



資料經濟與公私夥伴關係建立的 國際趨勢

彭啟明

台灣開放資料聯盟會長

天氣風險管理開發公司總經理

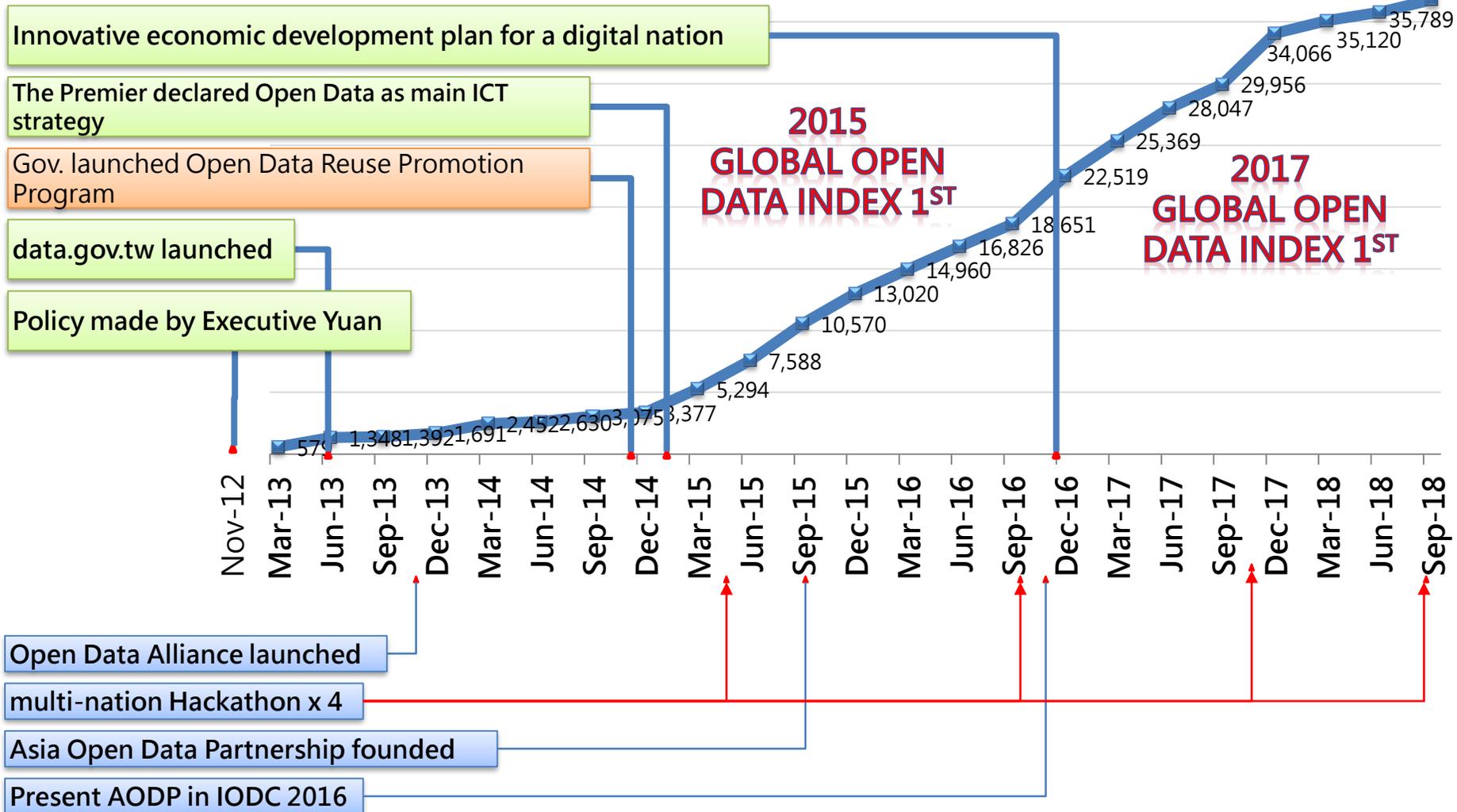
台灣開放資料 OKFN 評比 世界第一!

	National Statistics	Government Budget	Legislation	Election Results	Procurement tenders	National Map	Transport Timetables	Pollutant Emissions	Weather forecast	Company Register	Location datasets	Water Quality	Land Ownership	Government Spending	Health performance	Total Score
1 Taiwan	Green	Green	Green	Green	Green 1	Green 1	Green 2014 1	Green 1	Green 1	Green 1	Green 1	Green 1	Green 1	Green 1	Green (1)	1110
2 United Kingdom	Green	Green	Green	Red	Green 1	Green	Green 2014 1	Green 1	Green	Green	Green	Green 1	Green 1	Green 1	Green (1)	1090
3 Colombia	Green	Green 1	Green 1	Green	Green	Green	Green 2014 1	Green 1	Green 1	Green 1	Green	Green 1	Green 1	Green 1	Green (1)	980
4 Finland	Green	Green	Green	Green	Green 1	Green	Green 2014 1	Green 1	Green	Green 1	Green	Green 1	Green 1	Green 1	Green (1)	975
5 Uruguay	Green 1	Green	Green 1	Green 1	Green	Green	Green 2014 1	Green 1	Green 1	Green	Green	Green 1	Green	Green 1	Green (1)	960
6 Australia	Green	Green	Green 1	Green	Green	Green	Green 1	Green 1	Green 1	Green	Green 1	Green 1	Green 1	Green 1	Green	955
7 Denmark	Green	Green	Green 1	Green 1	Green 1	Green	Green 2014 1	Green 1	Green 1	Green 1	Green	Green 1	Green	Green 1	Green (1)	925
8 Norway	Green	Green	Green 1	Green 1	Green 1	Green	Green 2014 1	Green 1	Green	Green	Green	Green 1	Green 1	Green 1	Green (1)	915
9 France	Green 1	Green	Green 1	Green	Green 1	Green 1	Green 2014 1	Green 1	Green	Green 1	Green 1	Green 1	Green 1	Green 1	Green (1)	895
10 United States	Green	Green	Green	Green 1	Green	Green	Green 2014 1	Green	Green 2	Green 1	Green 1	Green 1	Green 1	Green 1	Green (1)	880

Multi-faceted efforts to promote Taiwan's open data growth

- Expanding the OD openness and accelerating the release of key data (such as eTag, medical drug, fuel) by matching among multiple supplies and demands.

+40,000



台英開放資料雙方合作



The screenshot shows the top part of the ODI website. At the top left is the ODI logo with the text 'open data institute'. To the right are navigation links: 'About', 'Get involved', and 'L'. Below this is a blue header with the word 'News'. The main content area features a news article titled 'ODI and Taiwan's Open Data Alliance sign up to open data collaboration', dated '2013-12-11 by Open Data Institute'. The article text reads: 'The UK's Open Data Institute (ODI) and Taiwan's Open Data Alliance (ODA) signed a Letter of Intent on 11 December 2013, which will see the two organisations promote and explore the potential open data holds for the public, private and academic sectors in both countries. The letter was signed by ODI Chairman and Co-Founder Sir Nigel Shadbolt during a visit to Taipei, and Chairman Peng Chi-Ming, from Taiwan's Open Data Alliance at a high level open data forum which involved Taiwan's ICT Minister Chang San-Cheng.' Below the article text, it says 'The agreement will see the ODI and ODA collaborate on a range of potential activities'.







Open Data MOU Ceremony (ODA and EGA)

26 February 2015
at Bangkok, Thailand



Dr. Sak Segkhoonthod
EGA Thailand



Dr. Chi Ming Peng
Taiwan



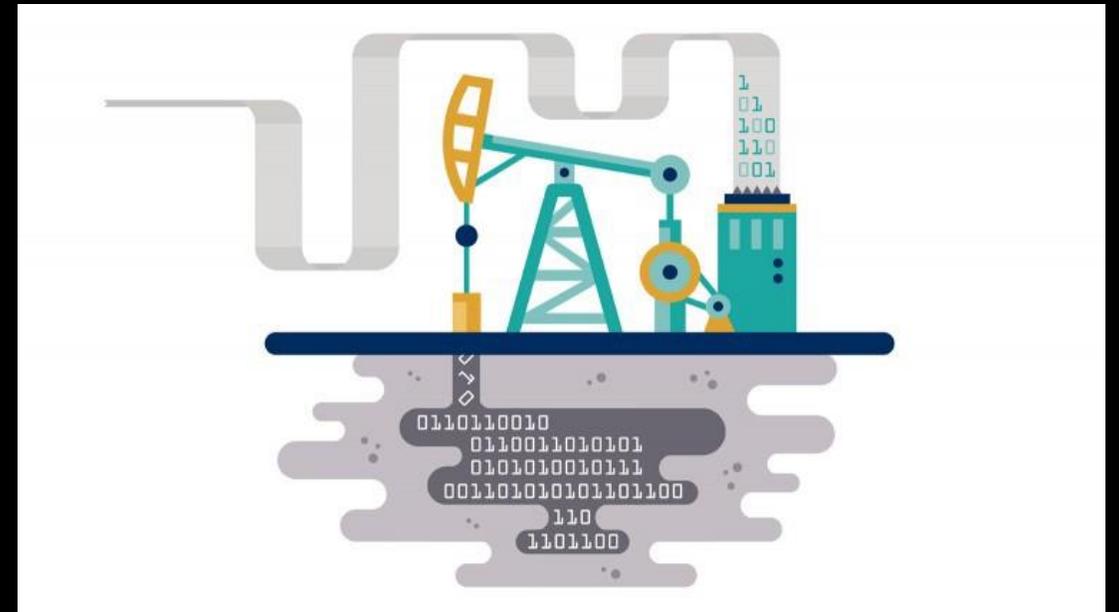


資料是新的石油 Data is the New Oil

Clive Humby, British mathematician, 2006

石油不能被重複使用，但資料可以重新分析，隨時隨地都可以用於新算法。無限可回收的。

全新的經濟可以基於資料（包括平台，雙邊市場，網絡以及社交和共享）。



Open Data and Big Data

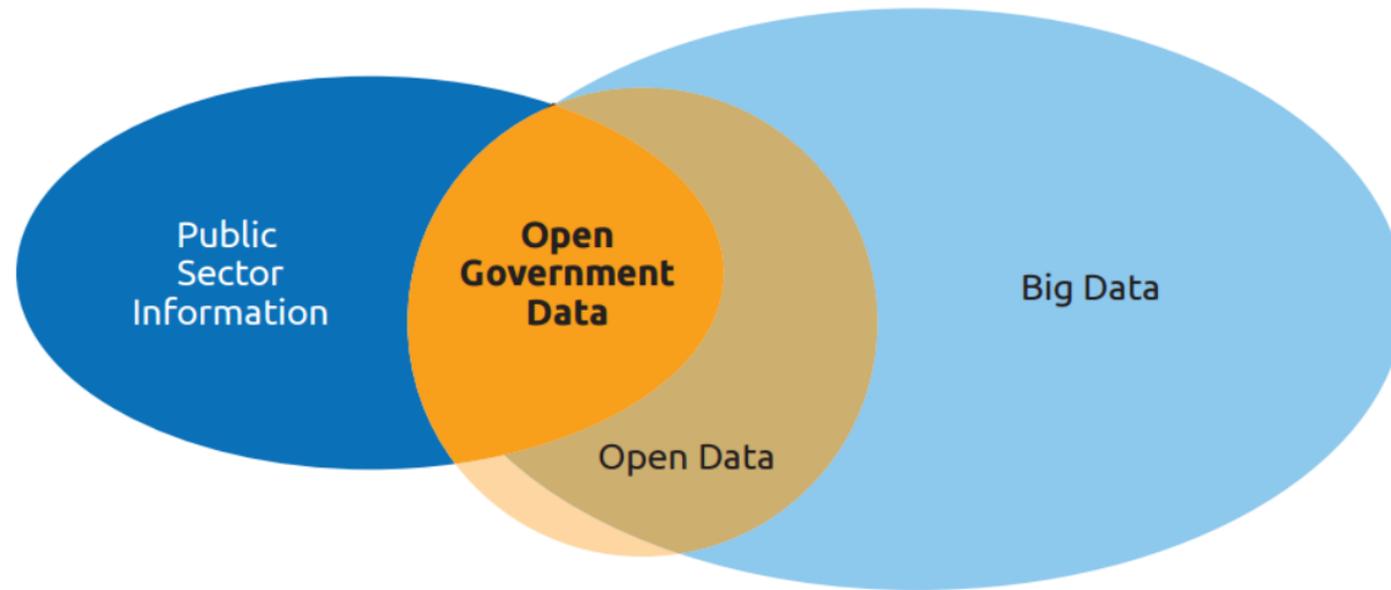
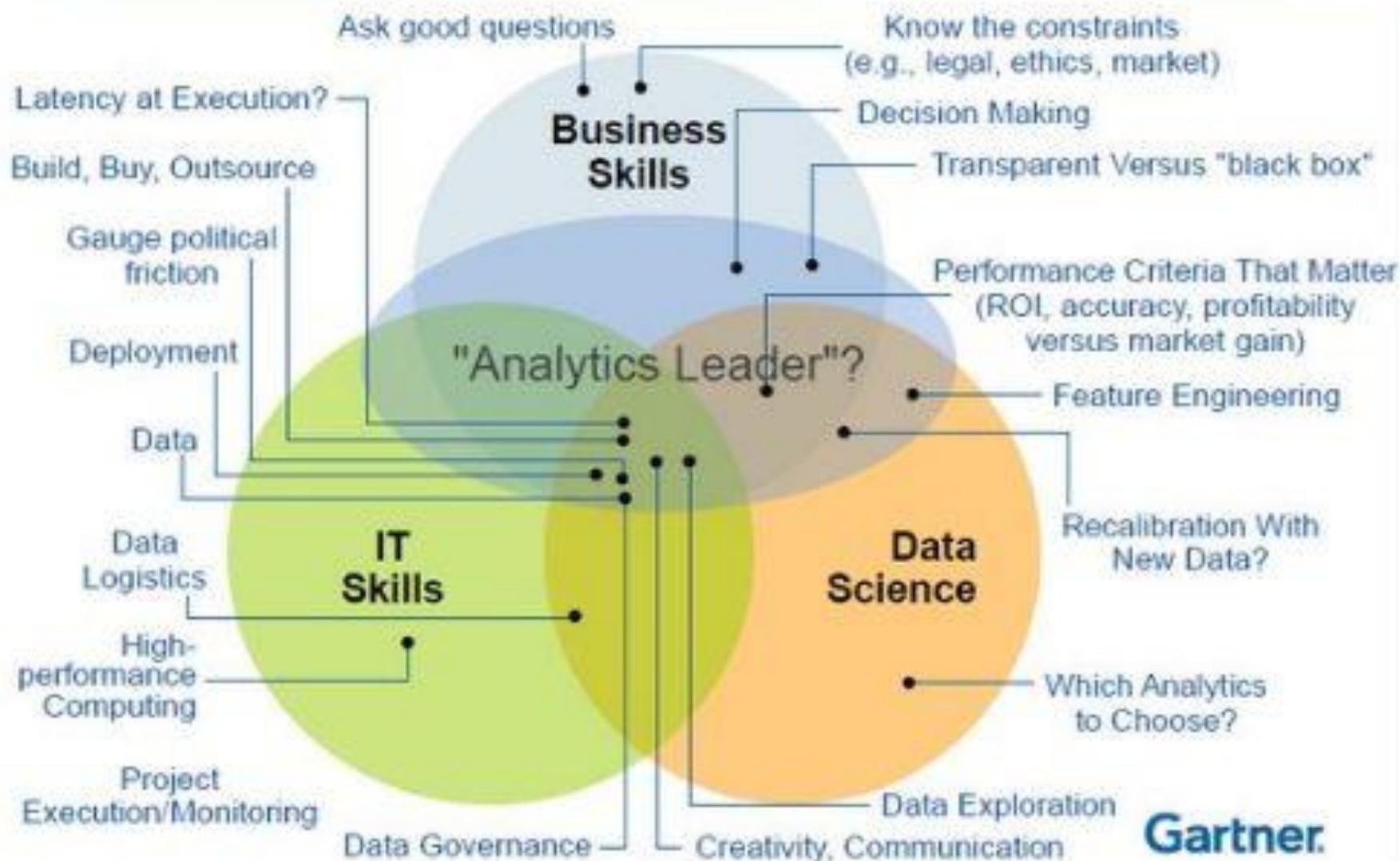
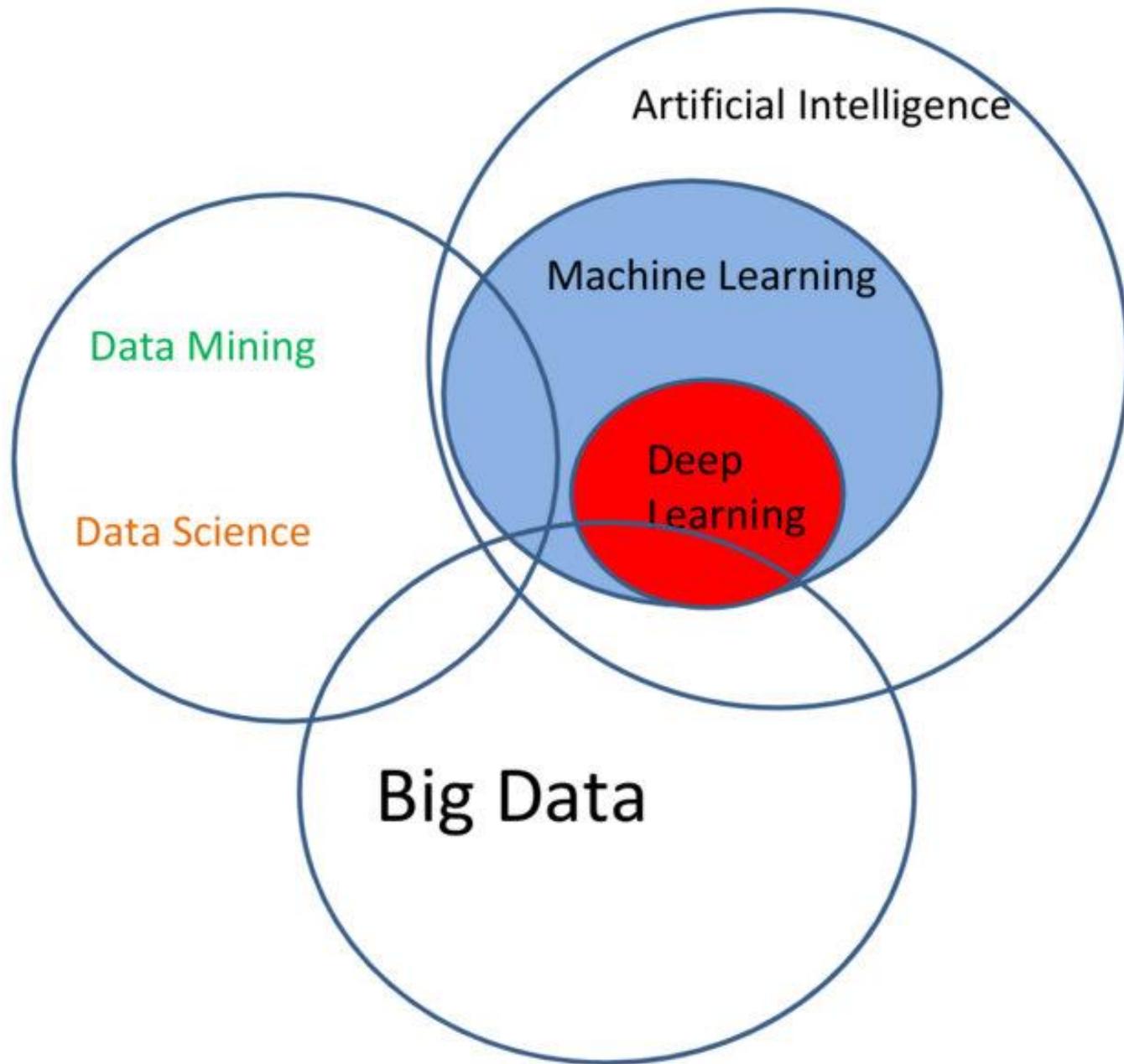


Figure 3 – Boundaries of Open Data and Public Sector Information

Driving the Success of Data Science Solutions: Skills, Roles and Responsibilities ...





