



AI – The Transformative Force Redefining Our Thinking, Collaboration, and Daily Lives.

卞志祥 總經理
Microsoft 台灣微軟



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COVID 期間全球CEO最關心的六大主題

**Hybrid
Collaboration**



Empower
Innovation,
Collaboration, and
Customer
Engagement

Data Insights



Data-Driven
Decision Making
guided by a single
source of truth

**Talent/
Skilling**



Data Science
Capabilities, IT
Transformation, and
Tech Intensity

**Supply Chain
Transformation**



Versatility, Resilience,
Adaptiveness,
Diversification and
Geopolitics

Security



Zero Trust - Security
is the foundation
for all digital
strategy

Sustainability



Carbon Reduction,
Water Positive,
Zero Waste

2024

以巴衝突

全球大選年

COVID-19

烏俄戰爭

供應鏈重組

地緣政治

停滯通膨

金融情勢緊縮

能源價格高漲

極端氣候

缺工

經濟衰退

中美關係

降息

糧食危機

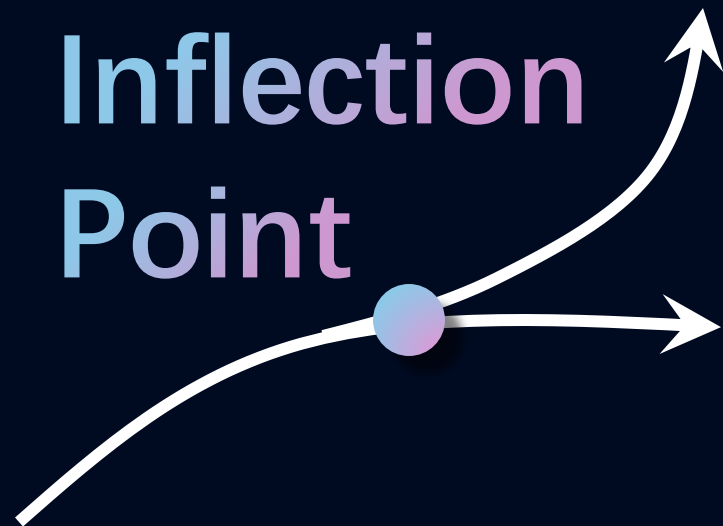
And 2025?

關稅貿易戰

In every **crisis**, lies an **opportunity**.

"You cannot overtake 15 cars in sunny weather – but you can when it's raining." Ayrton Senna

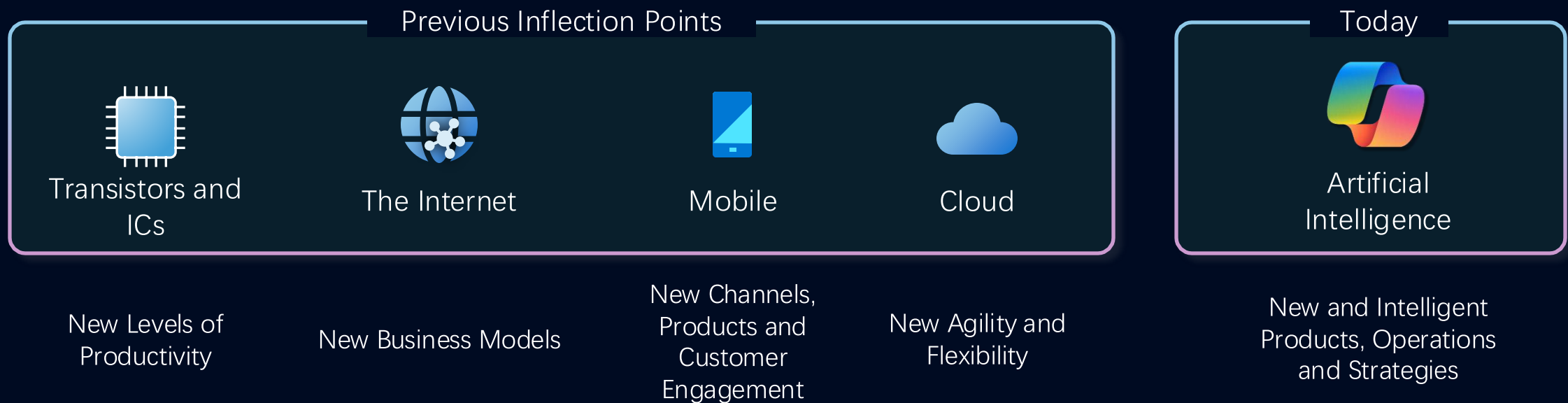




a critical juncture or pivotal moment where established norms, practices, or technologies shift dramatically

一個關鍵的時刻或轉折點，是傳統的規範、實踐或技術發生了顯著變化。

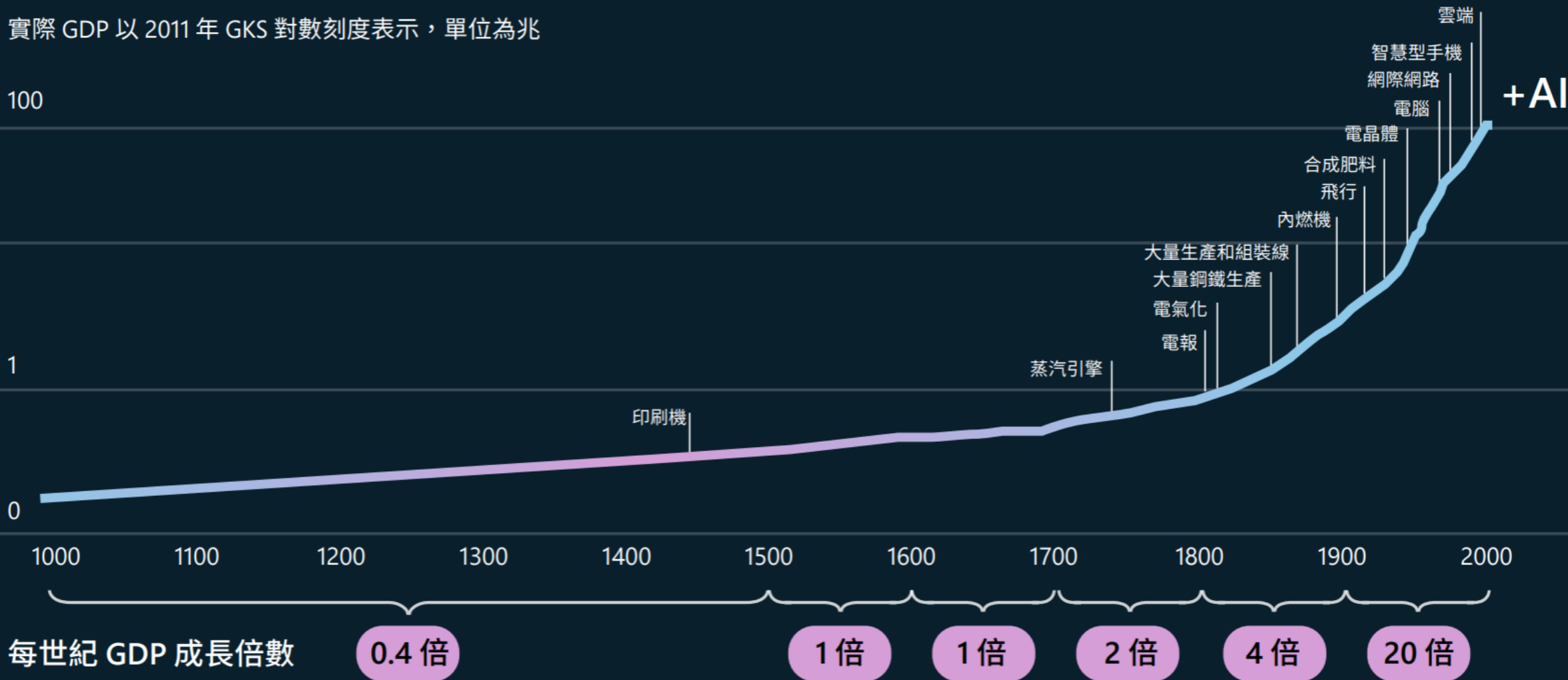
科技隨著時間而演進，創造了關鍵轉折點，對產業及企業產生了重大影響
AI 就是最顯注的 Inflection Point，並超越歷史



技術推動 GDP 成長，而且改變的步伐不斷加速

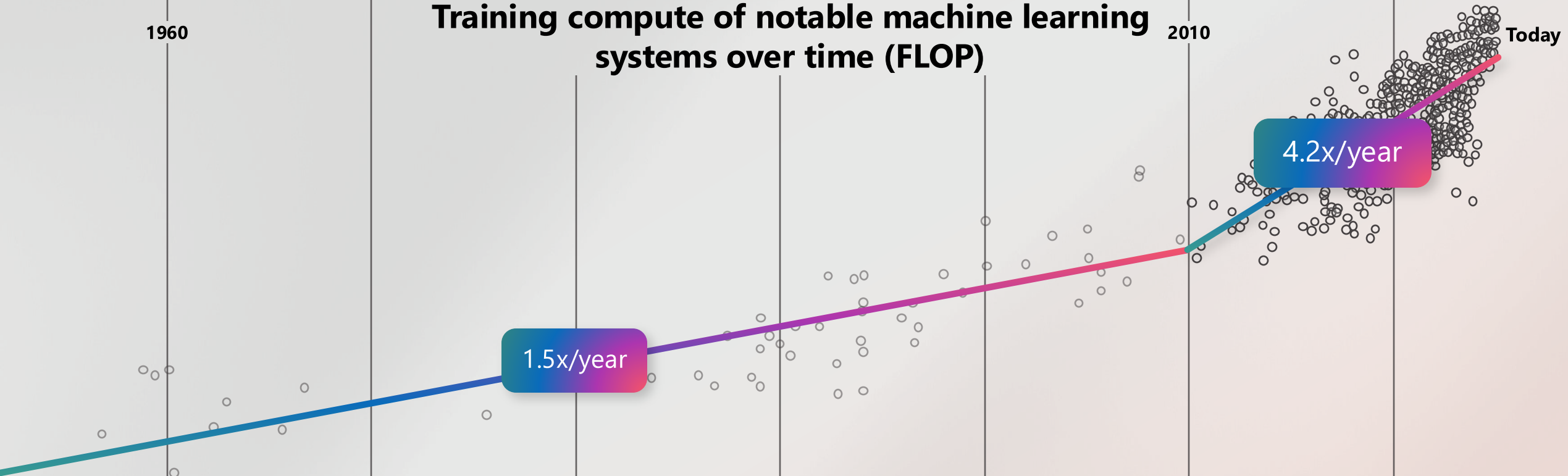
全球 GDP 和技術變革

實際 GDP 以 2011 年 GKS 對數刻度表示，單位為兆



Scaling laws

Training compute of notable machine learning systems over time (FLOP)



Source: Epoch, 'Parameter, Compute and Data Trends in Machine Learning'

2023 -2024 年全球 4000 大企業財報會議調查

– ChatGPT / GenAI / GenAI Use cases 出現在會議談話中次數驟升



這些是什麼？

Dall-E
GPT-3.5 OpenAI
Chat-4 ChatGPT
Codex Azure OpenAI Service
Generative AI

2023年1月16日
Azure OpenAI 服務全球上市

二年前，
我們正在討論...

此刻

90,000+

組織使用 Azure AI 服務

2000萬+

GitHub Copilot 用戶

85,000+

訂閱 M365 Copilot 的組織

超過7成

台灣前百大企業選擇微軟 AI 服務並已導入上線
UGPTS made by UMC SMG team + Teams Chatbot



“ 90% 開發成員認為成功提升工作效率與品質；86% 認為 **GitHub Copilot** 有效協助處理例行工作，提升整體開發能量，採用 **GitHub Copilot** 協同開發，大幅加快開發時間。”

永豐銀行



“ 光寶科技在 **Copilot for Microsoft 365** 的導入下，內部員工得以透過 **AI** 助攻，節省行政工作時間以降低作業負擔。”

光寶科技



“ 此次酷英導入微軟 **Azure OpenAI** 服務，透過類真人的口語互動，開拓英語口說學習情境，提供學習者更即時且高度擬真的口語訓練資源。

教育部



“專攻影像技術的光禾感知以 **AIGC** 技術，結合微軟 **Azure AI** 語音服務，為民視新聞打造台灣首位 **AI** 生成的虛擬電視新聞主播『敏熙』”

光禾感知科技



“ 透過 **Microsoft Copilot Studio** 與 **Azure OpenAI**，員工彷彿擁有一位具備 **20** 年知識庫的 **AI** 顧問，協助處理日常工作 ”

中華開發金控



“ 透過結合微軟 **Azure OpenAI** 服務以及 **LINE CLOVA Chatbot** 聊天機器人，成功為 **LINE TAXI** 及台北捷運拓展 **AI** 語音叫車及 **AI** 乘車資訊查詢等應用範疇，實現智慧場景便民服務。”

碩網資訊



NOBELPRISET I FYSIK 2024 THE NOBEL PRIZE IN PHYSICS 2024



KUNGL.
VETENSKAPS-
AKADEMIEN

THE ROYAL SWEDISH ACADEMY OF SCIENCES

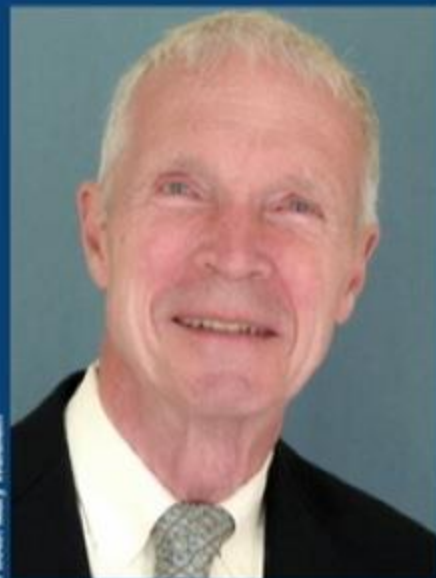


Photo: Mary Whitham

John J. Hopfield

Princeton University, NJ, USA



Photo: University of Toronto

Geoffrey E. Hinton

University of Toronto, Canada

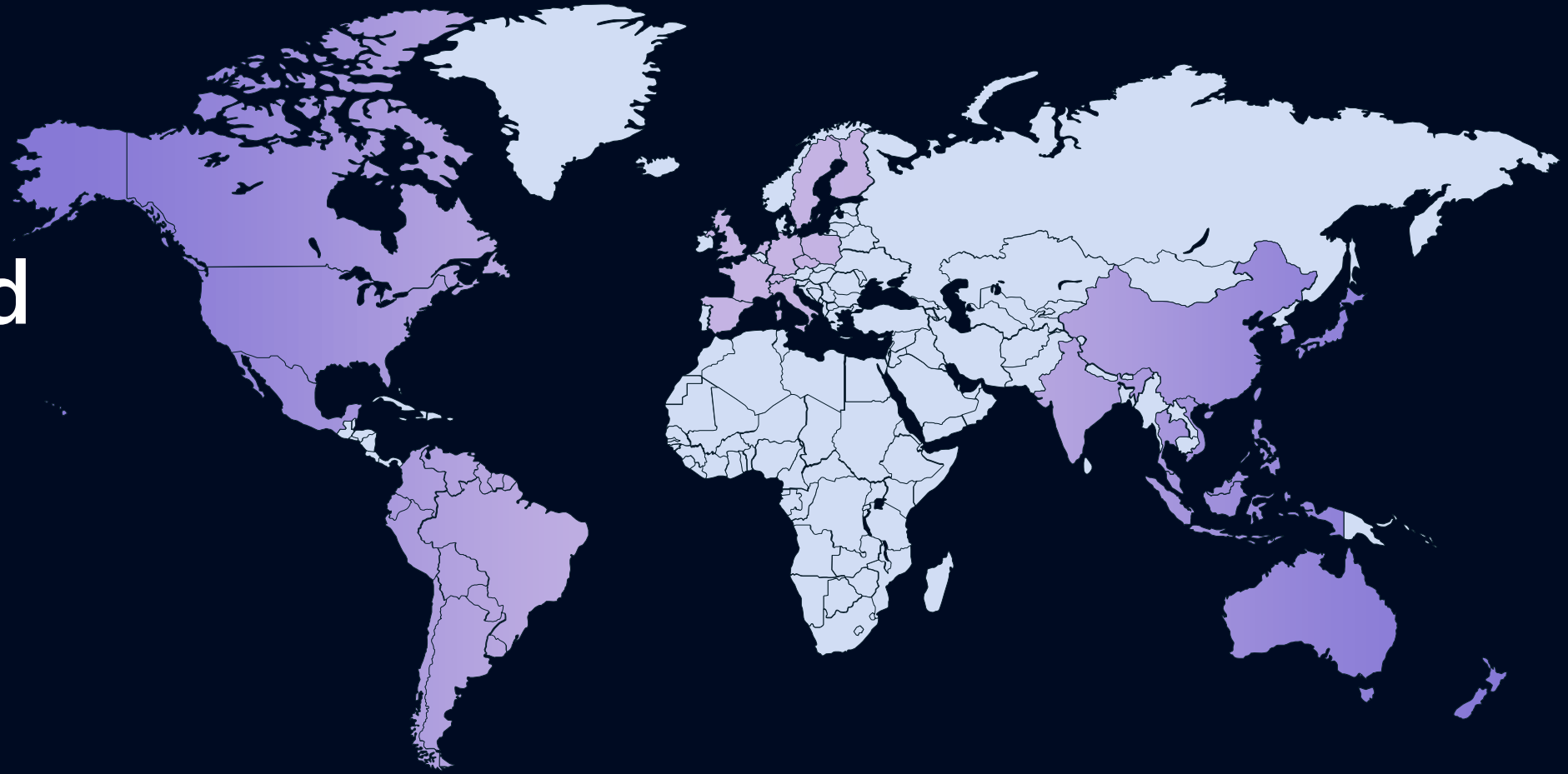
”för grundläggande upptäckter och uppfinningar som möjliggör maskininlärning med artificiella neuronnätverk”

