行政院及所屬各機關出國報告
（出國類別：會議）

出席 2017 Gartner 資訊科技發展國際研討會 (Gartner Symposium/ITxpo 2017)

出國人：服務機關： 國家發展委員會
　　　　姓名/職稱：高級分析師 / 王誠明
　　　　　　　　　 科長 / 楊耿瑜
　　　　出國地區： 美國佛羅里達州奧蘭多
　　　　出國期間：106 年 9 月 29 日至 106 年 10 月 8 日
　　　　報告日期：106 年 12 月 20 日

行政院及所屬各機關出國報告提要

出國報告名稱：出席 2017 Gartner 資訊科技發展國際研討會（Gartner Symposium/ITxpo 2017) 出國報告

<div align="right">頁數：32　含附件：是</div>

出國計畫主辦機關/聯絡人：

　　國家發展委員會/楊耿瑜

出國人員姓名/服務機關/單位/職稱：

　　王誠明/國家發展委員會/高級分析師

　　楊耿瑜/國家發展委員會/科長

出國類別：其他（出席會議）

出國期間：106 年 9 月 29 日至 10 月 8 日

出國地區：美國佛羅里達州奧蘭多

報告日期：106 年 12 月 20 日

分類號/目：

關鍵詞：數位政府、人工智慧、資料治理、網絡安全

內容摘要：

　　顧能顧問公司(Gartner)為一國際性知名之資訊科技智庫公司，專研範圍涵蓋資通訊科技產業，就資通訊科技研究、發展、評估、應用、市場等議題，提供客觀、公正的論證報告及市場調研報告，協助客戶進行市場分析、技術選擇、項目論證、投資決策。顧能顧問公司 2017 年於美國佛羅里達州奧蘭多舉辦為期 5 日之全球資訊科技盛會，發表 2018 年 10 大策略性科技發展趨勢，從「人工智慧」、「數位化應用」以及「數位網格」等 3 項議題，陳述未來 5 年資通訊科技發展重點；另外，顧能顧問公司就世界各國面臨的社會、經濟、政策、環境等層面的變遷與挑戰，陳述政府必須要從宏觀角度思索政府營運發展趨勢，進一步歸納與說明科技發展趨勢，以及建議資訊科技協助政府因應發展趨勢的契機。

目錄

壹、目的

　　隨著全球化分權化、市場化以及數位公民興起等主客觀環境的變化，先進國家電子化政府的發展趨勢，已從早期「公共事務管理」推移到當前的「公共服務創新」，逐漸推向「公共價值創造」的發展目標。同時，數位政府的影響層面，亦從政府行政逐步推及政治、社會及經濟發展等層面。數位政府的普及應用，對於促成公民社會的發展、公義社會的追求及優質網路社會的建構，都帶來相當大的影響。行政院自 106 年度起推動「數位國家・創新經濟發展方案」，該方案攸關國家未來產業、社會發展，期待建構全方位的大型上位計畫，並以達成擴大我國數位經濟規模、增加網路頻寬、保障國民寬頻上網的基本權利、提升我國資訊國力等目標。主要推動重心從硬體或網路覆蓋率與頻寬等建構有利數位創新的基礎建設與智慧城鄉，朝向人才、人權、數位服務經濟、產業面擴展，重點方向包括培育數位創新人才、支持跨產業數位創新、重視數位人權、開放網路社會的先進國家、並連結臺灣在全球數位服務經濟的地位。

　　顧能顧問公司(Gartner)為一國際性知名之資訊科技智庫公司，專研範圍涵蓋資通訊科技產業，就資通訊科技研究、發展、評估、應用、市場等議題，提供客觀、公正的論證報告及市場調研報告，協助客戶進行市場分析、技術選擇、項目論證、投資決策。顧能顧問公司 2017 年於美國佛羅里達州奧蘭多舉辦全球資訊科技盛會，發表議題如人工智慧、物聯網、數位政府、網絡安全、區塊鏈、雲端運算等項目，與我國推動數位國家・創新經濟發展方案密切扣合。國家發展委員會為推動全國資訊管理業務之主管機關，為提升我國數位競爭力，推動政府數位轉型，實有參加該國際研討會之需，透過大型研討會的資訊分享、與分析師對談了解世界先進國家、產業推動數位服務之策略、模式以及具體成效，進而了解國際發展趨勢，掌握世界脈動，據以規劃未來數位國家發展策略，為數位治理尋求最適發展模式。

貳、過程

　Gartner 2017 年於美國佛羅里達奧蘭多舉辦全球資訊科技盛會，自 10 月 1 日開始展開至 10 月 5 日止，5 天研討會聆聽及出席之專題發表，出席情形如下：

一、2017 年 10 月 1 日

(一)All-Industry Keynote: Presence: Bringing Your Boldest Self to Your Biggest Challenges

(二)The Future of Digital Government: Service Models, Platforms and Ecosystems

(三)The Top Business and Technology Trends in Government

(四)Which Way(s) to the Cloud for Government?

(五)Optimize Government Costs for Outcomes

(六)Government is Not a Business and Citizens are Not Your Customers

二、2017 年 10 月 2 日

(一)Gartner Analyst Opening Keynote: Creating Digital Value at Scale

(二)The 2018 CIO Agenda:Powerful Practices to Help You Master the New Job of CIO

(三)Top Cybersecurity Trends for 2018

(四)10 Ways to Fund the GreatStrategic Shift to Digital Business

三、2017 年 10 月 3 日

(一)CIO Story: Tech Innovation at Starbucks: What's Next?

(二)Business Model Leadership — The CIO's Greatest Value Contribution

(三)The Top 10 Strategic Technology Trends for 2018

(四)Guest Keynote: ADAPT - Stories from Lonely Planet's former CTO - The Key Ingredients Needed to Remain Relevant in an Ever Changing and Disrupted World

四、2017 年 10 月 4 日

(一)CIO Story: Beyond the Bright Idea: Building a Culture and Structure for Innovation at UPS

(二)Digital Trust — Redefining Trust for the Digital Era

(三)2018 Top 10 Trends and Technologies With the Greatest Impact on Infrastructure and Operations

(四)Use Data and Analytics to Drive

五、2017 年 10 月 5 日

(一) Gartner Keynote: THE FOUR - The Hidden DNA of Amazon, Apple, Facebook, and Google

(二)What to Do and Not Do With AI

(三)AI, Chatbots and Event Triggered Applications Enable the Digital Business Platform

(四)Using AI Conversational Platforms for Customer Experience; Better, Faster and Cheaper Measurable Business Value

參、2018 年 10 大策略性科技發展趨勢(Top 10 Strategic Technology Trends for 2018)

　　依據顧能顧問公司定義，策略性科技趨勢是指突破或崛起狀態且未來可能廣泛的影響組織及政府資通訊科技發展方向的資通訊應用；此外，策略性科技趨勢同時也具快速成長、變動性高，且將於未來 5 年內到達引爆點的特性。顧能顧問公司副總裁 David Cearley 表示，2017 年見證了人工智慧發展逐漸成熟，以人工智慧為基礎的商業應用不斷的增加，在未來 5 年內，如何讓機器學習滲透所有事物，將成為資通訊科技服務的主要戰場。循著 2017 年智慧化服務發展趨勢，2018 年十大策略科技趨勢則與智慧數位網格(Intelligent Digital Mesh)有關，包括：人工智慧基礎、智慧型應用與分析、智慧型物件、數位分身、雲端到邊際運算、對話式平臺、沉浸式體驗、區塊鏈、事件驅動服務以及連續的適應風險與信任。
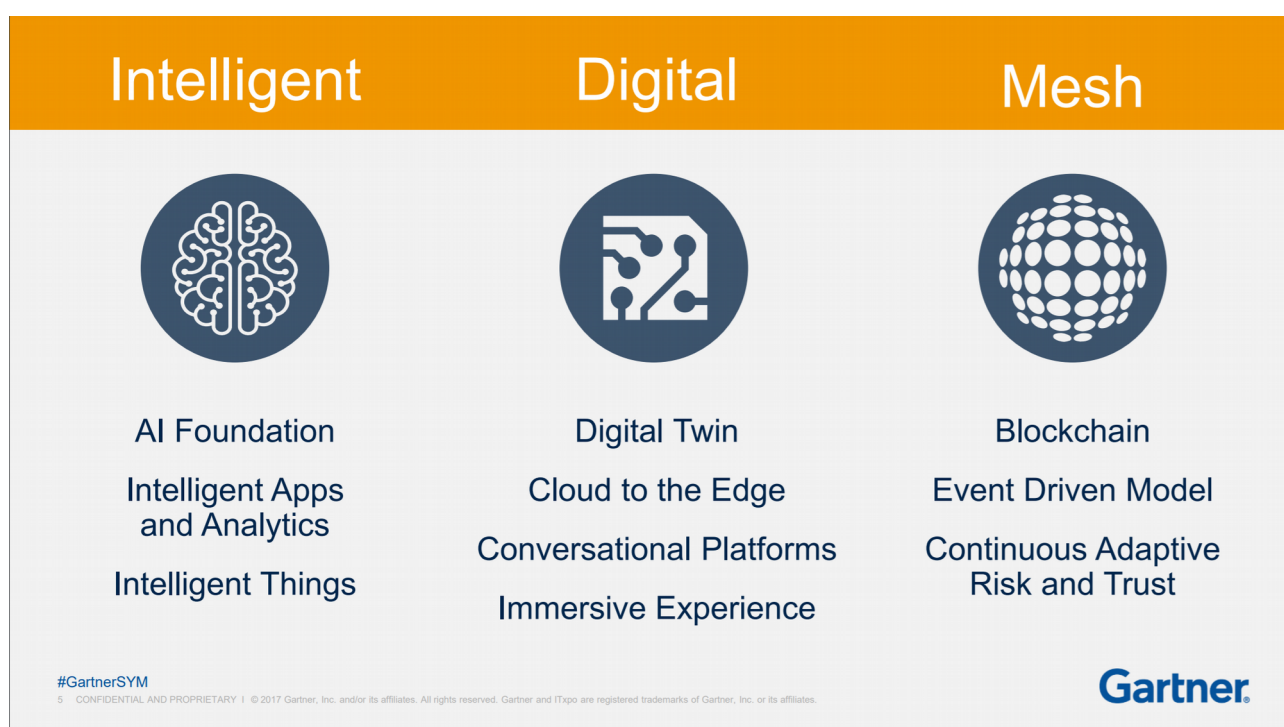

圖 3-1　2018 年十大策略科技趨勢

　　十大策略科技趨勢中前 3 項是說明人工智慧與機器學習將廣布於萬物中，接下來 4 項趨勢則說明實體世界與數位化萬物的整合，創造未來的環境均以數位化方式運作；最後 3 項趨勢則說明個人、組織、設備、內容與服務之間形成連結，未來必須重視運用數位科技連結萬物。

一、人工智慧基礎

　　人工智慧強大的分析與機器學習能力，大大影響組織進行決策的模式，重新塑造商業運作方法、創新服務生態系統，並重塑客戶體驗。 許多組織注意到人工智慧將為世界帶來巨大轉變。根據顧能顧問公司 2017 年調查顯示 59％的組織已經著手發展人工智慧的基礎與應用，到 2020 年 30％的資訊長會將人工智慧列為組織前 5 大投資重點，目前正是在資料的準備、彙整、分析演算法的選擇，以及分析模式建構的階段。

圖 3-2　人工智慧成長趨勢

　　有鑑於人工智慧相關技術逐漸成熟，組織在人員、作業流程以及管理模式上投入相當大的資源，建議組織應從特定的業務範疇中優先導入人工智慧相關技術，視執行成果修正或擴大應用範疇。 顧能顧問公司預測，人工智慧將持續領導數位科技相關領域技術的創新至少到 2025 年。特別需要說明的，這裡說的人工智慧技術是「特定用途的人工智慧」，如人臉辨識、語音分析、翻譯、圍棋等等，而「泛用型的人工智慧」，如電影裡的智能機器人則尚未出現。
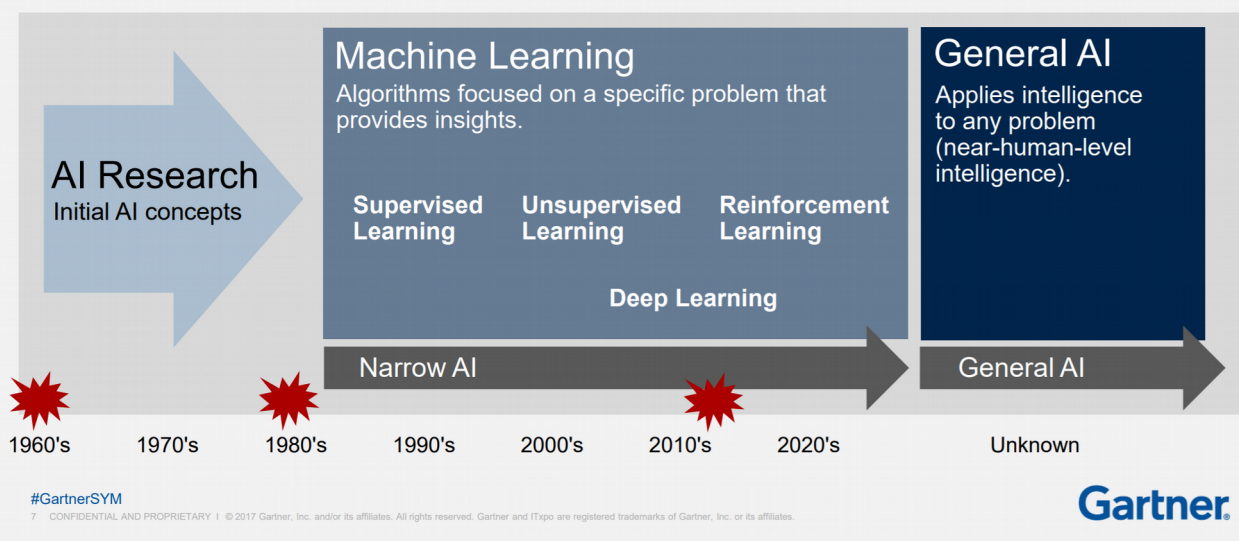