**The Data Science Puzzle,
Explained, 2016**

民主透明

開放
資料

效能
提升

創新
經濟



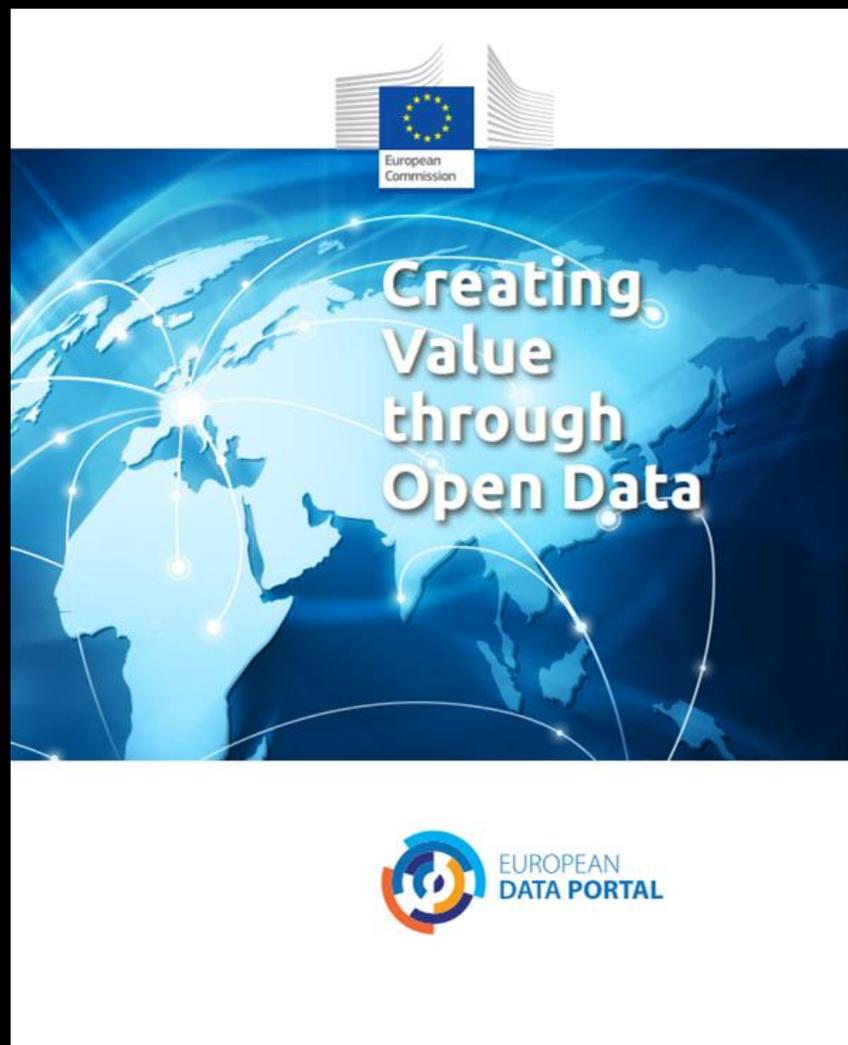
**Towards a data-driven
economy in Europe**

我們該加強投入 資料經濟

- 政府、企業協同合作
- 輔導培育年輕人轉向
- 創造工作機會、產值
- 台灣市場轉為亞洲市場

**歐盟的做法：
以資料經濟驅動
數位經濟發展**

歐盟的資料經濟現況



2016-2020 為發展目標

- 市場規模預計從432億歐元(約1.6兆台幣)，增加36.9%，達到757億歐元(約2.8兆台幣)。
- 新創就業人口從7.5萬到10萬。
- 公部門一年可節省0.22%支出，相當17億歐元(約629億台幣)
- 定性的在減少交通時間、環境改善及拯救生命有很大的幫助。

依照歐盟計算方式，概算我國2020年應有1000億台幣產值，5000人的新就業機會

歐盟的各國資料發展成熟度

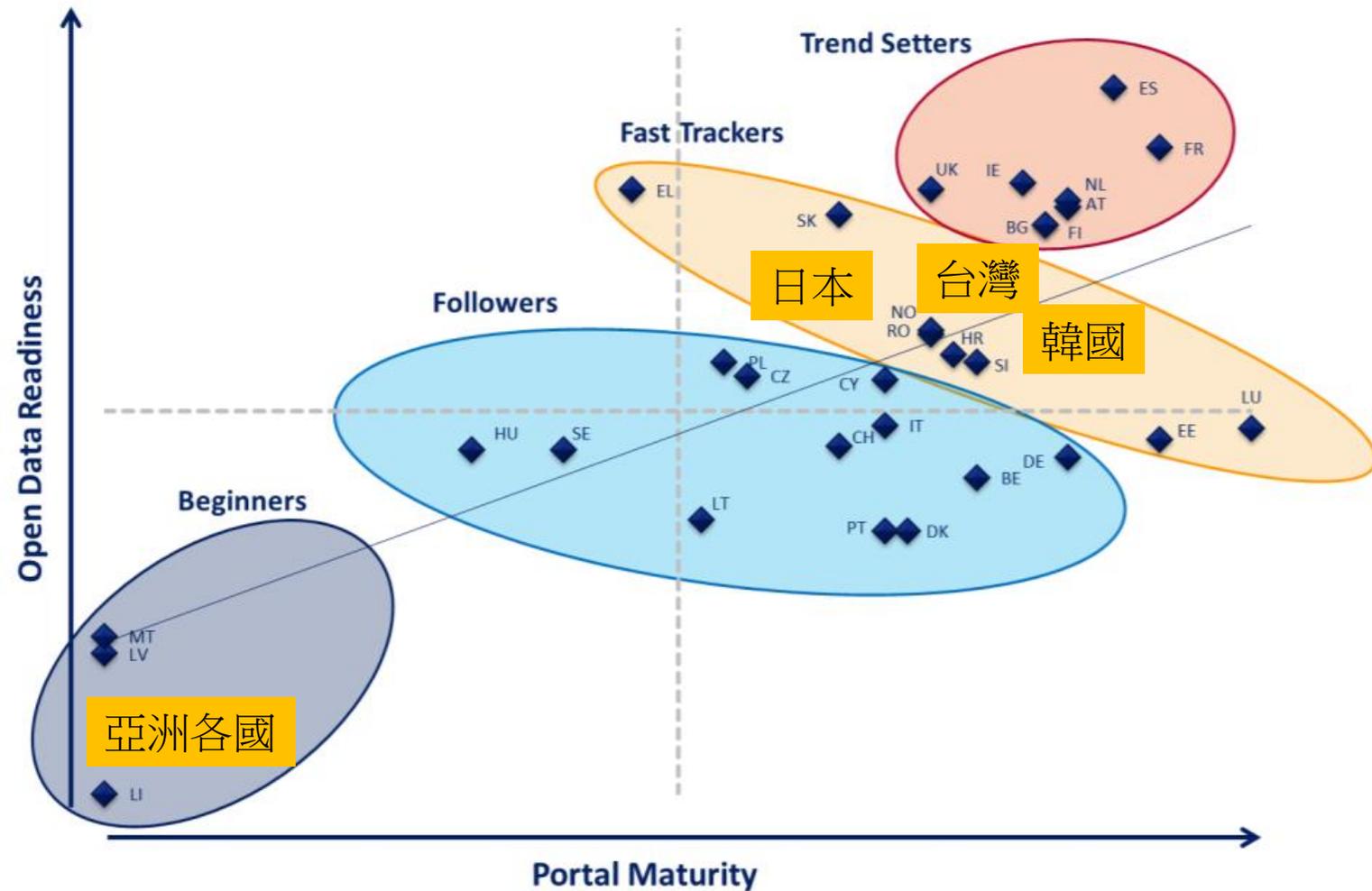


Figure 3 - EU28+ Open Data Maturity clusters

目前台灣政府 各種資料的問題

1. 各單位**自擁資料**

→ 把資料視為國家的資料

2. 跨單位**資料不相通**

→ 國家級資料公司

3. **隱私法令**等問題

→ 單一窗口統一由專家解決

4. **收費與免費**的原則

→ 開放資料與增值資料(流量)分野

5. **公私競爭/夥伴**關係

→ 妥善分配創造雙贏

6. 各單位**缺乏資料人**

→ 資料人才待遇高於公務員

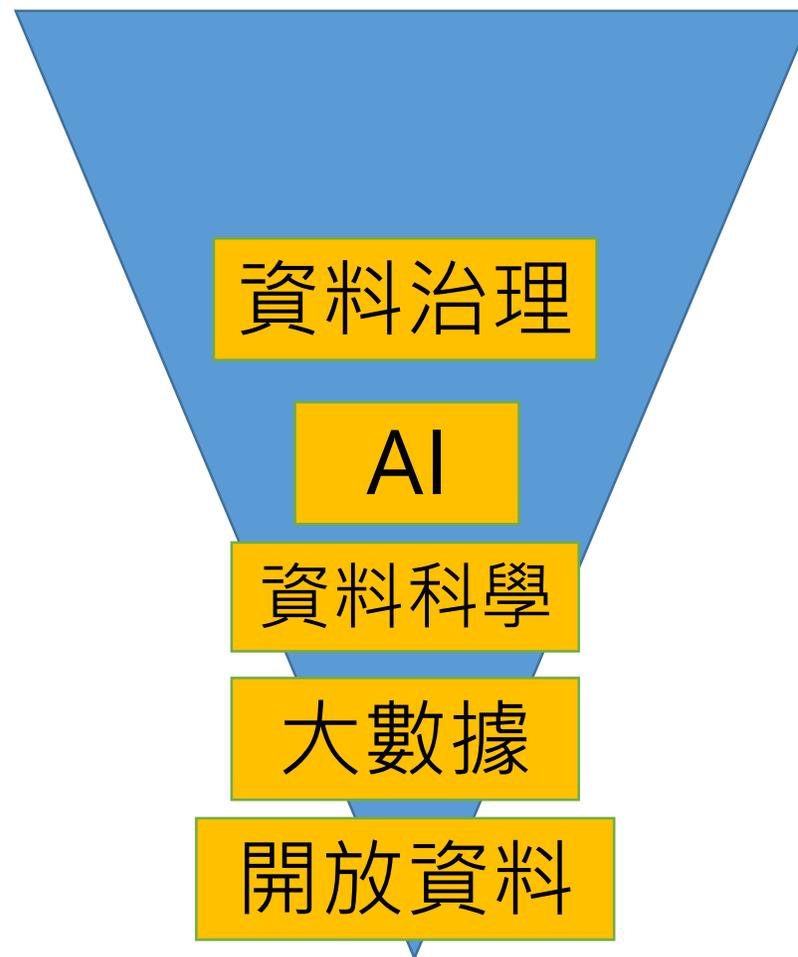
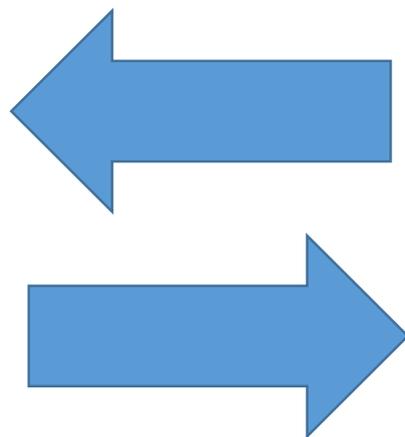
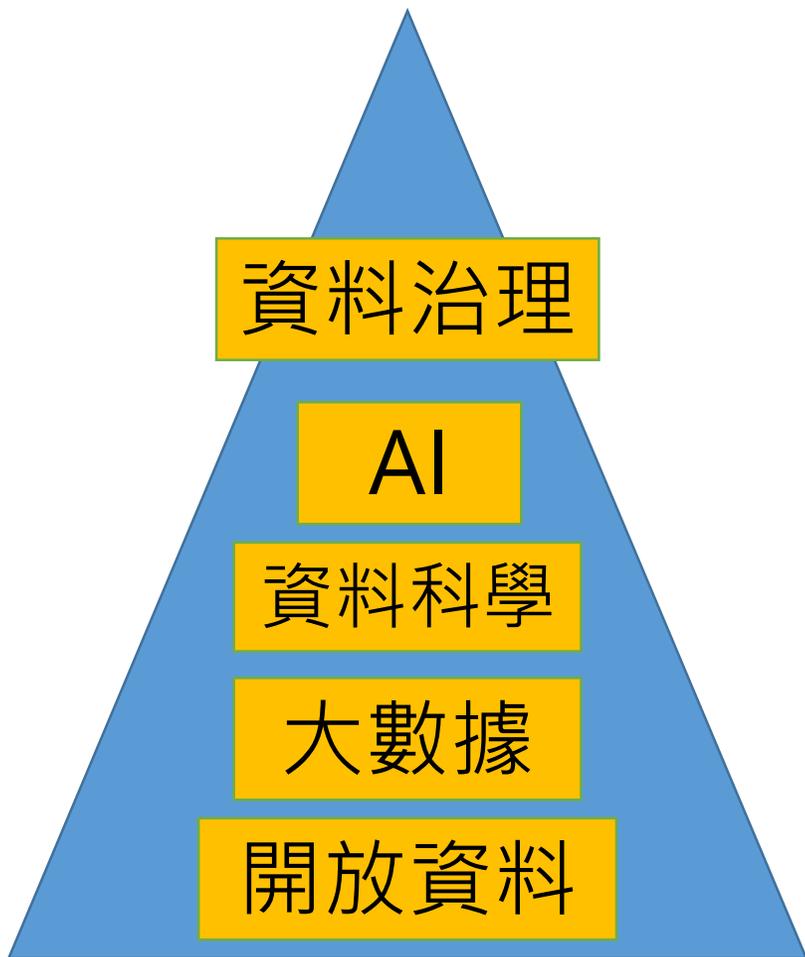
7. 資料**標準、品質**

→ 資料品管與標準是一切基礎

台灣各部會存在著穀倉 (Silo) 效應



各部會資料彼此不相通，取決於部會首長的認知與態度，變動甚大。



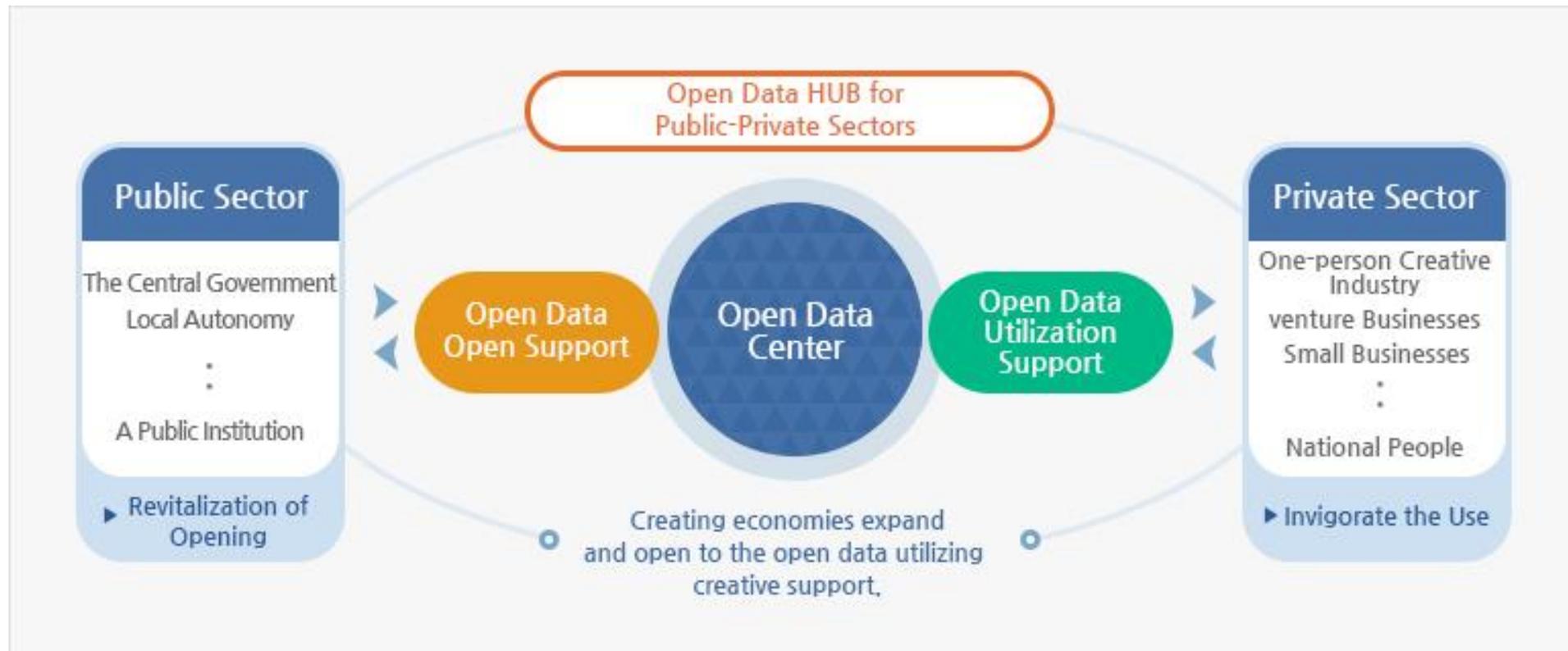


荷蘭中央統計局 (Centraal Bureau voor de Statistiek , CBS) 城市資料中心 (Urban Data Center)

- OECD 公共部門全球創新獎，數位化評比是 2016 年歐盟第二
- 荷蘭在 2004 年修改《統計法》，賦予「荷蘭中央統計局」獨立機構的地位，並賦予其擁有所有單位資料的權限，「荷蘭中央統計局」下成立了資料中心。
- 計劃性收集並分析城市資料，用數據讓生活更美好
- 中央整理資料，將量能挹注地方，創造公私協力
- 中央統合系統，避免資訊不流通
- 例如他們收集國家所有顧客購買資料，手機位置和荷蘭國鐵的晶片卡資料，因為他們有足夠的研究能量去分析資料、保護資料中的隱私，且這些私人企業「相信」他們中心是為了國家社會利益進行資料分析，導出有利於市民的決策。企業相信，他們中心不會做出傷害私人企業市場利益的事，且資料分析的方法是有利於私人企業再拿來進行分析或加值。

韓國 Open Data Utilization Support Center

- 目的
 - 促進公部門資料開放
 - 促進私部門應用開放資料
- 專業能力
 - 資料產製
 - 資料開放釋出
 - 應用開放資料
 - 以高品質資料促進公私協力
 - 扮演民間應用的支援者



韓國首爾市資料中心

Metropolitan Big Data Campus

- 主旨

- 2016年由首爾市政府成立，為整合政府、私部門、產業與大學的大數據分析與資料運用的平台。
- 透過大數據資源的共享，並使用雲端大數據分析，創造出公民、學術、公共和私人企業之間社會問題的解決方案和創新思維。