“for foundational discoveries and inventions that enable machine learning with artificial neural networks”

THE
NOBEL
PRIZE

Work Trend Index 2024

<http://aka.ms/wti24>



31,000 people across
31 countries



Labor, hiring trends
from **LinkedIn**



Productivity patterns
of **Microsoft 365**

企業領袖如何看待 AI

79%

企業領導者相信，
AI 對組織至關重要

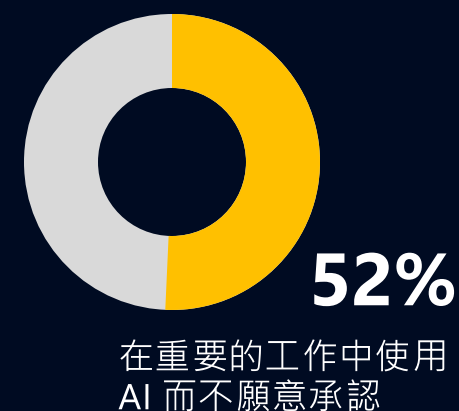
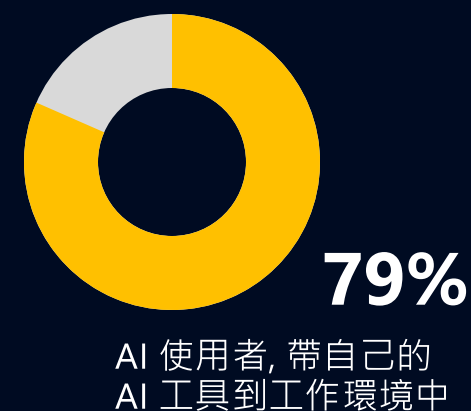
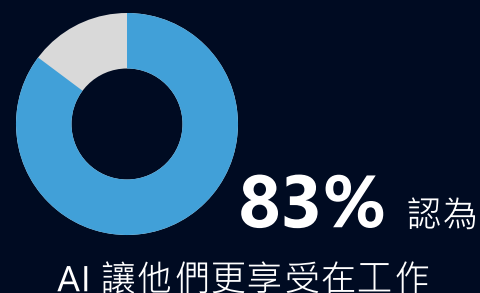
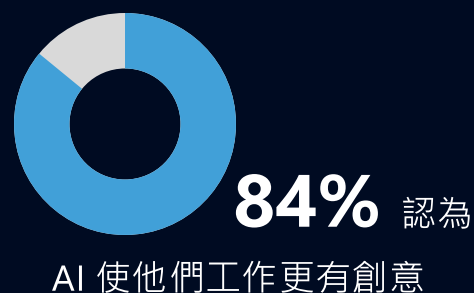
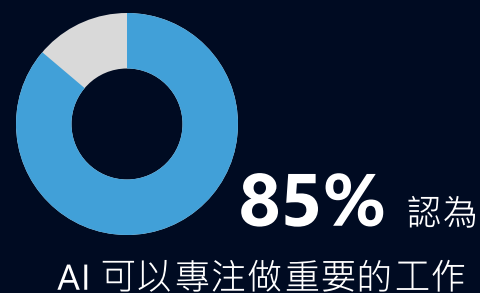
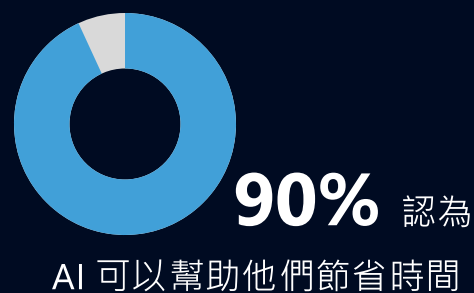
60%

領導者感覺自身
對於 AI 缺乏計劃與遠景

59%

的領導者在思考，
如何量化 AI 帶來的生產力

調查指出 3/4 的工作者，已經在工作中使用 AI，有半數是 從 6 個月內開始



2024 微軟工作趨勢指數報告 – 總結三大關鍵發現

1

員工渴望在工作中使用 AI，而不再等待公司跟上腳步

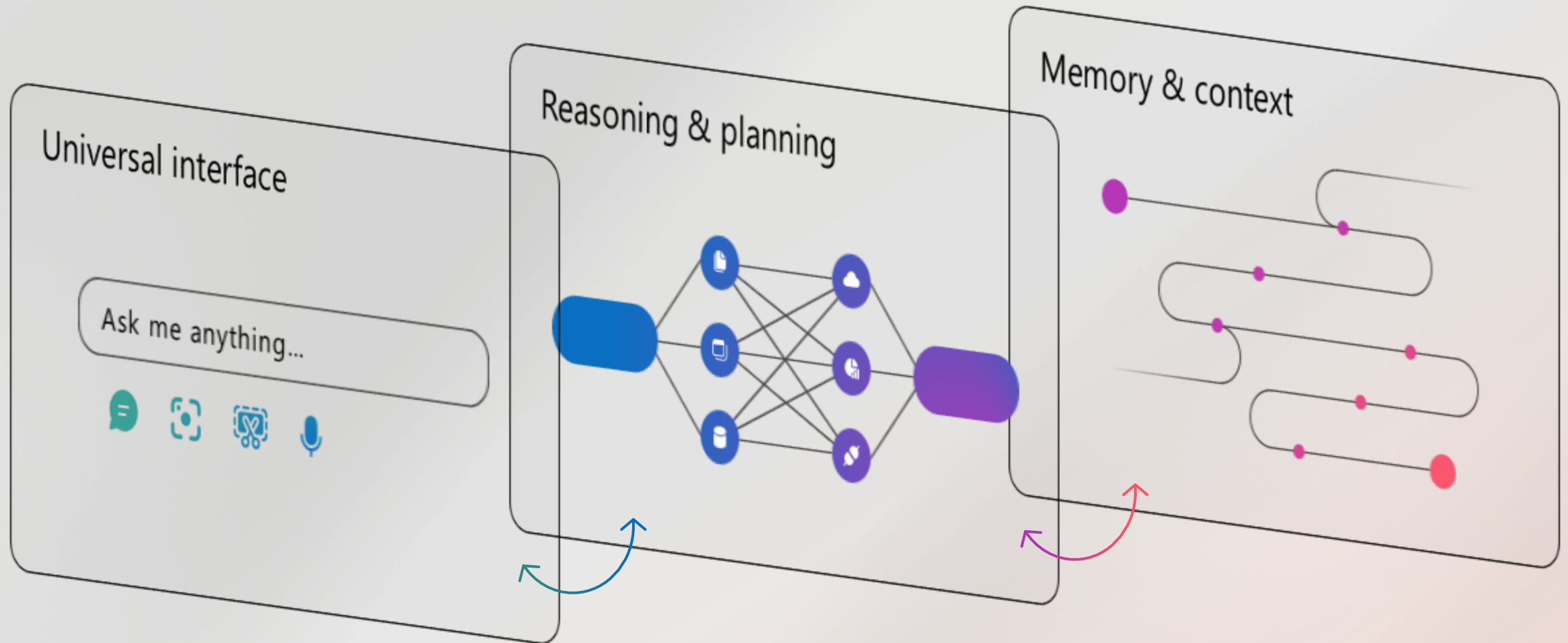
2

對於員工來說，AI 提升了標準、打破了職業發展的限制，個人發展可與公司脫鉤

3

企業領袖應全面了解 AI 與其可以帶來的效益，並定出未來策略

Three breakthroughs



GPT-4 Turbo 的視覺、圖片及影像理解能力

解數學題

讀流程圖

請分析影片並建議正確的製作食譜步驟

Sec. 4.4 Scene Text, Table, Chart, and Document Reasoning

Visual Math

Prompt:

What is x in the equation?

$$(x+3)^2=4$$

GPT-4V:

Without any context or information about what the equation is representing, we can only assume that "x" is a variable or unknown value in the equation.

In this equation, (x + 3) is being squared and is equal to 4. To solve for x, we can take the square root of both sides of the equation to get rid of the exponent on the left side. This would give us:

$$\sqrt{(x + 3)^2} = \sqrt{4}$$

$$x + 3 = \pm 2$$

From here, we can solve for x by subtracting 3 from both sides. This would give us:

$$x = -1 \text{ or } x = 5$$

So, in this equation, x could be either -1 or 5.

Prompt:

What is the value of d in the last equation?

Solve the following equations:

1) $8x + 11 = 4x + 14$

2) $7d - 4 = 11d - 9$

GPT-4V:

1) To solve the first equation, we need to isolate the x variable on one side of the equation and the constants on the other side. We can start by subtracting 4x from both sides to get rid of the x term on the right side of the equation. This gives us:

$$4x + 11 = 14$$

Next, we can subtract 11 from both sides to get rid of the constant term on the left side of the equation. This gives us:

$$4x = 3$$

Finally, we can divide both sides by 4 to isolate the x variable on the left side of the equation. This gives us:

$$x = 3/4$$

2) To solve the second equation, we can start by subtracting 7d from both sides to get rid of the d term on the left side of the equation. This gives us:

$$-4 = 4d - 9$$

Next, we can add 9 to both sides to get rid of the constant term on the right side of the equation. This gives us:

$$5 = 4d$$

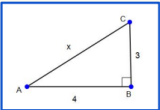
Finally, we can divide both sides by 4 to isolate the d variable on the right side of the equation. This gives us:

$$d = 5/4$$

So, the value of d in the last equation is 5/4.

Prompt:

What is the value of x in the image?



GPT-4V:

The value of x in the image can be found using the Pythagorean theorem, which states that in a right triangle, the square of the hypotenuse (the longest side, opposite the right angle) is equal to the sum of the squares of the other two sides.

In this case, the hypotenuse is the side AC, and the other two sides are AB and BC. We know that AB is 4 and BC is 3, so we can plug these values into the equation:

$$a^2 + b^2 = c^2$$
$$3^2 + 4^2 = c^2$$
$$9 + 16 = c^2$$
$$25 = c^2$$

Therefore, c (the length of the hypotenuse) is 5. Since x is the length of the hypotenuse, x is equal to 5.

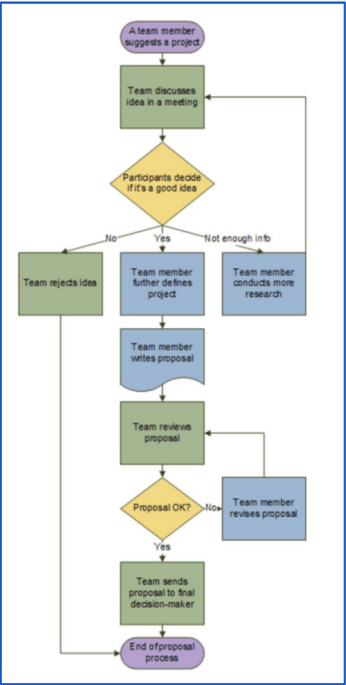
Figure 34: Results on visual math reasoning. GPT-4V is able to comprehend and solve visual math problems with a well-structured solution. Check Section 4.4 for detailed discussions.

Sec. 4.4 Scene Text, Table, Chart, and Document Reasoning

Flow Chart Understanding

Prompt:

Explain the figure



GPT-4V:

This figure represents a flow chart of a team's proposal process. The process begins with a team member suggesting a project in a meeting. The team then discusses whether it is a good idea or not. If the idea is not considered a good one, the team rejects it and the process ends.

If the team thinks it might be a good idea but needs more information, a team member conducts further research and refines the idea into a proposal. The team then reviews the proposal and provides feedback. If the proposal is not okay, then the team member revises it and the team reviews it again.

If the proposal is okay, the team sends it to a final decision-making process. If the proposal is approved, then the team proceeds with the project. This is the end of the proposal process.

Figure 35: Results on flow chart understanding. GPT-4V correctly describes the proposal process in details. Check Section 4.4 for detailed discussions.

Sec. 6.2 Video Understanding

Temporal Ordering

Prompt:

Analyze the images and decide the correct order in which they should be displayed.

a



b



c



d



e



Prompt Continued

GPT-4V:

The correct order in which the images should be displayed is:

1. e - Mixing the rice

2. c - Placing the rice on the seaweed

3. b - Adding the fillings

4. a - Cutting the roll

5. d - Finished sushi rolls on a plate.

Figure 54: Long-term temporal ordering: GPT-4V is presented with shuffled image frames depicting a sushi-making event. While the sushi-making process is disordered, GPT-4V is able to identify the event and determine the correct temporal sequence. Check Section 6.2 for detailed discussions.

Sora: OpenAI 人工智能影音合成的突破



Prompt: A stylish woman walks down a Tokyo street filled with warm glowing neon and animated city signage. She wears a black leather jacket, a long red dress, and black boots, and carries a black purse. She wears sunglasses and red lipstick. She walks confidently and casually. The street is damp and reflective, creating a mirror effect of the colorful lights. Many pedestrians walk about.