圖 3-3 人工智慧發展歷程

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二、智慧型應用與分析

　　人工智慧自 2017 年成為數位科技發展的顯學，而實際上發展的進度尚停留在基礎的資料分析與自動化的常規服務。顧能顧問公司副總裁 David Cearley 表示「智慧型應用程式只是人類生活與智慧的擴充，就像工具輔助讓人類的生活更便利，而不是取代人類。」，未來數年人工智慧應該被嵌入在各種應用程序，或是數位服務之中，以強化應用程序與數位服務的效能。
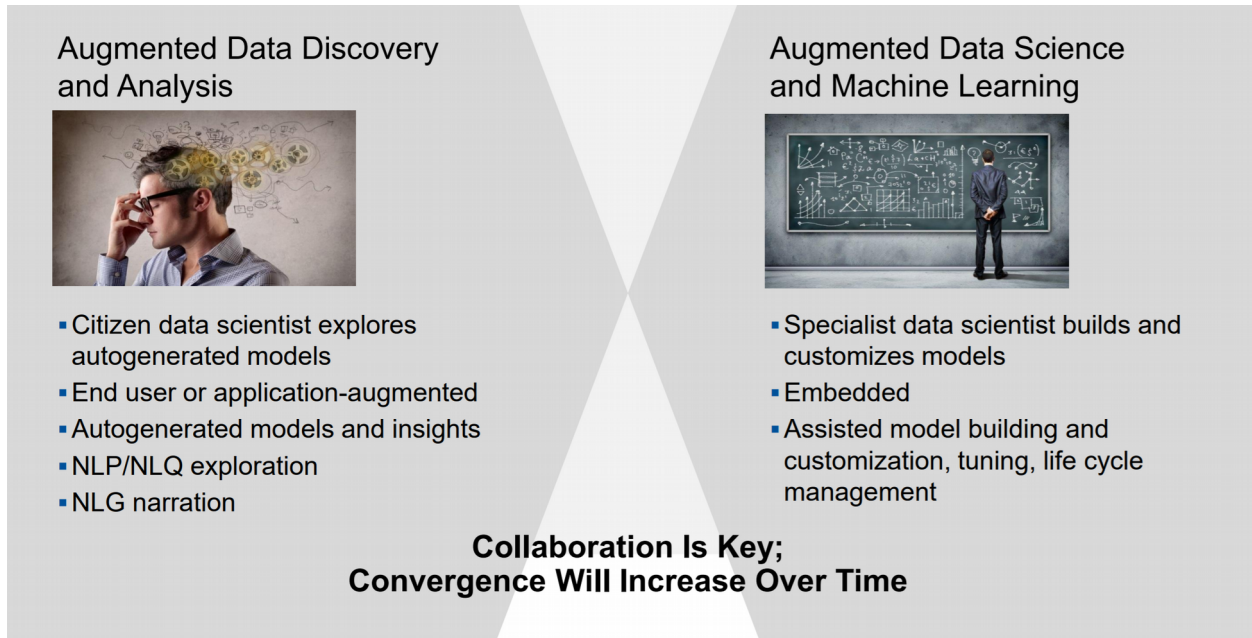

圖 3-4 資料分析與資料科學的特性

　　目前人工智慧技術大量被使用在對話式服務，如聊天室機器人(Chatbot)，AWS 和 IBM 的 Chatbot 平臺已正式提供商用服務，不僅可在伺服器、雲端服務佈署，還有輕量版本可在行動裝置上運作機器學習的模型，將人工智慧技術從軟體應用領域延伸更廣大的範疇。其他如生活照護、智慧車載、環境監控等領域的應用也將有非常突出的表現。
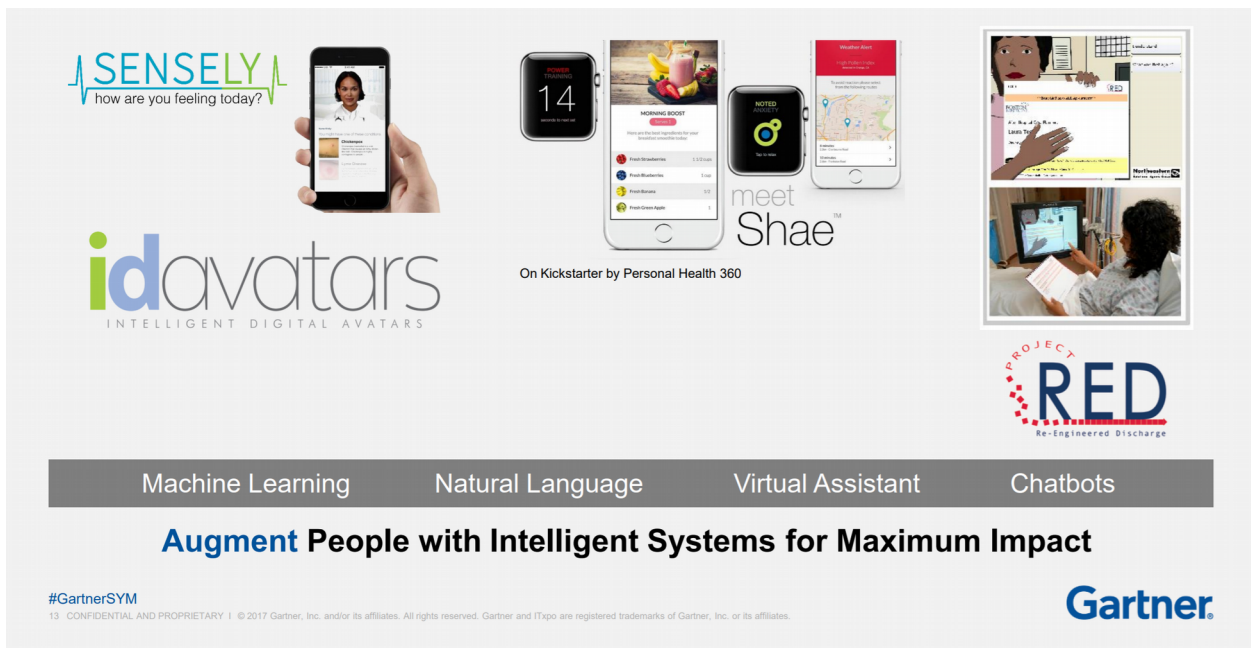
圖 3-5 人工智慧應用現況

三、智慧型物件

　　所謂智慧型物件是以物聯網為基礎的人工智慧應用服務，它讓物聯網的各項感測裝置結合人工智慧運算，使得機器得以全自動或半自動的運作，讓人為干預的情況降到最低，精準的達成預定的工作。換言之，智慧型物聯網跳脫傳統物聯網以程式控制物件的運作方式，而是人工智慧的自動分析、自主回饋的行為，讓物聯網與環境、人類等自然且準確的互動。
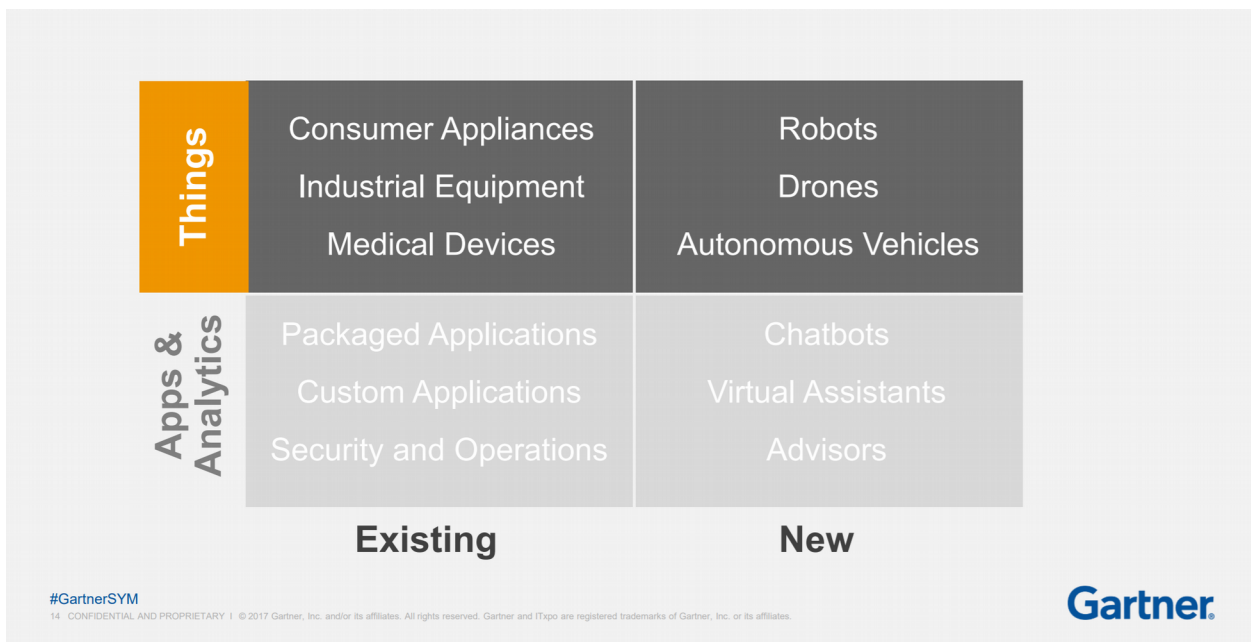
圖 3-6 物聯網發展趨勢

　　目前智慧型物件迅速發展在各項應用領域，例如無人機、自駕車，在農業與採礦領域的應用也逐漸獲得重視；在臺灣智慧型物件也是眾所矚目的產業發展契機，已有相當

多的試練場域正在執行中，例如臺南市無人機空拍結合人工智慧技術用於防救災環境監測，臺北市政府與業者合作的「自動駕駛小巴實驗解密 ing」專案，在信義路封閉雙向公車專用道進行實驗專案測試，未來將在內湖科學園區、南港軟體園區或是南港站至中研院等路段擴大測試範圍。
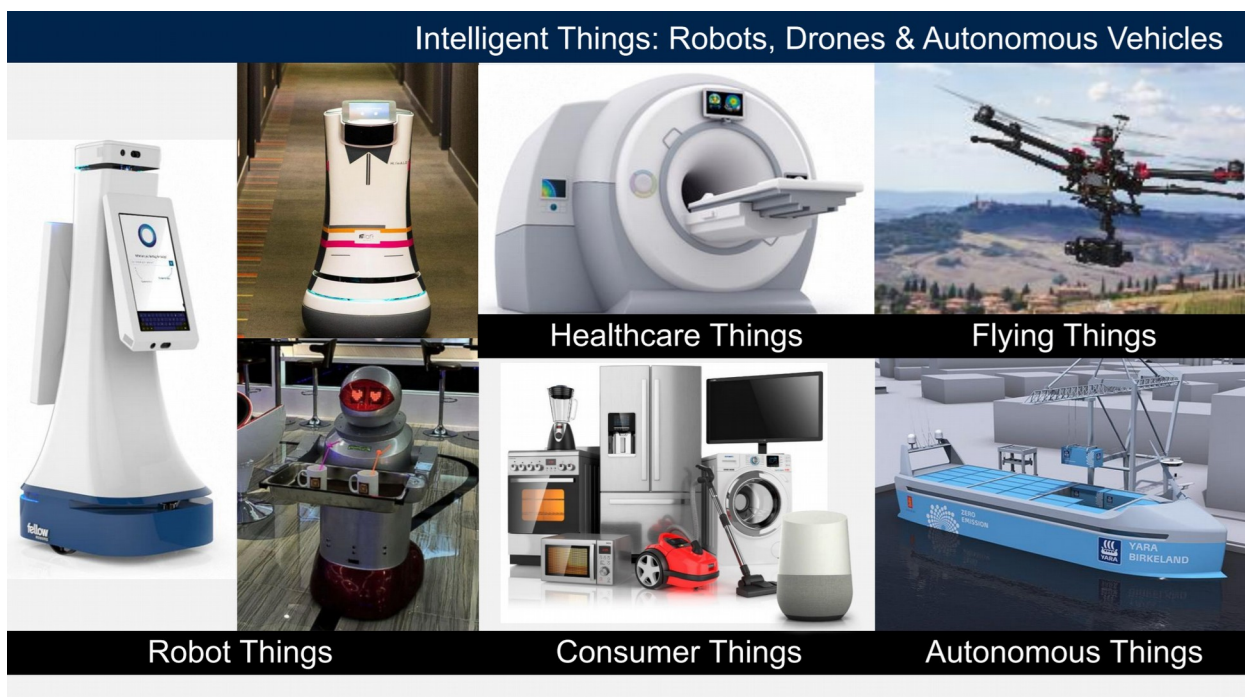
圖 3-7 智慧型務聯網應用契機