- 核心價值：用資料服務公民，解決社會問題

- 作法

- 所有資料分析結果將發佈在該機構的網站上，旨在通過與其他公民分享知識和訊息來進一步擴大價值。
- 釋出從公/私部門取得的開放資料，並推動民間應用
- 以使用者為中心，主動發現並開放釋出資料。透過公私協力社群機制，支援民間主導的商業模式
- 以未來資料應用為導向，開設雲端服務
- 加速大數據共享和利用平台

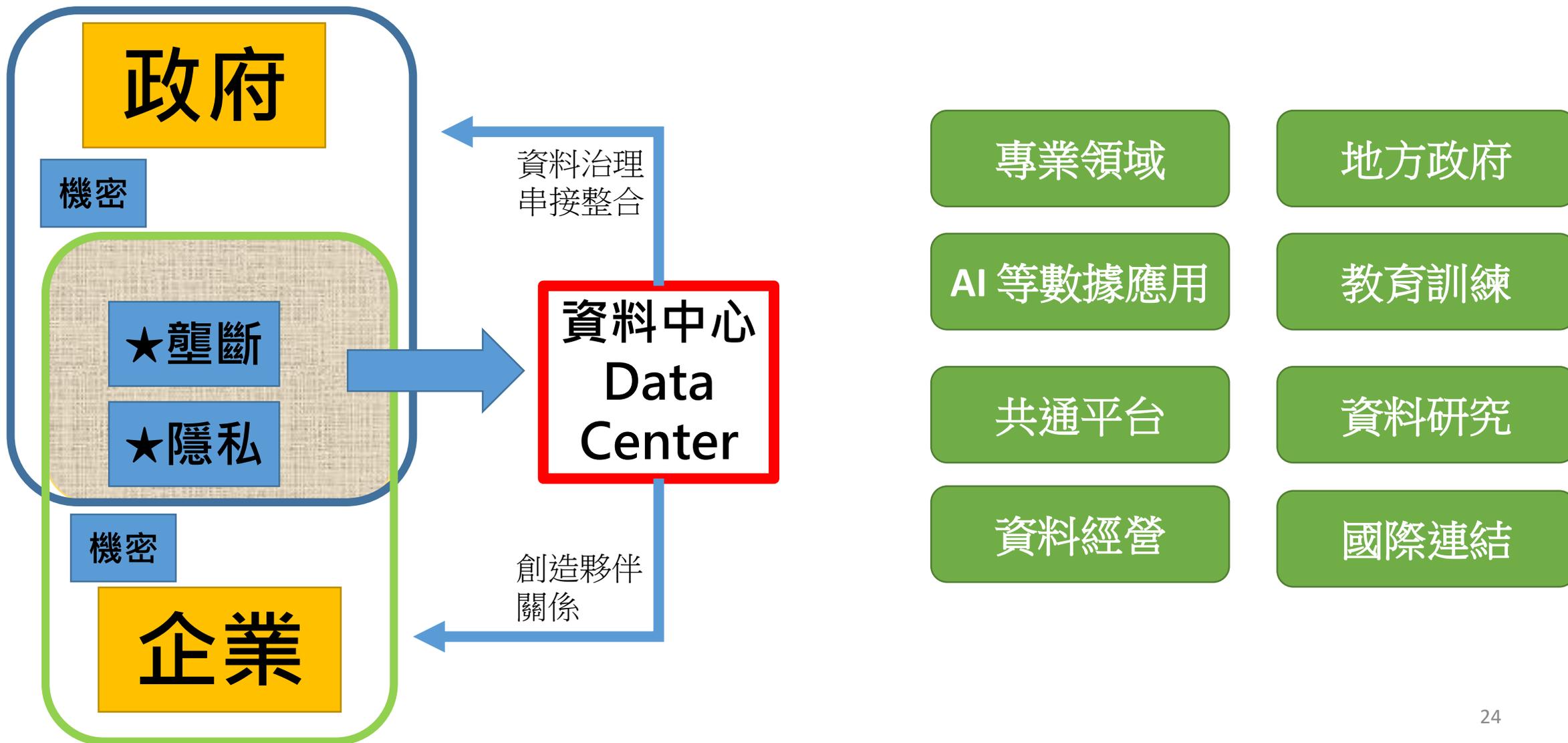
上海市大數據中心 (其他各省多仿效)

- 上海市大資料中心的主要職責
 - 貫徹落實國家大資料發展的方針政策，做好上海大資料發展戰略、地方性法規、規章草案和政策建議的基礎性工具。
 - 制定政務資料資源歸集、治理、共用、開放、應用、安全等技術標準及管理辦法
 - 推進上海政務資訊系統的整合共用，貫通彙聚各行、各行政部門和各區的政務資料。
 - 承擔政務資料、行業資料、社會資料的融合工作
 - 開展大資料採擷、分析工作
 - 承擔全市政務雲，以及上海政務網的建設和管理
 - 指導各區、各部門資料管理工作
 - 配合相關部門開展全市資料安全、資料管理的績效評估和督查工作。

其他各國案例

歐盟	DG CONNECT G3 以每年約五億台幣預算，支援開放資料法令、平台、宣導及活動等
英國	除政府外，成立開放資料研究所 ODI，進行國內及國際活動，剛又改組續約五年。
法國	以總理下資訊長成立 ETALAB，每年約六億預算(政府與民間各半預算員額)，推動資料等活動
加拿大	除政府負責資料外，IDRC 下推動全球開放資料活動，推動OD4D，每兩年有IODC 大會，預算約為10億台幣
日本	安倍內閣CIO，與大企業合作，為奧運2020，資料應用委由VLED 執行
資料市集公司	越來越多成功國際資料市集公司，進行跨國運作，各國都積極面對，深怕難敵此競爭壓力。

資料生態系



參與全球開放資料會議 IODC 的經驗

IODC 15 加拿大渥太華

加拿大駐台代表處主動邀約

科技會報、工研院、ODA等社群約十人

IODC 16 西班牙馬德里

科技會報、工研院、ODA等社群約六人

三場分享座談、受邀大會上台、亞洲之夜

IODC 18 阿根廷 布宜諾斯艾利斯

OCF、ODA、工研院等社群約8人

首度受邀參加籌備委員會，約有五場次活動，主導亞洲活動、亞洲之夜

OAS

Government of Spain

Arturo Munte-Kunigami

Inter-American Development Bank

Nnenna Nwakanma

Web Foundation

Georg Neumann

Open Contracting

Beth Noveck

Govlab

Muchiri Nyaggah

Africa Open Data Network (AODN)

Anders Pedersen

Natural Resource Governance Institute

Chimeng Peng

Government of Taiwan

Fernando Perini

IDRC - OD4D

Stephanie Carroll Rainie

University of Arizona

Katelyn Rogers

Open Knowledge International (OKI)

Mor Rubinstein

Open Heroines / 360Giving

Ana Sofia Ruiz Schmidt

Open Contracting - Hivos

Lejla Sadiku

United Nations Development Programme (UNDP)

Nancy Salem

Access to Knowledge for Development (A2K4D)

籌備 及 審查經驗

相當繁瑣...溝通 溝通

不能一直說自己好的議題
要來解決區域或國際的問題
要能夠有跨國合作的機會

參加西班牙 國際開放資料研討會 IODC 2016 觀察心得

ODA聯盟 彭啟明會長
TCA 張雅婷、章孟昉
科技會報 張心玲、廖惠美
工研院 黃維中

活動基本資訊

- International Open Data Conference 為全球最大的開放資料盛會
 - 總計1660人參加，87場會議、28個pre-event
 - 11100則推特、7219萬點閱
- 本屆為第四屆
 - 第三屆於加拿大渥太華、第二屆於美國華盛頓
- 活動時間
 - 10/3~10/5為會前活動(pre-event)
 - 10/6~10/7為主要論壇
- 主辦單位
 - 西班牙產業能源旅遊部、red.es (西班牙之科技研發法人)
 - 加拿大政府、IDRC (加拿大國際發展研究中心)
 - 世界銀行、OD4D (Open Data for Development Network)
 - 馬德里市政府、歐盟

發表：少數民族開放資料應用

- ODA彭啟明會長(與工研院聯名)發表
 - 台灣氣象開放資料應用於少數民族之災害防救
- 其他發表：愛爾蘭毛利族、美國亞歷桑納原住民



強化國際OD人脈

韓國 Mr. Lee



美國 Joel Gurin



英國 ODI



義大利

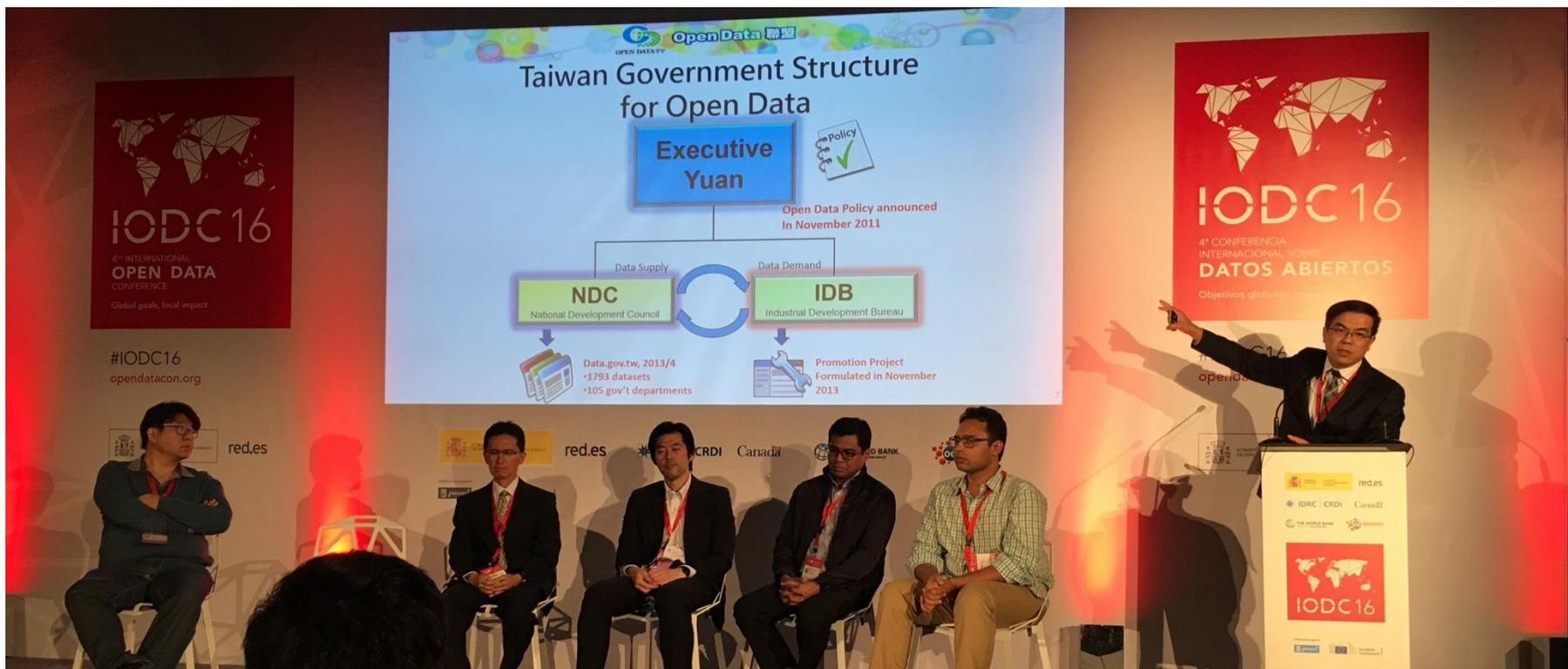
共同發表亞洲開放資料合作夥伴

➤ 泰國、臺灣、韓國、日本、印尼、印度(由左至右)



共同發表亞洲開放資料合作夥伴

- 發表重點：各國開放資料推動歷程、成效與重點
- AODP未來合作之構想
- 成效：亞洲國家在國際場合認同，並對全球發表



2.2.AODP晚宴

- 邀請AODP代表餐會增進情誼
- 額外邀請
 - 美國商務部首席資料科學家Jeffery



發表：區域合作

➤ 10/6總結座談，由全球各區域代表座談區域合作

-  – Lead, Canada's Open Government Portal(加拿大)
-  – ODA Chairman (亞洲)
-  – Co-Founder and Director of Programs, Center for Open Data Enterprise (美國)
-  – Open Data Specialist, UNDP (歐洲)
-  – Senior Research Specialist, Access to Knowledge for Development Center at the American University in Cairo (非洲)
-  – Commissioner, Right to Access Information Commission (非洲, 獅子山)

➤ 世界各國再次重視到ODA與AODP是亞洲地區區域合作的主要推動與領導者

代表亞洲區與全球代表座談





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red.es IDRC | CRDI

red.es IDRC | CRDI Canada THE WORLD BANK

IDRC | CRDI Canada THE WORLD BANK

THE WORLD BANK OpenData



IODC 2018

- 全球開放資料國際會議
- 時間：9月25日(二)~9月28日(五)
- 地點：阿根廷/布宜諾斯艾利斯
(Usina del Arte 藝術文化中心)



#IODC18
The Future is Open
El Futuro es Abierto
BUENOS AIRES September 27-28

— 宣傳臺灣及亞洲 OD 推動成果

我國受邀擔任四個場次論壇講者(開放資料領袖論壇、開放資料與農業論壇、開放資料在亞洲論壇、發展中國家的開放資料論壇)，推廣我國資料開放成效、亞洲開放資料合作夥伴(AODP)推動效益。

— 積極評估主辦 IODC2022 準備

針對爭取IODC 2022主辦仍於評估及籌備階段，本次實際參與了解現場執行狀況，並與具有影響力的關鍵單位與人士建立關係。

— 掌握國際開放資料脈動

瞭解全球開放資料發展趨勢、公私協作所衍生的成功應用案例，探詢與其他國家合作機會。

— 建立國際人脈與尋求合作機會

拓展國際人脈，積極與國際以及亞洲區域夥伴共同推動國際交流活動，擴大國際合作網絡。

拜會駐阿根廷台北商務文化辦事處



- 主要代表：謝俊得大使、經濟組于晶芝組長
- 臺灣ODA聯盟彭啟明會長擔任臺灣代表團長
- 交流重點：
 - 阿根廷面臨震盪波動，真的不安全。
 - 謝大使表達高度歡迎臺灣組團前來阿根廷參加國際會議，並由團長代表致贈伴手禮。
 - 彭會長介紹IODC 2018國際會議、臺灣開放資料推動進程、AODP國際網絡形成。
 - 謝大使表示阿根廷政府對開放資料的態度是以促使跨機關資料流通，降低貪腐程度，落實開放政府公開透明度。
 - 經濟組于組長表示阿根廷為我國在拉丁美洲第4大貿易夥伴國，進口以玉米、大豆、皮革，出口以聚甲醛、資料處理器相關產品為主。

辦理亞洲之夜(Asia Night)



- 餐廳：Gourmet Porteño (Puerto Madero)
- 工業局、ODA、AODP共同辦理
- 由臺灣ODA聯盟彭會長代表致歡迎詞
- 重要貴賓：謝大使夫婦、經濟組于組長
- 與會貴賓：加拿大、美國、日本、緬甸、菲律賓、臺灣共19位代表共襄盛舉
- 交流重點：

- 以資料開放、跨國資料、社群參與協作等議題交流互動，奠定亞洲區域未來開放資料推動合作之基礎。
- 美加是以開放政府指令和開源軟體授權為基礎，來達到開放資料、開放對話。
- 湄公河流域五國於今年5月共同建立平台，促進該區域資料流通，共同為湄公河下游區域創造可持續發展之經濟與環境發展。
- 亞洲代表皆表示將積極參與AODP區域內所舉辦的活動，活絡亞洲區域開放資料應用與專業人才的交流。

參與IODC 2018國際會議

(一)開放資料領袖論壇



- 主辦單位：英國開放資料研究所(UK ODI)
- 交流重點：
 - 各國代表參與多為官方人士，例如統計局、主計總處，明顯的開放資料主管。
 - 阿根廷從2015年由政府開始重視開放資料，分享開放資料網站的相關機制與案例，包括52個不同領域的271個資料集。
 - 紐西蘭政府有取得開放資料的影響力、達到釋放資料的目的、保留資料的爭議、產生資料；而NGOs可獲得資料應用案例的公開、聯絡政府內部、取得他們所需要的資料、產生資料。
 - 彭會長說明臺灣開放資料歷程，也成功推動亞洲11國16夥伴組成亞洲開放資料合作夥伴(AODP)，帶領區域交流合作，建立完善亞洲資料來源。
 - 加拿大網站每月瀏覽量達71,897筆，2015~17資料集下載量成長率達75%，使用者達到75,000人次，超過100多個資料集，由新創進一步挖掘資料需求共創資料集，比政府單一推動還更有效果。
 - 烏克蘭已有600個開放資料集，接下來至少再開放300個，以有利於民生的資料為優先。



(二)開放資料在亞洲論壇



- 由我國與IODC大會議程共同擬定，協助邀請亞洲各國專家共10人擔任貴賓講者與會，ODA彭會長擔任論壇主持，討論開放資料共同挑戰與障礙及因應策略。
- 交流重點：
 - 亞洲區域認同以環境災害預防優先開展區域合作，仍需克服不同語言與開放資料策略、開放資料質量不一等，朝建立亞洲開放資料平台邁進。
 - 日本推動資料共享革新有五大關鍵差異：法律制度的成熟、首相安倍晉三承諾、進行開放資料盤點工作、開展圓桌討論、地方與政府資源整合。
 - 菲律賓以使用者需求為出發建立資料平台，設計簡便容易使用操作模式，降低使用門檻。
 - 湄公河流域五國共同建立一站式政府資料蒐集平台，增進政府施政透明度、提升民眾生活品質，滿足產業界需求。
 - 尼泊爾對開放資料的需求和使用是有限的，政府在開放資料的發展較為緩慢。
 - 亞洲代表皆同意以符合國際標準的資料開放標準與作業規範，確保所有平台的資料能夠有效被利用。
 - 亞洲代表大多認同資料使用大多集中於高所得國家，開放資料的可用性有在提升但成效有限，產生越來越多的開放資料但其缺乏可持續性。

The Future is Open

BUENOS AIRES September 27-28, 2018

OPEN DATA IN ASIA

Moderators:
ChiMing Peng

slido

Join at
slido.com
#asiadata

Speakers:

Michael Canares

Pyrou Chung

DongPo Deng

Louisa Dennison

Hiroichi Kawashima

Michelle Manza

Aye Kyithar Swe

Min-Hsuan Wu

Khairil Yusof

Lei Zheng

OPEN DATA IN ASIA

Opportunity

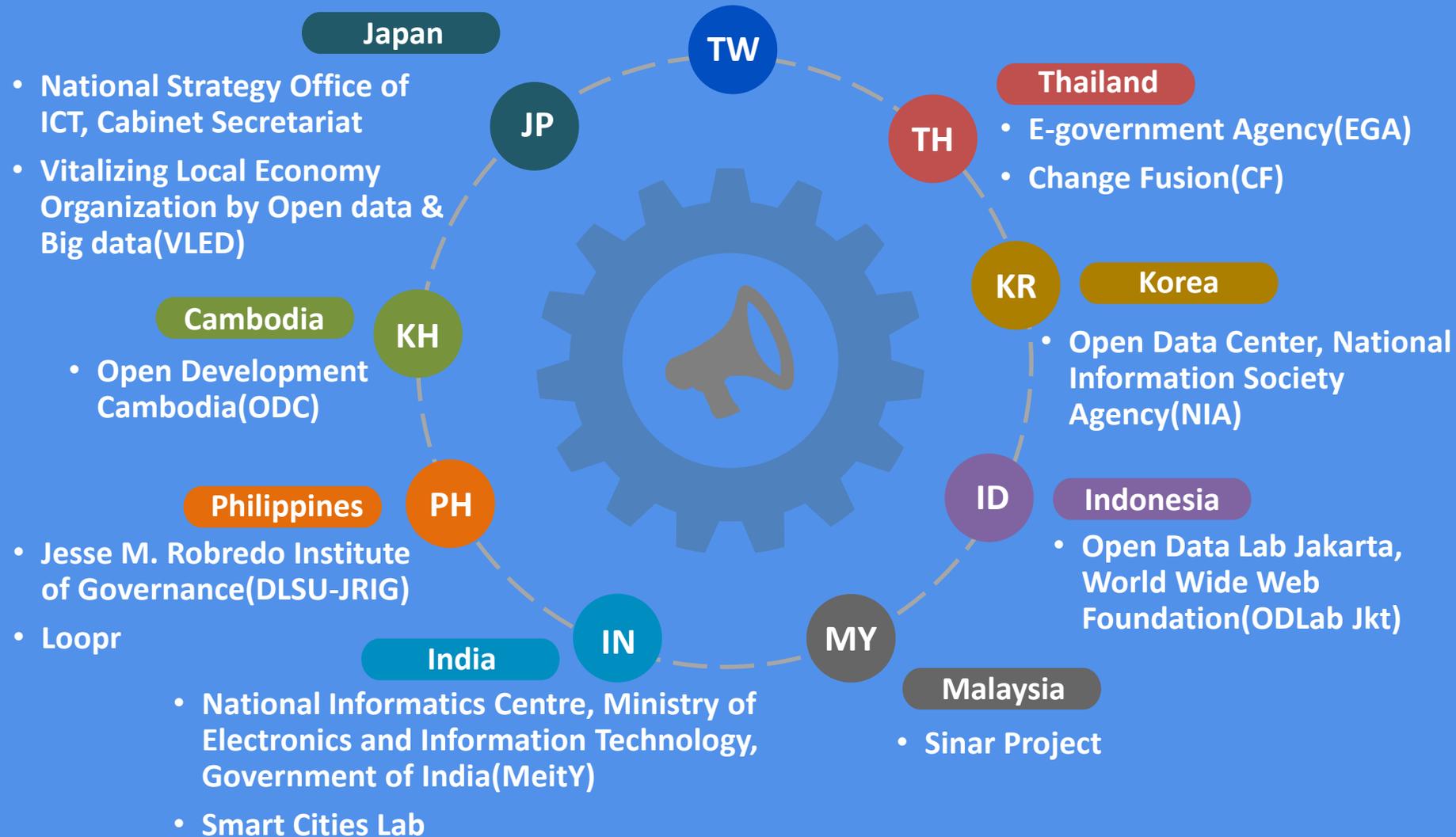
- Smart Nation/Cities
- Quickly development
- Economy interest, Innovation
- Market Size
- Government change/young generation is getting better and better

Challenge

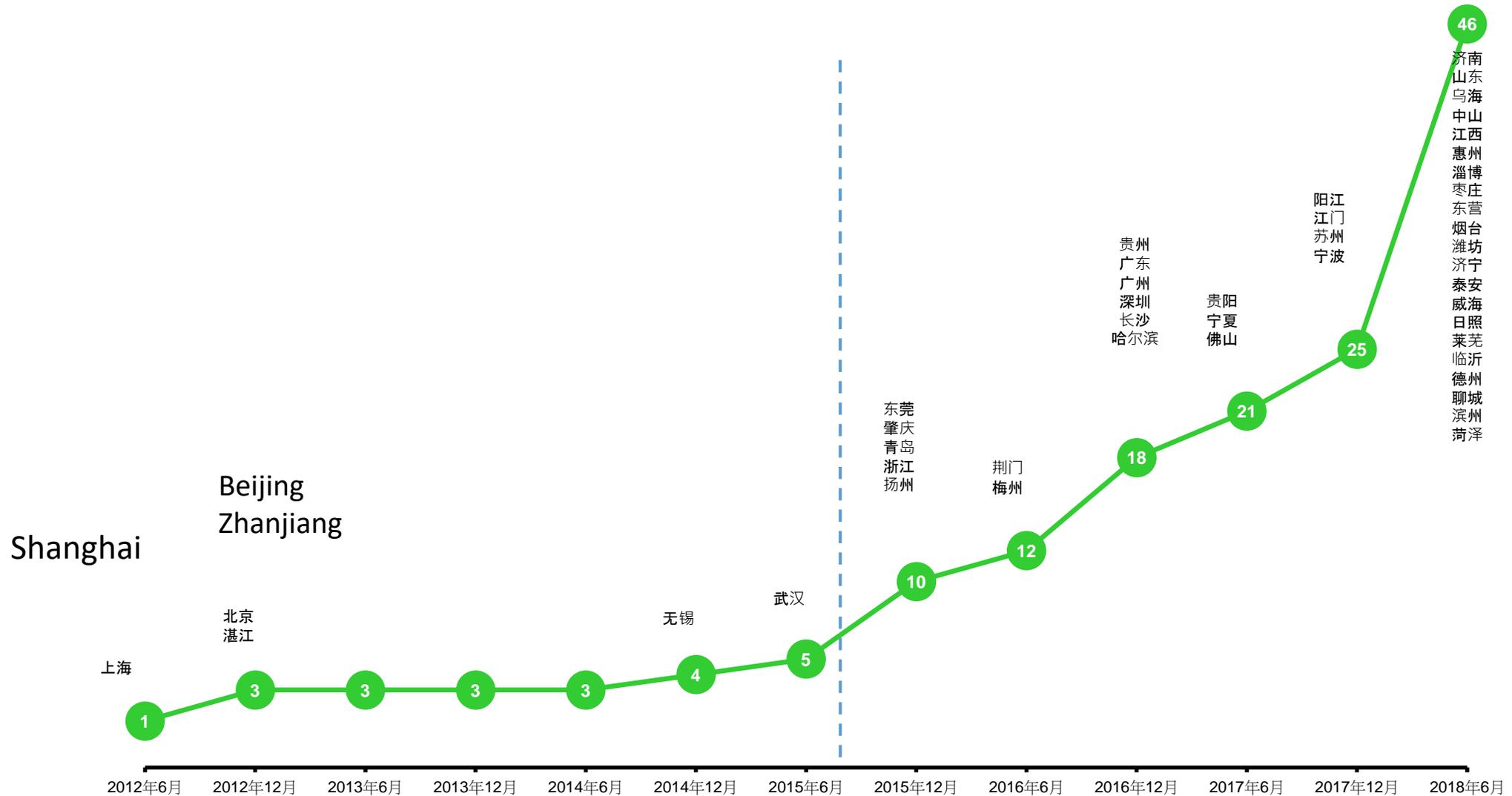
- Open is NOT traditional culture
- Limited Politian awareness
- Lack of Law, policy
- Privacy
- Education
- Language, Asia Open Data portal
- OD → Big Data → AI

Taiwan

- Open Data Alliance(ODA)



Local Government Open Data Platforms Launched Since 2012

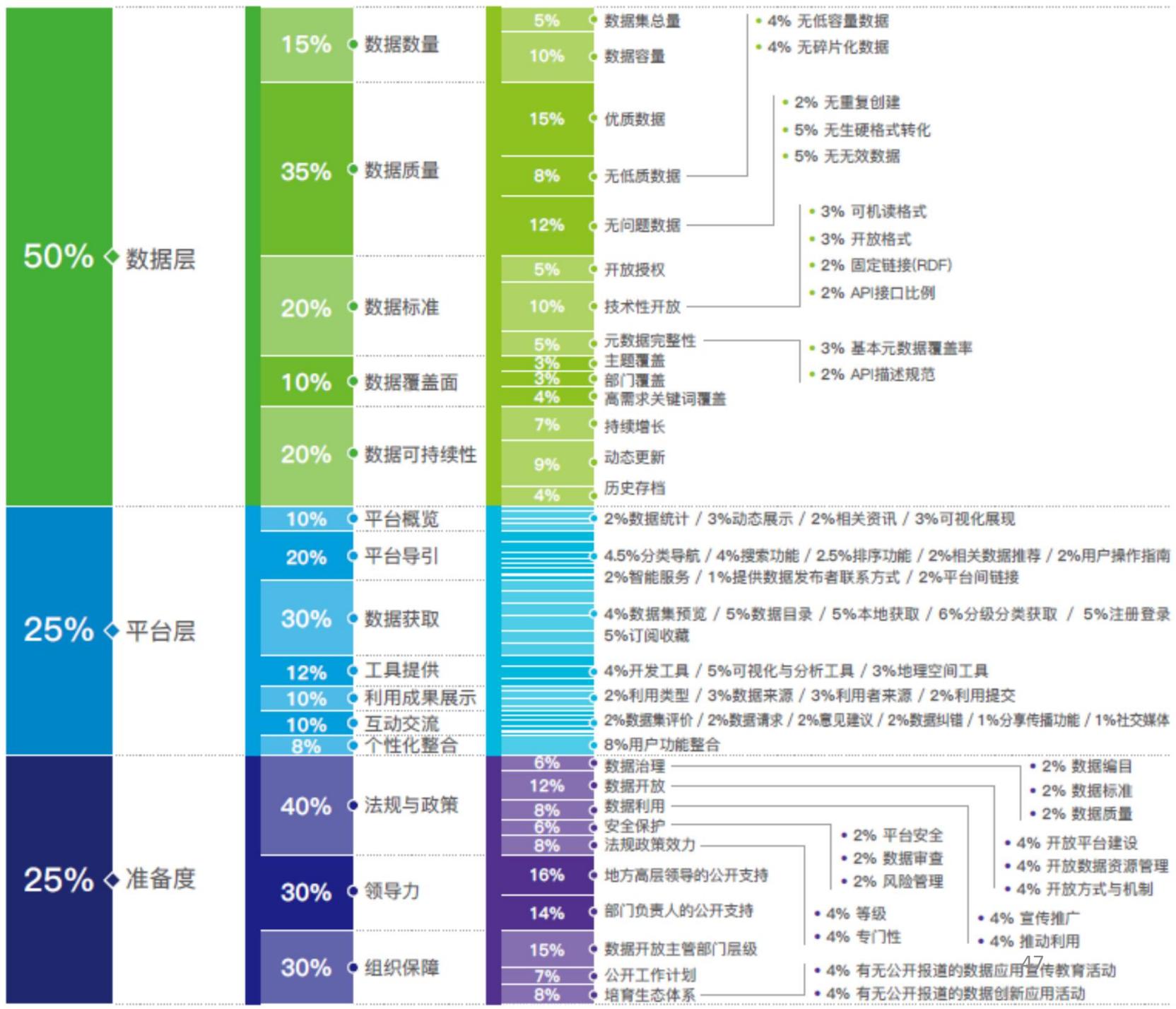


Assessment Framework

Data

Platform

Readiness



Top 10 Provinces and Cities by Number of Open Datasets

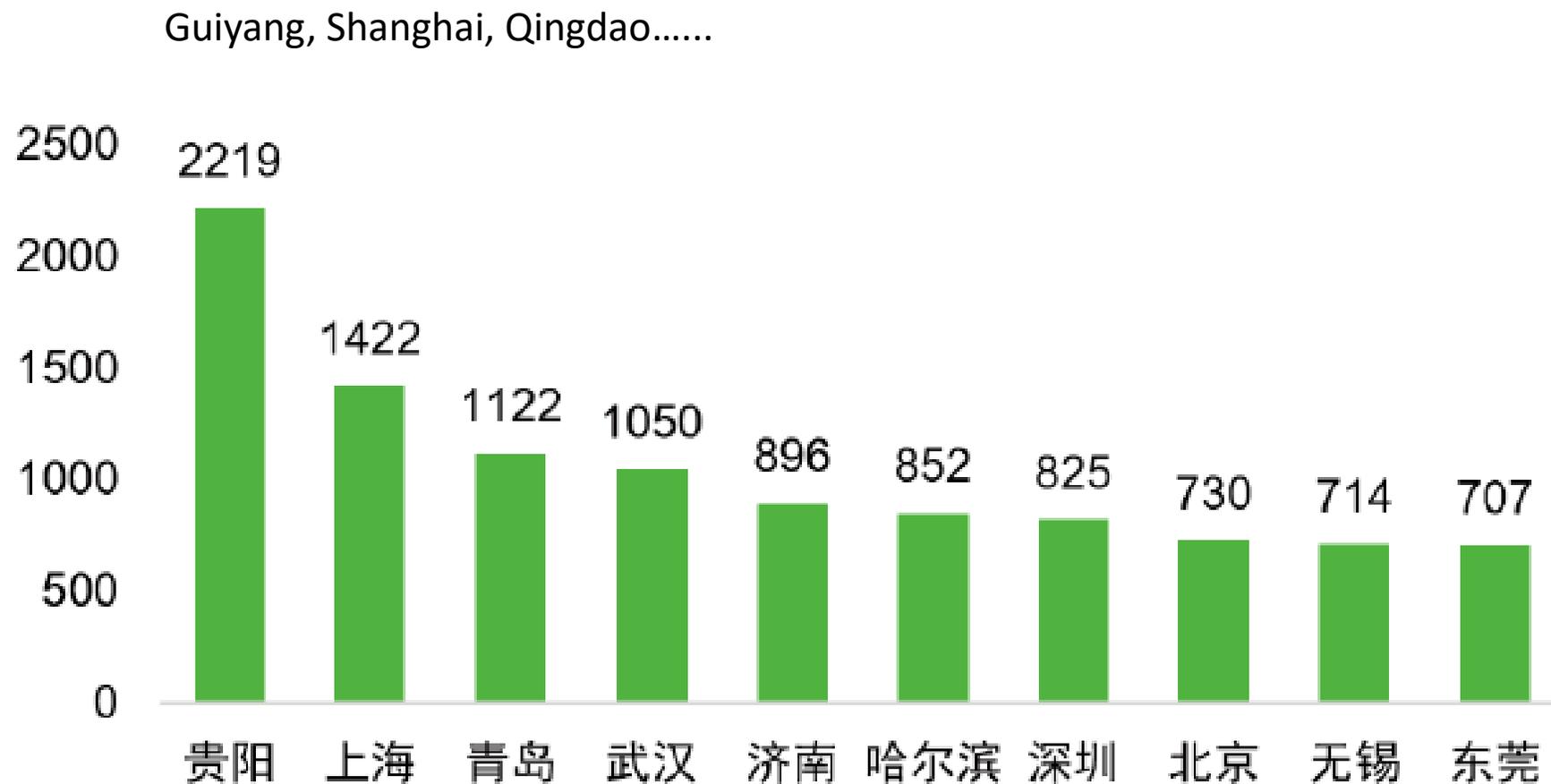
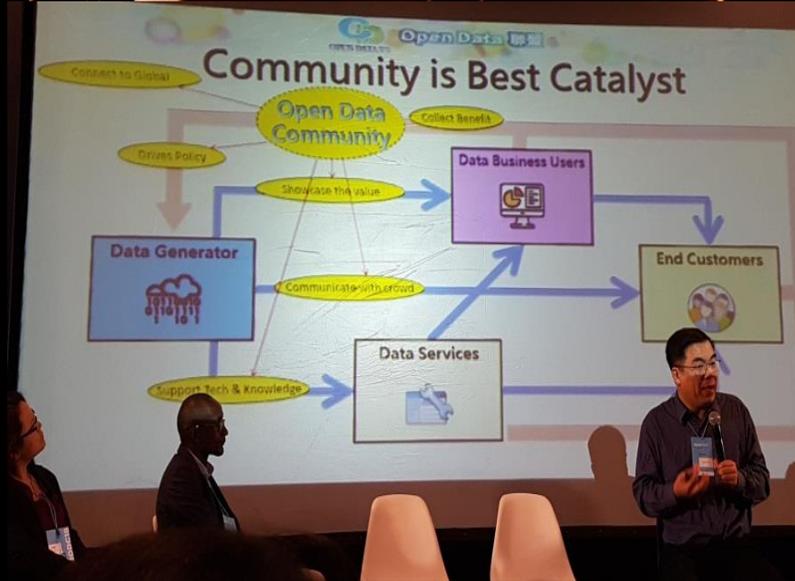


图6 各地平台上的数据集总量(前10名)



(三)發展中國家的開放資料論壇



- 拉丁美洲：中南美洲國家如墨西哥、烏拉圭、巴西、哥倫比亞為世界前20名的國家，政府有追求進步的決心。
- 非洲：非洲開放資料等於開放選舉，資金由外部援助很少談論，存在信任問題、合約開放等有待解決。
- 亞洲：亞洲各國領導者對於開放資料的立法，是互相競爭的態度，形成一個AODP的生態系，比如說日本已針對開放資料立下專法，韓國或台灣政府就會起而倣尤。公私協力可分為產業和公民兩部分來看。
- 東南亞：2018年上線「湄公河資料平台」(Open Development Mekong platform)，提供跟土地、環境、資源等相關的資料，包含越南語、緬甸語、泰文、柬埔寨文、越南語五種語言版本。需要克服的障礙如文化差異、科技程度，挑戰是如何收集到資料、清洗資料。

參、小結

1 掌握國際開放資料 脈動與發展趨勢

參與具指標性的國際會議(IODC)有助於我國開放資料與國際主流發展接軌，並掌握第一手的資料與趨勢，作為政府政策擬定之參考。

2

爭取國際場合 曝光的機會

本次實際參與了解現場執行狀況，並與具有影響力的關鍵單位與人士建立關係持續互相交流資訊。

3

宣傳臺灣及亞洲 OD推動成果

本次臺灣共有3位代表受邀擔任論壇主持人與講者，強力推廣我國資料開放成效與亞洲開放資料合作夥伴(AODP)國際合作推動效益。



Open data – summary of findings

Evolution and impact

Lessons learned

Implications for the future

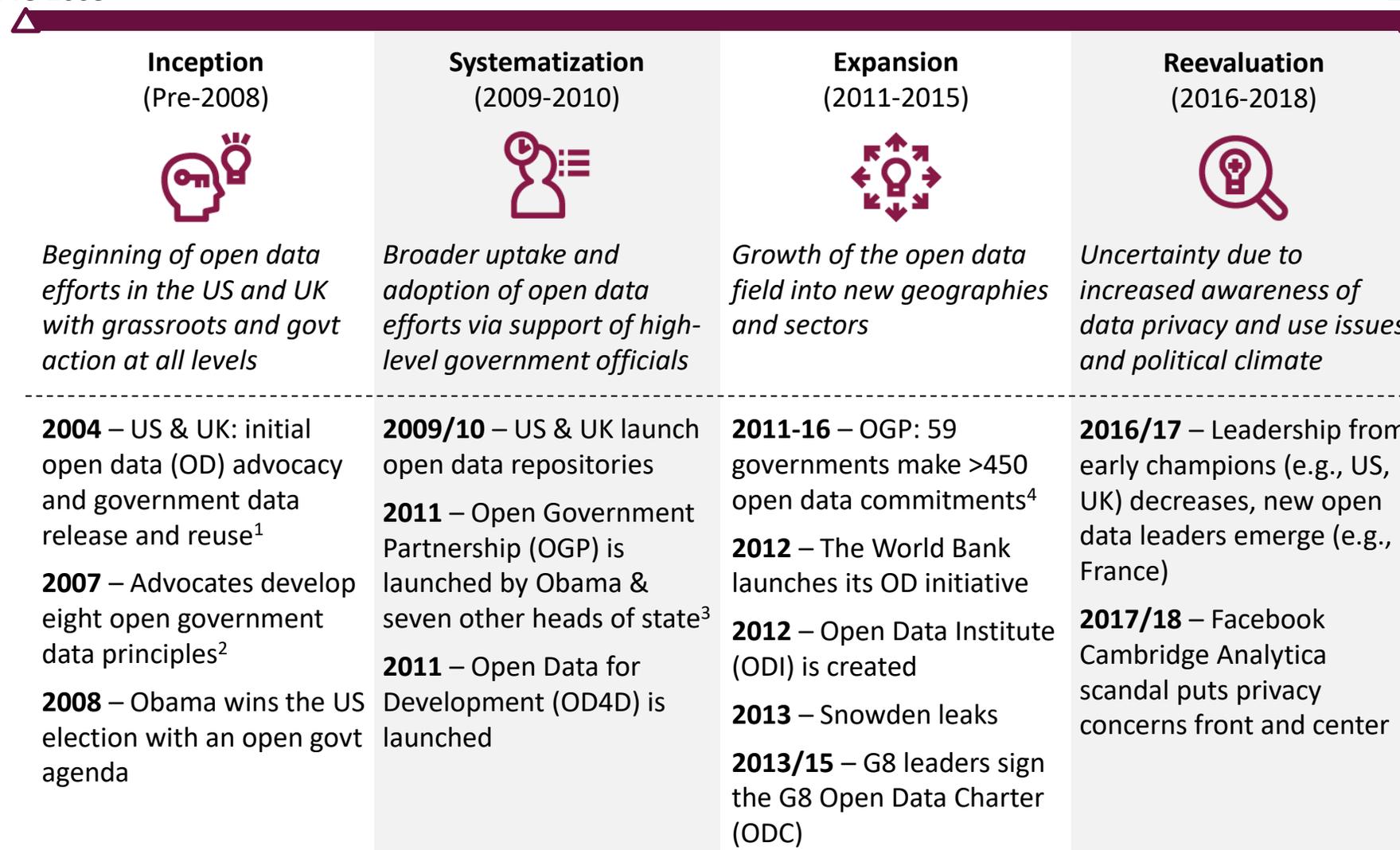
Laura Bacon

*Principal, Investments
Governance & Citizen Engagement Initiative
Omidyar Network*

The field of open data grew worldwide within a decade

Pre-2008

2018



Notes: 1. In the UK it was [TheyWorkForYou.com](#) and in the US it was [GovTrack.us](#). 2. Sunlight Foundation, “Ten Principles for Opening up Government Information,” 2017. 3. Brazil, Indonesia, Mexico, Norway, the Philippines, South Africa, the United Kingdom, and the United States. 4. Open Government Partnership, “The OGP Explorer,” 2018.