AI live interpretation



Language



Chat



People



Raise



React



View



Notes



Apps



More



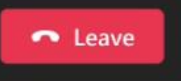
Camera



Mic



Share



Leave



Marie Dubois



Kristin Watson



Daniela Mandera



Youji Kanaco



Ralph Edwards



Serena Davis



Floyd Miles



Jerome Bell



Zhang Wei

以 GPT-4o 實作電商虛擬客服



1

客戶透過鏡頭請
GPT-4o 判斷需求

2

請 GPT-4o 幫忙
自己作最佳選擇

3

多國語言能力
的演譯



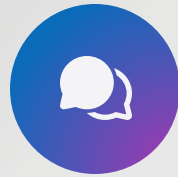
Drive Topline Growth

Improve Operating Efficiency

AI-driven business transformation



Enrich
employee
experiences



Reinvent
customer
engagement



Reshape
business
processes



**Bend the
curve
on innovation**



流程自動化
提升效率



教師教學與研究

生成式 AI 行政、教學、研究 多軸數位轉型



提升行政職員
生產力



學生學習與社團



Microsoft 365 Copilot



Copilot for Microsoft 365, The Best UI for AI

自然語言



大型語言模型



Microsoft Graph
- 你的資料 -



Microsoft 365
應用程式



即時網路搜尋

Copilot for M365 基本運作原理

Microsoft 365 Apps



生成內容
+
App指令

提示語

Microsoft 365服務範圍

提示語、回復以及通
過Microsoft Graph
訪問的數據不會被用
來訓練基礎模型

大型語
言模型
LLM

Azure OpenAI實例
由微軟維護。
OpenAI沒有訪問數
據或者模型的許可權。

Azure
OpenAI

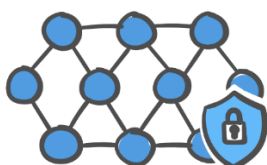
處理後的
提示語

LLM 生成的
回復

負責任的AI

負責任的AI在
輸入提示語和
生成結果時都
會運作

Microsoft Graph



語義
索引

你的內容和數據

郵件，文件，會議，聊天，日
曆和聯繫人等

後處理

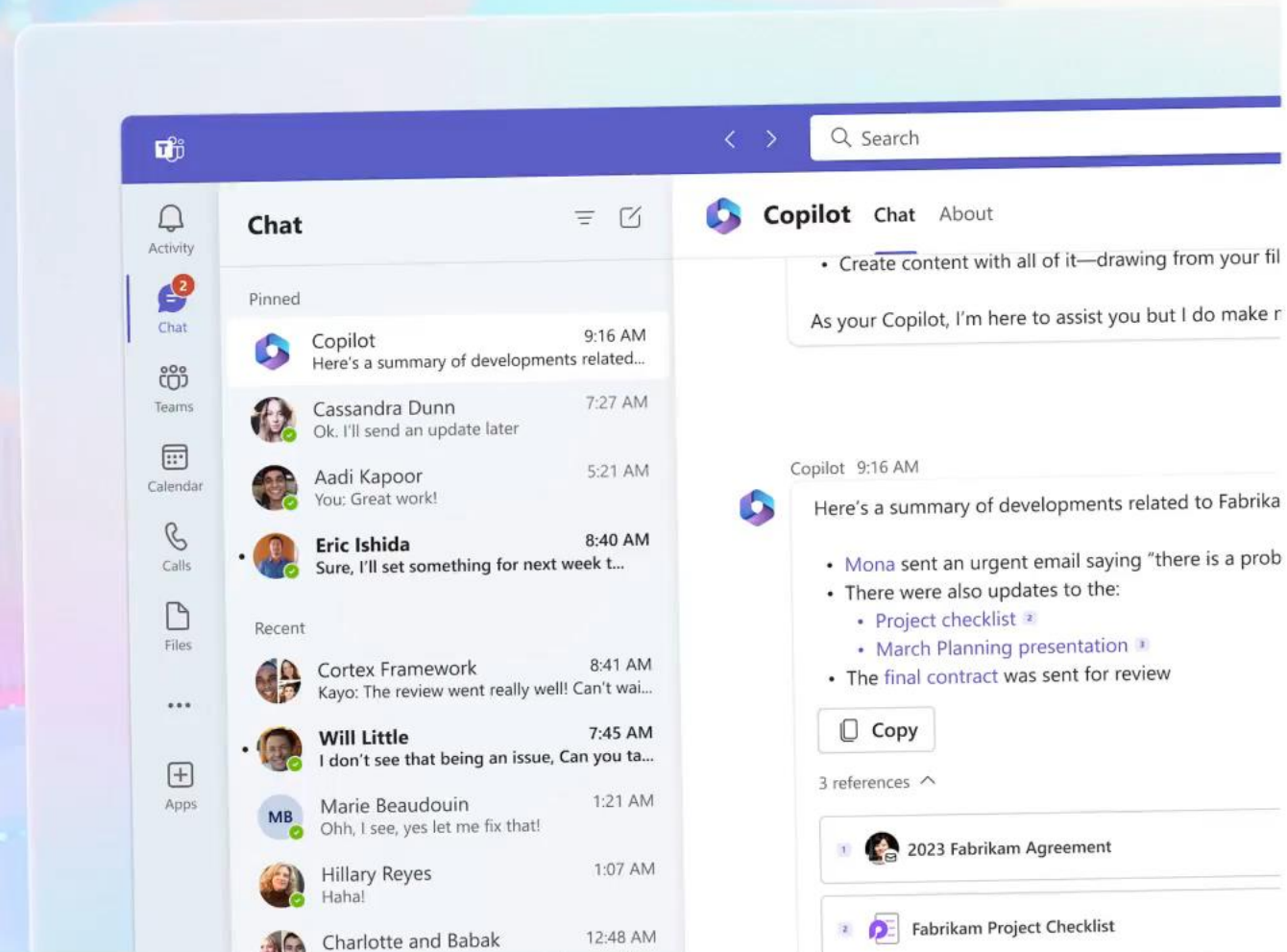
客戶的Microsoft 365租戶

資料流 所有要求都透過 HTTPS 和 wss:// 進行加密

- 1 使用者在Microsoft 365 Apps中將提示語發送給Copilot
- 2 Copilot 訪問MS Graph和語義索引來進行預處理
- 3 Copilot 將處理后的提示語發送給大語言模型
- 4 Copilot 收到大型語言模型的回復
- 5 Copilot 訪問MS Graph和語義索引來進行後處理
- 6 Copilot 發送生成的內容以及App命令通過Microsoft 365 Apps給到使用者

MICROSOFT 365

Business Chat in Teams



Microsoft 365 Copilot 使教授省下寶貴時間



研究

研究

教學

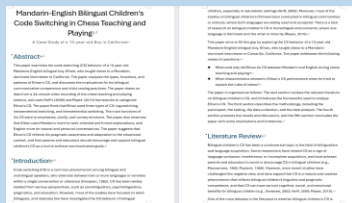
行政

行政



論文草稿與 編修

論文草稿、潤飾與改寫



依據○○檔案產生論文

撰寫期刊摘要。

以五個重點總結○○。

Copilot in Word



學術研討會

投影片製作、演講準備



根據○○資料產生簡報

依據簡報產生演講稿

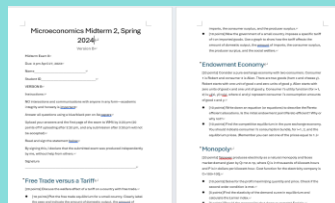
其他學者會問什麼問題？

Copilot in PowerPoint



教學資料

考試出題、課程大綱



依據○○/○○產生題目

產生○○課程大綱/FAQ

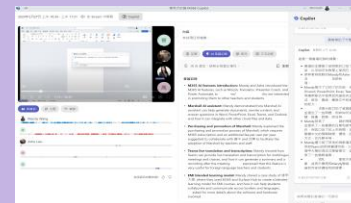
產生○○理論的說明

Copilot in Word



系務會議

會議摘要、可跟進問題



依照主題回顧會議

提出建議問題

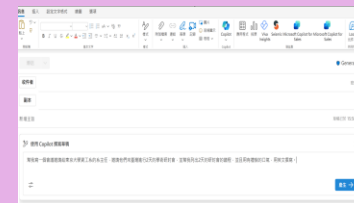
列表告訴我後續工作

Copilot in Teams



私人助理

信件回覆、資料統整



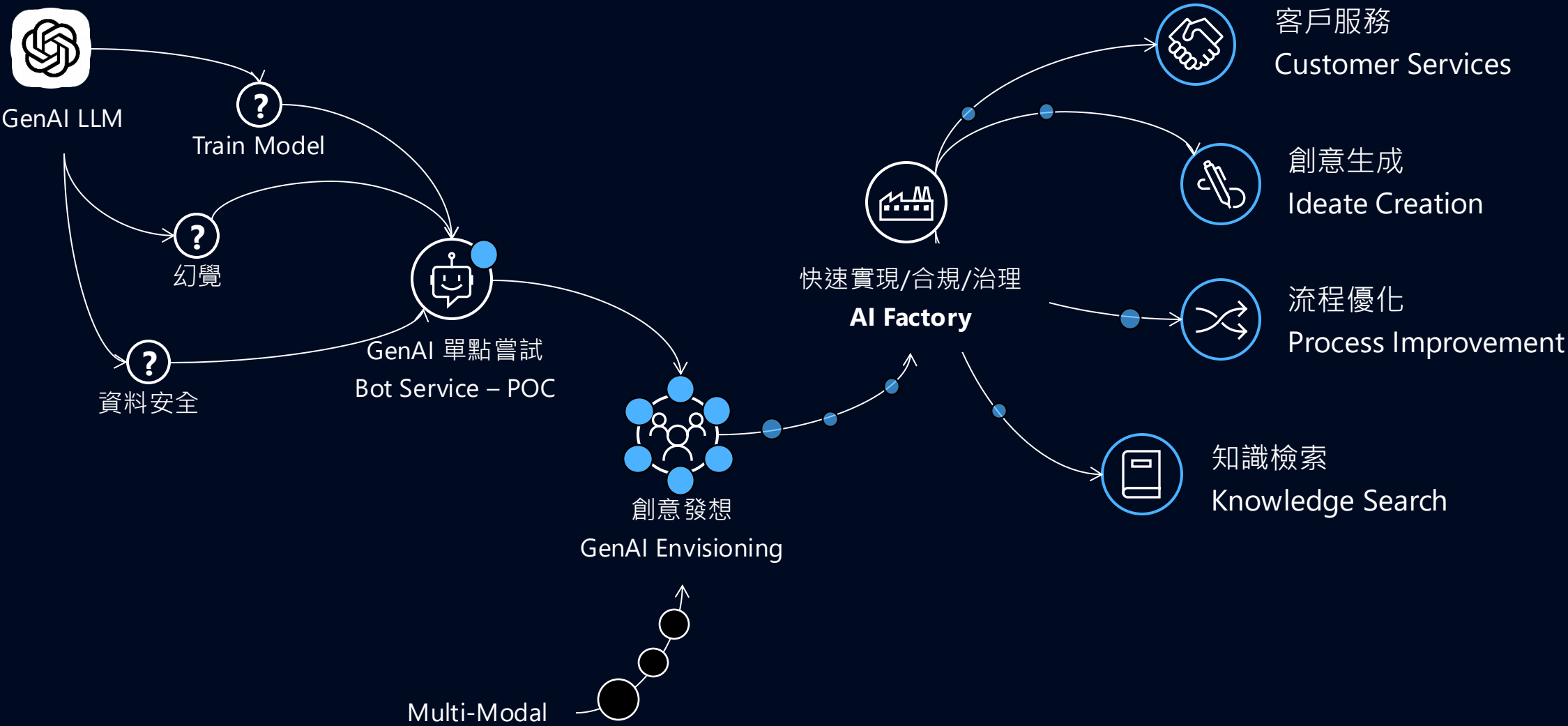
幫我找○○主題的內容

比較這兩份文件並條列

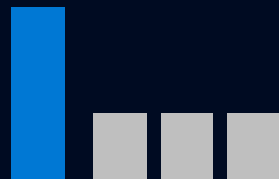
○○的會議要準備什麼？

Copilot in Outlook

我們觀察到 GenAI(GPT 模型) 落地應用在企業端都有相似的旅程



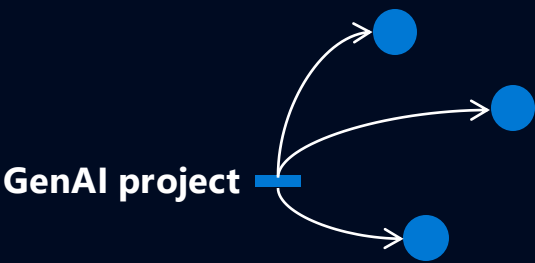
我們常聽到，客戶在 GenAI 應用遍地開花時所遭遇的挑戰



模型擴增快
語言模型有變小、專業領域化與多模態的趨勢，如何運用多種模型在 GenAI 實踐場景中



Prompt 需要領域的專業
語言模型的 Prompt 需要其業務領域的專業，如何與開發團隊有專業上的分野與分工



重覆性專案成本
許多 GenAI 的專案在執行時，開發重覆的架構與邏輯，使成本變高與資源浪費



導 AI 的專業資源不足
導 AI 的人員趕不上需求產生的速度



既有系統的轉型
面對龐大的既有系統，如何賦予其 GenAI 的能力



不確定的服務品質與合規性
無法確保 GenAI 的反應速度，和延遲所帶來的影響

AI 的五大價值驅動因素



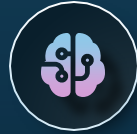
組織、人才 與文化

- Do you have a defined operating model to industrialize the adoption and use of AI?
- Do you have top-down support?



核心業務策略與 北極星

- What business outcomes are you driving?
- How can AI help you achieve those outcomes?



AI 導入策略 與客戶體驗

- Do your people have diverse experiences and skills with AI?
- Is your organization collaborating to build experience?



AI 資安與治理

- Are you implementing processes and controls that are transparent?
- Are you governing data privacy and security?

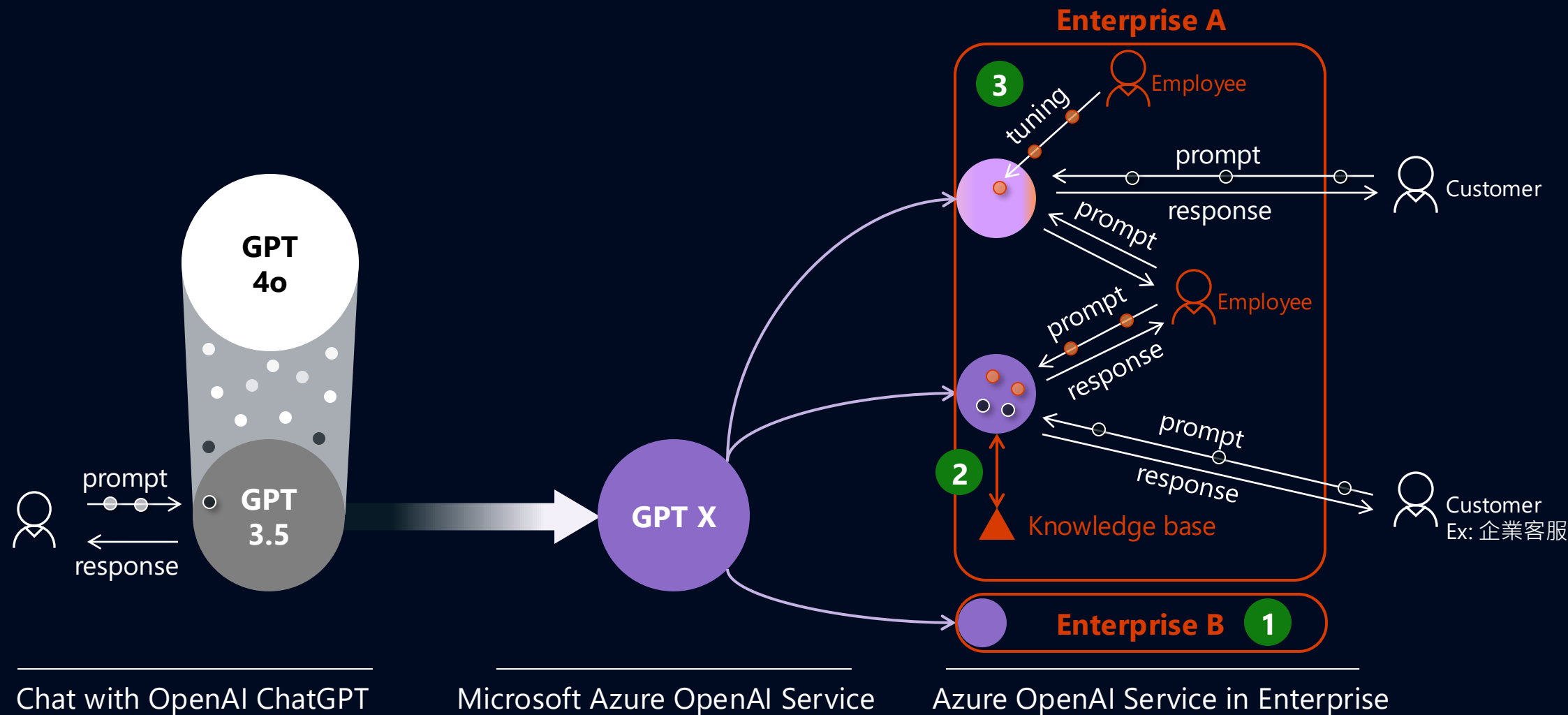


技術平台策略

- Do you have access to quality data?
- Is your infrastructure set up to help you scale?

aka.ms/AIStrategyRoadmap

資訊安全與隱私，是企業最在意的事



- 1 企業訂閱 Azure OpenAI 服務
- 2 GPT Model 結合企業內部知識庫
- 3 GPT Model Tuning 成企業自己的 GPT Model

Microsoft Cloud

Runs on trust

Your data is your data

您的數據為你所有，微軟不會使用你的數據

Your data from any fine-tuning is not used to train the foundation AI models

你的數據不會被用來訓練微軟所提供給其他客戶的模型

Your data is protected by the most comprehensive enterprise compliance and security controls