四、數位分身

　　數位分身是指現實生活中的實體物品、系統的數位分身，藉由感測器蒐集資料來偵測物品的狀態、外在刺激反應、物品運作方式等等。數位分身的概念最早由美國國防部提出，最早的目的是為了模擬飛機各項反應而建構的數位飛機模型，包括零件材料、機電、油路系統、艙內陳設到飛行里程等等，都和實體飛機相同，並且可以與數位模型同步更新，在數位空間建立飛機模型，利用感測器與飛機真實狀態同步，每次飛行後採集的資料，透過物聯網傳送到數位分身，即時分析評估該飛機維修或調整之處，進一步分析飛機性能優化的可能性，藉此改進設計以減少故障率。
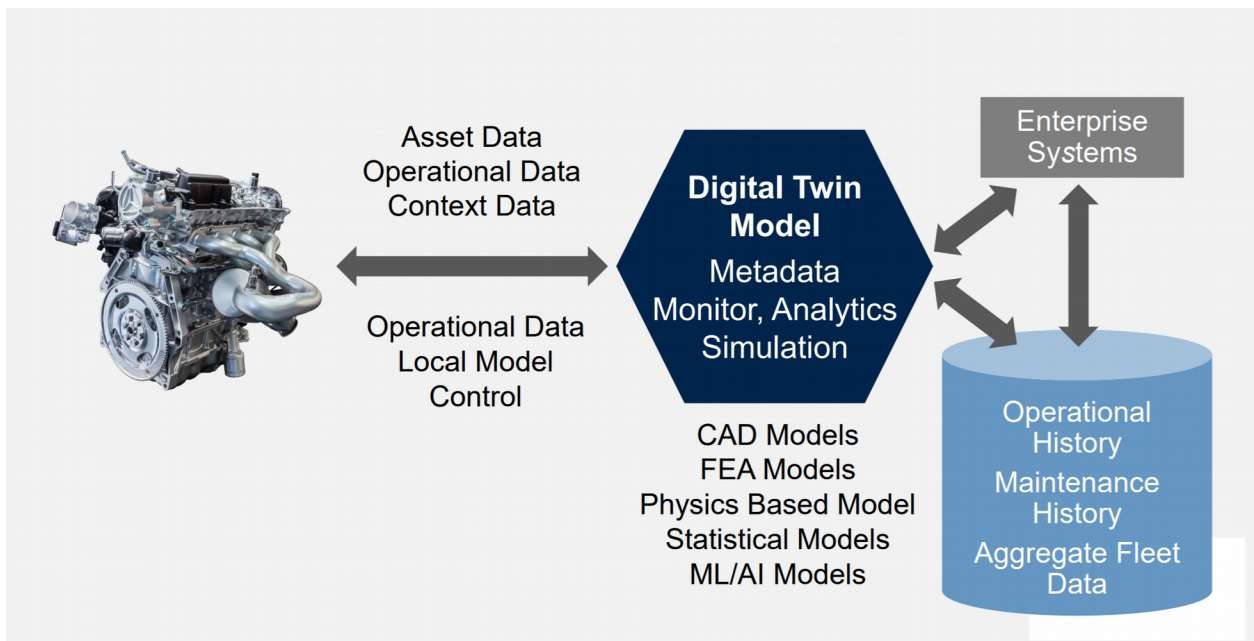
圖 3-8 數位分身概念

　　數位分身連結真實世界裡的對應實物，用來模擬該實務在運作的過程中，反應到所有外界刺激下的實際回應，商業上開始接受這樣的概念，以數位建模模擬物品、團體運作、客戶服務，以及員工訓練等作為。隨著數位分身的演化，讓真實世界的物品逐步改善，顧能顧問公司表示未來 3 到 5 年之間，物聯網應用領域的數位分身最具有前景，完整規劃的數位分身，就可能大幅改善物聯網應用的效益。
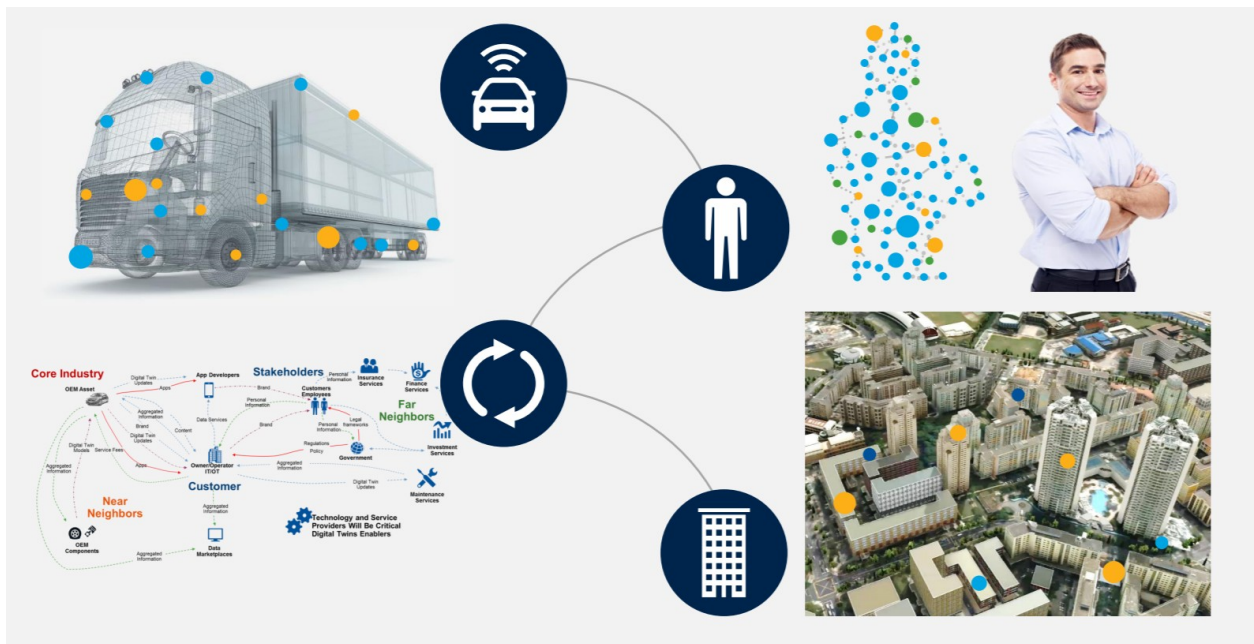
圖 3-9 數位分身應用趨勢

五、雲端到邊際運算

　　邊際運算的概念就是分散式運算架構，讓資料運算的工作在資料蒐集端運算，盡可能不將原始資料送回雲端中心，可提升資料在雲端與邊際之間傳遞的效率，降低網路頻

寬成本。這種運算模式的架構,與集中式的雲端運算架構有很大差異,採用邊際分算的分散式運算架構,將資料運算的的工作分攤到邊際的設備上,在資料來源端的設備,不需要將資料傳回雲端才能處理,因此速度變更快,甚至在沒有網路的情況下,邊際端的運算設備仍可在沒有雲端的支援下正常運作並處理資料。
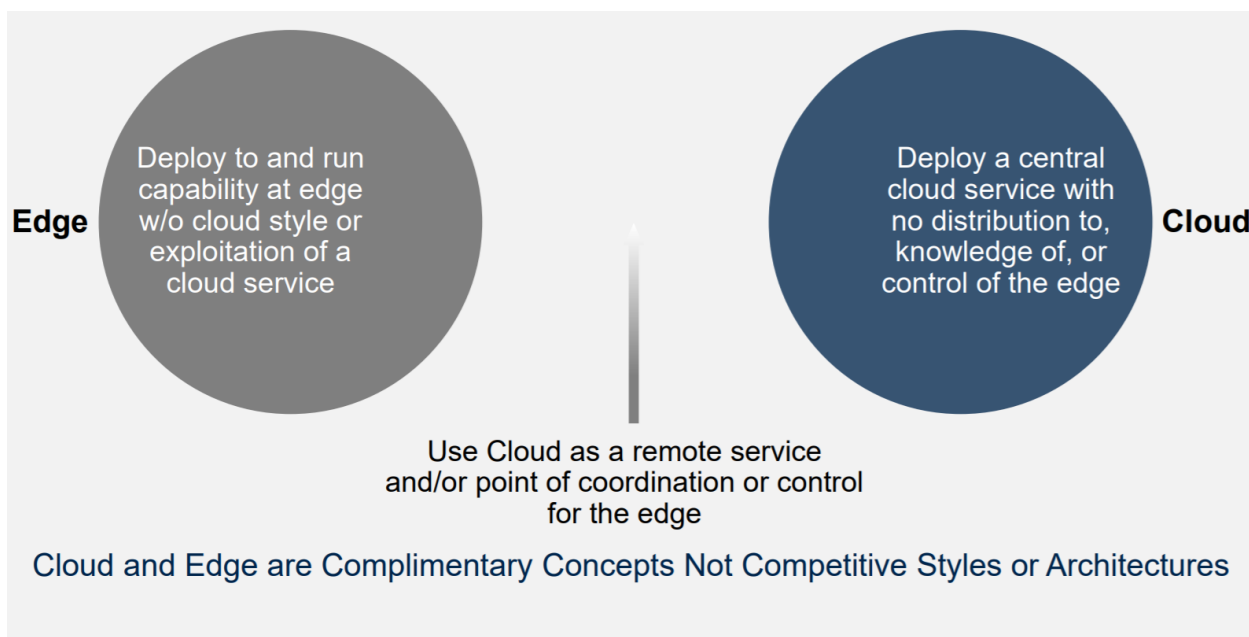
圖 3-10 雲端運算與邊際運算的特性

有些人認為雲端運算與邊際運算彼此是競爭的關係,實際上兩者運算本質各有特性與不同的使用情境,兩者可相輔相成建構強大的運算服務基礎,顧能顧問公司分析,若將雲端和邊緣運算視為互補的關係,則雲端服務可以建構集中化控制的使用者服務導向數位服務,而邊際運算的角色則是擔任在地資料蒐集與分析者,提供因地制宜的適地性服務。

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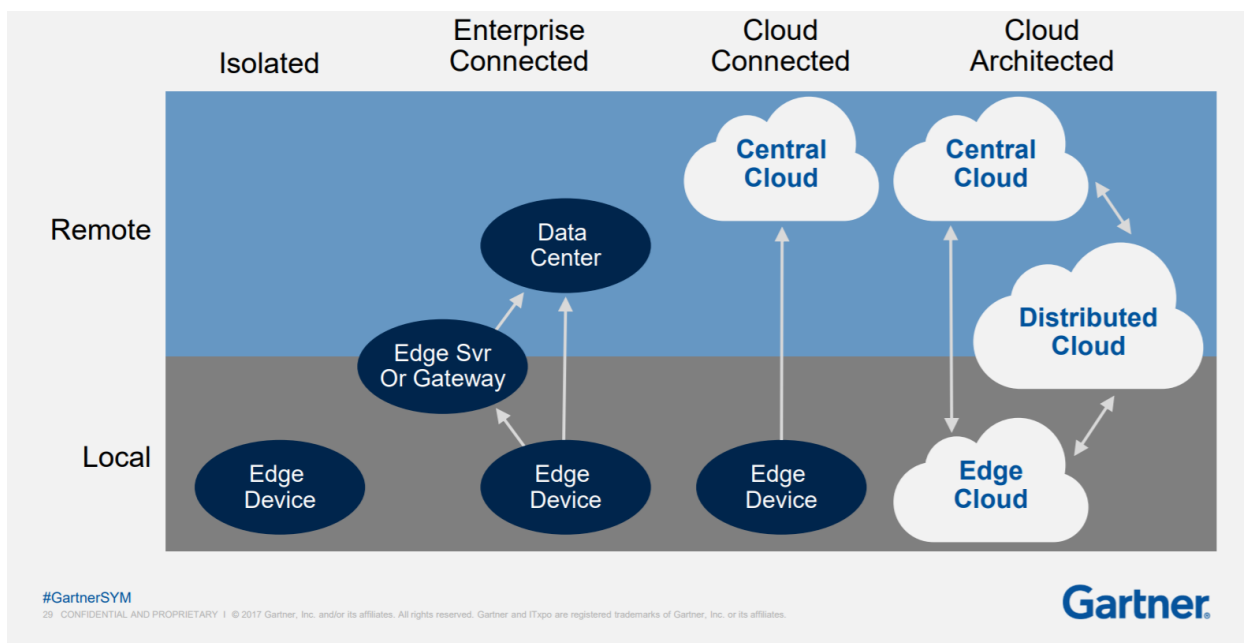
圖 3-11 邊際運算建構模式

六、對話式平臺

以往人類與數位服務溝通的方式，是透過數位服務已經設計好的選項，讓人類自行選擇後，將該選項對應的數位服務、資訊提供給人類。這種溝通方式必須由人類擔任人機溝通的內容轉譯工作，把人類想要知道的內容，轉換為選項後讓機器人執行。而對話式平臺是一種人類與數位服務溝通全新機制，轉譯內容的工作將由人類轉移到機器身上，在平臺獲取人類聲音或文字型態的的問題或指令後，機器就會執行功能以回應人類要求，現在常見的 Chatbot 即是對話式平臺的應用之一。
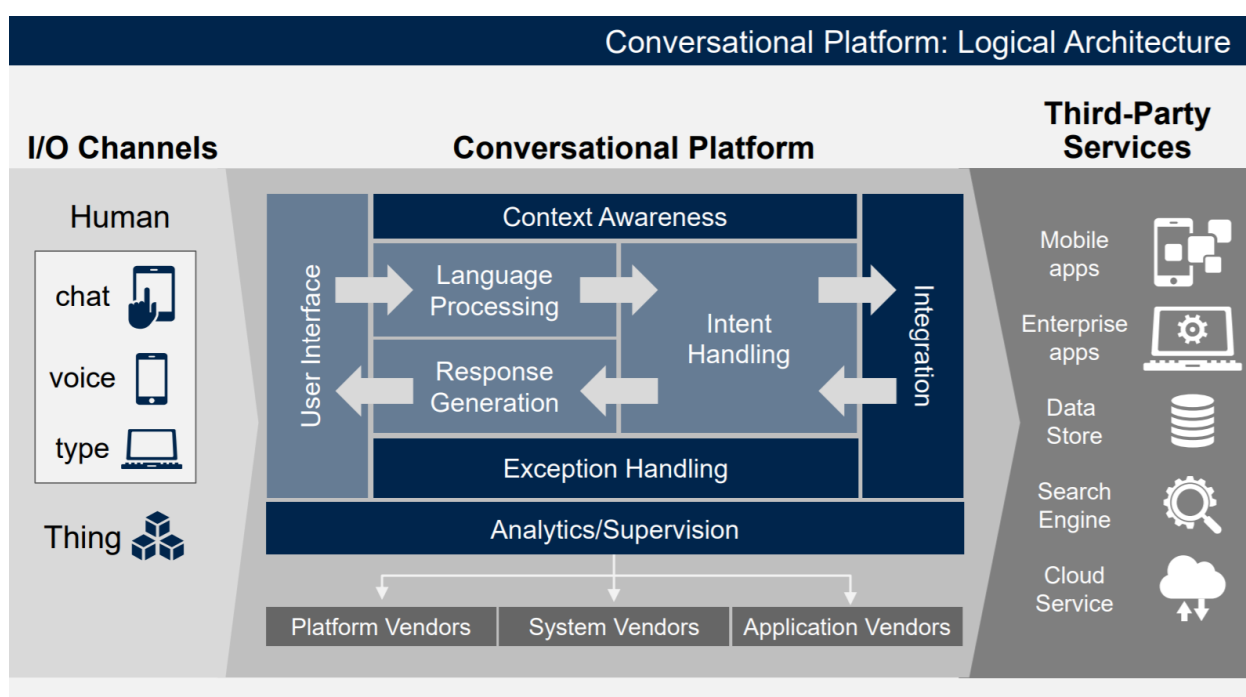
圖 3-12 對話式平臺組成概念