Sources: Becky Hogge, “Open Data Study,” 2010; Sunlight Foundation, “Ten Principles for Opening up Government Information,” 2017; Open Government Partnership, “The OGP Explorer,” 2018; Stakeholder interviews, 2018

Efforts to date have driven concrete results across many issue areas

IMPROVING GOVERNMENT

- In 2014 the Ukrainian government created **ProZorro, an open source and open data e-procurement system**
- **ProZorro is estimated to have cost the government USD ~4.7 million¹**
- ProZorro estimated **savings over \$350 million on planned government spending and increased the number of companies bidding for contracts by 50%²**

CREATING OPPORTUNITIES

- **Transport for London (TfL)—the local govt body responsible for transport—decided to release 63 key datasets⁴** in large part as an experiment without a strong business case supporting this decision⁵
- This has unlocked **£130 million for the London economy⁴** via growth of businesses using TfL data, better transport services, and commute time saved
- **Over 600 applications use TfL data—reaching four million people⁵**

EMPOWERING CITIZENS

- **A Tu Servicio—a Uruguayan website that provides easy to use government health data –helps citizens make data-based decisions about their health service providers**
- Within one month, the website received **35,000 visits—~1% of Uruguay's population—**compared to <500 downloads in 2014 before the launch³

SOLVING PUBLIC PROBLEMS

- Following earthquakes in Nepal in 2015, crowdsourcing and use of open data helped to **identify urgent citizen needs, target relief efforts, and ensure aid money reached targets**
- As one example, QuakeMap.org received 2,035 reports – which were then verified by volunteers to identify **551 reports that required action⁶**

台灣的能見度
需要大家努力

Notes: 1. R4D, "OPEN GOVERNMENT CASE STUDY: Costing the ProZorro e-Procurement Program," 2017. 2. Open Data Charter "Open Up Guide: Using Open Data to Combat Corruption," 2018. 3. The GovLab "Uruguay's A Tu Servicio," 2016. 4. Deloitte, "Assessing the value of TfL's open data and digital partnerships," 2017. 5. Hogge B. & The GovLab, "United Kingdom's Transport For London: Get Set, Go!," 2016. 6. The GovLab "Nepal Earthquake Recovery," 2016.

Sources: Stakeholder interviews, 2018

Early momentum from North America and Europe spread to all regions

NORTH AMERICA

- **OD began ~2004** with grassroot efforts reusing public government data (e.g., GovTrack.U.s)
- **Canada and US were first movers** (e.g., US government's launch of OD platform in 2009) and **supported OD globally** (e.g., Canada IDRC efforts with OD4D, USAID support to GODAN)
- Today, North America is **the leading OD region** (e.g., ranked first in OD Barometer 2016, OD Inventory Index 2017, and Global OD Index 2015)

EUROPE

- Europe **began creating its OD field ~2004**, with the **UK as first mover**—and launched its govt platform in 2010
- Today, **strong advancements in OD are present across Europe**, from legislative OD commitments in France to impactful use cases in Ukraine
- **Europe is also spearheading data governance conversations²** (e.g., recent approval of the General Data Protection Regulation, GDPR)

LAC

- **Open data efforts accelerated in 2013** through Latin America & Caribbean OD Conference—ConDatos—in Uruguay
- **Strong open data impact cases exist** (e.g., Mejora tu Escuela in Mexico, A tu servicio in Uruguay)
- **Strong commitments and policies exist** (e.g., LAC has the most signees to the OD Charter; OD kit published by Argentina's govt as govt data publishing guidelines)

AFRICA

- **OD had a major milestone in ~2011** when Kenya launched Africa's first open data portal
- **Some "first mover" countries have backtracked** due to limited political commitment (e.g., Burkina Faso, Kenya)
- **New region leaders** are creating impact cases (e.g., South Africa, Nigeria)—in large part via infomediary work³

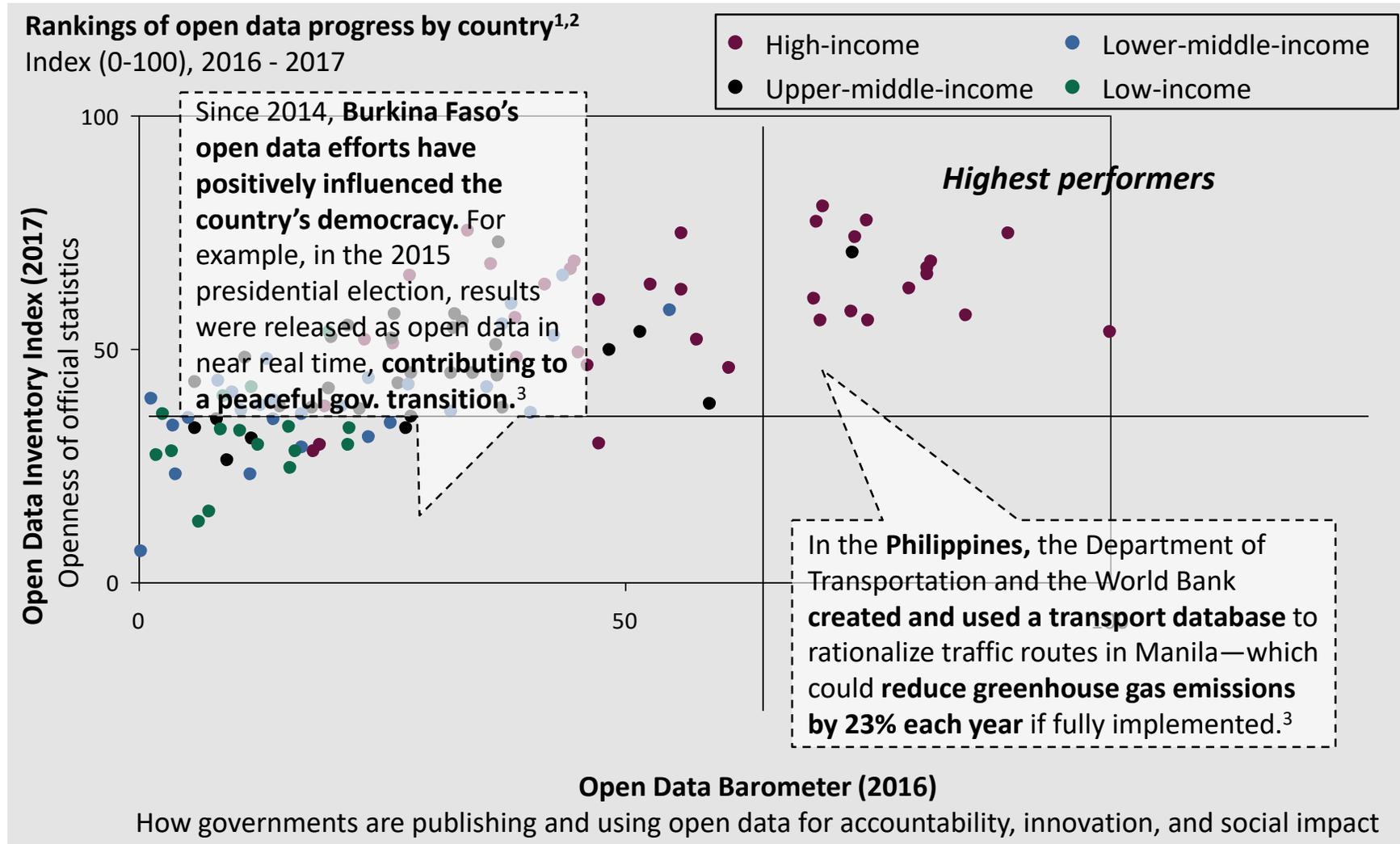
ASIA

- **Early supporters of OD and govt openness came from Asia** (e.g., Philippines was one of the eight founders of OGP in 2011)
- **Today, OD use and availability vary by country income** in the region; East Asia has a strong data release and use, while Southeast, West, and South Asia all have more nascent OD efforts

Notes: 1. GODAN is Global Open Data for Agriculture and Nutrition. IDRC is Canada's International Development Research Centre. 2. Definition of data governance: the overall management of the availability, usability, integrity, and security of data. 3. Infomediaries: actors who have taken published data and transformed data—interviewees noted this is common in many African countries as few impact cases come from civilians using data. Stakeholder interviews, 2018.

Sources: OD4D, "The State of Open Data - WIP," 2018; WWF, "Open Data Barometer, 4th Edition," 2016; Open Data Watch, "Open Data Inventory," 2017; Open Knowledge International, "Global Open Data Index," 2015; Stakeholder interviews, 2018 and Dalberg analysis

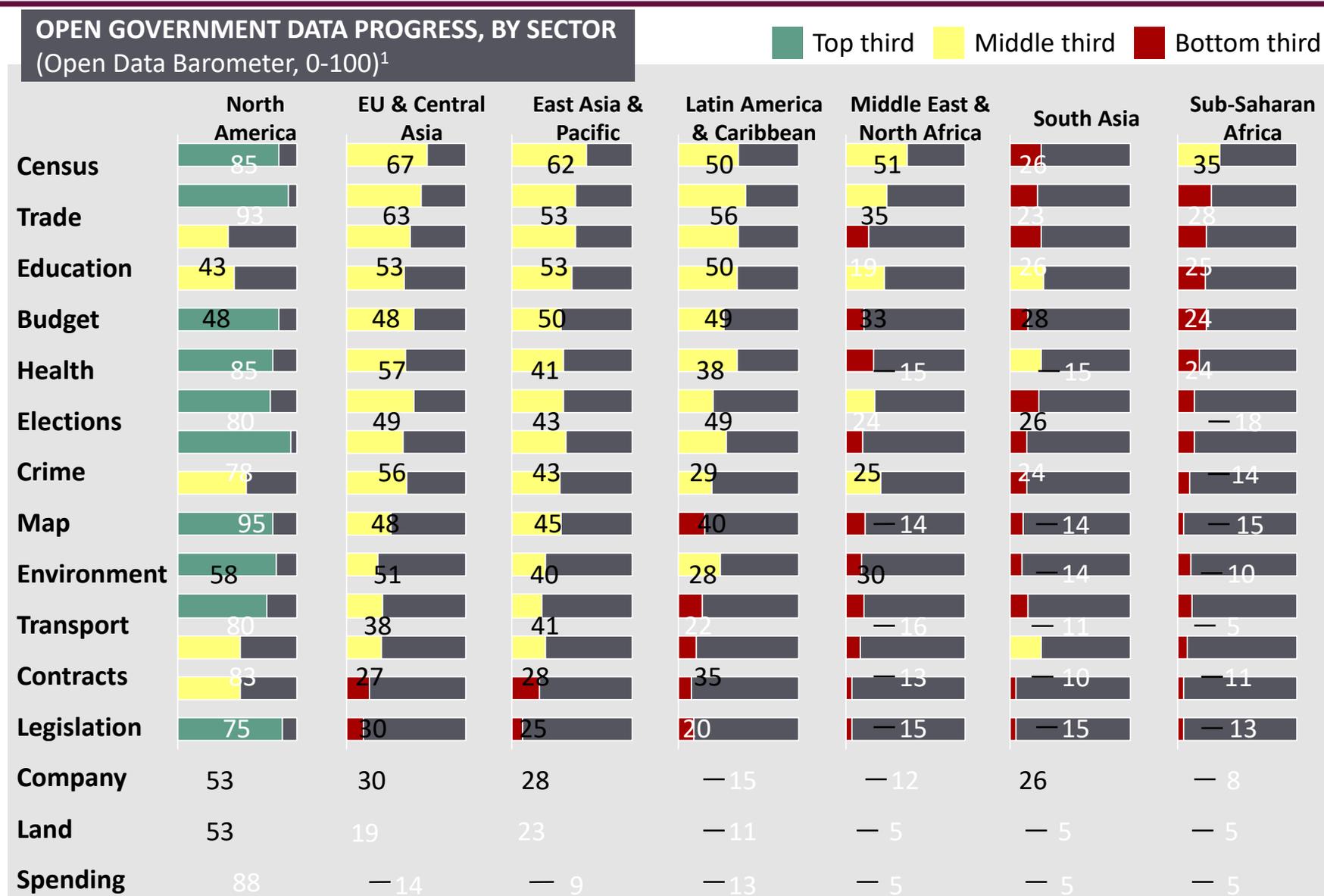
Open data efforts gained the most traction in high-income countries, although there are promising use cases across income levels



Notes: 1. OD Watch, "Open Data Inventory," 2017. 2. World Wide Web Foundation, "Open Data Barometer, 4th Edition," 2016. 3. WB, "World Bank Support for Open Data," 2018.

Sources: Open Data Watch, "Open Data Inventory," 2017; World Wide Web Foundation, "Open Data Barometer, 4th Edition," 2016; Open Data Charter "Open Up Guide: Using Open Data to Combat Corruption," 2018; Open Data Charter "Open Up Guide: Using Open Data to Combat Corruption," 2018; OGP, "The Philippines progress report 2015–2017," 2018; WB, "World Bank Support for Open Data," 2018; Stakeholder interviews, 2018

Progress releasing and using data has varied by sector and domain



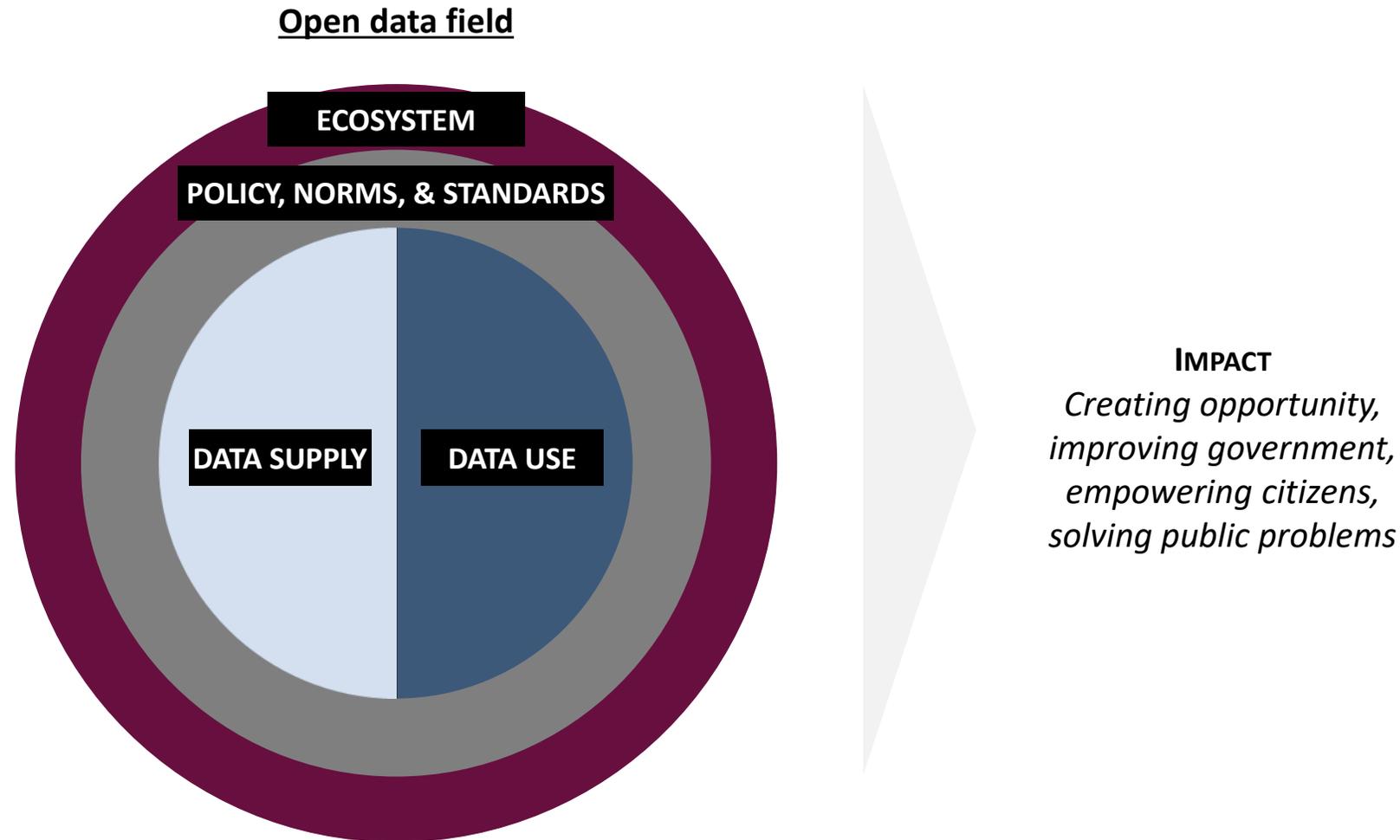
Notes: 1. Sectors organized from highest to lowest global score and regions organized from highest to lowest scoring – from left to right – in the Open Data Barometer. Average Open Data Barometer score for sector datasets is 32.5. WWWF, "Open Data Barometer, 4th Edition," 2016.