你的數據將受到全方位的企業合規及安全措施的保護

人才是關鍵

46%

企業認為缺乏數位轉型人才
是首要問題



微軟提供完整平台給不同需求族群



Copilot & AI stack



Developer tools & app services

Azure AI Foundry

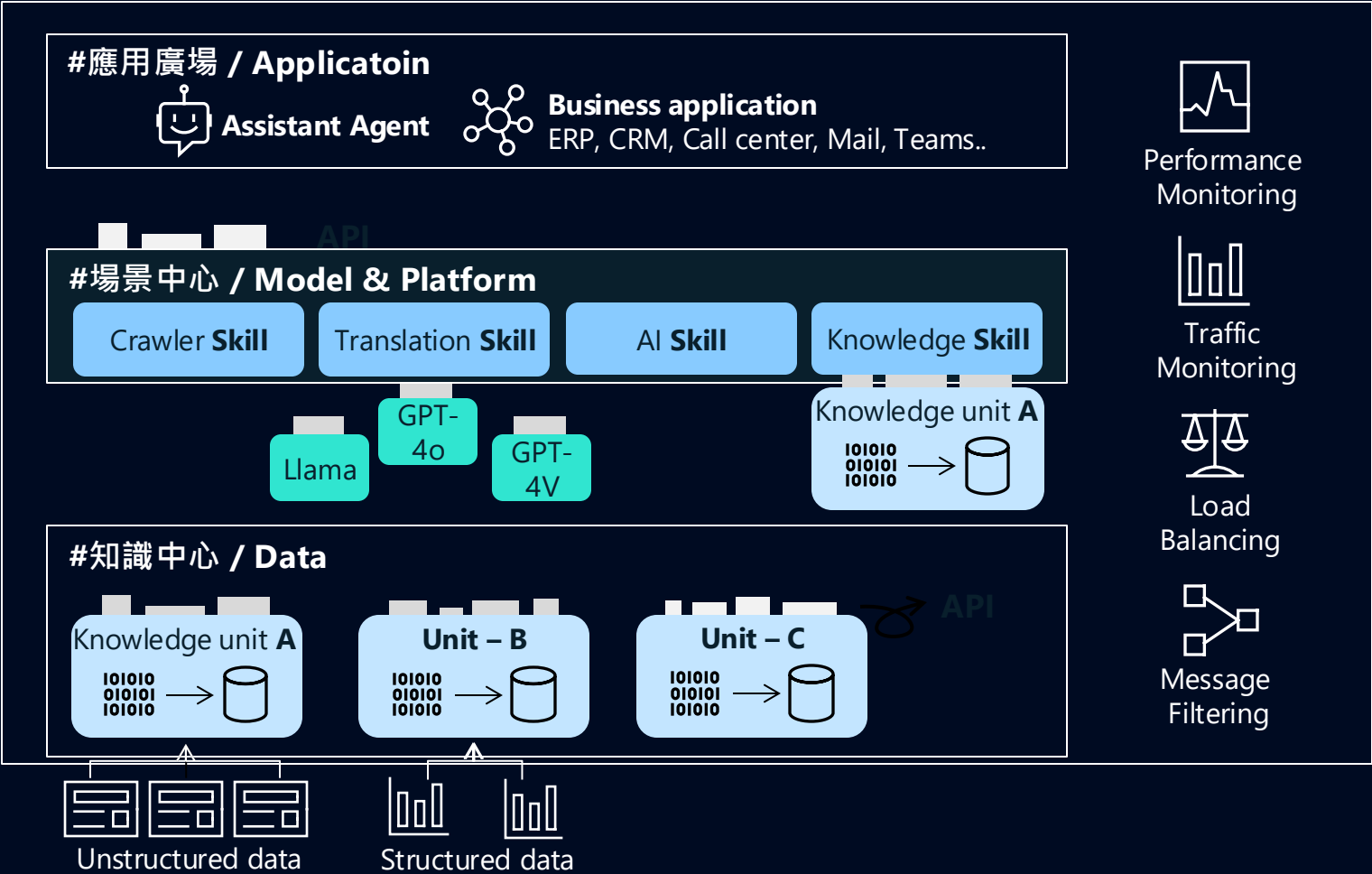
Data

Infrastructure

← Cloud and edge →

建構 Universal AI Platform 協助企業快速佈署 GenAI 應用

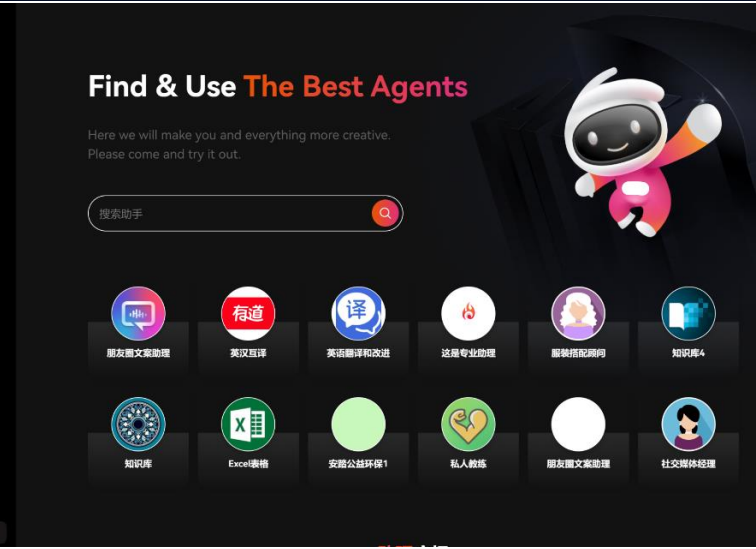
Microsoft ISD AI Platform high level 架構概念



- ① **應用代理(Assistant Agent)**
提供業務聚合，串接知識庫或場景，透過 API 服務複雜的應用業務。
- ② **場景編排(Flow Engine)**提供編排，並可串接知識庫或其他場景，同樣可透過API提供使用。
- ③ **知識庫(KM)**可串接內外資料源，並透過 API 服務知識內容。
- ④ **Gen AI Platform(AIP)**支持的**應用服務**包括有應用代理(Super Agent)/場景編排(Flow Engine)/知識庫(KM)，並且透過**基礎(Foundation)**連結LLM模型。

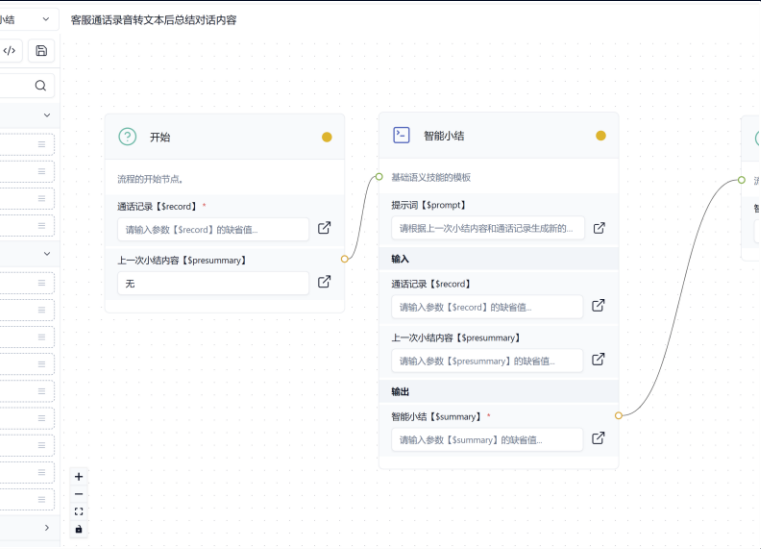
將 GenAI 應用開發的 共通性、可重覆性提取，並給予彈性架構設計 使企業快速落地 GenAI 的場景

#應用廣場



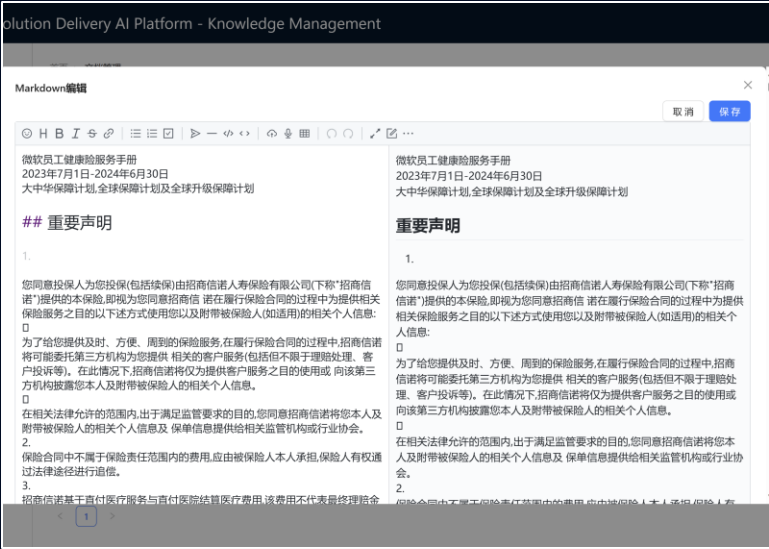
用戶自由組成各種 **GenAI** 助理，協助處理工作中的各種事務
(like: 文案助手，翻譯助手，郵件生成助手...等，使用者可透過預建 **Prompt** 建立個人助手)

#場景中心



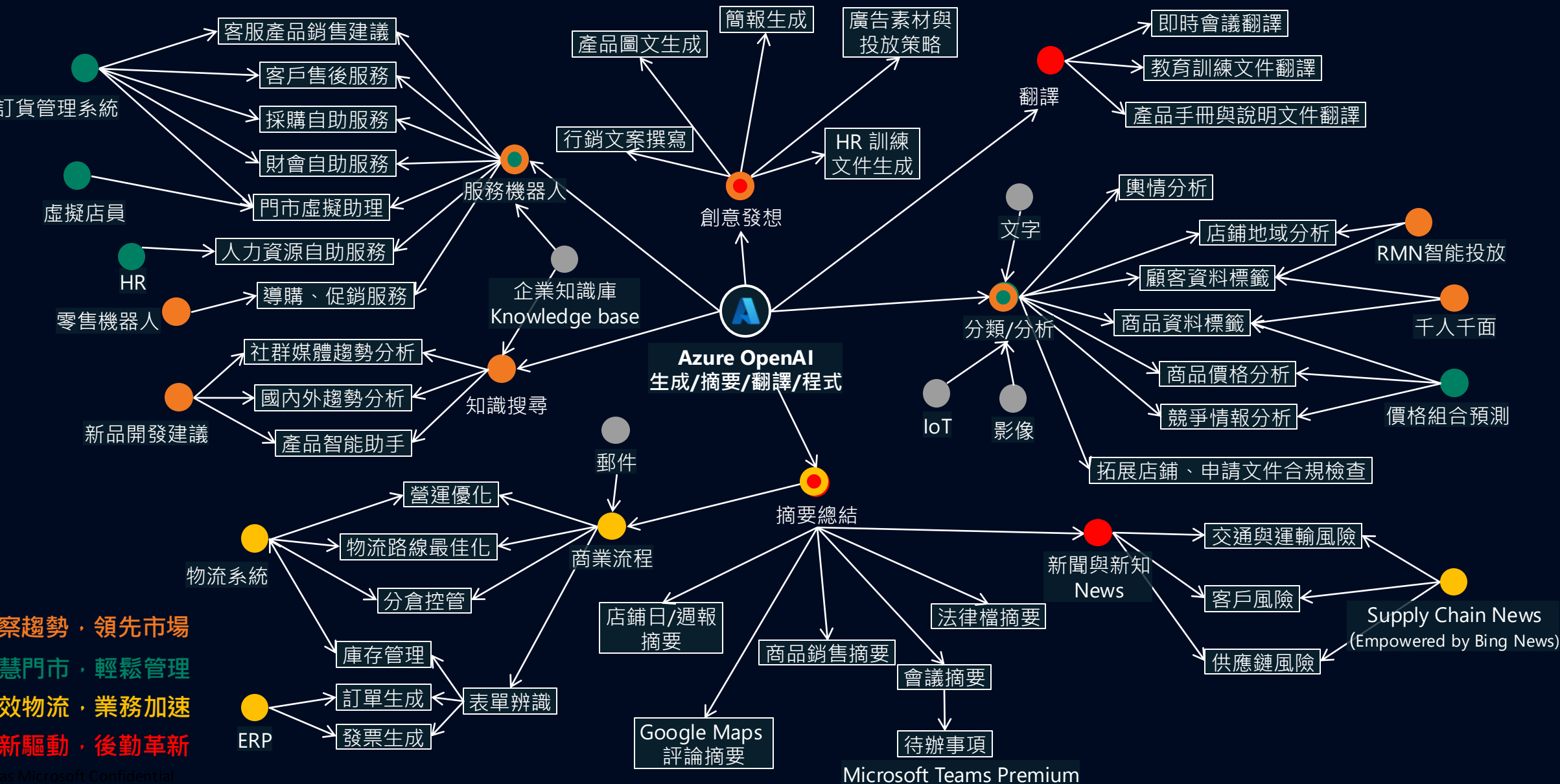
Low code/No code 拖拉組合各種 **GenAI** 與 **AI** 技能，實現各種使用者場景
(like: 總結、摘要、**RAG**、語音轉文字、爬蟲...等，可持續擴充技能)

#知識中心



自動化文件轉換成 **Markdown**, 切片, 向量化，並對知識進行權限管理

Azure OpenAI – 廣泛應用在零售流程當中，加速創新與提升效率，創造商業價值





What's Next?