顧能顧問公司指出，早期的對話式平臺對於文字、語音轉譯為指令的語意分析能力，往往面臨無法精準處理非結構化的問題，人類必須使用極度結構化的溝通方式與機器對談，而這種體驗往往令人感到失望。未來對話式平臺與傳統平臺的主要差異，在於自然語言的對話模型，以及人工智慧為核心的語詞分析。隨著人工智慧開始走進日常生活，民眾將透過對話式人工智慧來獲得政府服務，根據顧能顧問公司預測，2020 年有 25%的客服業務會運用對話式平臺建構虛擬客服，政府機關可善用此項數位技術協助數位政府拓展與利用。
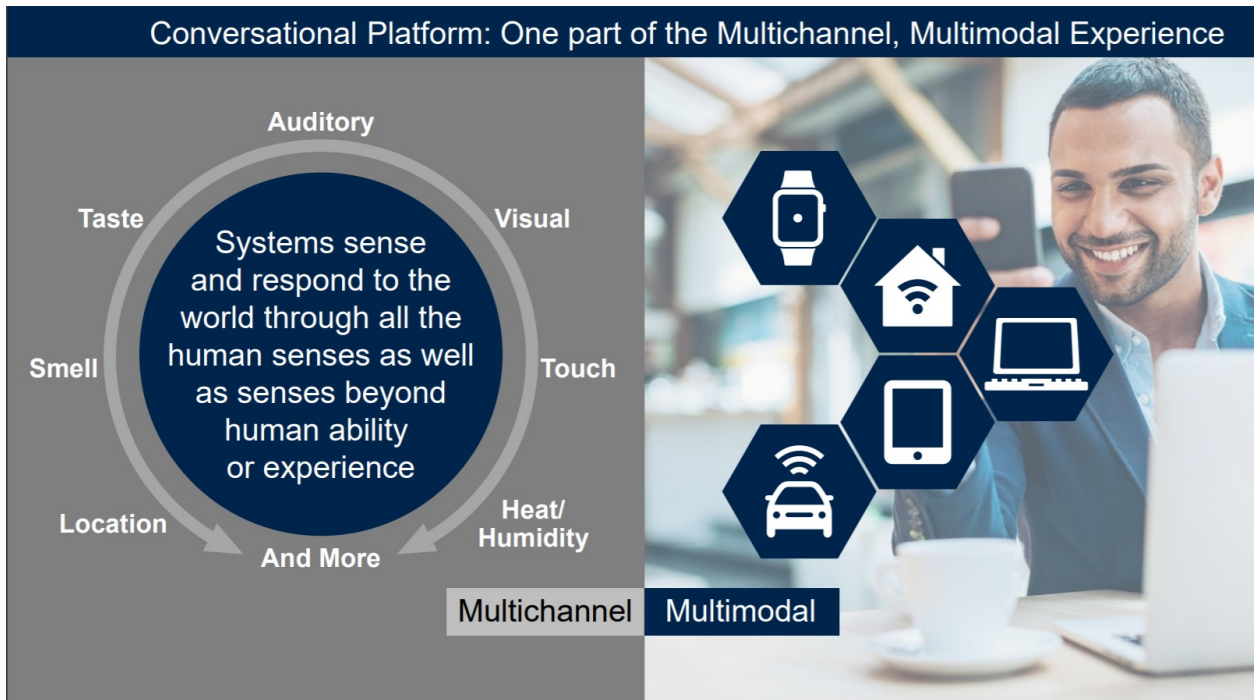
圖 3-13 對話式平臺應用情境

七、沉浸式體驗

沉浸式體驗是指以人為中心的數位科技發展趨勢之一，它強調讓人類沉浸在數位科技建構的環境，讓人類與工作、家庭，以及其他物體、團體的互動，將變得更緊密與親近，實現彼此透明無距離的關係，這種以科技為基礎的「沉浸式體驗」將成為未來的趨勢。顧能顧問公司表示，沉浸式體驗 表示技術包含：4D 列印、擴增實境、腦機介面、連網家庭、人類機能增進、奈米碳管電子、虛擬實境與三維立體顯示。
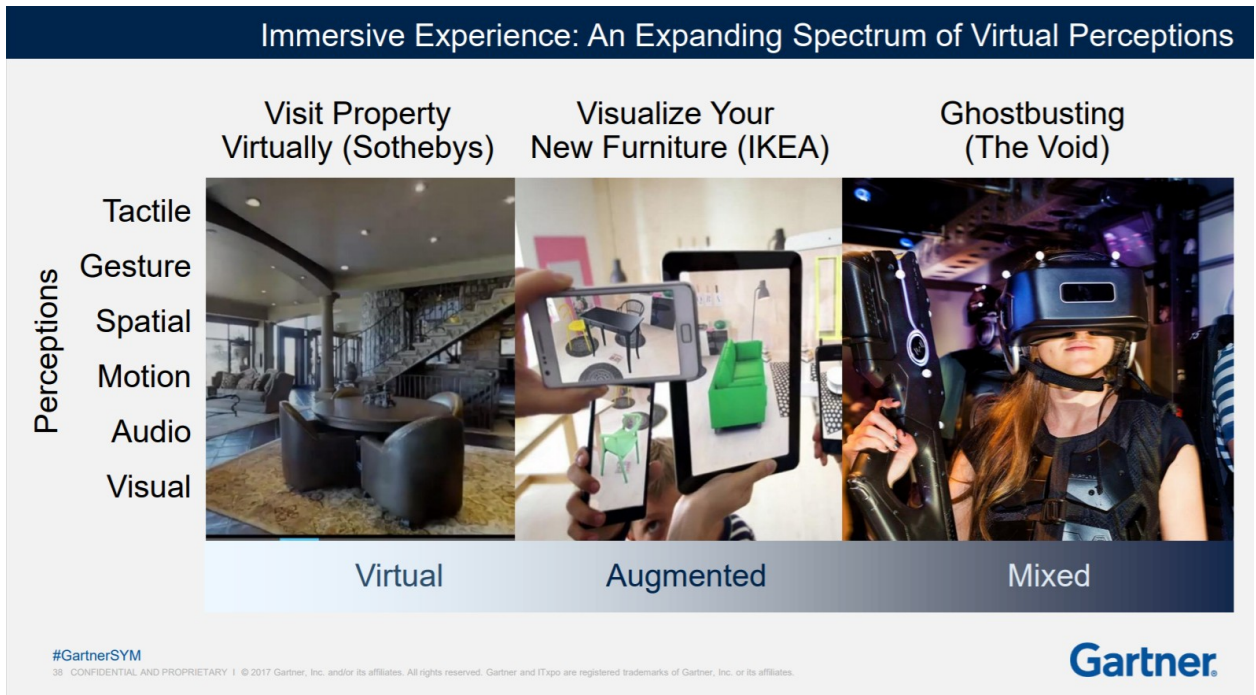
圖 3-14 虛擬實境、擴增實境與混合實境

沉浸式體驗產生的條件有三：一是依據體驗者能力設計新匹配的挑戰；二是體驗過程中有非常明確的目標；三是體驗者與環境互動時會發生即時的回應，讓體驗者感覺任何互動都有回應。目前最常見的沉浸式體驗多數為虛擬實境與擴增實境混合搭配設計為混和實境(MR)，結合前述對話式平臺，可以營造出與體驗者對話、互動，並且具有身歷其境，親身感官體驗的數位服務。

八、區塊鍊

區塊鍊技術因 bit coin 一炮而紅，成為 2017 年數位科技發展的顯學之一，尤其在金融科技上區塊鏈分散式、分享式、去中心化以及不可修改的特性，讓契約雙方毋須將信任基礎建立在公正第三方上，善加利用區塊鍊可以增加組織創新服務模式，創造獲利契機的機會。根據顧能顧問公司的調查，大多數組織對於區塊鏈的理解程度並不高，從技術面區塊鍊相關技術亦無明確規範，所以區塊鍊技術在商業應用上仍處於尋求發展契機的階段，具有長期潛力且能帶動突破性創新，區塊鏈所描繪的願景在近期仍不具有成熟技術與應用範疇。
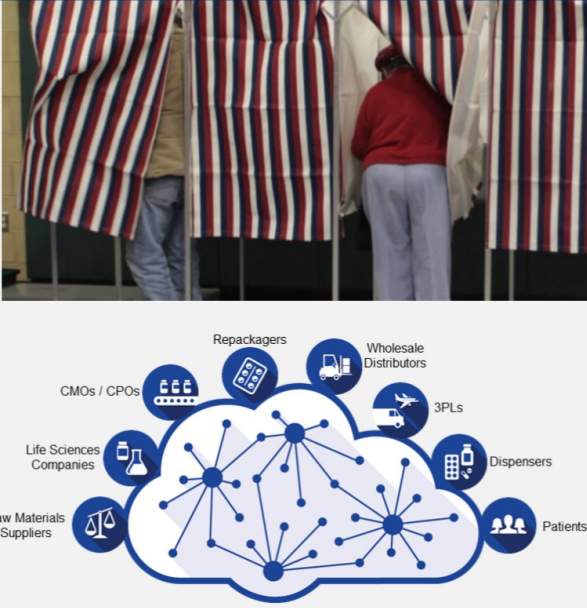
圖 3-15 區塊鍊技術在各領域之應用

臺灣對區塊鏈技術亦抱持著熱衷的態度，根據資誠顧問公司的調查，發現有超過七成的臺灣企業想在 2 年內導入區塊鏈相關技術，有超過九成五希望在 2020 年前導入，但調查也發現，近 6 成台灣企業主與資訊長，是對區塊鏈技術一知半解的，建議組織導入區塊鍊技術時，應以小範圍試辦方式，先行擇定特定且單純的業務領域如表單、文件的鑑別，再擴大到複雜的業務領域。

九、事件驅動服務

事件驅動並不是新的概念或科技，早在數年之前，因為雲端運算技術的興起，平臺

技術發展趨勢，以及非同步系統技術成熟，讓事件驅動的程式設計方式逐漸成為資訊程式設計的模式，它可以讓資訊系統因應外界的變化，做出適當的回應。例如，在期貨交易市場，當交易程式偵測到交易口數符合設定的條件時，程式自動掛單買/賣期貨。在數位化的環境中，事件驅動的核心是可能是物聯網的偵測器、可以是人機交談平臺，也有可能是人工智慧的機器人、無人機、自駕車等等，透過端點偵測器、設備蒐集外在環境變化，並更深入分析細節，進而細緻地反應必要的回饋。
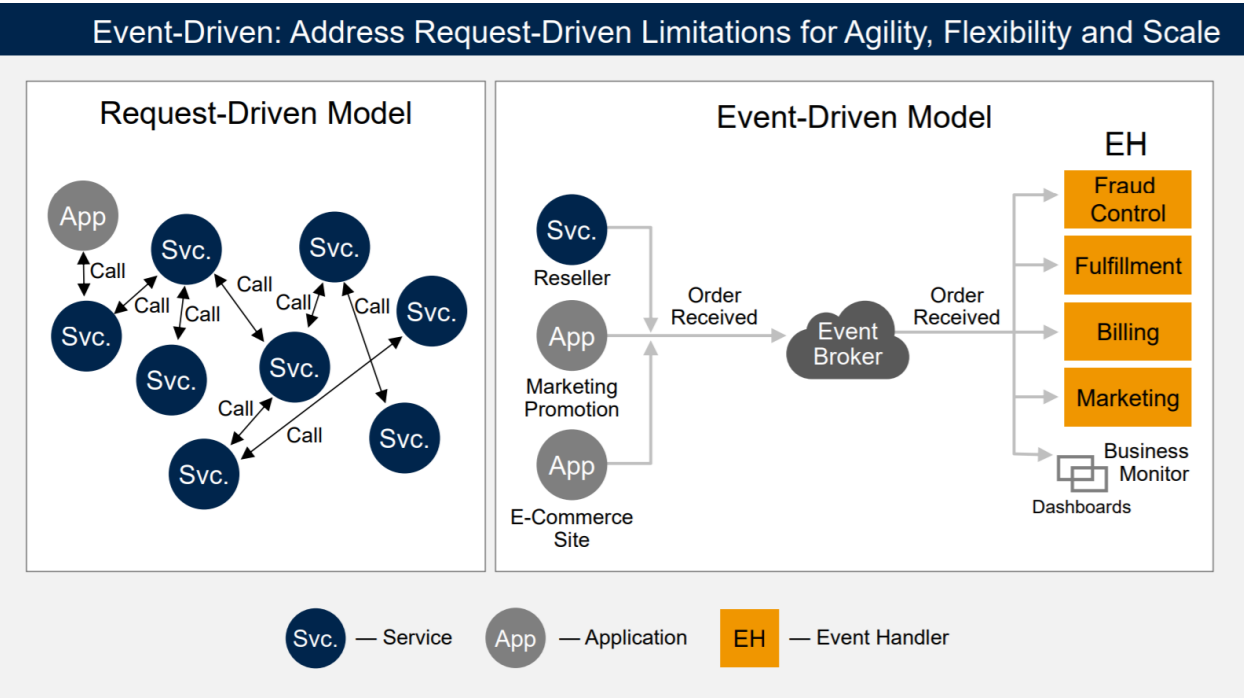
圖 3-16 事件驅動模式之運作概念

顧問公司表示，事件驅動的數位服務模式強調的重點應該是組織文化與人員技能的調適，資訊科技只是輔助設計出符合組織運作之事件驅動的數位服務模式。顧能顧問公司建議組織應該接受與學習事件思考模式，2020 年前 80％的數位業務必須透過事件驅動的方式，真實對外反饋因應措施，而 8 成的新興業務會把事件驅動的模式融入於該項業務的事件處理方式中。