Sources: WWWF, "Open Data Barometer, 4th Edition," 2016 and Dalberg analysis

Advocacy, political climate, and technological change all shaped the field's trajectory

	Driver	Select examples
 <p>Champion enthusiasm</p>	<ul style="list-style-type: none"> • Pressure from grassroots and civil servants fueled initial efforts around government transparency and accountability—and have sustained “movement-like” energy over time • Pressures have shaped the open data dialogue by pushing for government transparency, raising concerns and risks (e.g., privacy), and working toward improved data quality 	<p><i>In 2006, bottom-up pressure started building in the UK as a group of volunteers launched theyworkforyou—a website that helps understand what happens in parliament by reusing government data</i></p>
 <p>Political climate</p>	<ul style="list-style-type: none"> • Government support—or lack thereof—has influenced public and private sector efforts around open data • Governments have helped attract international attention and support for open data (e.g., OGP, Open Data Charter), and enabled or hampered data releases—amongst other contributions 	<p><i>In 2015 the Costa Rican government issued a decree that government data should be published under open data technical standards—helping institutionalize open data efforts</i></p>
 <p>Data & tech growth</p>	<ul style="list-style-type: none"> • Development and diffusion of information communication technologies enabled data release and use • Recently, a deeper understanding of the risks vs. rewards of tech and data have prompted reevaluation of the initial promise of open data, amplified certain voices in the conversation (e.g., civilians, privacy experts), and helped create new anonymized data formats and standards 	<p><i>Technology has enabled creation of more detailed, comprehensive datasets; for example, Zillow—a real estate app—made real estate info digitally accessible for free - it was previously only accessible via physical registries</i></p>

We looked at four dimensions of open data as leading indicators of the field's ability to achieve its desired impact



There has been demonstrable progress in building an ecosystem; developing policies, norms, & standards; and releasing & using data (1/2)

	Open data ~2007	Open data ~2018
Ecosystem	<ul style="list-style-type: none"> • Few incipient actors exist, like the Sunlight Foundation - founded in 2006 • Few open data-focused events (e.g., conferences) • Siloed open data ecosystems exist in a few sectors or topics, (e.g. weather) 	<ul style="list-style-type: none"> • Well-established actors exist, including open data champions (e.g., ODI and Open Data Charter) and active supporters (e.g., OGP) • Open data events happen recurrently and have grown in size (e.g., 10x growth for International Open Data Conference, IODC; sold out Open Data Institute Summit) • Global and regional communities exist (e.g., Iniciativa Latinoamericana por los Datos Abiertos, ILDA)
Policy, norms, & standards	<ul style="list-style-type: none"> • Legislation: No explicit open data laws exist and some countries have laws that restrict open data possibilities¹ • Policy: No explicit open data policies exist • Norms: First norms are created, like the eight principles of open government data² • Technical standards: Sector-specific technical standards exist or are being created (e.g., the US Environmental Protection Agency is using open standards for environmental data) 	<ul style="list-style-type: none"> • Legislation: A few countries have open data laws or laws that include open data standards (e.g., Germany's open data law enabling free access to govt data) • Policy: Countries have instituted OD policies (e.g., the US has an OD policy established by an executive order) • Norms: Have developed across sectors (e.g., Open Data Charter, 16 G20 countries have OD strategies,³ OD policy of International Aid Transparency Initiative) • Technical standards: Thousands of open standards exist (e.g., Open Contracting Data Standard),⁴ including quality standards and infrastructure to monitor progress (e.g., Open Data Barometer)

The following slides contain additional detail on developments in each category

Notes: 1. For example, the UK had difficult copyright and licensing rules making it difficult to work with public data. 2. OECD, "Compendium of good practices on the use of open data for Anti-corruption," 2017. 3. ODI, "Open Standards for Data: Guidebook," 2018.

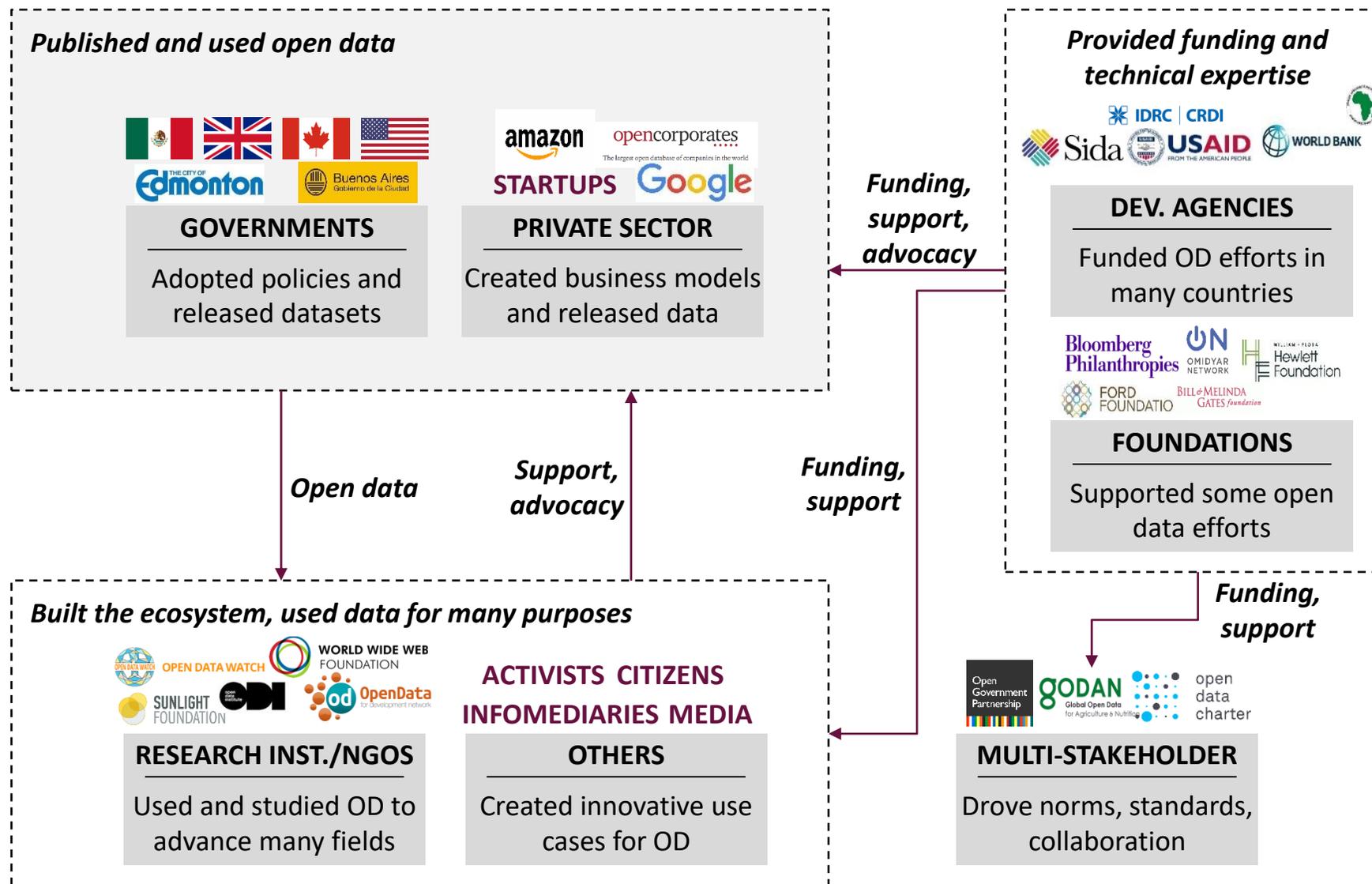
Sources: Stakeholder interviews, 2018; Joshua Tauberer, "Open Government Data: The Book," 2014; U.S. Government, "data.gov webpage," 2018; Techradar, "Hack to the future: Inside the Young Rewired State Project," 2012; OECD, "Compendium of good practices on the use of open data for Anti-corruption," 2017; World Wide Web Foundation, "Open Data Barometer, 4th Edition," 2016; ODI, "Open Standards for Data: Guidebook," 2018; Stakeholder interviews, 2018; Dalberg analysis

There has been demonstrable progress in building an ecosystem; developing policies, norms, & standards; and releasing & using data (2/2)

	Open data ~2007	Open data ~2018
Data release	<ul style="list-style-type: none"> • A few governments have efforts to open data (e.g., the city of Washington DC launched the first major government data catalogue in 2006¹) • Open data supply is very limited (e.g., in 2009 data.gov—the US federal government data portal—had 47 datasets⁴) 	<ul style="list-style-type: none"> • Having open data portals is common for most countries (e.g., 79 out of the 115 governments in the Open Data Barometer have at least one portal³) • Open data repositories hold vast amounts of data (e.g., data.gov has ~200,000 datasets⁴) • 90% of government datasets remain closed, according to the Open Data Barometer
Data use	<ul style="list-style-type: none"> • First events to use open data were held: <ul style="list-style-type: none"> - First “Rewired State Hack the Government day” is held in the UK with 80 developers² - The Sunlight Foundation holds its first Transparency Camp 	<ul style="list-style-type: none"> • A range of use cases have been demonstrated across sectors and geographies • Open data community has shifted to focus more on data quality and use (e.g., more “purpose-driven” OD Charter strategy—meaning data is released based on a clear goal) • There is more active engagement of end users of data (e.g., civil society, infomediaries)

The following slides contain additional detail on developments in each category

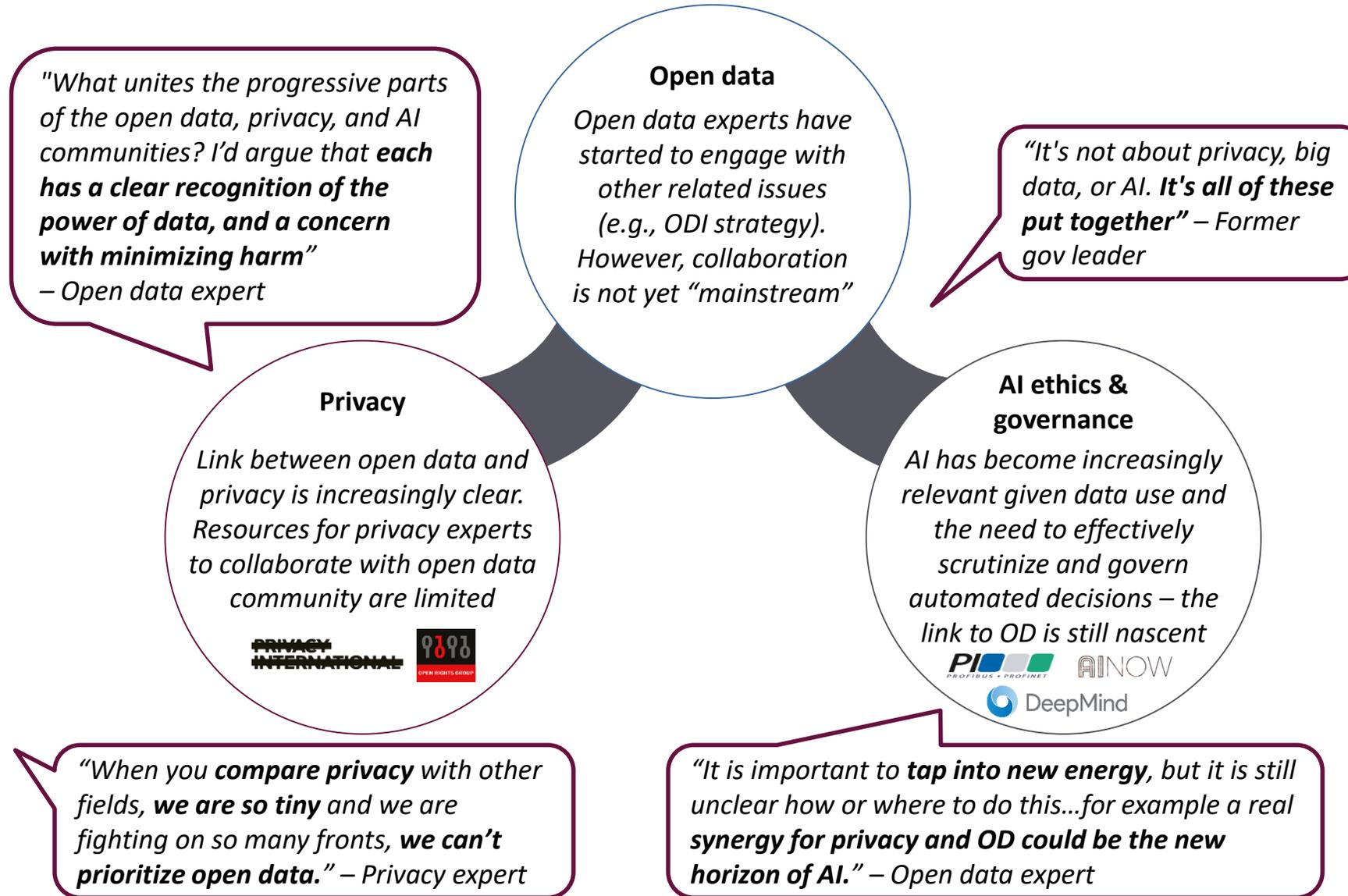
Ecosystem: Funders, civil society, and dedicated partnerships enabled government and private sector data release



Note: 1. These descriptions illustrate key roles/linkages and are not exhaustive. For further details please refer to annexes.

Sources: data.gov, "home page," 2018; Pew Research Center, "Americans' Views on Open Government Data," 2015; Stakeholder interviews, 2018; and Dalberg analysis

Ecosystem: The open data community is now linking to other advocacy efforts—and more concrete use cases are needed to cement linkages



Policy, norms & standards: Open data policies and standards have gained traction at the global, national, and subnational levels

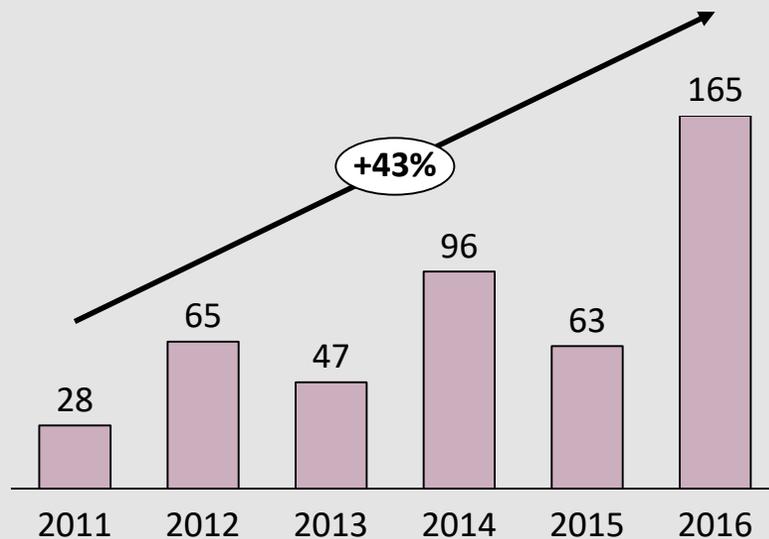
KEY FINDINGS

- OGP, the Open Data Charter, and other global advocacy efforts **secured important commitments from global, national, and subnational governments.**
- **Translation into legislation** at the national and local levels is still underway. For example, **France and Germany recently created open data laws.** Australia and Connecticut recently announced plans to do so.

PROGRESS TO DATE

- **19** national and **35** local/subnational governments are part of the **Open Data Charter**¹
- **59** countries made **464 OGP** open data commitments²
- **7** countries in the **Open Data Barometer** have an explicit policy commitment to make government data open by default³

Number of OGP commitments tagged with open data²
Commitments, 2011-2016



*“Open data got broad buy-in as it was a **more technical, and less controversial issue** than open government.” – Funder and researcher*

*“**Cross-pollination between governments plays an important role in disseminating open data**, for example Burkina Faso’s government began to grow interest in moving the topic nationally after a trip to Ghana.” – Government official*

*“**Legal support is important to create sustainability**, as without laws it becomes very difficult to support open data initiatives that will outlast government changes.” – Government official*

Notes: 1. Open Data Charter, “Webpage, About Us,” 2018. 2. OGP, “OGP Explorer,” 2018. 3. World Wide Web Foundation, “Open Data Barometer Global Report, 4th Edition,” 2016.

Sources: Open Data Charter, “Webpage, About Us,” 2018; OGP, “OGP Explorer,” 2018; World Wide Web Foundation, “Open Data Barometer Global Report, 4th Edition,” 2016; French National Assembly, “Bill on a Digital Republic,” 2016; OGP, “Germany Finally has an Open Data Law,” 2017; Lexology, “Australian Government committed to open data with response to Privacy Commission,” 2018; Digital communities, “What’s New in Civic Tech: New Legislation in Connecticut Bolsters State’s Open Data Efforts,” 2018; Stakeholder interviews, 2018, and Dalberg analysis

Data release: Public and private data released continues to grow.

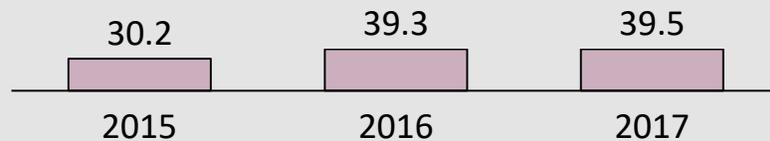
Quality is now the focus to increase usability

KEY FINDINGS

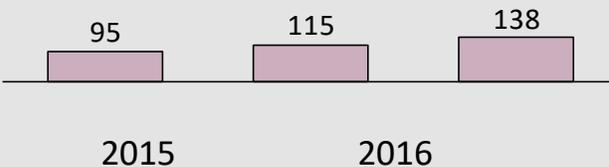
- **Release of public and private data is increasing.** Experts also note a growing focus on “purpose-driven” release—meaning data is released based on a specific goal.
- **Data quality remains a challenge.** Indices show increases in number of datasets but decreases in quality.
- These indices measure quantity and quality of open data released. However, **if release is “purpose-driven,” there is no expectation that all government datasets should be open.**

AVAILABILITY

Coverage and openness of official statistics published by national statistical offices (NSOs)¹
Index (0-100), 2015-2017

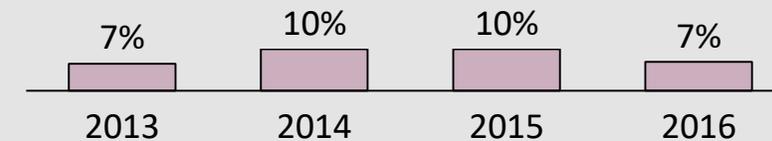


Companies listed on OpenCorporates²
Millions of companies, 2015-2017

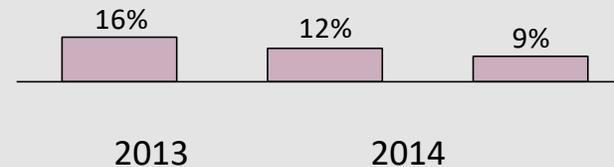


QUALITY

Open Data Barometer datasets that meet open data quality standards³
% of datasets, 2013-2016



OD Index datasets that meet quality standards⁴
% of datasets, 2013-2015



“The rhetoric around open data has started to shift, from open for openness sake, to more purpose-driven initiatives of why we want to open the data.” – NGO

“Opening data without following guidelines – such as updating it periodically or publishing it in machine readable formats – really decreases its utility.” – Open data expert

Notes: 1. Open Data Watch, “Open Data Inventory 2017 Index,” 2017. 2. OpenCorporates, “About Timeline,” 2018. 3. World Wide Web Foundation, “Open Data Barometer, 4th Edition,” 2016. 4. Open Knowledge Network, “The Global Open Data Index,” 2018.