Building an agentic world



**Personal
agents**



**Organizational
agents**



**Business process
agents**



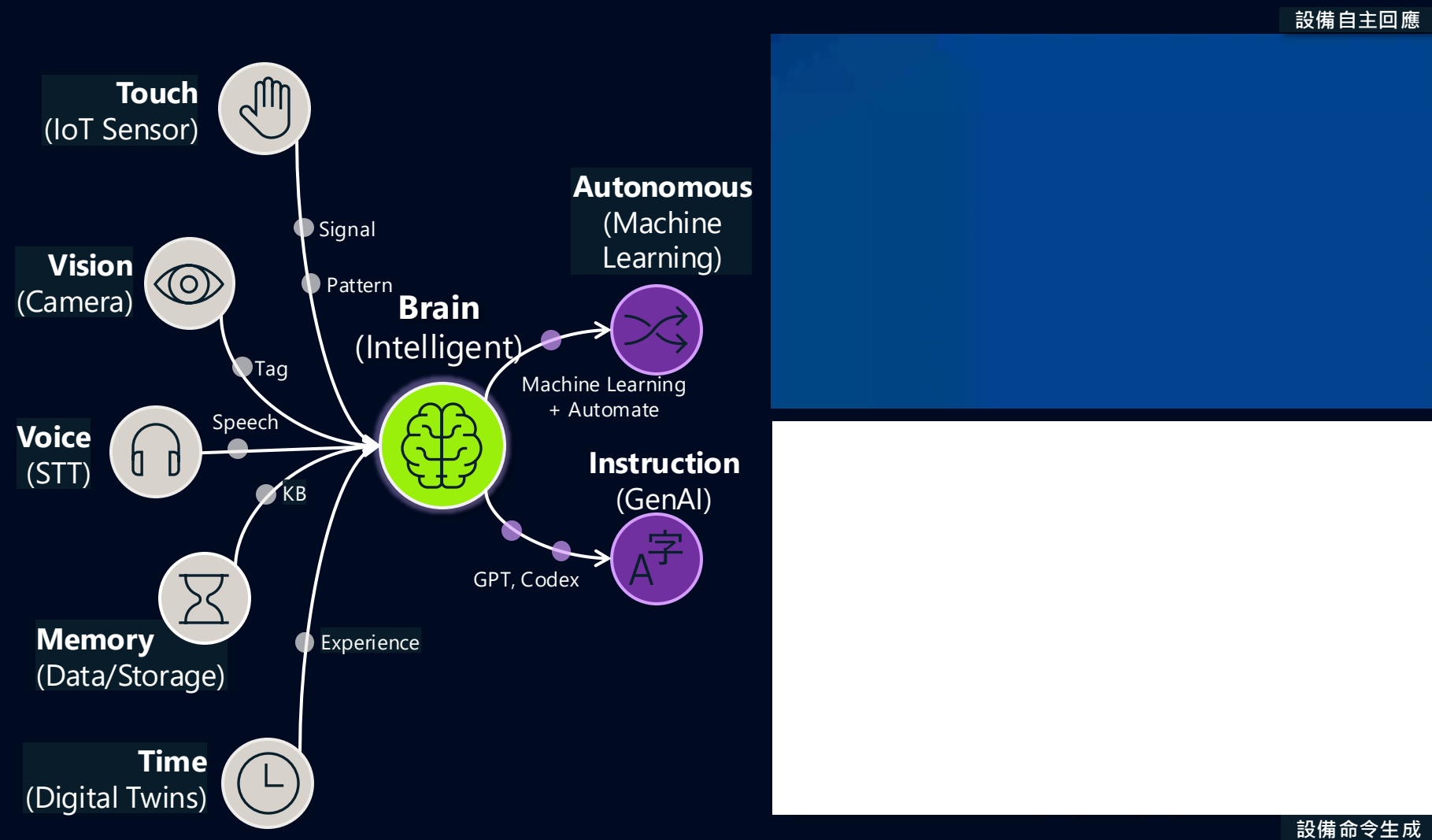
**Cross-org
agents**

Input

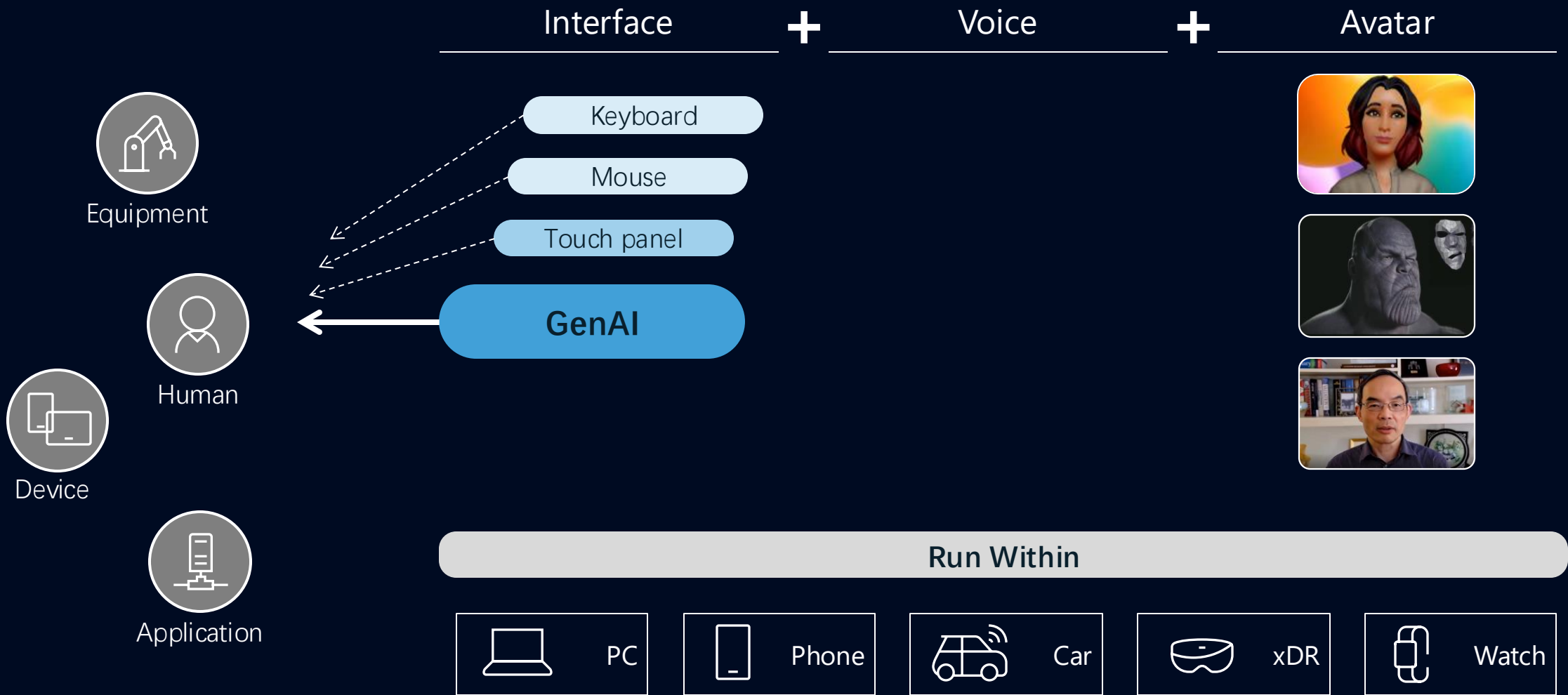
Response

Mission

AI (不僅只是 GenAI) 賦予數位世界與人類相同的靈魂 (感知/思考/行動)

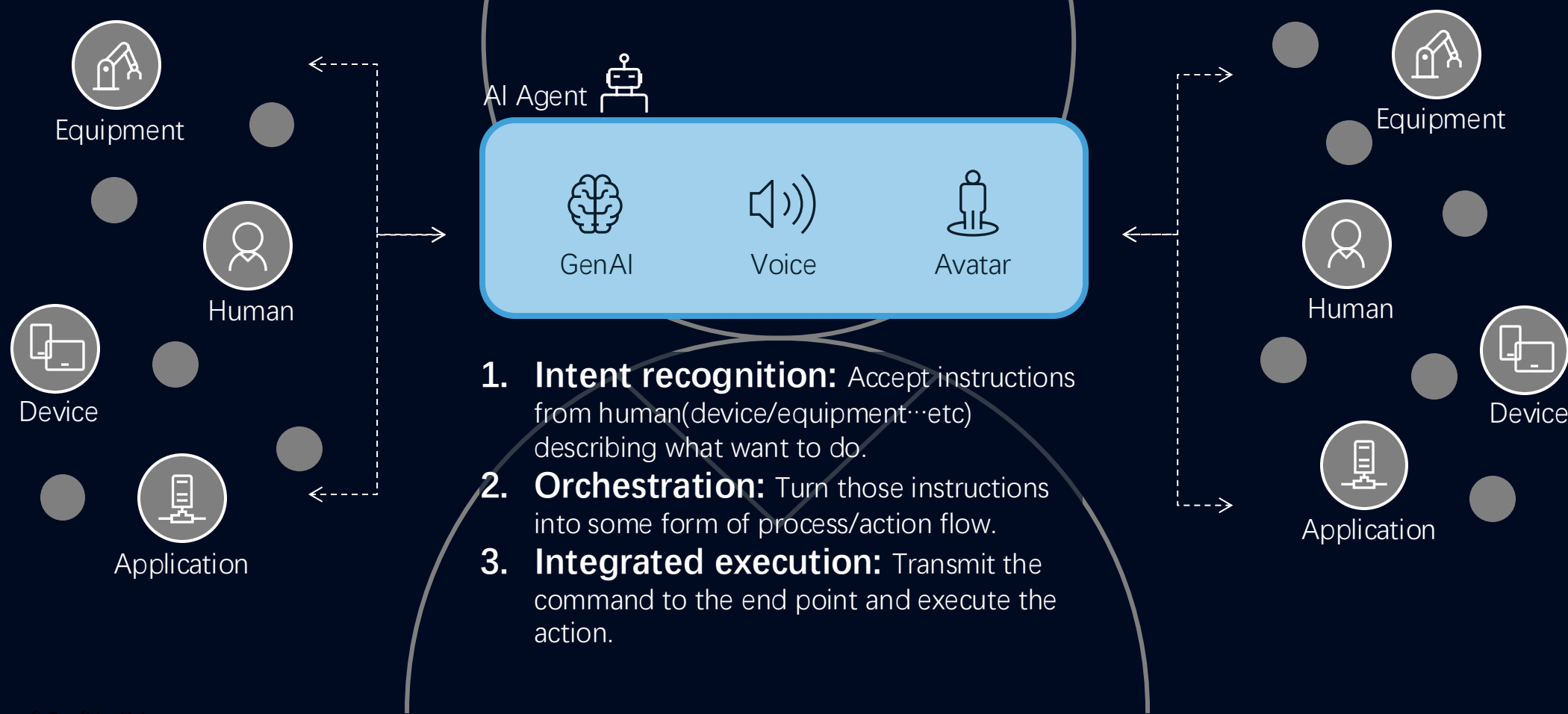


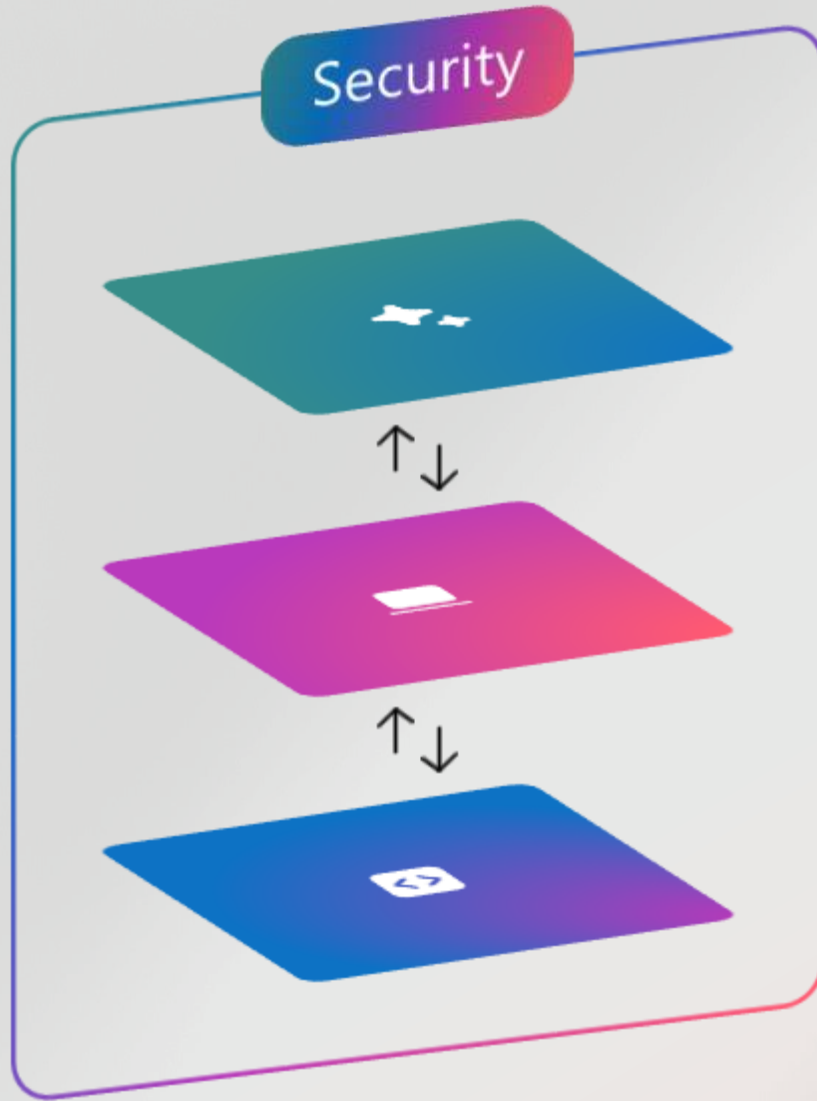
第一步，GenAI 將進一步改變人與數位世界互動的方式 – 無需學習，使其更貼近人們自然溝通的方式



Television, robotics, and additional topics...