十、連續的適應風險與信任

資訊化時代面臨的資訊安全風險與信任危機，進入數位化時代之後挑戰更加嚴峻，組織推動數位化服務的規劃、設計、建構與維護執行階段，都必須要把安全風險與信任的議題融入在數位服務的全生命程序中。連續的適應風險評估是從防衛的角度檢視數位服務發展過程可能面臨的威脅，透過標準評估程序檢視攻擊、漏洞、威脅等風險。而持續適應信任評估是從數位服務外部角色的角度，找出授權、認證的必要條件。
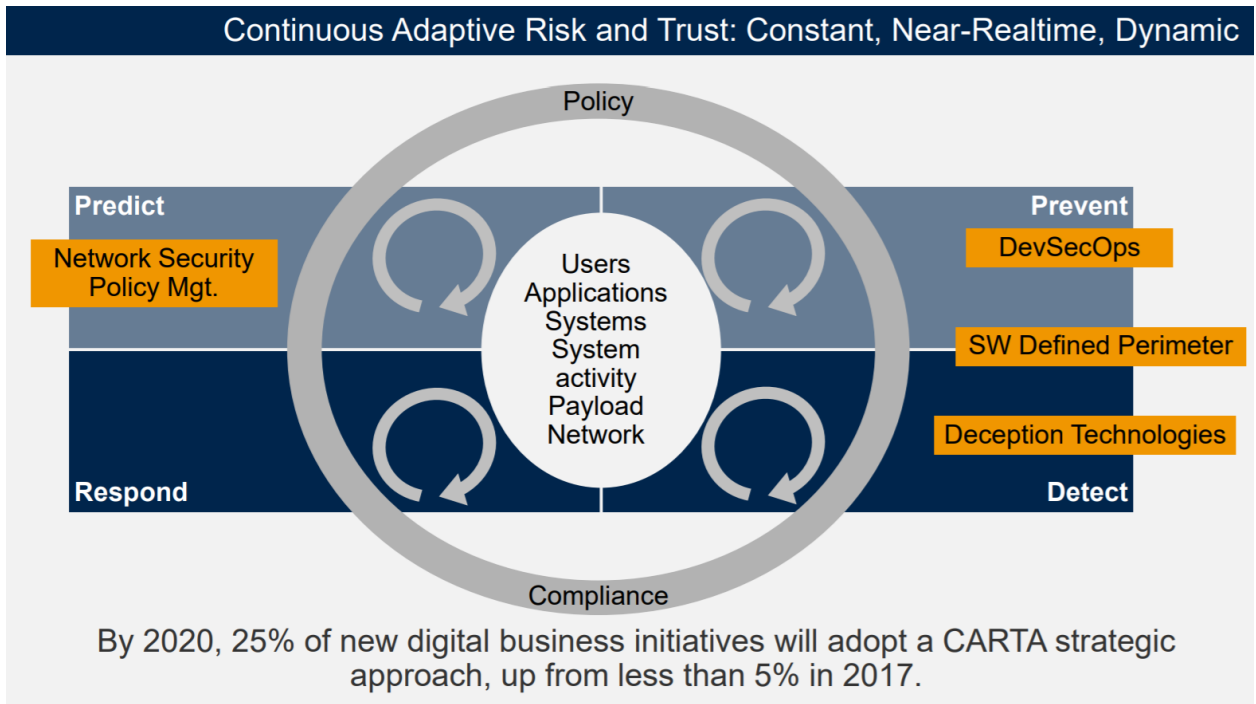
圖 3-17 適應風險與信任評估方法論架構
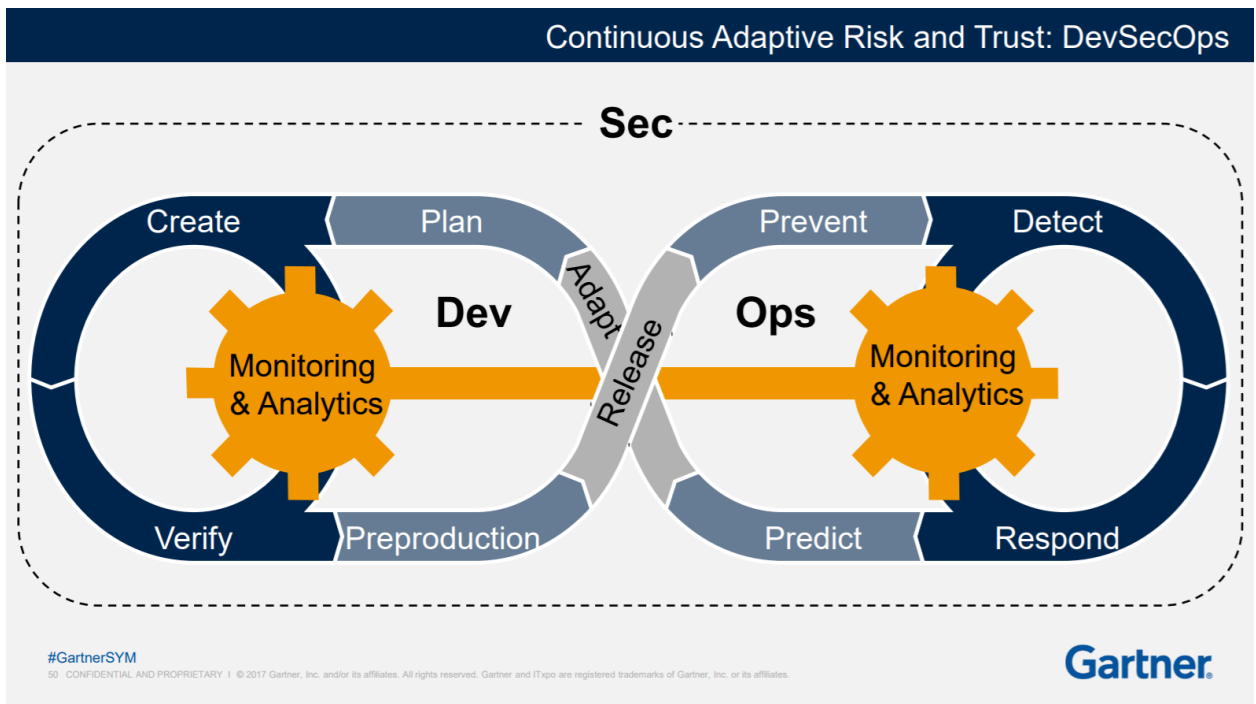
圖 3-18 開發與營運工具和程序

　　為了在不斷發生網路安全事件的大環境下持續推動各項數位服務，顧能顧問公司建立連續性適應風險與信任評估法 (continuous adaptive risk and trust assessment; CARTA)，以風險及信任為兩個角度，透過即時且適性的回應作出決策。執行 CARTA 評估法時，組織必須排除安全管控人員與數位服務人員之間隔閡，而開發與營運 (DevOps) 工具和程序打破了開發與營運之間的隔閡。安全管控人員必須在開發與營運的流程環節點，與數位服務開發人員以透明化的合作方式執行安全測試，更需要保持開發與營運的團隊以敏捷的速

度，以兼顧「開發、資安與營運」(DevSecOps)。

肆、政府營運與技術發展趨勢(The Top Business and Technology Trends in Government)

　　政府不是商業組織，營運目標並非以獲利為主要目的，政府營運著重於營造國家整體運作環境，透過各項法規命令、獎勵補助、科技技術讓公民、企業、政府機關順應國際趨勢永續發展。根據顧能顧問公司的調查，從資通訊科技發展的角度來看，政府雖然不是商業組織，但兩者在數位化演進卻是朝著同一個方向前進。本節報告內容探討政府未來數年在宏觀趨勢、營運趨勢以及科技趨勢之發展。
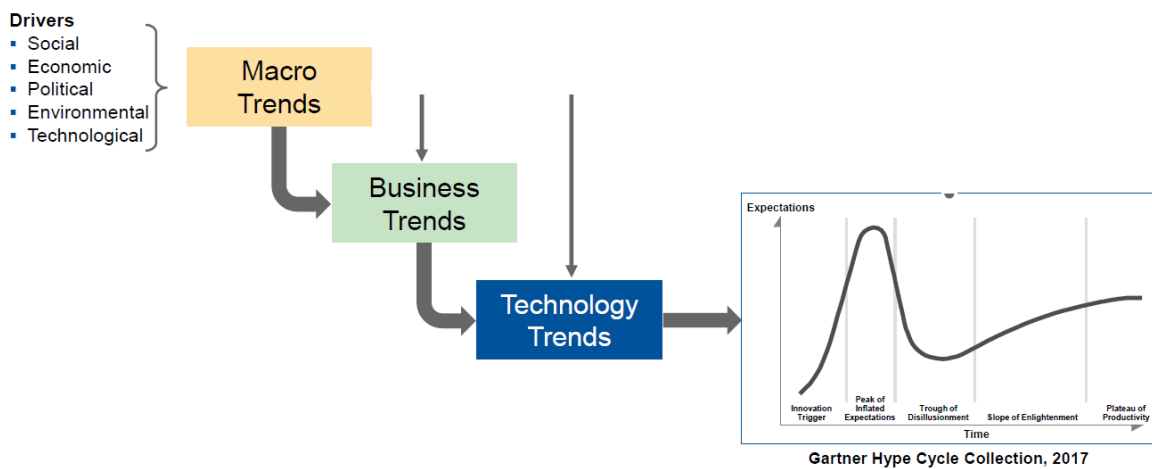
圖 4-1 政府宏觀發展趨勢、營運發展趨勢與科技發展趨勢架構

一、未來數年政府發展趨勢

　　政府運作全體國家事務，需要全方位的思考政策推動的影響性，必須評估社會面、經濟面、政策面、環境面以及科技技術面的影響。顧能顧問公司表示，世界各國正面臨 4 項全球性的宏觀趨勢，包括公民需求快速轉變產生社會不穩定性、民需擴大但資源有限形成的資源緊縮情形、面對不斷變化的外部環境必須建立持續運作的社會系統，以及因應人口老化必須改變國家運作等趨勢。

圖 4-2 世界各國面臨之宏觀發展趨勢

　　為因應以上四項國際宏觀發展趨勢，顧能顧問公司認為世界各國可以從以下 10 項營運趨勢構思政策作為。

(一)數位平權：確保所有公民具有文化參與、就業、終身學習，以及獲得政府基本服務所需之數位技能。

(二)公民體驗管理：從公民的需求為出發點，瞭解公民對政府的期待，讓政府思考如何運用有限的資源，讓公民獲得更多政府服務，以及重新設計與公民的互動模式，據以提升民眾對政府的滿意程度。

(三)開放式公民空間：公民空間是政府施政透明和民主社會的碁石，公民和民間組織能毫無障礙地參與和溝通，藉此主張公民權利，影響國家政治和社會結構。

(四)參與式生態系統：以業務執行為範疇，讓所有的利害關係人組合成可以合作互動的平臺(生態系統)，相關利害關係人得以在此生態系統中溝通無礙。

(五)機構的敏捷性：確保政府得以迅速、適切地回應內、外部環境變化與挑戰之能力。

(六)數位領導力：運用數位資產以達成政府施政目標之執行策略。換句話說，即是使用數位科技協助政府運作，提升公務員效率，提供民眾服務之執行策略。

(七)洞悉力導向的勞動力：政府雇員必須具備以資料分析洞察國際、社會發展趨勢，藉以優化施政品質，強化政府運作效能之能力。

(八)社群團體恢復力：利用現有資源（能源，通訊，運輸，食物等）抵禦災難，並從災難中回復至原來情況的能力。

(九)不斷演進的政府服務：依據外在環境變化、內部挑戰而不斷調整政府服務，透過不斷的接受外部刺激，並產生對應的回饋，而形成以事件導向政府服務之演化趨勢。

(十)持續性的網絡安全：資料是政府運作的基礎，政府任何運作均與資料相關，政府面對內外部環境的挑戰，思考政府持續營運作為時，必須包括網絡安全作業，確保政府長遠運作。

…and Setting the Business Agenda for Government Leaders…
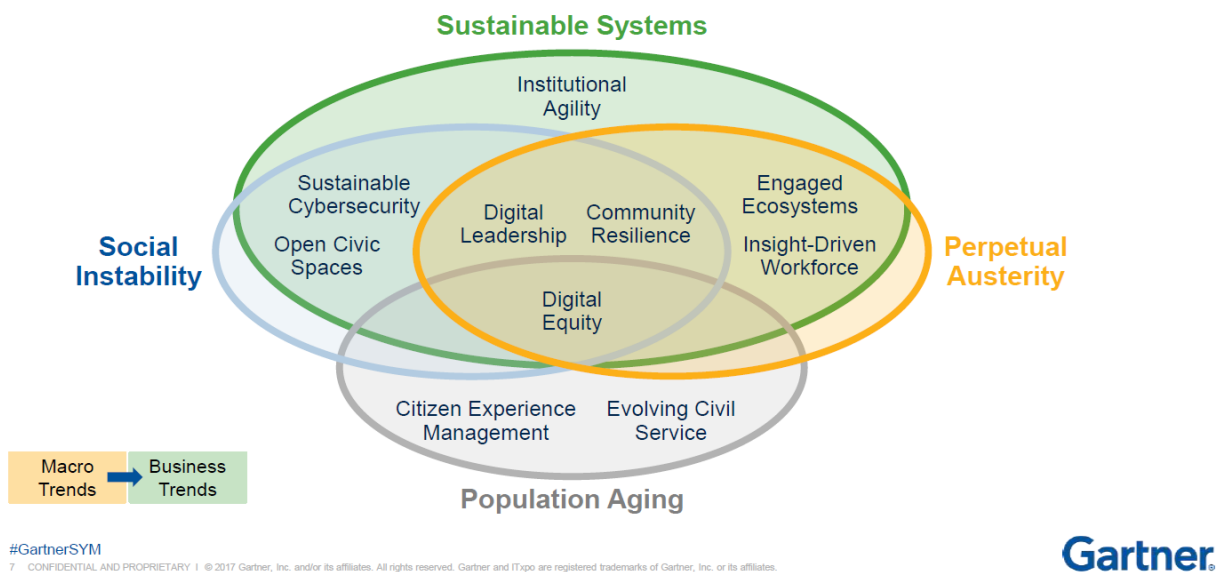
圖 4-3 政府宏觀發展趨勢與營運發展趨勢之關聯

二、資訊科技協助政府因應發展趨勢的契機

從資通訊科技的角度思考，顧能顧問公司提出 10 項科技發展趨勢，協助政府因應未來的營運趨勢。

(一)以民眾為中心：政府持續使用數位科技建構政府服務，提升民眾服務品質與效率，讓民眾和政府溝通的管道越來越多樣化，包括官方網站、社群媒體、行動載具，甚至是超商資訊機，推升數位公民的量與質，並且逐漸重視數位科技擴大政府服務範疇，必須要以民眾為中心，建構一套適用於多領域、多服務之受信任的交易機制，如憑證、帳號密碼等。有機會使用在政府科技發展趨勢之科技技術如下：

1.多管道的民眾參與機制

(1)客戶互動中心：客戶互動中心是一個將多個系統連接在一起以最佳方式吸引

客戶的服務架構。 它讓建構在該中心的所有交互管道，通過人工、數位助理或其他能和客戶互動的感應器，向客戶進行個人化、情境式的服務。

(2)數位政府技術平臺：以平臺的架構彙整數位政府發展所需的共用性服務，例如認證、授權、付款、通知、資料交換等，讓政府資訊服務使用一致性的共用性服務下，建構其他數位服務，並且讓這些數位服務能夠彼此串聯相通。

(3)社群媒體參與應用：建構在民眾社群網路之上的各項政府與民眾互動之機制，以粉絲頁、社團，或是即時通訊，讓政府與民眾能雙向交流、溝通，進而形成民眾意見與政府回饋之健全體制。

(4)虛擬客服助理：以資料分析為核心，結合行動化載具發展趨勢，建立數位化虛擬客戶服務機制，讓民眾不受時間、地點、通道限制，自由選擇他們熟悉的通道與政府溝通。

…Who Look to Government IT Executives for Solutions.