Sources: Open Data Watch, “Open Data Inventory 2017 Index,” 2017; OpenCorporates, “About Timeline,” 2018; World Wide Web Foundation, “Open Data Barometer, 4th Edition,” 2016; Open Knowledge Network, “The Global Open Data Index,” 2015; Stakeholder interviews, 2018; and Dalberg analysis

Overall, the open data field has matured and developed some aspects of longer-term sustainability

	OPEN DATA ~2007	PROGRESS BY ~2018
Narrative	<ul style="list-style-type: none"> • Localized narrative in a few countries (e.g., US, UK) 	<ul style="list-style-type: none"> • Open data efforts exist in every region and in almost every country • OD relates to many issues areas and has seen uptake across 20+ sectors (e.g., extractives, education) and domains (e.g., weather)
Norms	<ul style="list-style-type: none"> • Few norms in place around need to open data 	<ul style="list-style-type: none"> • Incipient changes in norms and standards across sectors and countries, e.g. reporting in extractives, release of gov. data, ODI and ODC's 5-star deployment scheme. Fewer changes in private sector
Policies	<ul style="list-style-type: none"> • No dedicated policies in place 	<ul style="list-style-type: none"> • ~60 countries have made commitments via OGP;¹ a few have OD legislation (e.g., Germany) • 35 sub-national governments have adopted Open Data Charter²
Institutions	<ul style="list-style-type: none"> • Some early institutions (e.g., Sunlight, early Open Knowledge) 	<ul style="list-style-type: none"> • 50+ funders have supported open data efforts³ • Specialized OD orgs have led efforts (e.g., ODI's data spectrum) and adjacent orgs have built OD into their work (e.g., EITI)
Constituency	<ul style="list-style-type: none"> • Some emerging champions (e.g., Sebastopol advocates) 	<ul style="list-style-type: none"> • Open data and sector-specific champions exist • Many people use OD without knowing (e.g., 42% of Londoners use TfL-driven apps⁴)
Technical leadership and capacity	<ul style="list-style-type: none"> • Early tech enthusiasts becoming involved (e.g., Tim O'Reilly) 	<ul style="list-style-type: none"> • Open data leaders have established a backbone (e.g., data portals, technical definitions, indices, talent)

Notes: 1. Open Government Partnership, "The OGP Explorer," 2018. 2. The ODC, "The Open Data Charter Webpage," 2018. 3. The State of Open Data, "Donors – Stakeholder Chapter WIP," 2018 – As the State of Open Data is still a WIP, this information may change when finalized and reviewed. 4. Deloitte, "Assessing the value of TfL's open data and digital partnerships," 2017.

Sources: Robert Wood Johnson Foundation, "Exiting Responsibly: Best Donor Practices in Ending Field Support," 2011; The ODC, "The Open Data Charter Webpage," 2018; Open Government Partnership, "The OGP Explorer," 2018; The State of Open Data, "Donors – Stakeholder Chapter WIP," 2018; Deloitte, "Assessing the value of TfL's open data and digital partnerships," 2017; Stakeholder interviews, 2018; and Dalberg analysis

Several assumptions underpinned GCE's Theory of Change

Impact objective

Key assumptions within Theory of Change – *not comprehensive*¹

Build an ecosystem

- Building **new organizations focused on open data** research, advocacy, and analysis was necessary to drive progress
- Creating a **community of actors** (e.g., “silo-busting collaboration”) accelerates OD progress, creates linkages with adjacent areas, and enhances the efficacy of individual GCE investments

Advance standards, principles, and policy

- **Global norms/principles and technical standards accelerate national-level efforts** to increase the quantity and quality of open data released
- **GCE can add distinctive value as a direct advocate for open data**, above and beyond its investment in platforms and organizations

Enable social impact via release and use of data

- **Availability of data and evidence of impact** drive data use and innovation (e.g., for better services)
- **Integrating open data into sector-specific fiscal governance efforts** can drive compelling use cases and concrete impact
- Efforts focused on opening data **can empower citizens, reduce corruption, and improve government services**

The following slides provide insights and implications about these critical assumptions

Notes: 1. There are many assumptions and hypotheses that underpin GCE open data efforts over the past decade—especially considering GCE's dynamic, evolving strategies. We have highlighted the assumptions—explicit and implicit—that are most critical to examining the role GCE has played in the field and its contributions to impact. Another key assumption was that citizens engage with data, in part to hold government and corporate actors accountable—but GCE has already shared learnings around the importance of infomediaries with the Board.

Sources: Interviews with Laura Bacon and Martin Tisne; Internal GCE documents; and Dalberg analysis

The past decade has underscored learnings about how GCE can best frame and focus its efforts around open data

Impact objective

Key learnings¹

Build an ecosystem

- A. **Organizations working to advance open data must build broader expertise** to sustain impact and support from funders

Advance standards, principles, and policy

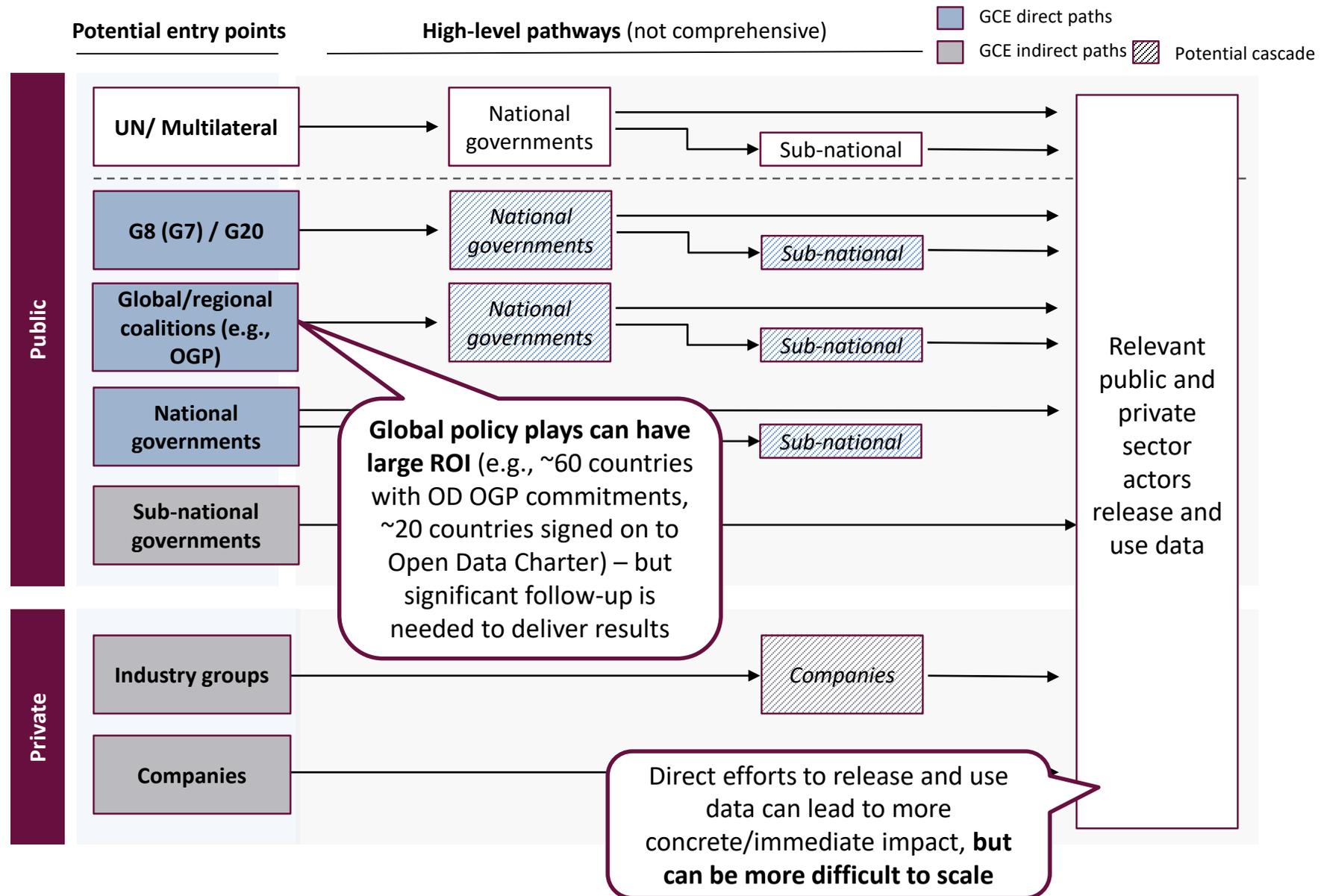
- B. **Global policy agreements have high return on investment (ROI) potential**
- C. Realization of results from global policy agreements **requires sustained focus, incentives, and clarity on who will drive implementation**

Enable social impact via release and use of data

- E. Data release that has a clear goal—or is “purpose-driven”—and a dedicated community of users (e.g., infomediaries) **increases potential for impact**
- F. “Open data” was a helpful rallying cry for advocates but **has limitations in addressing data risks (e.g., privacy) and maximizing data opportunities**

*The following slides have **additional detail & implications for each learning***

A. Global policy agreements have high ROI potential



B. Realization of results from global policy agreements requires sustained focus, incentives, and clarity on who will drive implementation

Lesson learned

- **Global advocacy laid important foundations**, for open data policy and regulation at the national and local levels, but is not enough to drive end impact
 - **70% of OGP open data commitments cannot be confirmed** due to lack of review and/or data
 - Countries have **not fully delivered on G8, G20 commitments**¹
- **Implementation and delivery of open data commitments requires “boots on the ground”** (i.e., deep local engagement, culture change, and dedicated budgets and staff to succeed)
- To drive long-term success, it is important to **identify the constituencies** (e.g., within governments and companies) who drive sustained release of data – **and users who will engage/benefit from the data**²
- It is critical to have **full theory of change** for how policy efforts translate into durable end impact – including strategies to build ownership across relevant constituencies, embed changes in legislation, etc.³

*“Building sustainable policies that create lasting change can start with high level political will **but need to be followed by smarter ways to advocate for change, including building ownership across constituencies, laying the foundations for transformative legislation, and delivering results that resonate with the needs and demands of people.**” – Open Data Charter*

*“Nothing will happen to someone who doesn’t comply an OD commitment – **enforcement doesn’t happen**”
– Privacy expert*

C. Clear goals, collaborative users, and windows of opportunity drive impact of open data release and use

Lesson learned

- Open data projects have **most effectively delivered impact when they are focused on solving problems people care about**¹
- “Purpose-driven” release can help **prioritize release of data that is most demanded** from citizens, CSOs, and other actors who use it – which is critical given limited capacity and resources²
- Open data released without a clear purpose **risks harming perceptions about the value of the field**: *“this is where open data went wrong”*
- The debate about **purpose-driven release** (i.e., opening data for a clear goal) vs. **free-market-driven release** (i.e., releasing as much as possible) continues (*see annex slide 126*)
- Some experts fear a growing **focus on data use risks losing focus on underlying rights-based principles** – as well as shared data infrastructure

*“Opening data for the sake of opening results in a bunch of **zombie platforms that are created and never used or maintained.**” – GCE grantee*

*“As the openness space matures and starts thinking about use cases and users, there is a tension. People say ‘there is no point in publishing data if no one is going to use it,’ which is really threatening. **Some datasets are so critical that if only one person uses it, that is fine.**” – GCE grantee*

*“**Problem-focused, but public-minded is the goal**” – OD expert*

D. “Open data” as a concept has demonstrated limitations addressing related risks and maximizing opportunities of data use

Lesson learned

- Many early open data advocates did not give sufficient attention to **the risks and costs of opening data** – or propose mitigation strategies to address them¹
- **Cases of opening data without having the appropriate precautions have evidenced open data’s risk.** For example, Eightmaps in the USA permitted people to gather personal information on donors supporting bans on same sex marriage in California, leading to harassment and threats to civilians

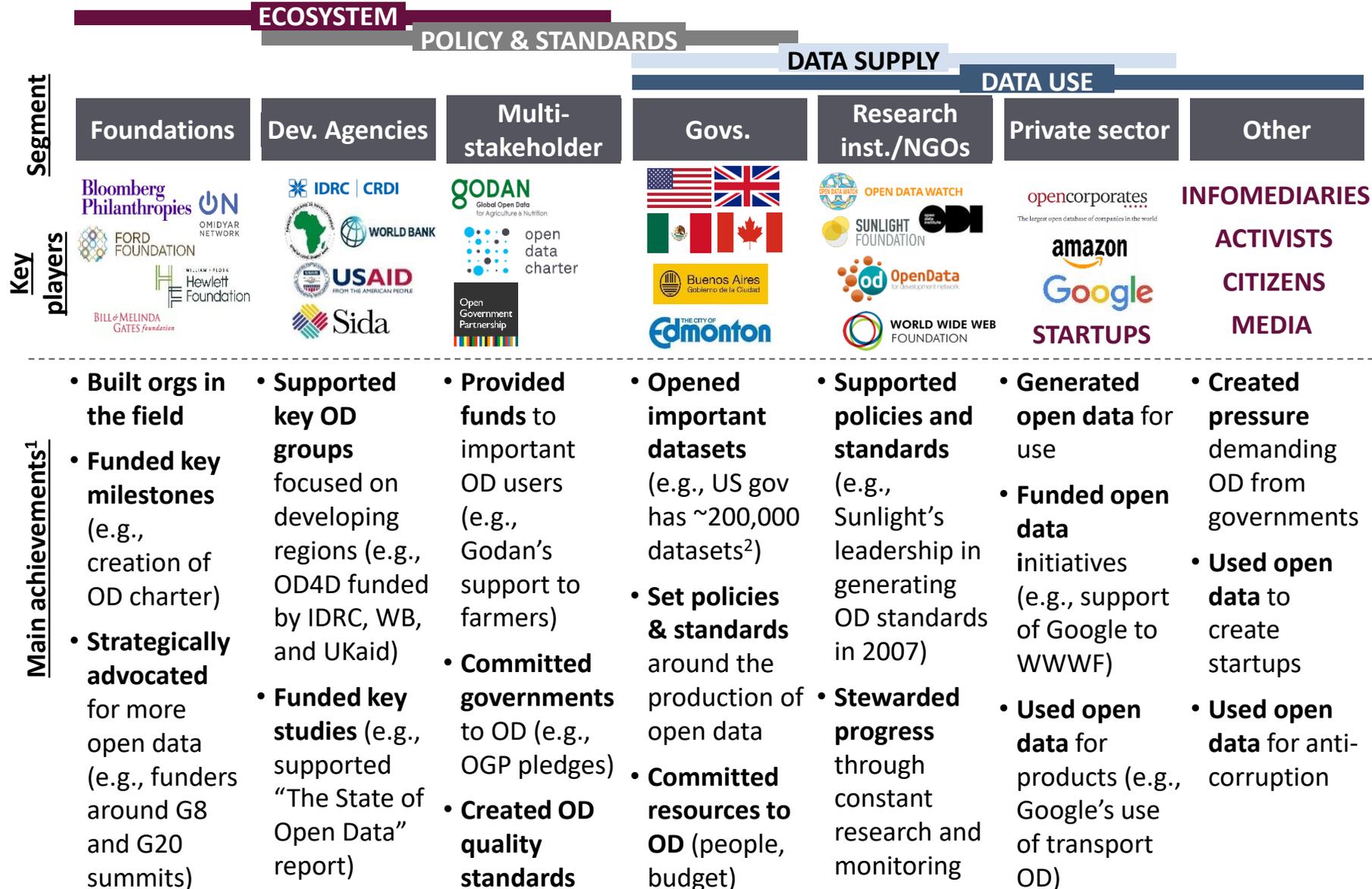
*“The important advances lie in the nuance about **when does Congress need secrecy, when does open data create a risk of abuse, and how much is this database going to cost.** These are the hard questions at the core of open data advocacy that are largely ignored.” – GCE grantee*

*“One of the lessons is the **costs and risks are both complicated.** Whoever has more expertise and better empirical guidance about what the actual risks are in any given disclosure or open data scheme – what it’s going to cost and what the potential negative side effects are – this is what is worth its weight in gold. **Most people who call themselves experts are not really grappling with these questions.**” – GCE grantee*

Notes: 1. “The open data community did not stop driving for more and more data...they did not stop to pause and to think what is going to happen with all of this open data? I have not seen this moment of contemplation and reflection...not a lot of people are stopping and seeing what is going on.” – Privacy expert.

Sources: Internal GCE documents; Stakeholder interviews, 2018; Stakeholder interviews, 2018; and Dalberg analysis

A combination of champions and political forces fueled critical developments across the open data system



Notes: 1. These descriptions illustrate key roles these segments of actors have played so far, hence are not exhaustive. 2. data.gov, “home page,” 2018.

Sources: data.gov, “home page,” 2018, and stakeholder interviews, 2018.

Open data in sectors (1/4)

Sectors	Key actors	Key activities/progress	Key impact	Lingering gaps
Agriculture	<ul style="list-style-type: none"> • GODAN • WB • AfDB • AidData • CGIAR 	<ul style="list-style-type: none"> • Strong OD organizations - e.g., GODAN has ~700 partners¹ • Vast use and impact of weather data for decision-making (e.g., sowing day, harvesting) 	<ul style="list-style-type: none"> • Proven impact – e.g., GODAN published two volumes of OD impact 	<ul style="list-style-type: none"> • Confusion in data ownership • Lack of incentives to provide data • Limited use by smallholder farmers
Anti-corruption	<ul style="list-style-type: none"> • OD Charter • CSOs • Media • OGP • OCP • WWWF • TACOD • RiSSC 	<ul style="list-style-type: none"> • Growing support - OD charter has defined priority data to fight corruption • Uses of OD to call-out or look for corruption – e.g., Regards Citoyens, a French CSO, created a platform reusing OD showing gifts from pharma. to Drs. 	<ul style="list-style-type: none"> • Limited direct impact evidence - e.g., 2015 RiSSC study found that OD didn't have a causal effect on anti-corruption² • Case studies of OD use for anti-corruption - In Germany of citizens stewarding pharma's gifts to Drs. 	<ul style="list-style-type: none"> • Disconnected development of anti-corruption and open data losing opportunities to add value • Data is commonly unavailable, has quality issues, and people don't have the skills to use it • Difficulty to move from corruption to persecution
Corporate	<ul style="list-style-type: none"> • OpenCorporates • GovLab • Global Witness • Open-ownership • Transparency International • EITI 	<ul style="list-style-type: none"> • Central registries of beneficial ownership exist in a few countries (e.g., UK, Ukraine, Denmark) • Testing of a beta data standard to describe beneficial ownership (BODS) 	<ul style="list-style-type: none"> • Existence of an index to monitor the use of OD – the Company Data Index • Known use in uncovering scandals through the identification of shell companies (e.g., Panama Papers) 	<ul style="list-style-type: none"> • Little use of standards for corporate registries • Limited interoperability between datasets due to weak standards • Low availability of data as OD (e.g., OD Barometer found that 5% of registries are OD³)
Crime & justice	<ul style="list-style-type: none"> • IDRC • OGP • ODI • MySociety • GovLab • UpTurn 	<ul style="list-style-type: none"> • Open data is gaining attention as a tool for crime & justice – particularly with international organizations that push OD policies (e.g., OGP) 	<ul style="list-style-type: none"> • Proven importance of OD for crime & justice (e.g., the GovLab's Criminal Justice Innovation Project) 	<ul style="list-style-type: none"> • Political and cultural barriers reduce OD's implementation • Limited interoperability between available datasets • Limited publication of judicial data in open formats
Education	<ul style="list-style-type: none"> • Open State Foundation • Academia 	<ul style="list-style-type: none"> • Open data is used as an input, output, and subject of education • Data reporting for SDGs on education have improved their quality recently 	<ul style="list-style-type: none"> • Strong impact cases such as Mejora tu Escuela in Mexico or monitoring school budget cuts in the UK 	<ul style="list-style-type: none"> • Low research on the uses and needs of OD in education • Researchers rarely make their data open, making verifying results difficult

Notes: 1. GODAN, "GODAN webpage," 2018. 2. RiSSC, "Revolution Delayed? A study on the impact of Open Data on Corruption," 2015. 3. WWWF, "The Open Data Barometer 4th edition," 2016.