在人們的監督下，AI Agent (empower by GenAI) 有能力 – 識別意圖、協調處理流程與轉換成可執行的指令





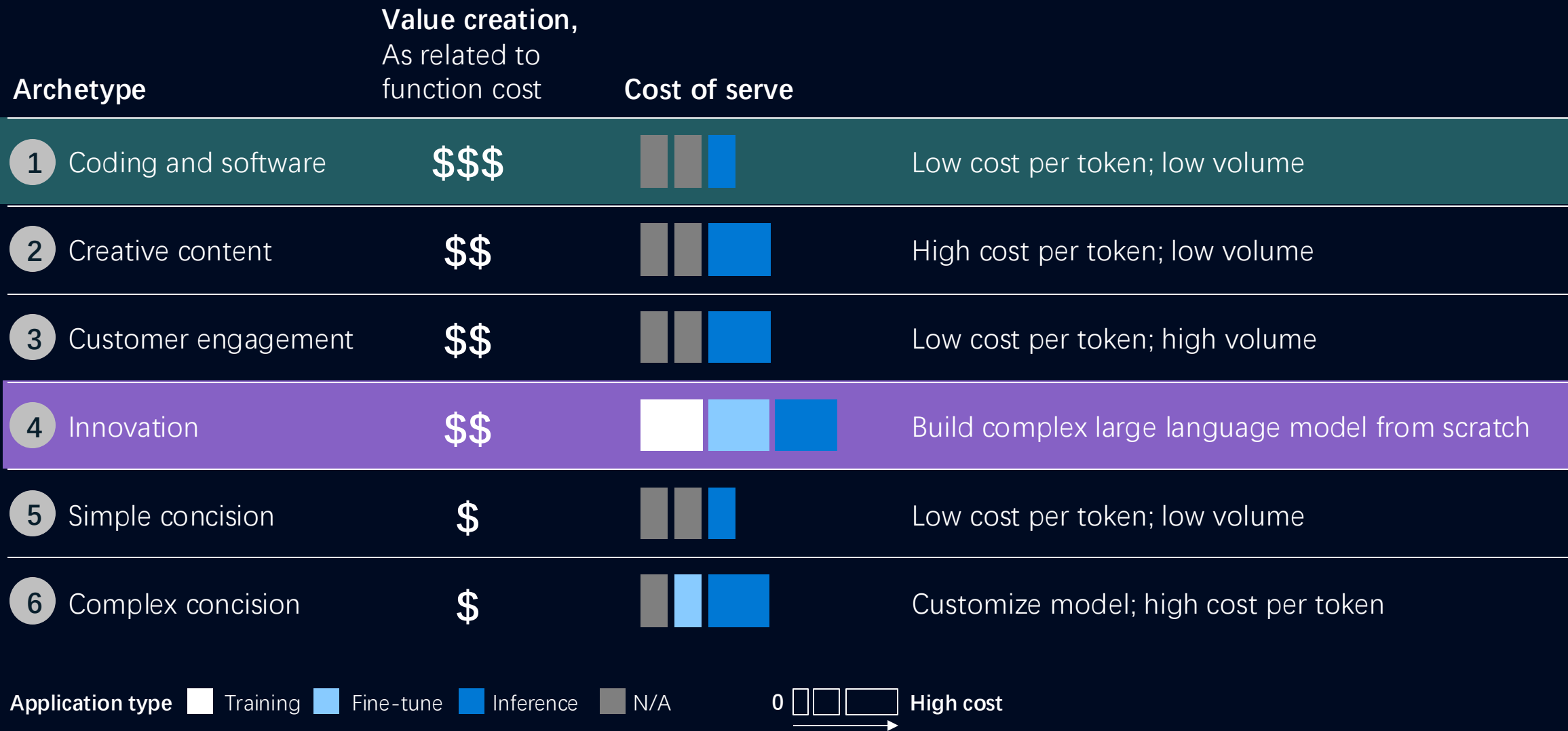
Copilot

Copilot devices

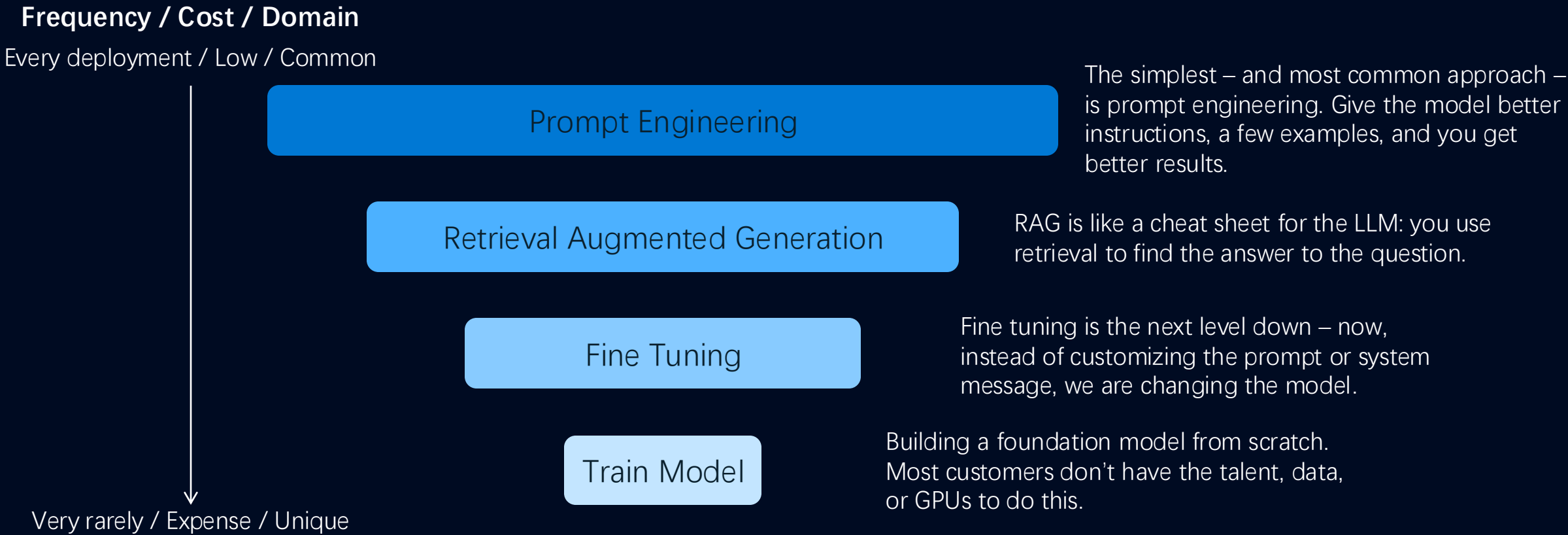
Copilot & AI stack

GenAI 在跨產業中的應用場景，排序其創造價值與運算成本

為創造更大的效益，模型訓練與推理的運算將走向分歧，以優化推理成本

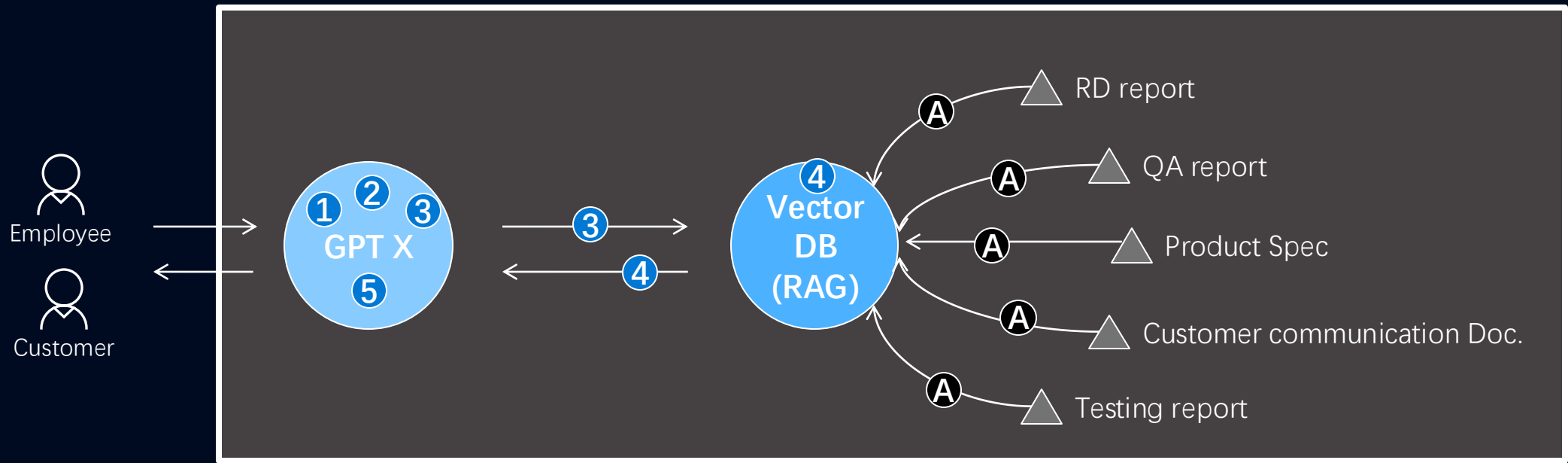


根據領域獨特性，以 4 種型式使用模型



GenAI 結合企業內部知識庫(RAG), 用已有的資料來回應企業的問題

Microsoft Security & Responsible AI



① Translation: GPT base model

② Generative: Content creation

Ⓐ Embedding: Build embedding DB

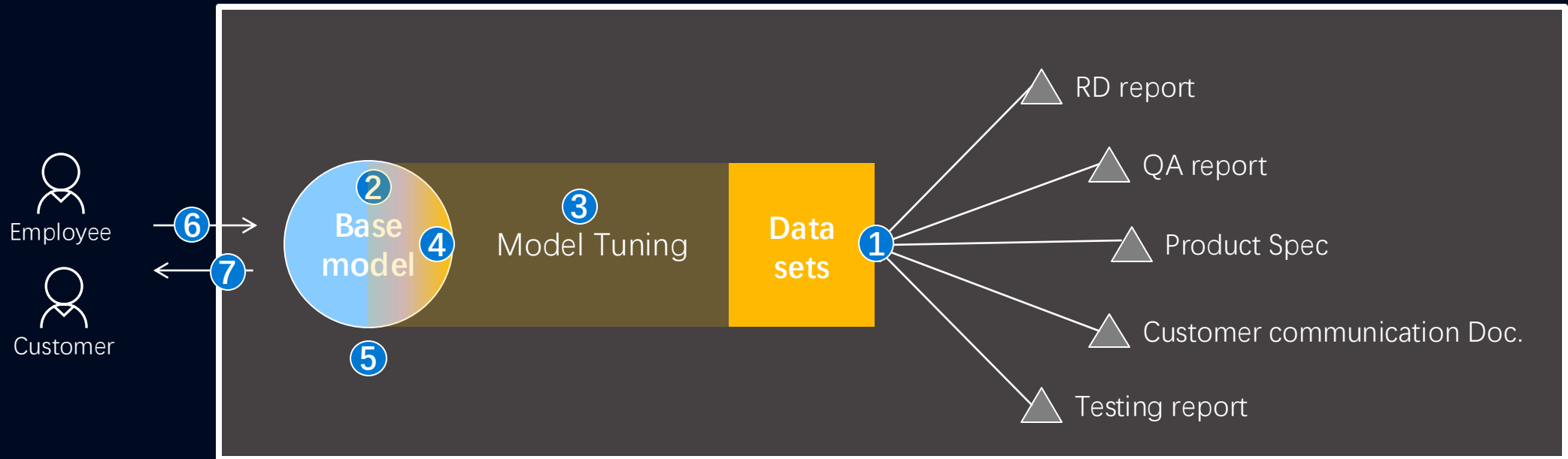
③ Intent recognition: User query understanding

④ Vector search: Semantic search

⑤ Summary: Summarize and output the findings.

Model Tuning 在基礎模型之上調校專屬的模型，讓模型學會講企業的話，產生新的回應內容

Microsoft Security & Responsible AI



① Data preparation, mark, clear, enhance

② Select base model

③ Model Tuning: Parameter configuration, training and monitoring

④ Evaluation

⑤ Model deployment and hosting

⑥ Ask questions

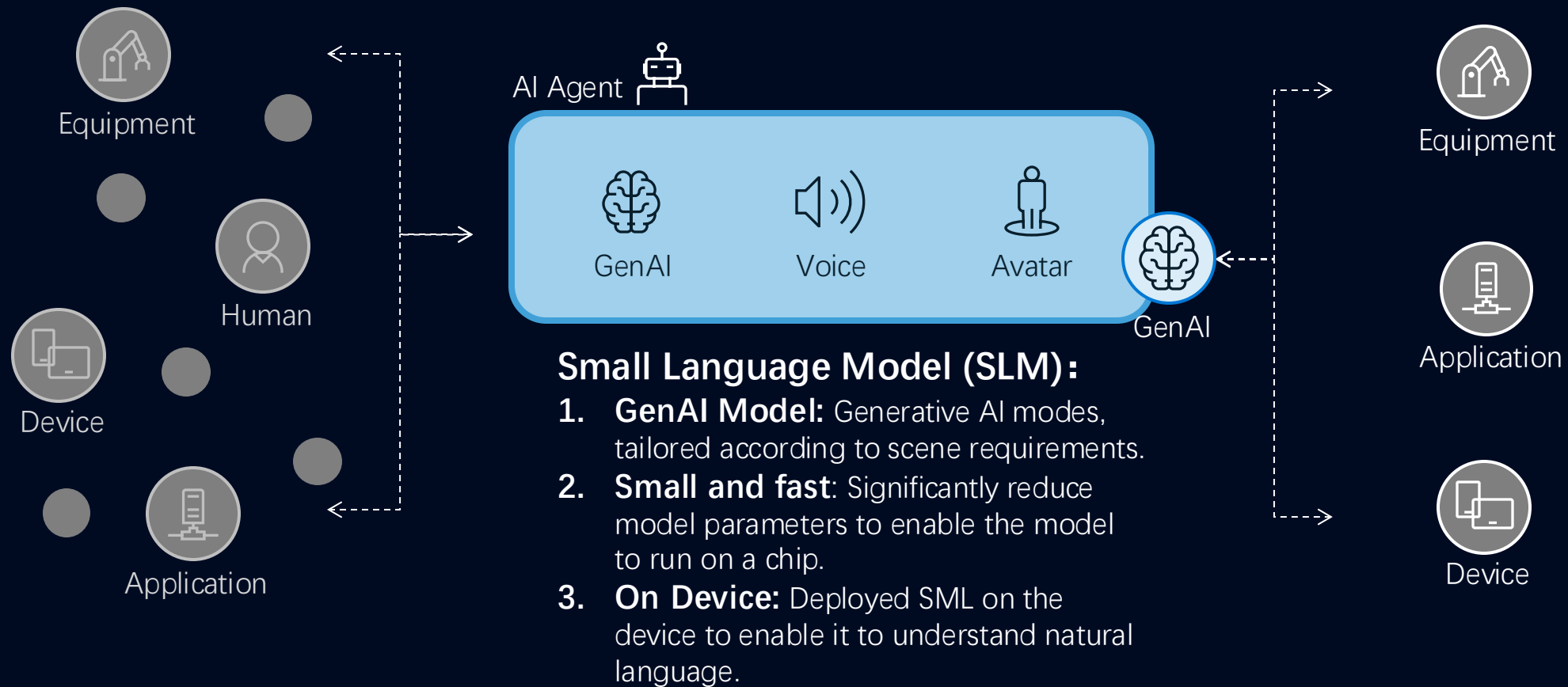
⑦ Response using domain language

從 Microsoft 的研究報告中發現, RAG 與 Fine Tuning 的結合, 可以得到更高的準確率

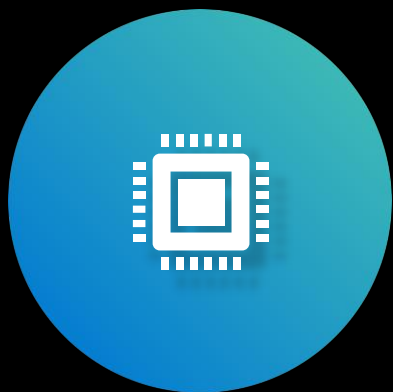
	Model	Accuracy	+RAG
Base Model	Llama2-chat 13B	76%(+ - 2%)	75%(+ - 2%)
	Vicuna	72%(+ - 2%)	79%(+ - 2%)
	GPT4	75%(+ - 3%)	80%(+ - 4%)
Fine-Tuned Models	Llama2 13B	68%(+ - 3%)	77%(+ - 2%)
	GPT4	81%(+ - 5%)	86%(+ - 2%)