Key Macro Trends	Top Government Business Trends, 2018	Top Government Technology Trends, 2018
Social Instability	Digital Equity	Multichannel Citizen Engagement
	Citizen Experience Management	d-Citizen Extensions
	Open Civic Spaces	Trusted Transactions
Perpetual Austerity	Engaged Ecosystems	Civic Tech Innovation
	Institutional Agility	Bimodal Shared Services
	Digital Leadership	Digitally Empowered Workforce
Sustainable Systems	Insight-Driven Workforce	Engineered Agility
	Community Resilience	Analytics Everywhere
	Evolving Civil Service	Intelligent Automation
Population Aging	Sustainable Cybersecurity	Adaptive Security Architecture

Macro Trends → Business Trends → Technology Trends

Gartner.

圖 4-4 政府宏觀發展趨勢、營運發展趨勢、科技發展趨勢之結構

2.數位公民持續擴大：數位公民是指透過資通訊科技從事社會、政治和政府活動的人。數位公民會隨著國家資通訊科技基礎建設普及率，以及政府數位服務發展程度的提升而不斷擴大，如此可降低公民參與社會活動的障礙，平衡經濟機會以及增加的政治參與。

3.受信任的交易

(1)區塊鍊建構政府服務：以「交易識別確認」、「資料無法篡改」及「資料分散儲存同步更新」的三個特性，建構民眾信任的數位服務。

(2)雲端服務接取安全中介：它可能是一個工具、一個軟體，建構於政府接取雲端服務之間扮安全守衛的角色，它可落實政府網路安全政策擴展到自身的基礎設施之外，藉以提升政府使用雲端服務之安全性。

(3)進行資料分類：依據資料性質分類，並賦予不同程度的使用、流通、儲存與管理規範，讓資料的應用效益與保護措施取得平衡。

(4)建立資料市集：資料市集是資料倉儲的類型之一，兩者均有統一蒐存歷年資料特性，讓使用者得以取得歷史資料進行歷史趨勢分析與問題探究；兩者最大的差別在於資料市集強調在預設的資料分類之下，以便利的資料取用介面讓使用者接取。

User-centricity, Agility and Sustainability Are the Ends – Technology is the Means
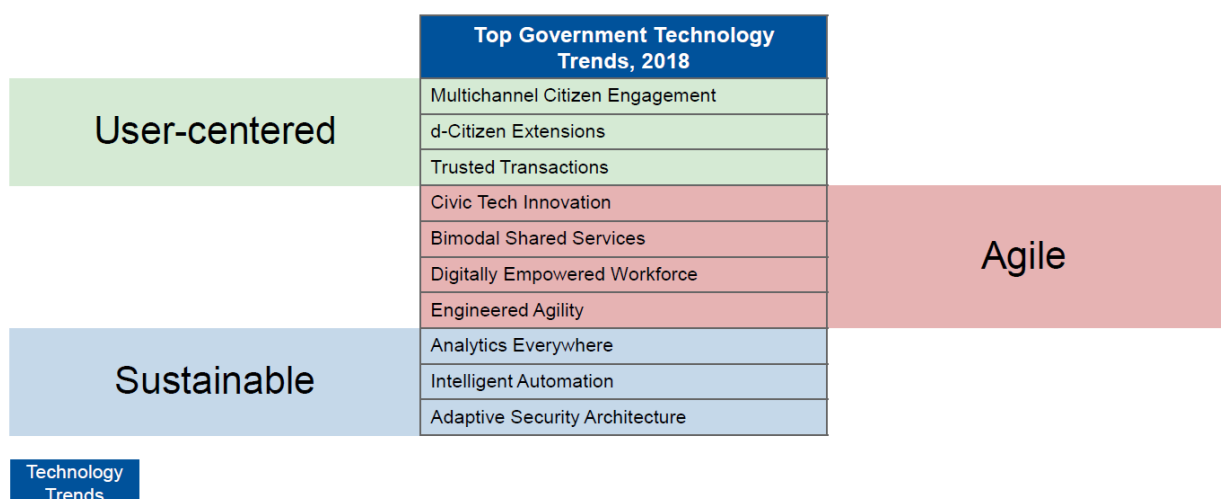
	Top Government Technology Trends, 2018	
User-centered	Multichannel Citizen Engagement	
	d-Citizen Extensions	
	Trusted Transactions	
	Civic Tech Innovation	Agile
	Bimodal Shared Services	
	Digitally Empowered Workforce	
	Engineered Agility	
Sustainable	Analytics Everywhere	
	Intelligent Automation	
	Adaptive Security Architecture	

Technology Trends

Gartner.

圖 4-5 政府科技發展趨勢聚焦於使用者需求、敏捷式發展與持續運作

(二)敏捷的發展趨勢：政府需要以靈活、敏捷的態度回應外界的環境變遷與挑戰，快速取得並建構新興科技，透過數位科技擴大公私協力、徵集民間智慧，讓政府內部與外部形成協作機制，讓政府轉換為更具回應性之體制。有機會使用在政府科技發展趨勢之科技技術如下：

1.公民科技創新：公民科技泛指提升公民參與政府施政的各項科技技術，主要以資通訊技術為主，目的為促進公民的交流，改善政府基礎設施，

普及公共利益等。

2.雙模式的共享服務：雙模式的意思是以既有的數位服務為基礎，透過資料分析的方式尋找、確認目標對象，透過通知或主動的方式讓目標對象使用數位服務。

3.數位賦能的勞動力：數位賦能的勞動力是指透過資訊科技協助政府員工使用知識的能力，數位社會的願景在於讓每個人透過數位科技展現潛能，達成擴大社會網絡、專業能力、產生有效訊息、學習適應瞬息萬變生活的方法等，建構資訊運作環境，提供各項數位工具與應用，並打造數位交流文化，提升政府員工專業技能。

4.工程化的敏捷發展：透過數位科技將政府運作過程，以及內、外部相關互動過程工程化、結構化，有助因應外界環境變化，快速調整政府運作程序，因應外界期待。

(三)持續性的發展趨勢：政府服務的啟用、升級，會受到當時的國家財政、社會環境、技術進展，以及地域環境等特性的影響，需要因地制宜適度調整。面對瞬息萬變的內外部環境變化，政府服務必須是可以持續性的調整，為了更精準因應外界變化，以資料分析、證據導向的方式制定發展決策，讓資源更有效、公平的分配。有機會使用在政府科技發展趨勢之科技技術如下：

1.無所不在的分析：在巨量資料和物聯網等技術逐漸成熟的環境下，資料分析在應用與發展領域有大幅度的進展，透過資料分析洞悉資料意涵以持續提升政府服務，是必須具備的基本功力。

2.智慧自動化：字面上的意涵是人工智慧與自動化的結合。拜資料分析與演算法創新之賜，自動化系統結合人工智慧應用，可創造更貼近真實環境變化與回應的自動化服務，例如自駕車、無人機等等，許多政府服務可透過智慧自動化系統，因地制宜的回應環境情形，提升政府治理效能，如交通號誌回應、公共設施監控、危險場域監控等等。未來應進一步透過持續自我精進的智慧化應用，建立主動貼心的政府服務。

3.自適性資安保全架構：由顧能顧問公司創立的一套方法論，幫助組織對現有，以及潛在的資安投資進行分類，以確保資安投資均衡性。多數政府處理資安風險是以單點事件評估後續的預防作為，這種做法不容易全面的檢視政府資安管理體系的弱點；顧能顧問公司提出這方法論，是以「持續精進」的角度設計，從安全預防、現況偵測、事件回應以及風險

22

預測等四個步驟，12 項措施不斷循環進行。

Critical capabilities of Gartner's adaptive security architecture
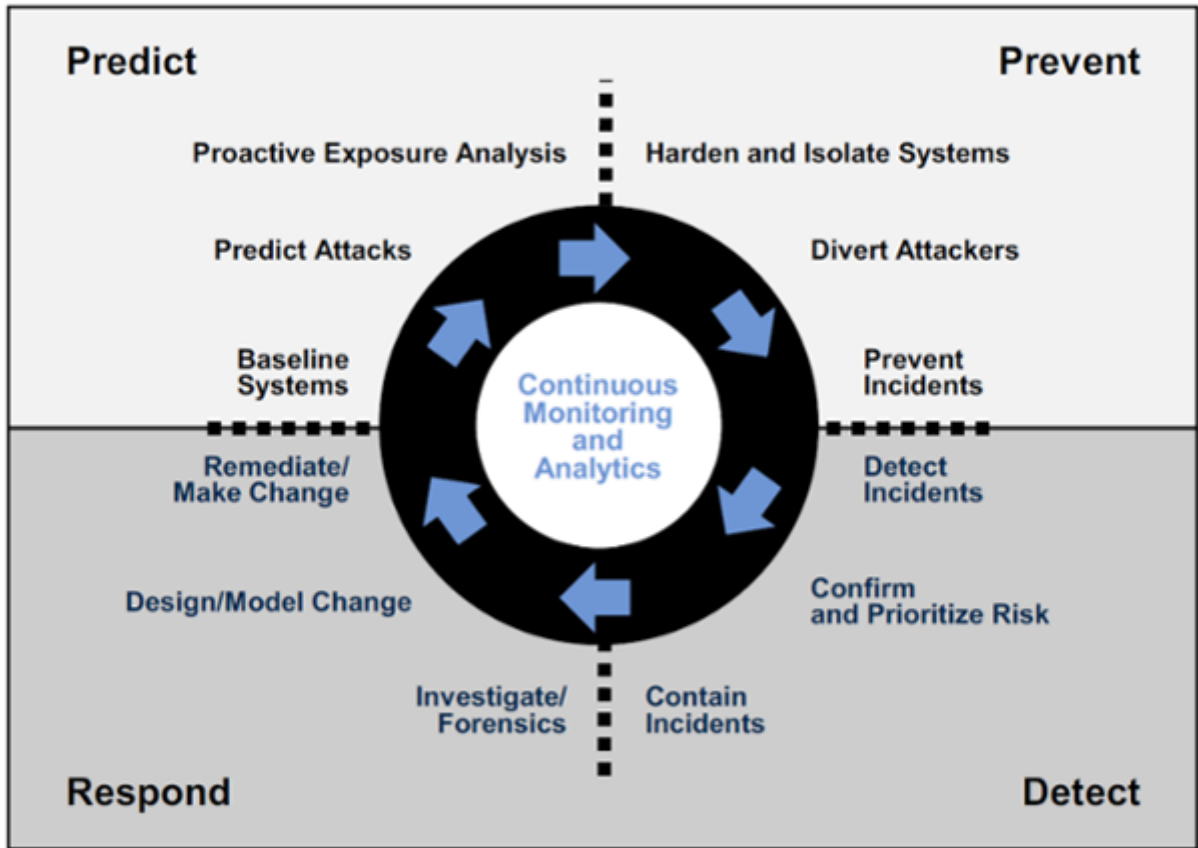
Source: Gartner (February 2014)

圖 4-6 自適性資安保全架構

伍、心得與建議

一、心得

(一)數位時代策略科技發展趨勢，仍以雲端運算、行動化服務、資料分析，以及創新服務等四大力量，勾勒數位科技發展藍圖，這四股力量推動政府、企業、民眾進行數位轉型，讓傳統的電腦化作業，升級為以數位科技為核心，重新塑造全新數位服務。政府應該正視這四股強大力量運用於政府服務的關鍵時機，將資通訊管理機制、營運模式之變革，納入政府施政規劃的參考。

(二)人工智慧是資料分析的進階應用，兩者均強調資料創新應用，而最大的差異在於人工智慧還重視演算法創新以及使用者體驗創新。政府推動人工智慧產業時，不該只重視硬體設備製造代工技術，更應該鼓勵產業專注發展人工智慧的靈魂：軟體，以問題導向解決問題痛點，並以使用者需求導向滿足使用者體驗的角度，尋求人工智慧發展產業契機。

(三)人工智慧應用範疇將全面擴大到每一個領域，無論在服務業、製造業、農業、政府治理等，所謂產業智慧化即為既有產業領域導入人工智慧應用，對政府治理而言，人工智慧將帶給政府服務智慧自動精進的契機，讓政府得以持續不斷因應內外部環境的挑戰，迅速調整服務架構並正確回應。