Sources: OD4D, "The State of Open Data – WIP," 2018; WWWF, "The Open Data Barometer 4th edition," 2016; RiSSC, "Revolution Delayed? A study on the impact of Open Data on Corruption," 2015; WWWF, "CONNECTING THE DOTS: Building the Case for Open Data to Fight Corruption," 2017; OD Charter, "OD Charter webpage," GODAN, "GODAN webpage," 2018; Stakeholder interviews, 2018; and Dalberg analysis

Open data in sectors (2/4)

Sectors	Key actors	Key activities/progress	Key impact	Lingering gaps
International aid	<ul style="list-style-type: none"> IATI Publish what you Fund Global Humanitarian Assistance Dev. Data Hub AidData All Voices Count 	<ul style="list-style-type: none"> Active tracking and monitoring of progress - e.g., Aid Transparency Index published since 2011 Existing international consensus on OD requirements and needs - e.g. IATI initiative, HDX labs in Dakar and Nairobi 	<ul style="list-style-type: none"> Monitoring of aid donor performance in reporting activities established clear benchmarks and oversight Improved coordination among donors in geographies and topics being supported 	<ul style="list-style-type: none"> Limited knowledge of IATI standards among people who are interested in aid information, as found by a 2015 USAID study Limited use in decision-making, as not all donors are basing their decisions on data or are not prioritizing it
National statistics	<ul style="list-style-type: none"> Open Data Watch OKI OD Charter IDRC UNF WB 	<ul style="list-style-type: none"> Strong strides in opening data sets - e.g., ODIN scores for over 180 countries show progress through its three editions Countries publishing data are working to establish standards (e.g., France) 	<ul style="list-style-type: none"> Countries have improved reporting on achieving SDG commitments, according to the Open Data Inventory Census data is the highest quality open data according to the Open Data Barometer 	<ul style="list-style-type: none"> Progress in improving coverage of missing data is slow Lack of many datasets essential to measuring SDG progress Little gender disaggregation data Low political support for quality data
Urban development	<ul style="list-style-type: none"> Open Cities OKI Sunlight F. Cities Climate Leadership Group OD4D Open Data Soft 	<ul style="list-style-type: none"> Strong infrastructure to source data – e.g. crowdsourcing, crowd-mapping Existing multi-stakeholder coordination which enhances data’s interoperability and maximizes shared infrastructure 	<ul style="list-style-type: none"> Strong technical developments in the field - e.g., SDG tracking through geospatial data, improved estimation of urban poverty 	<ul style="list-style-type: none"> Multiple stakeholders – including government – lack knowledge of existing tools and/or do not use them for decision-making
Government finance	<ul style="list-style-type: none"> Follow the Money Network International Budget Partnership GIFT 	<ul style="list-style-type: none"> Efforts that precede the open data movement – some that date back to the 80s Strong CSO support, due to its importance for advocacy work 2017 Open Budget Survey shows progress stalling from 2016-17, after years of continued progress 	<ul style="list-style-type: none"> Multiple recorded use cases - e.g., over 250 cases recorded in the Open Data Impact Map Evidence of impact at a global level - e.g., 2015 GIFT research coded 120 impact cases 	<ul style="list-style-type: none"> Most budget data available is too highly aggregated Spending data is not readily available and is the last type of data govts. are willing to open Implementation of the G20 Open Data Principles is low and inadequate

Sources: OD4D. “The State of Open Data – WIP,” 2018; IATI, “IATI webpage,” 2018; Publish What you Fund, “Aid Transparency Index,” 2016; Open Data Watch, “Open Data Inventory Index,” 2017; WWWF, “The Open Data Barometer 4th edition,” 2016; GIFT, “GIFT webpage,” 2018; International Budget Partnership, “The Open Budget Survey,” 2017; GIFT, “Open Budget Data: Mapping the Landscape,” 2015; Stakeholder interviews, 2018; and Dalberg analysis

Open data in sectors (3/4)

Sectors	Key actors	Key activities/progress	Key impact	Lingering gaps
Extractives	<ul style="list-style-type: none"> EITI Publish what you Pay Open Oil OCP Responsible Mining Index 	<ul style="list-style-type: none"> 51 EITI countries have disclosed 95% of their data in OD format¹ 51 EITI countries have agreed to provide project-level disclosures from the financial year of 2018, in OD format¹ 	<ul style="list-style-type: none"> ~65 companies disclose data in the UK through an extractives disclosure API² Countries have improved their management of extractives - e.g., Nigeria recovered USD 2.4 billion unpaid and identified USD 9 billion expected to recover¹ 	<ul style="list-style-type: none"> Black box methodologies – particularly from private actors – remains a common practice in extractives - e.g., how deal decision-making is done Many valuable datasets remain private
Health	<ul style="list-style-type: none"> MoHs BMGF IDRC MCC Pepfar GovLab 	<ul style="list-style-type: none"> Various MoHs have led efforts to open data at national and subnational levels - e.g., OD work in Mexico by the Slim Foundation and the MoH Increased use of automation in data collection has improved the quality and veracity of data 	<ul style="list-style-type: none"> Tangible improvement of health sector governance – e.g., sub-Saharan Africa has received significant investments to improve health data 	<ul style="list-style-type: none"> Accountability remains limited There is tension between open and personal data issues In some countries opening health data is difficult without e-government infrastructure
Environment	<ul style="list-style-type: none"> Resource watch Specialized players in sub-topics – e.g., climate change, air quality, biodiversity, water, forest 	<ul style="list-style-type: none"> Strong political backing by almost all countries – e.g., The Paris Agreement requires countries to release OD detailing progress against goals More comprehensive environment OD platforms are emerging - e.g., wdc.org.ua 	<ul style="list-style-type: none"> Sensors are being implemented at a rapid pace, allowing multiple streams of data to be made available for research The Open Data Impact Map has tracked over 100 cases of organizations using energy and climate data³ 	<ul style="list-style-type: none"> Lack of a comprehensive inventory is resulting in collection of data that could already be available Lack of common standards reduces use and interoperability Difficulty in creating strong business cases hampers funding
Transport	<ul style="list-style-type: none"> Transportation camp Oasis project GovLab Eurocities 	<ul style="list-style-type: none"> Transport data success stories precede OD conversations Transport data is commonly used on a day-to-day basis by many to navigate cities 	<ul style="list-style-type: none"> Strong impact cases – e.g., The Transport for London's (TfL) OD has generated ~USD 150 million for the London economy⁴ Strong use of data – e.g., with TfL's data ~600 apps were created, used by 42% of London⁴ 	<ul style="list-style-type: none"> Little transport data is published in compliance with OD's technical definition Limited data interoperability due to lack of use of common identifiers

Notes: 1. EITI, "2018 EITI Progress Report," 2018. 2. Publish What You Pay, "UK government review of the reports on payments to governments regulations," 2017. 3. Center for Open Data Enterprise, "The Open Data Impact Map," 2016. 4. Deloitte, "Assessing the value of TfL's open data and digital partnerships," 2017.

Sources: Center for Open Data Enterprise, "The Open Data Impact Map," 2016; Publish What You Pay, "UK government review of the reports on payments to governments regulations," 2017; OD4D, "The State of Open Data – WIP," 2018; IATI, "EITI, "2018 EITI Progress Report," 2018; EITI, "EITI Webpage," 2018; The GovLab, "Open Data Impact Webpage," 2018; Deloitte, "Assessing the value of TfL's open data and digital partnerships," 2017; Stakeholder interviews, 2018; and Dalberg analysis

Open data in sectors (4/4)

Sectors	Key actors	Key activities/progress	Key impact	Lingering gaps
Land	<ul style="list-style-type: none"> • Cadasta F. • Land Matrix • Access Land • Global Land Alliance • PRIndex • Radiant 	<ul style="list-style-type: none"> • Continued work from specialized stakeholders, with the support of OD specialists – e.g., The Cadasta Foundation and Open Knowledge have worked together to explore open land data • Focused work on geospatial mapping data, by increasing accuracy and helping communities with no formal land recognition 	<ul style="list-style-type: none"> • The land records authority of UK (HM Land Registry) freed two of its land ownership data sets, however the terms of re-use were changed in April 2017 and the dataset is no longer technically open 	<ul style="list-style-type: none"> • Limited supply - ranks as the least likely data to be available (e.g., least open among 15 types of data in the open data index)¹ • High aversion from government to open this data due to political aversion and privacy concerns • High aversion from landowners due to privacy concerns, as established by 2016 study by the Cadasta Foundation
Banking	<ul style="list-style-type: none"> • ODI • Barclays • COADEC • EY • HSBC • Royal Bank of Scotland 	<ul style="list-style-type: none"> • Development of standards – e.g., ODI developed open banking standards • Nascent field – to date, the UK has adopted open banking and other countries have shown promising steps (e.g., Australia) 	<ul style="list-style-type: none"> • The UK has become a leader in Open Banking • Impact data is limited given that efforts are relatively nascent 	<ul style="list-style-type: none"> • Open banking faces substantial data concerns – particularly around client privacy and security • Some banks and FinTech companies have expressed aversion to using open banking standards

Notes: 1. Open Knowledge Foundation, “Global Open Data Index,” 2015.

Sources: OD4D, “The State of Open Data – WIP,” 2018; ODI, “Open banking: setting a standard and enabling innovation,” 2018; Becky Hogge, “Open Data Six Stories About Impact in the UK,” 2015; The Cadasta Foundation, “Cadasta Website,” 2018; Open Knowledge Foundation, “Global Open Data Index,” 2015; Stakeholder interviews, 2018; and Dalberg analysis

Open data in regions (1/3)

Sectors	Key actors	Key activities/progress	Key impact	Lingering gaps
Asia	<ul style="list-style-type: none"> • WF Open Data Labs • DataKind • OKI • IDRC • OD4D • WWWF 	<ul style="list-style-type: none"> • Various OD civil society initiatives, including active initiatives to improve open data – e.g., Open Data Asia 2020 which sets the region’s OD agenda • Tangible improvements in OD – e.g., clear growth throughout Asia in ODB scores 	<ul style="list-style-type: none"> • Nascent efforts show evidence of impact at outcomes level, but not yet changing lives • Concrete impact cases exist – e.g., use of OD for Nepal’s earthquake recovery, use of mapping data to identify dengue outbreak in Singapore, and India’s energy mapping tool ESMI 	<ul style="list-style-type: none"> • Funding limitations have driven various initiatives to dry-up after funding ends • Use is lacking in lower-income countries, especially countries in western and southern Asia • Limited use outside of the private sector
SS Africa	<ul style="list-style-type: none"> • WWWF • Code for Africa • OGP • ODI • Follow the Money 	<ul style="list-style-type: none"> • Policy support to OD or adjacent topics – e.g., 15 countries have constitutional mandate or an Access to Information Act • Uptake of global efforts – e.g., commitments of various African countries under OGP (e.g., Kenya, Cote D’Ivoire) • Nascent policy commitments – e.g., Burkina Faso started drafting its open data policy 	<ul style="list-style-type: none"> • Tangible use cases have been championed mainly by infomediaries – e.g., Follow the Money Kenya uncovered deviation of funds to support families with lead poisoning 	<ul style="list-style-type: none"> • Limited engagement from civilians and private sector, reducing potential OD uses • Little sustainability of OD – e.g., Kenya originally led the way, however they backtracked and now countries like Cote D’Ivoire are becoming regional leaders • Lack of strong legal frameworks including open data policies, political will, and funding
Western Europe	<ul style="list-style-type: none"> • Open Knowledge network • MySociety • OKI • ODI • WWWF • OpenCorporates 	<ul style="list-style-type: none"> • Strong non-gov data efforts are becoming more common – e.g., Open Science, OpenGlam, TfL • Global leaders in OD have emerged from EU, like UK, France, and Denmark • Governments have dedicated full-time resources to OD efforts – e.g., Belgium’s data harmonization agencies 	<ul style="list-style-type: none"> • Multiple strong impact cases have been recorded – e.g., Denmark’s release of address data, creating direct financial benefits for 2005-09 of ~USD 70 million, at a cost of only ~USD 3 million;¹ Sweden’s launch of openaid.se disclosed aid funding for higher transparency¹ 	<ul style="list-style-type: none"> • Alignment of policies across government agencies remains challenging and very few countries have engraved OD in their legislation • The private sector continues to lag behind government efforts, with exceptions like OpenCorporates

Notes: 1. The GovLab, “OD Impact,” 2018.

Sources: The GovLab, “OD Impact,” 2018; OGP, “Independent Reporting Mechanism,” 2018; Open Data Labs, “Open Data Asia 2020,” 2015; The GovLab, “OD Impact webpage,” 2018; WWWF, “The Open Data Barometer 4th Edition,” 2016; OD4D. “The State of Open Data – WIP,” 2018; Stakeholder interviews, 2018; and Dalberg analysis

Open data in regions (2/3)

Sectors	Key actors	Key activities/progress	Key impact	Lingering gaps
North America & Oceania	<ul style="list-style-type: none"> GovLab OCP Sunlight Foundation CfA New America ODI Strong government leaders 	<ul style="list-style-type: none"> Use of OD by govts to engage in evidence-based policymaking Emphasis on data quality, to increase OD's usability by civilians and machines (e.g., AI) Mix of political headwinds and tailwinds for OD – e.g., US support slowdown at federal level due to change in government; Canada's consistent support to OD provides full-time focused resources; New Zealand's government has made OD commitments and investments for implementation 	<ul style="list-style-type: none"> New Zealand – OD, open source tools, and crowdsourcing were used to develop tools to respond to natural disasters, enabling citizens to check the status of their homes and saved the government USD ~6 million in costs within its first year of use¹ Canada – T3010 provided a mapping of the nonprofit sector in OD format which helped improve advocacy work by creating a common understanding about areas with duplication of efforts¹ 	<ul style="list-style-type: none"> Limited data use remains as a barrier in most countries, as many civilians rarely engage with the data due to factors like lack of incentives or lack of knowledge Political headwinds have demonstrated fragilities in what has already been built; for example a few months after taking office, Trump took down datasets that had been open, like federally-funded teaching positions
MENA	<ul style="list-style-type: none"> ODI OKI IDRC WB 	<ul style="list-style-type: none"> There is a growing data community, with capacity building organizations and data-driven innovation Progress in legal reforms that support open data – e.g., Jordan and Tunisia have access to information laws, while Egypt, Lebanon, and Morocco have drafts for similar laws² Recently, almost all MENA govts are backsliding on OD, with lower scores compared to the previous Open Data Barometer 	<ul style="list-style-type: none"> The Lebanese Association for Democratic Elections used OD to promote electoral transparency by visualizing voter trends in past elections to help create discussions and participation in the election process In Morocco, Geospheres harmonizes urban data from different subnational governments and other sources to provide an easy-to-use geospatial platform of Moroccan geospatial data 	<ul style="list-style-type: none"> Lack of civil society engagement with open data Little pressure for governments to make data public or provide it in quality format Lack of data infrastructure to collect and disseminate it

Notes: 1. The GovLab, "OD Impact," 2018. 2. OECD, "Benchmarking Digital Government Strategies in MENA Countries," 2017.

Sources: The Sunlight Foundation, "These government open data sets have been taken down since Trump took office," 2017; OECD, "The MENA-OECD Governance Programme," 2017; OECD, "Benchmarking Digital Government Strategies in MENA Countries," 2017; OECD, "The MENA-OECD Governance Programme," 2015; The GovLab, "OD Impact," 2018; OD4D, "The State of Open Data – WIP," 2018; WWF, "The Open Data Barometer 4th edition," 2016; Stakeholder interviews, 2018; and Dalberg analysis

Open data in regions (3/3)

Sectors	Key actors	Key activities/progress	Key impact	Lingering gaps
Eastern Europe	<ul style="list-style-type: none"> • DFID • USAID • WB • Governments 	<ul style="list-style-type: none"> • Increased momentum and political interest around joining OD global initiatives – e.g., various countries from Western Balkans and the Caucasus are considering open contracting • Improved overall awareness around OD and how to combine it with other sources of data for problem-solving 	<ul style="list-style-type: none"> • Ukraine’s ProZorro experience has served as a global example of a high ROI OD investment • Roll out of the Personal Democracy Forum in Ukraine has helped consolidate the community across the region • In Kosovo, a bottom-up movement for OD has generated pressure for policy-makers 	<ul style="list-style-type: none"> • Lack of support for collaborative innovations – with multiple siloed efforts at regional, national, and sectoral levels • Data infrastructure and quality are low – e.g., in the region, only 4% of datasets analyzed in the Open Data Barometer were fully open¹
LAC	<ul style="list-style-type: none"> • OECD • Abrelatam • Red-Gealc • Open Contracting • OGP • ILDA • ECLAC • OD Charter • IMCO • Caribbean Open Institute (COI) 	<ul style="list-style-type: none"> • LAC has the highest number of adopters of the OD Charter • Promising work around fiscal governance is occurring – e.g., more fiscal governance data is available in LAC than anywhere outside of Western Europe and North America • Various cooperation mechanisms and forums have continued interest – e.g., AbreLatam, Condatos • Strong political will – e.g., Costa Rica is working on a decree to institutionalize its OD Policy through participatory dialogue 	<ul style="list-style-type: none"> • Strong impact cases are seen in almost all countries of the region – e.g., A Tu Servicio in Uruguay, Mejora Tu Escuela in Mexico, Budget Transparency Portal in Brazil, and Aclimate in Colombia • Strong use by media and communications of OD – e.g., La Nacion – an Argentinean newspaper – has made government data more accessible through a platform that reuses it so civilians can access datasets like consumer indices, industrial data, weather data, and CO2 emissions 	<ul style="list-style-type: none"> • Limited effectiveness of participatory mechanisms reduce the potential impact of OD, for example corruption scandals may be uncovered and put in the public eye, but few consequences are had due to ineffective institutions • Civil society groups commonly lack financial support from governments, and must work with very limited resources to drive for impact • Governments and civil society groups commonly want to do more with open data, but lack the technical capacity • Political instability jeopardizes progress – in Costa Rica, after a change in government, the new administration took down a well-functioning open data platform – as it was associated with people from the previous administration – to start from scratch

Sources: 1. WWWF, “The Open Data Barometer 4th Edition,” 2016.

Sources: The GovLab, “OD Impact webpage,” 2018; WWWF, “The Open Data Barometer 4th Edition,” 2016; Open Data Charter, “Open Up Guide: Using Open Data to Combat Corruption,” 2018; The Open Data Charter, “OD Charter webpage,” 2018; OD4D. “The State of Open Data – WIP,” 2018; Stakeholder interviews, 2018; and Dalberg analysis

建議

- 法令、制度、規範仍為開放資料的重要環節
- 資料經濟國際合作可以擴大展開。
- 我國缺乏明確的開放資料主管單位，對外合作較為消極，如何由民間帶動公部門的積極合作參與，找出新機會。

Thank you for your attention!

peng@weatherrisk.com

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