Microsoft Research Agriculture Case Study: RAG vs Fine Tuning

GenAI 各類模型將賦能每一個端點均能互相理解並溝通



SML – 小模型的優勢領域



Low compute
footprint and can
run on older
GPUs



Ultra Low Latency
thanks to its
small size



Easy on your
wallet, and hence
business viable

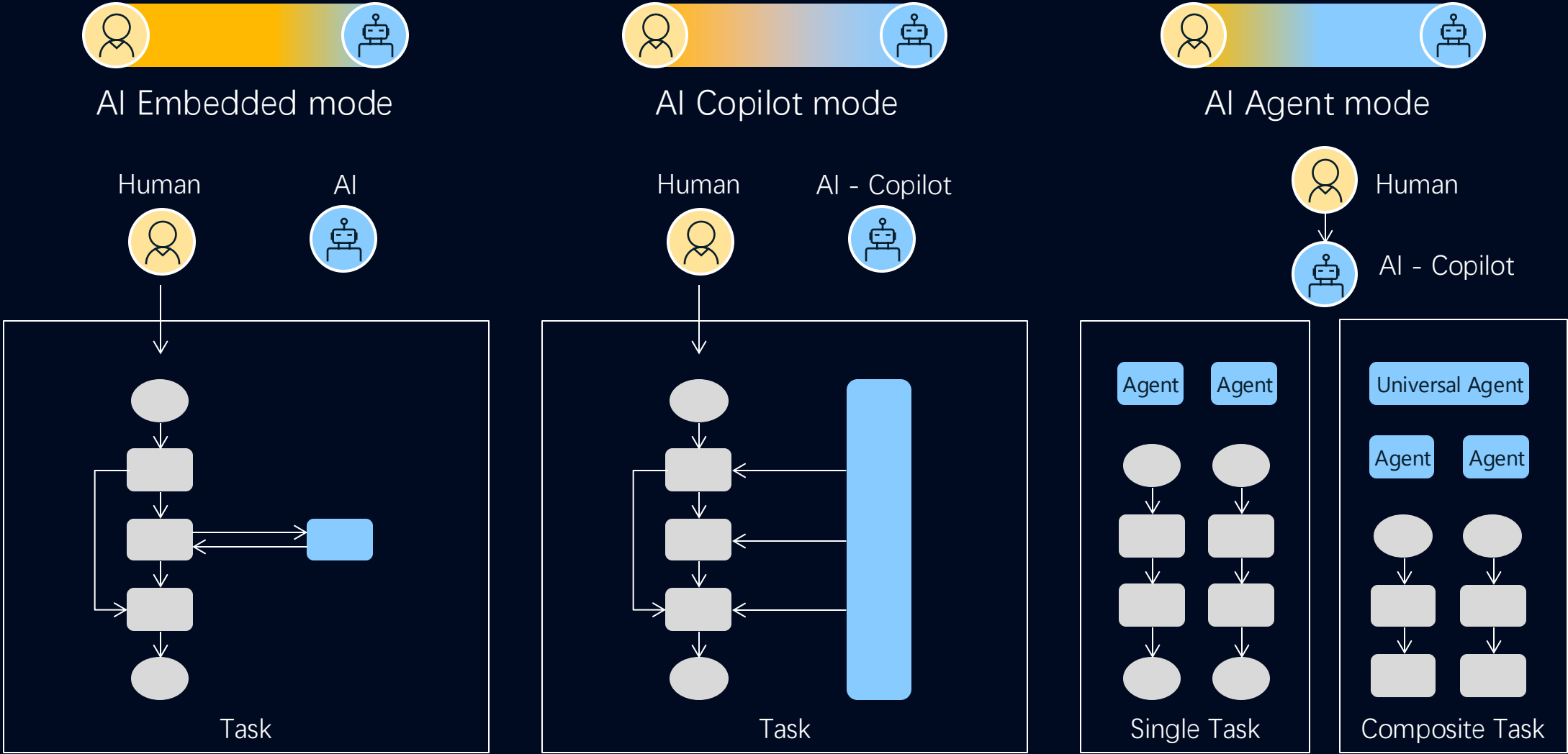


Can be deployed
on-prem or on-
edge devices



Easier & Affordable
to customize

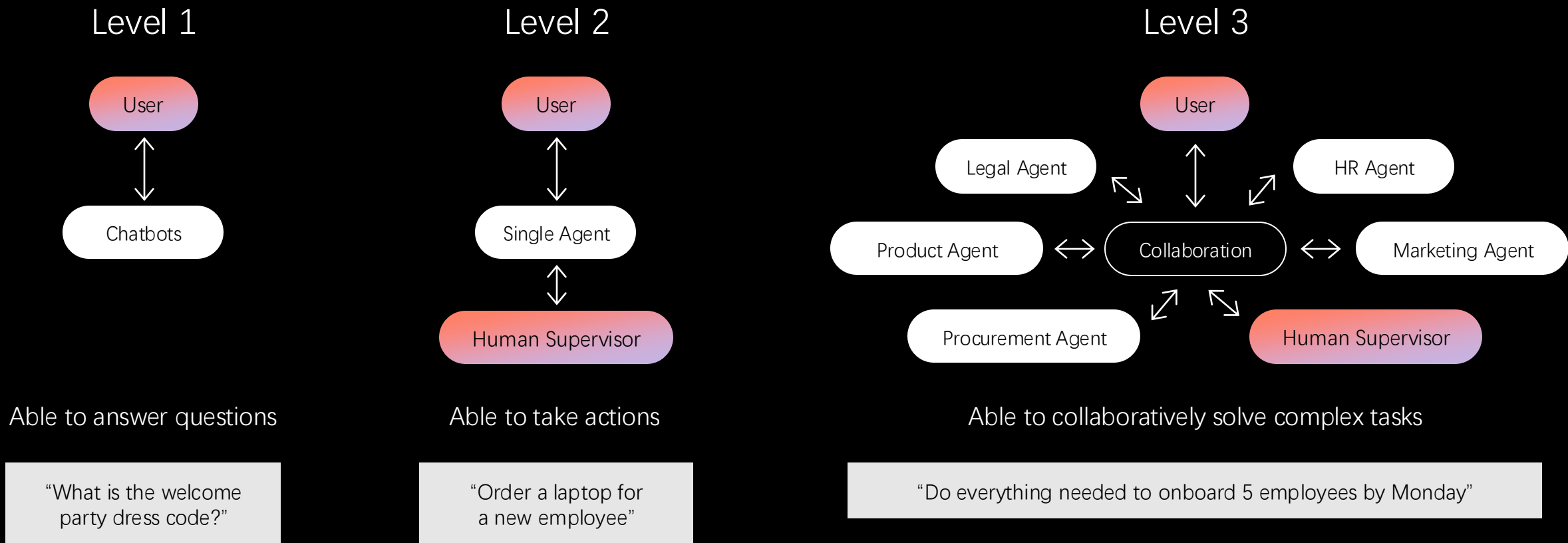
往下，人們對AI的期待將進入 Agent 階段，逐步成為各項任務的代理人



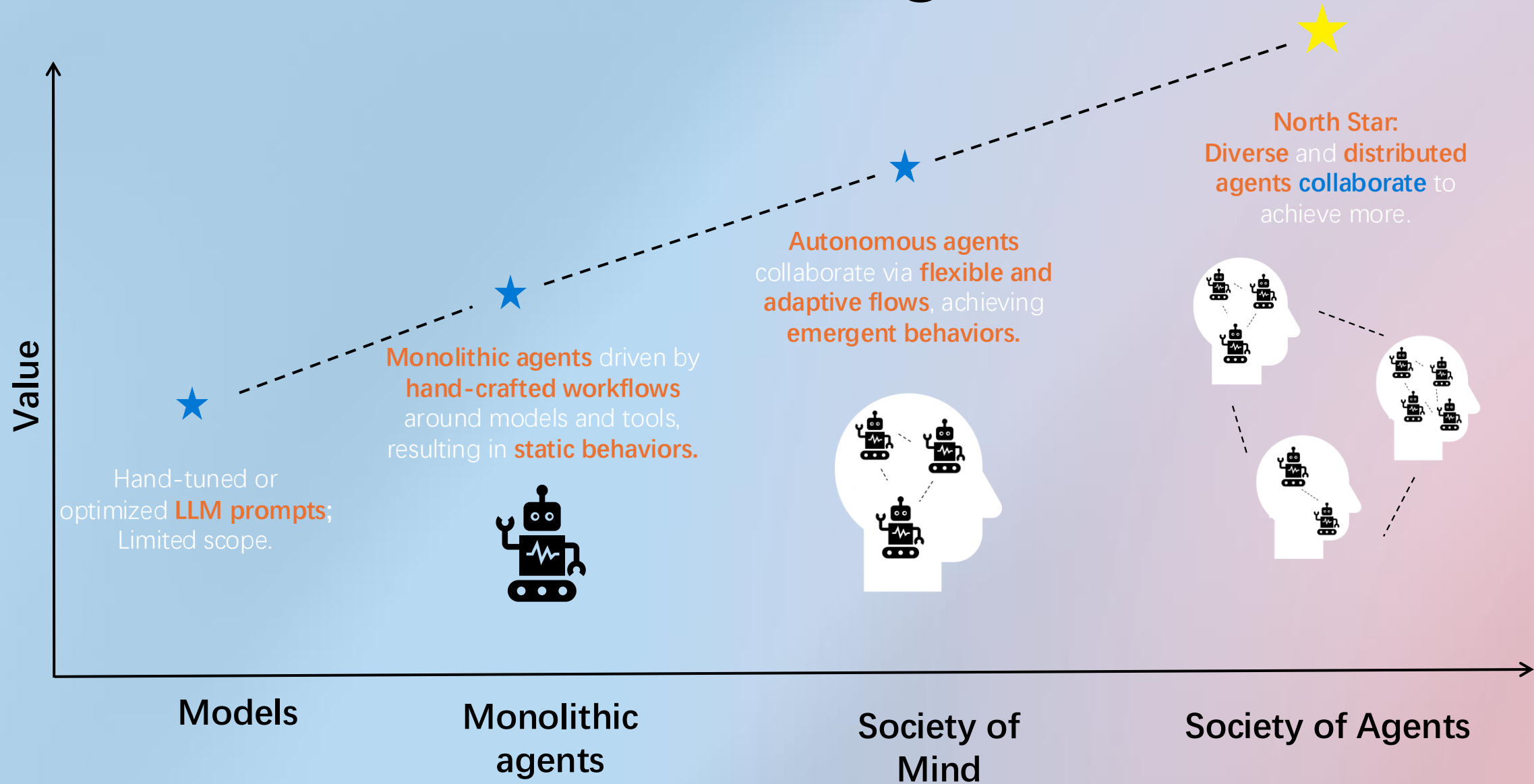
Agents 的範圍



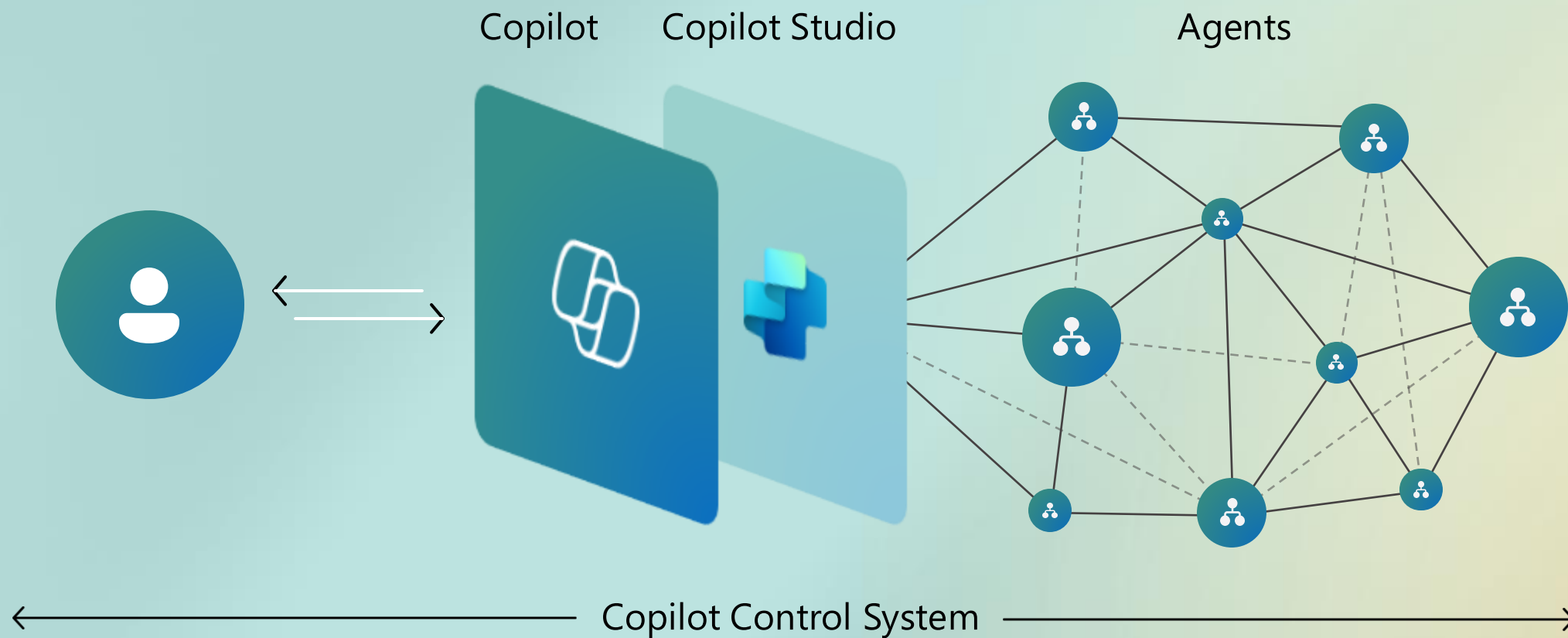
Multi-agent 的世界，能協助解決各種不同且複雜的事務



未來：我們將與強大的 Multi-Agent 進行協同作業



Copilot is the UI for AI

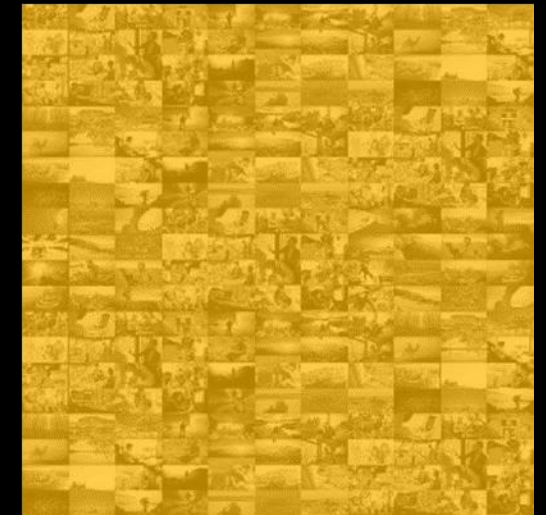
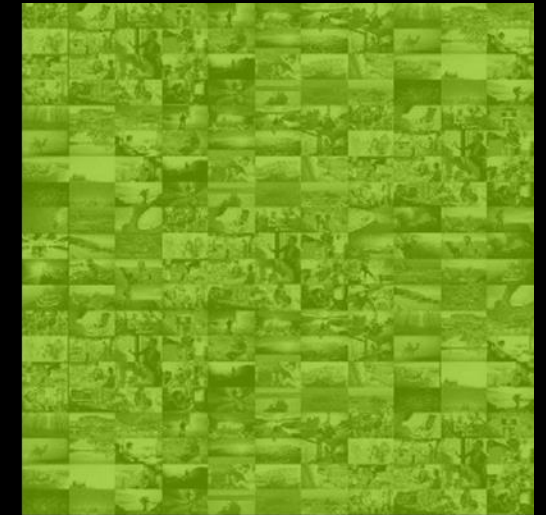
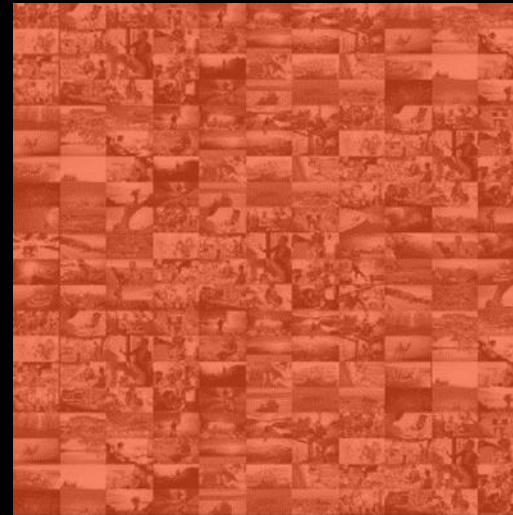


What we could/should do TOGETHER?

Microsoft Mission

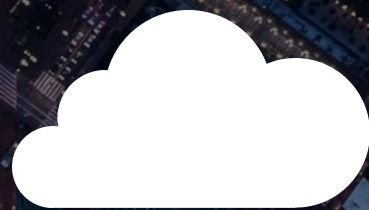
Empower every person and every organization on the planet to achieve more.

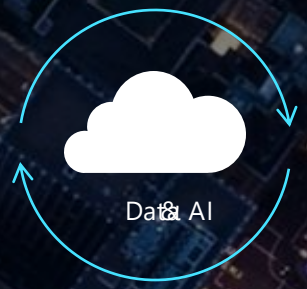
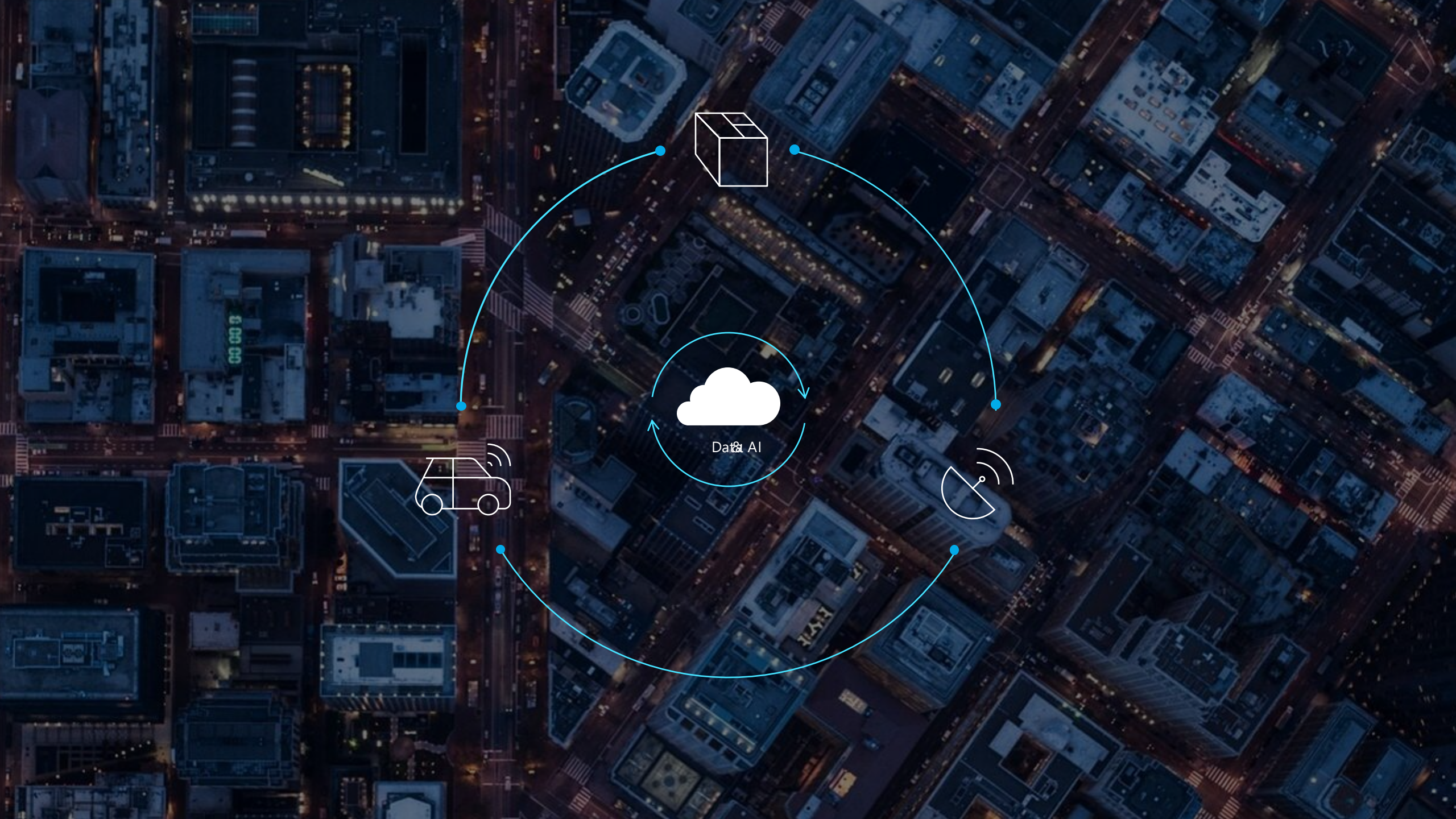
賦能在這個地球上的每一個人到每一個組織，都能實現更多、成就非凡。