(四)數位時代創造許多新型態的數位應用機會，加速社會發展與經濟成長，對大多數民眾而言，亦獲更多發展契機。然而部分民眾因為數位能力未能及時提升，面對快速成長的數位時代，數位落差鴻溝將持續擴大，政府推動數位轉型過程，應正視數位平權的願景，持續讓民眾得到維持生活基礎能力之數位技能，避免任何人在這波浪潮中因資訊不對等而脫隊。

(五)資訊安全防護負擔隨著數位科技應用多元化而加重，傳統因應資安弱點而進行系統修補的安全管理模式已不夠完善，尤其數位服務強調資料創新可能涉及民眾隱私侵犯的疑慮，未來推動數位服務面臨的資安風險更加嚴峻，政府應持續不斷地檢視數位服務運作過程可能發生的風險，建立洞悉驅動導向(insight-driven)之安全分析作為，藉由智慧自動化科技協助數位科技執行日常資安管理作為。

二、建議

(一)精進前瞻性政府資通訊服務發展

配合行政院推動「數位國家‧創新經濟推動方案」，本會著手推動「服務型智慧政府推動計畫」，顧能顧問公司在國際上蒐集、分析與發表之資通訊科技發展，揭示未來政府與企業在未來數年發展資通訊科技之建議重點與方向，值得我國政府規劃資通訊服務計畫、推動數位服務之參考，引導我國數位發展接軌國際趨勢，並滿足使用者需求。

(二)舉辦國際研討會議提升資服產業商機

　　　　顧能顧問公司為展現該公司研究量能，彰顯研究績效，每年定期辦理國際性數位科技發展研討會議，以未來 5 年資通訊科技發展趨勢為主軸，安排成果發表會、閉門討論會議，以及透過焦點團體座談等課程，並結合資通訊廠商，展示發展時機，藉此行銷資通訊產業產品；我國數位政府推動績效在世界各國排名前茅，資通訊產業發展成績全球有目共睹，建議應定期舉辦國際級研討會，邀請各界名人站臺演說，與國際與會人員交流，並安排資通訊產品展覽，提高我國產業在國際曝光率，吸引買家、投資人青睞。

(三)積極加入國際合作組織及參加國際會議

　　　　我國歷年推動電子化政府計畫，定期與國際先進國家辦理資通訊科技交流與成果展示，在國際上具有一定能見度，我國出席國際會議，可和世界不同領域備景，專長各異的專家學者交流與分享經驗，未來應該持續參與國際會議，與世界各國保持良好且密切的夥伴關係。

陸、附件-會議議程

DAILY AGENDA OVERVIEW

SUNDAY, OCTOBER 1

9:00am-9:45am	All-Industry Keynote: Presence: Bringing Your Boldest Self to Your Biggest Challenges **Amy Cuddy**, Social Psychologist and Professor, Harvard Business School					
10:15am-11:00am	**BANKING** Financial Services 2030	**EDUCATION** Top Business and Tech Trends Impacting Higher Education	**GOV/FEDERAL** Blockchain Usage in Public Sector: What to Do (and Not Do)	**GOV/S&L** The Future of Digital Government: Service Models, Platforms and Ecosystems	**HEALTHCARE** Value Creation at the Intersection of the Future of Healthcare and Digital Technology Innovation	**OIL & GAS ASK THE ANALYST** Successful Digital Innovation: Opportunites, Approaches and Challenges for Oil and Gas CIOs
	MANUFACTURING Get Ready for the Tipping Point for Digital Life Science	**INSURANCE** Insurance Scenario 2030	**MANUFACTURING** The Future of Products – Navigating the Digital Manufacturing Transformation	**RETAIL** Fighting for the Customer — Going Nine Rounds With Amazon	**ELECTRIC & GAS UTILITIES** Top 10 Trends Shaping Energy and Utility Sector in 2017	
	GOV/S&L ROUNDTABLE Managing Consolidation in Regional, State and Local Government	**OIL & GAS ROUNDTABLE** Remote Operations in Oil and Gas	**GOV/FED ROUNDTABLE** Short on Resources? Share Creative Solutions to Fostering Diverse Teams in Federal Government			
	Meetups					
11:15am-11:45am	Solution Provider Sessions					
11:45am-1:15pm	Attendee Lunch					
12:15am-1:00pm	Meetups					
1:15pm-1:45pm	**BANKING & INV SERVICES** How Banks Can Win in a Platform World	**EDUCATION** The AI-Driven Academy — the Future Is Now	**GOV** The Top Business and Technology Trends in Government	**HEALTHCARE PROVIDER** The IT Art and Science of Creating a Health System	**HEALTHCARE PAYER** Use a Health-Value Compass to Navigate the Dynamic Payer Vendor Landscape	
	INSURANCE How Insurtechs Are Driving Innovation in the Insurance Industry	**MANUFACTURING** Engage Your Customers to Ensure Higher Success of New Product Introduction	**MANUFACTURING** Creating New Manufacturing Business Models With 3D Printing	**RETAIL** Win-Win Situation: Enhance the Customer Experience With Self-Funding Technology	**OIL & GAS** CIO Role in Leading Digital Business Transformation in Oil and Gas	

Page 1 of 12   Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate.   Agenda as of September 8 and subject to change.

1:15pm-2:00pm	GOV/S&L ASK THE ANALYST	ASK THE ANALYST	INSURANCE ASK THE ANALYST		
	Creating a Digital Transformation Program Through Industrie 4.0	Critical Factors in Developing an Outsourcing Contract	Understanding Your Legacy Modernization Options in Insurance		

Meetups

1:15pm-2:15pm	MANUFACTURING ROUNDTABLE	ROUNDTABLE			
	AI Technology in Manufacturing – Beyond Augmented Reality, Head Mounted Displays, and IoT	How to Find, Nurture and Retain Great Technology Talent			

1:15pm-2:45pm	CIO WORKSHOP	CIO WORKSHOP	ASPIRING CIO WORKSHOP		
	A Systematic Approach to Identify and Justify Cost Reduction Opportunities	Don't Relegate Innovation to the R&D Department	Next Stop - CIO (Exclusively for Executive Programs Attendees)		

2:00pm-2:30pm	BANKING & INV SERVICES	EDUCATION	GOV/FEDERAL	GOV/S&L	HEALTHCARE
	A New Vision for Google, Apple and Alibaba in Banking	Putting Higher Education Administrative IT on a Diet	Which Way(s) to the Cloud for Government?	Case as a Service – How to Successfully Implement a Case Management Modernization Program	Lifting the Fog Surrounding AI and Advanced Analytics in Healthcare
	INSURANCE	MANUFACTURING	MANUFACTURING	RETAIL	ELECTRIC & GAS UTILITIES
	Digital Business Platforms and New Insurance Business Models	Revenue Management in Consumer Goods Manufacturing - Where Do We Begin?	Digital Transformation in an Asset-Intensive Company	AI in Retail: People or Machines or People and Machines?	Platforms and Ecosystems — Laying out Foundation for Digital Utility Business

2:45pm-3:15pm	Solution Provider Sessions					

3:30pm-4:00pm	BANKING & INV SERVICES	EDUCATION	GOV/FEDERAL	GOV/S&L	HEALTHCARE PROVIDER	HEALTHCARE PAYER
	Microservices in Banking - Is it Time to Ditch Your Core Banking Vendor?	The End of Education and the Future of Learning	Optimize Government Costs for Outcomes	Achieve the Pace of Business With the Digital Government Technology Platform	The Future of Digital Care Delivery	Payer Tools & Tactics to Align Provider Partnerships to Member Value
	MANUFACTURING	INSURANCE	MANUFACTURING	OIL & GAS	RETAIL	
	When a Car Is No Longer a Car and What All Manufacturers Can Learn From Tesla	Leveraging AI for Success in Insurance	IoT Will Usher in a Radical New Era of Customer-Centric Manufacturing	Immersive Digital Operations: The Convergence of Digital and Physical Worlds in Oil and Gas	Associate as a Platform: The Future Retail Employee Is Not Who (or What) You Think	

3:30-4:15pm	LIFE SCIENCES ASK THE ANALYST	ASK THE ANALYST				
	Life Science in the Cloud - How to Make It Happen	Midsize Enterprise IT Organizational Design (Exclusive to Midsize Enterprise Attendees)				

Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate. Agenda as of September 8 and subject to change.

3:30pm-4:15pm	CIO WORKSHOP	CIO WORKSHOP	ASPIRING CIO WORKSHOP	ROUNDTABLE	ROUNDTABLE	ROUNDTABLE
	The Art of the One-Page Strategy	Are We There Yet? How to Measure Your Digital Journey Performance	Communications Effectiveness — Getting to What Matters Fast (Exclusively for Executive Programs Attendees)	Get Hired as a Business Executive: Using the Jobs To Be Done Model to increase CIO Business Value	Reducing Costs: Lessons, Practices, and Recovery	Top 10 Ways Successful Women Increase Their Visibility

Meetups

4:15pm-4:45pm	ELECTRIC & GAS UTILITIES	EDUCATION	GOV/FEDERAL	INSURANCE	INSURANCE	
	"Innovate or Die" — Utility CIO as the Innovation Leader	The K-12 Evolution: What's Next?	Government is Not a Business and Citizens are Not Your Customers	Insurance Core Replacement as a Path to Extreme Cost Optimization	Disruptive Digital Manufacturing Innovation Stories from the Front Line	
	MANUFACTURING	GOV/S&L	HEALTHCARE	BANKING & INV SERVICES		
	Data Wars - The Battle Over Your Equipment Moves to the Data Level	Building a Smart City Execution Roadmap	The Tough Truths About Consumer Engagement in Healthcare and the Path Forward	Gartner Financial Services Eye on Innovation Awards: Learn from your Peers and Select the Winners! (Live Polling)		

5:15pm-6:00pm	All-Industry Keynote: Blockchain Revolution: Competing with the Internet of Value
	Don Tapscott, Author and Influential Management Thinker

MONDAY, OCTOBER 2

7:30am-9:30am	Attendee Breakfast					
9:30am-10:30am	Gartner Analyst Opening Keynote: Creating Digital Value at Scale - **Leigh McMullen, Tina Nunno, Peter Sondergaard**					

11:15am-12:00pm	SIGNATURE SERIES	ARCHITECT THE DIGITAL PLATFORM	TRANSFORM THE TECHNOLOGY CORE	PLAN FOR THE DIGITAL FUTURE	MASTERING LEADERSHIP	DRIVE BUSINESS PERFORMANCE
	The 2018 CIO Agenda: Powerful Practices to Help You Master the New Job of CIO	Capitalizing on Your Business Ecosystems with Digital Platforms	Creating the Future Proof Digital Infrastructure	Architect Your Business to Engage "Things" as Customers	Six Steps to Change Leadership — The Escape Model	The Total Cost of Digital Strategies
	TRANSFORM THE TECHNOLOGY CORE	ASK THE ANALYST	ASK THE ANALYST	ASK THE ANALYST		
	Securing the Data Lake — Before It Turns Toxic	How Do I Create a Mobile App Strategy?	How Can You Best Personalize the Digital Commerce Experience?	How Chatbots Will Change the Way You Engage With Your Customers		

Meetups

Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate. Agenda as of September 8 and subject to change.

Time					
11:15am-12:15am	**GOV/S&L ROUNDTABLE** The Talent Platform for Regional, State and Local Government	**ROUNDTABLE** Taking Unified Communications to the Cloud	**ROUNDTABLE** IoT Strategies and Challenges for Midsize Enterprises (Exclusive for Midsize Enterprise Attendees)		
11:15am-12:45am	**ASPIRING CIO WORKSHOP** ANext Stop - CIO (Exclusively for Executive Programs Attendees)	**ASPIRING CIO WORKSHOP** Communications Effectiveness — Getting to What Matters Fast (Exclusively for Executive Programs Attendees)	**CIO WORKSHOP** A Systematic Approach to Identify and Justify Cost Reduction Opportunities (Exclusive for Midsize Enterprise Attendees)	**CONTRACT NEGOTIATION CLINIC** SAP	**CONTRACT NEGOTIATION CLINIC** Software as a Service

11:45am — ⚙ Attendee Lunch Begins

12:15am-1:30pm — 🔑 CIO Experience Luncheon Keynote: Quiet: How to Harness the Strengths of Introverts to Change How We Work, Lead, and Innovate
Susan Cain, Co-Founder, Quiet Revolution, and Author of "Quiet: The Power of Introverts in a World That Can't Stop Talking"

1:00pm-1:30pm — Solution Provider Sessions

🔗 Meetups

Time						
2:00pm-2:45pm	**SIGNATURE SERIES** The CEO Perspective 2017 How CIOs Should Respond	**ARCHITECT THE DIGITAL PLATFORM** Real-Life Examples of Digital Platforms	**CREATE A DYNAMIC ORGANIZATION** Harness Diversity of Thought to Ignite Your Team	**TRANSFORM THE TECHNOLOGY CORE** Cost Optimization Using Cloud Computing	**DRIVE BUSINESS PERFORMANCE** Black Ops Innovation	
	MIDSIZE ENTERPRISE Drive Business Value — Midsize Enterprise IT Leaders Must Demonstrate Contribution to Business Outcomes	**TRANSFORM THE TECHNOLOGY CORE** The Cloud Computing Scenario Strategy and Tactics to Live By	**TRANSFORM THE TECHNOLOGY CORE** Attention CIOs: Top "Internet of Things" Technologies That Will Disrupt You and Your Enterprise	**PLAN FOR THE DIGITAL FUTURE** Strategy and the CIO — Your Personal Contribution to Digital Business Success	**TRANSFORM THE TECHNOLOGY CORE** Top Cybersecurity Trends for 2018	

🔗 Meetups

Time						
2:00pm-3:00pm	**ROUNDTABLE** How to Make Governance Stick in a Midsize Enterprise (Exclusive for Midsize Enterprise Attendees)	**PUBLIC SECTOR ROUNDTABLE** Acquisition Practices Meet Emerging Technologies: Can They Co-Exist?	**ROUNDTABLE** How Midsize Enterprises Can Be More Secure Without Spending a Penny (Exclusive for Midsize Enterprise Attendees)	**ASK THE ANALYST** What Is the Future of Facebook, WhatsApp, WeChat as Customer Engagement Tools	**ASK THE ANALYST** What Does a World-Class Field Service Organization Look Like?	**ASK THE ANALYST** Digital Workplace Strategy That Takes Advantage of Being a Midsize Enterprise (Exclusive for Midsize Enterprise Attendees)
2:00pm-3:30pm	**M3E WORKSHOP** Business Model Leadership — The CIO's Greatest Value Contribution (Exclusive for Mega Enterprise Experience Attendees)	**CIO WORKSHOP** The Art of the One-Page Stratey	**CIO WORKSHOP** New Operating Principles for Getting the Talent You Need	**CIO WORKSHOP** A Systematic Approach to Identify and Justify Cost Reduction Opportunities		

Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate. Agenda as of September 8 and subject to change.