Engage
Customers



Empower
Employees



Microsoft

**Cloud + IoT + Connectivity + Data + Metaverse + AI =
Empower Every person & Org to Achieve More**

Optimize
Operations



Transform
Products

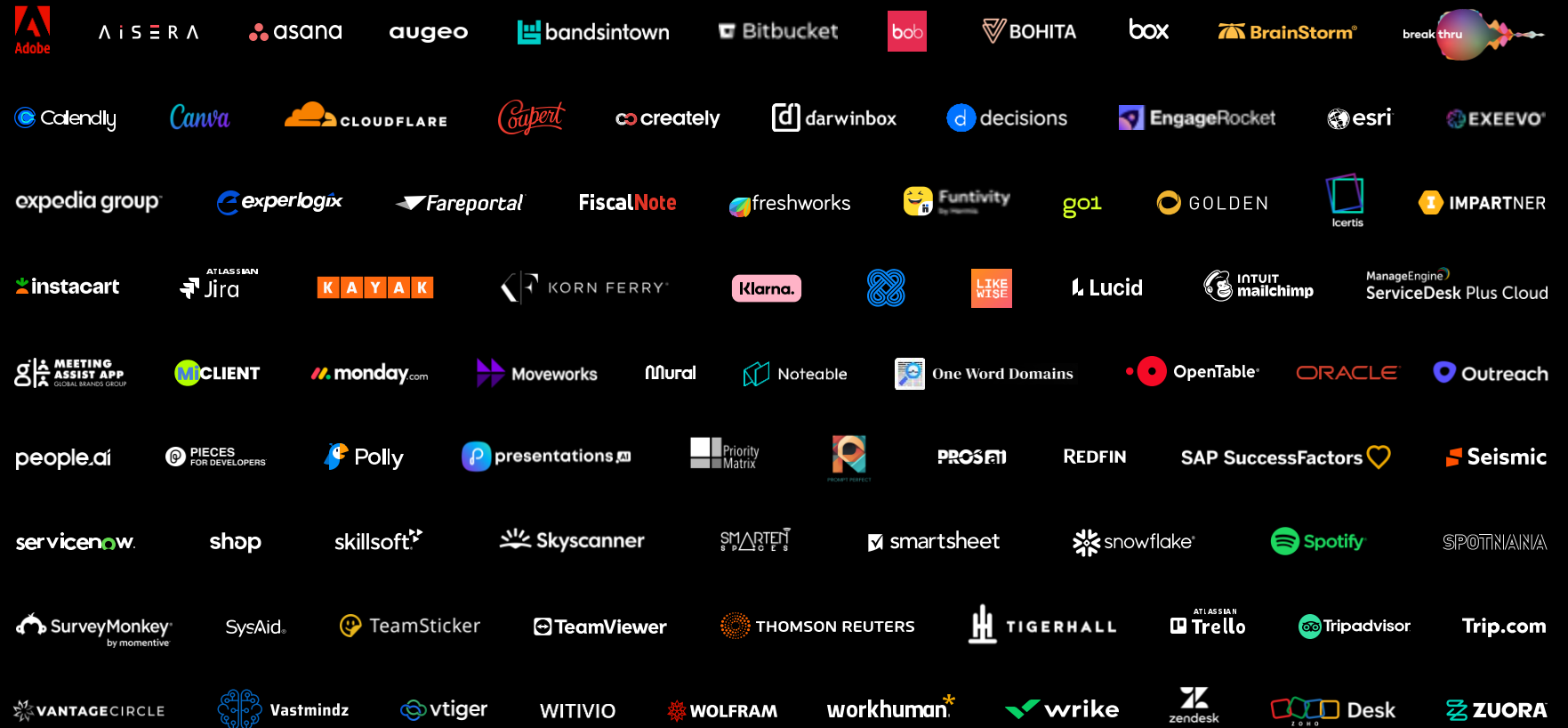


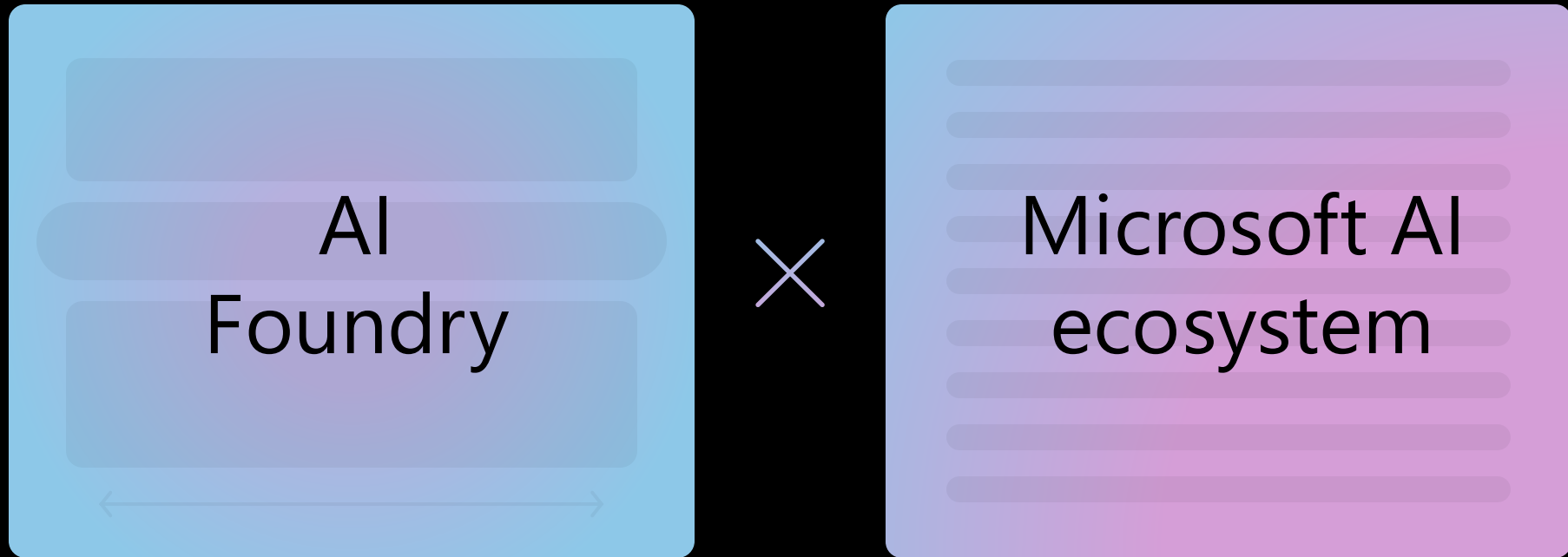
Digital Feedback Loop





Microsoft AI ecosystem





Copilot



Agents



數位世界



AI Economy Ecosystem



AI 價值鏈上游： 伺服器晶片、關鍵零組件



AI 價值鏈中游： 伺服器組裝廠、品牌廠



AI 產業所帶動的台灣整體價值鏈

AI 價值鏈下游： 軟體平台、開發及服務公司



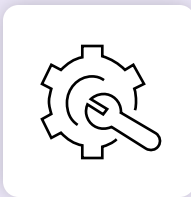
What Microsoft do for Startups/Innovation in Taiwan

Microsoft for Startups and Innovation

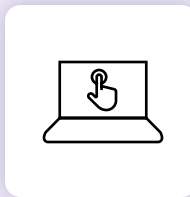
Founders Hub

An online platform that *grows* with you.

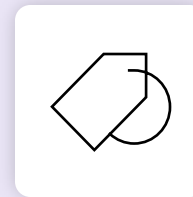
Build at your own pace with up to \$150,000 in free Azure credits.



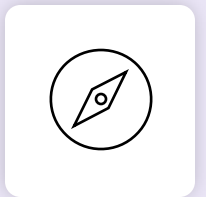
Get free access to powerful development and productivity tools including GitHub and Microsoft 365.



Access startup-friendly offers from Microsoft partners including OpenAI.



Receive mentorship guidance from business leaders and technical experts.



台灣微軟推動國內創新、培育、加速轉型

創新、培育、加速轉型

微軟選擇從台灣出發，結合台灣過去在科技業的深度著墨，以及硬體製造的優勢，我們的使命在於幫助合作夥伴於各產業加速在全球的發展與布局以及招募跟培育台灣研發團隊。

微軟物聯網創新中心 在台成立

2016.10.13

共45位業界夥伴共同見證微軟成立台灣物聯網夥伴連結國際的平台

微軟AI研發中心 在台成立

2018.1.10

在行政院與經濟部的支持下，在台成立「微軟AI研發中心」

加入Startup Terrace 林口新創園 計畫

2018.9.18

加入經濟部「Startup Terrace林口新創園」，以微軟強大的雲端技術與平台以及AI等資源，協助台灣新創團隊的整體實力提升。

啟動亞灣雲平台－ 微軟新創加速器

2022~2024

台灣微軟攜手資策會以及中山產發於亞灣區合作協助新創於中南部發展，三年計畫、落地高雄、在地輔導、行銷亞灣、社群連結、場域實證、價值創造

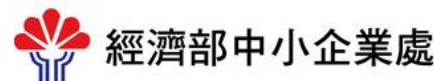




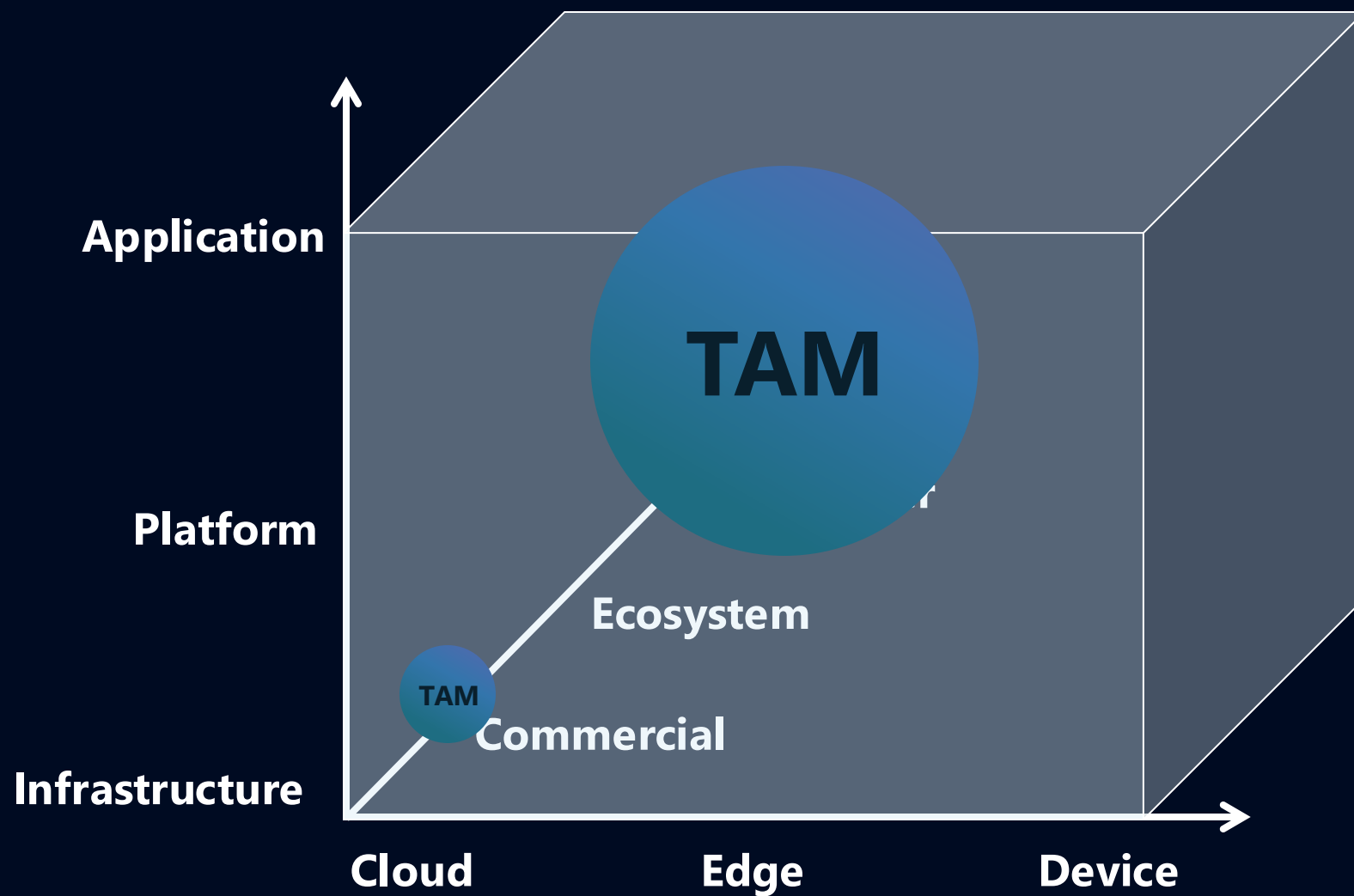
Microsoft
for Startups



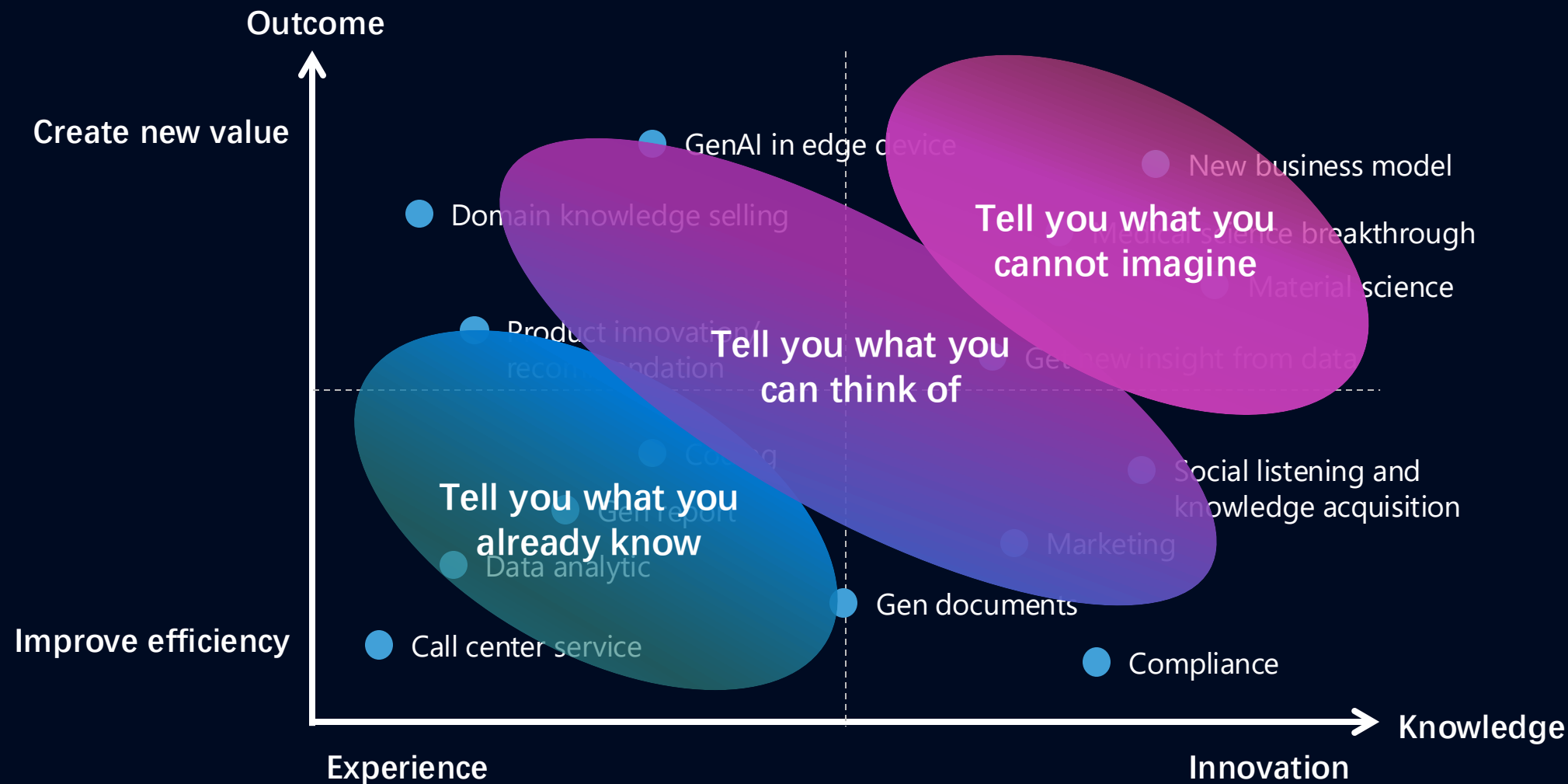
4年扶植65家新創
80+個專案合作
6億以上的商務價值



歷史告訴我們，GenAI 商業化邁入第三年，但最精彩的時刻尚未到來



AI 持續演化並帶動與產業連結的無限應用





讓龍華科大與微軟一起引領創造下一個
AI 的數位轉型世代

未來，正在變成現在式



THANK YOU



Sean's LinkedIn

<https://aka.ms/sean-linkedin>



Microsoft News Center

<https://news.microsoft.com/zh-tw/>