Time			
2:30pm-4:00pm	**CONTRACT NEGOTIATION CLINIC** Use Four Financial Models to Optimize Negotiations (Exclusive for Midsize Enterprise Attendees)	**CONTRACT NEGOTIATION CLINIC** Oracle	
3:15pm-4:00pm	**ROUNDTABLE** Applying Modern IT Organizational Principles and Processes to Drive Staff Efficiency: DevOps, Bimodal, Enterprise Agility and More	**ROUNDTABLE** Cost Optimization, Investing in IT To Grow Your Midsize Enterprise (Exclusive for Midsize Enterprise Attendees)	**MANUFACTURING ROUNDTABLE** Manufacturing CIOs Need Multiple Strategies to Maintain Legacy Technologies and Lead the Digital Change at the Same Time

Solution Provider Sessions

🔗 Meetups

Time					
4:30pm-5:00pm	**TECHEXEC INTERVIEW** TechExec Interview with Andy Jassy, CEO, AWS	**PLAN FOR THE DIGITAL FUTURE** 10 Ways to Fund the Great Strategic Shift to Digital Business	**DRIVE BUSINESS PERFORMANCE** Digital Business Requires Knowing Your Customer(s), Not Necessarily Owning Them	**TRANSFORM THE TECHNOLOGY CORE** Smart Data Discovery Is the Next Disruption in Business Analytics	**MASTERING LEADERSHIP** Succession Planning for Leadership in the Age of Digital Transformation

🔗 Meetups

Time			
4:30pm-5:15pm	**EDUCATION ASK THE ANALYST** AI Impact in Education	**ASK THE ANALYST** Blockchain - Managing Business Expectations	**ASK THE ANALYST** Let's Talk About AWS as an Enterprise App Platform
4:30pm-5:30pm	**ROUNDTABLE** How Midsize Enterprises Are Leveraging Cloud Office Services (Exclusive for Midsize Enterprise Attendees)	**ROUNDTABLE** How to Identify Digital Business Moments	**BANKING & INV SERVICES ROUNDTABLE** Innovating in Financial Services: Labs, Fintechs and How to Get Value From Them

5:00pm-7:00pm — 🍸 ITxpo Opening Reception

5:30pm-5:50pm — Magic Quadrant: Unified Communications

6:00pm-6:20pm — Magic Quadrant: Sales Force Automation

6:30pm-6:50pm — Magic Quadrant and Critical Capabilities: Enterprise Mobility Management Suites

Time		
7:00 pm - 9:00 pm	US and Canada Financial Services Reception	US and Canada Public Sector Cocktail Reception

Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate. Agenda as of September 8 and subject to change.

Time						
7:30am-9:30am	Attendee Breakfast					
8:00am - 8:45am	CIO Story: Tech Innovation at Starbucks: What's Next? Gerri Martin-Flickinger, Chief Technology Officer, Starbucks					
9:00am-9:45am	Guest Keynote: Alexis Ohanian, Co-founder, Reddit					

10:30am-11:15am

M3E WORKSHOP
The Art of the One-Page Strategy

Solution Provider Sessions

Meetups

10:30am-12:00pm

CIO WORKSHOP	CIO WORKSHOP
Business Model Leadership — The CIO's Greatest Value Contribution	Don't Relegate Innovation to the R&D Department

11:45am-12:30pm

ASK THE ANALYST	ASK THE ANALYST	PLAN FOR THE DIGITAL FUTURE	TRANSFORM THE TECHNOLOGY CORE	DRIVE BUSINESS PERFORMANCE	PLAN FOR THE DIGITAL FUTURE
Technology Trends Impacting Midsize Enterprises (Exclusive to Midsize Attendees)	What is a Customer Engagement Hub, and How do You Build One?	Beyond the Hype Key Trends in Data Science	Building an Enterprise Cloud Strategy That Works	Digital Business KPIs: Identifying and Then Measuring Value	Using AI to Cultivate Enterprise Intelligence
MASTERING LEADERSHIP	**ARCHITECT THE DIGITAL PLATFORM**	**SIGNATURE SERIES**	**PLAN FOR THE DIGITAL FUTURE**	**CREATE A DYNAMIC ORGANIZATION**	**ARCHITECT THE DIGITAL PLATFORM**
Focus on Engagement, Value, and Outcomes to Eliminate the Boundary Between Business and IT	From APIs to Digital Platforms: API Economy Lessons for Building an Ecosystem	Gartner's Top Predictions: Pace Yourself for Sanity's Sake	If "Enterprise Blockchain" Is the Answer, What Exactly Is the Question?	Jump Start Your Innovation Journey: Customizable Roadmaps for Process, Culture and Outcomes	Master Event-Centric IT for Digital Business Transformation

Meetups

11:45am-12:45pm

ROUNDTABLE	ROUNDTABLE	ROUNDTABLE
Implementing IoT: Strategies and Challenges	Security Strategy for Midsize Enterprises (Exclusive for Midsize Enterprise Attendees)	The Power of Branding

11:45am-1:15pm

CONTRACT NEGOTIATION CLINIC	CONTRACT NEGOTIATION CLINIC
Best Practice in Negotiating Both Traditional and Cloud-Based Infrastructure Contracts	Microsoft Licensing (Exclusive to Midsize Enterprise Attendees)

Time	
12:30pm-12:50pm	Magic Quadrant: Mobile App Development Platforms
12:00pm-2:00pm	Exclusive CIO Lunch: Larger Than Ourselves: The Impact of Cyber on our Businesses & Our Lives **Jared Cohen**, CEO, Jigsaw

Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate. Agenda as of September 8 and subject to change.

Time	
12:45pm-1:30pm	Meetups
12:45pm-2:30pm	Attendee Lunch
1:00pm-1:20pm	Magic Quadrant: IT Service Management Tools

1:30pm-1:50pm

HYPE CYCLE	MAGIC QUADRANT
Cloud Security	IT Project and Portfolio Management Software Applications, Worldwide

Time	
1:45pm-2:15pm	Solution Provider Sessions
2:00pm-2:20pm	Magic Quadrant: Intelligent Business Process Management Suites
2:30pm-2:50pm	Magic Quadrant: Insight Engines
2:30pm-3:15pm	Meetups

2:30pm-3:30pm

M3E ROUNDTABLE	OIL & GAS ROUNDTABLE	ROUNDTABLE
Building a Sustainable Framework for New Digital Skills (Exclusive for Mega Enterprise Experience Attendees)	Smart Machines and Robotics in Oil and Gas	What Is Stopping You From Better IT Financial Management Discipline?

2:30pm-3:45pm

ASK THE ANALYST	ASK THE ANALYST	ARCHITECT THE DIGITAL PLATFORM	DRIVE BUSINESS PERFORMANCE	PLAN FOR THE DIGITAL FUTURE	MASTERING LEADERSHIP
How to Manage Multiple Salesforce Organizations	Intelligent BPM	Building Your Digital Business Ecosystem	Business Architecture: From Strategy to Guiding Execution and Investment Decisions	Business Models Matter for CIOs	CIO Panel: Getting to CIO and Beyond No Matter Where You Came From
ARCHITECT THE DIGITAL PLATFORM	**DRIVE BUSINESS PERFORMANCE**	**MASTERING LEADERSHIP**	**MAVERICK**	**ARCHITECT THE DIGITAL PLATFORM**	
Develop a Pragmatic Security Vision & Strategy	Integrating Technology Risk and Corporate Performance With a Risk-Engaged Culture	Mastering the Art of the Political Discussion for CIOs	Fixing IT's Diversity Problem Requires A Focus On Inclusion	Putting Data and Analytics at the Heart of Your Digital Platform	
MAVERICK	**TRANSFORM THE TECHNOLOGY CORE**	**CREATE A DYNAMIC ORGANIZATION**	**SIGNATURE SERIES**		
Fixing IT's Diversity Problem Requires A Focus On Inclusion	Megavendors on the Cloud Spectrum: How CIOs Must Understand Vendors Overall Cloud Strategies	Scaling the Design Mindset and Methods	The Top 10 Strategic Technology Trends for 2018		

2:30pm-4:00pm

CONTRACT NEGOTIATION CLINIC	CONTRACT NEGOTIATION CLINIC				
Gartner's Five-Step Approach to Negotiating With IBM	Microsoft Licensing				
CIO WORKSHOP	**CIO WORKSHOP**	**M3E WORKSHOP**	**CIO WORKSHOP**	**CIO WORKSHOP**	
Communications Effectiveness — Getting to What Matters Fast (Exclusive for Midsize Enterprise Attendees)	Are We There Yet? How to Measure Digital Journey Performance in Banking and Financial Services	Report Cybersecurity and IT Risk to Your Board of Directors (Exclusive for Mega Enterprise Experience Attendees)	Cost Reduction Opportunities: Prioritizing, Optimizing and Justifying Regional, State and Local Government (RSLG) Budgets	I Just Started as a CIO, Now What?	

Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate. Agenda as of September 8 and subject to change.

Time				
3:00pm–3:20pm	Hype Cycle: Midsize Enterprises			
3:30pm–3:50pm	Magic Quadrant: Field Service Management			
3:45pm–4:30pm	Solution Provider Sessions			
3:45pm–4:30pm	Meetups			
5:00pm – 5:45pm	Guest Keynote: ADAPT - Stories from Lonely Planet's former CTO - The Key Ingredients Needed to Remain Relevant in an Ever Changing and Disrupted World Gus Balbontin, Former Chief Technology Officer, Lonely Planet			

5:45pm–4:45pm	ROUNDTABLE	ROUNDTABLE	ROUNDTABLE
	Finding the Right Vendors for Midsize Enterprises (Exclusive for Midsize Enterprise Attendees)	Postmodern ERP in Higher Education	Top 10 Ways Successful Women Increase Their Visibility

Time	
4:00pm–6:00pm	Analyst Relations Forum Meeting (Open to all high-tech industry professionals with AR responsibilities or interest with a valid Symposium/ITxpo ticket)
5:45pm–7:00pm	ITxpo Reception
6:00pm–6:20pm	Magic Quadrant: Digital Commerce
6:00pm–7:00pm	Analyst Relations Forum Reception
8:00pm	Evening Special Event

WEDNESDAY, OCTOBER 4

Time	
7:30am–9:30am	Attendee Breakfast
8:00am–8:45am	CIO Story: Beyond the Bright Idea: Building a Culture and Structure for Innovation at UPS Juan Perez, Chief Information Officer, UPS
9:00am–9:45am	Mastermind Keynote Marc Benioff, Chairman and CEO, Salesforce
10:15am–11:00am	Solution Provider Sessions
	Meetups

10:15am–11:15am	ROUNDTABLE	ROUNDTABLE	ROUNDTABLE
	Acquisition Practices Meet Emerging Technologies: Can They Co-Exist?	Higher Education and Cloud — Are We Getting Out of the Data Center Business?	How Midsize Enterprises Are Using Data and Analytics to Drive Measurable Business Value (Exclusive for Midsize Enterprise Attendees)

10:15am–11:45am	WORKSHOP	CIO WORKSHOP	EXCLUSIVE WOMEN CIO WORKSHOP	M3E WORKSHOP
	Report Cybersecurity and IT Risk to Your Board of Directors	The Art of the One-Page Strategy (Exclusive for Midsize Enterprise Attendees)	The Myth of the Glass Ceiling — How to Recruit, Retain and Promote for Inclusion and Diversity	Don't Relegate Innovation to the R&D Department (Exclusive for Mega Enterprise Experience Attendees)

Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate. Agenda as of September 8 and subject to change.

11:30am–12:00pm	PLAN FOR THE DIGITAL FUTURE	CREATE A DYNAMIC ORGANIZATION	TRANSFORM THE TECHNOLOGY CORE	PLAN FOR THE DIGITAL FUTURE	MIDSIZE ENTERPRISE
	Digital Trust — Redefining Trust for the Digital Era	Foster a Growth, Not a Fixed, Mindset	How to Select Technologies for Your Digital Workplace	The 2018 CIO Agenda – An Industry Perspective	Top Recommendations for Storage and Backup for Midsize Enterprises
	ARCHITECT THE DIGITAL PLATFORM	PLAN FOR THE DIGITAL FUTURE	CREATE A DYNAMIC ORGANIZATION	DRIVE BUSINESS PERFORMANCE	
	Use Design Thinking to Integrate Customer Experience Into Your Digital Platforms	What a Good Strategic IoT Framework Should Look Like	What CIOs Should Do About Digital Officers	Why Humans Will Remain at the Core of Great Customer Experience	

Time	
11:45am–2:00pm	Attendee Lunch
12:15pm–12:35pm	Hype Cycle: Emerging Technologies
12:15pm–1:00pm	Meetups
12:15pm–1:30pm	Exclusive CIO Lunch: The Grid: The Decision-making Tool for Every Business (Including Yours) Matt Watkinson, Author
12:45pm–1:05pm	The Competitive Landscape for Head-Mounted Displays — A Guide to Technology on Your Face
1:15pm–1:35pm	Magic Quadrant: Data Center and Infrastructure Utility Services Outsourcing, North America
1:15pm–1:45pm	Solution Provider Sessions
1:45pm–2:05pm	Magic Quadrant: Cloud Infrastructure as a Service

2:00pm–2:45pm	ASK THE ANALYST	ASK THE ANALYST	ASK THE ANALYST			
	Choosing the Right Tools for Your DevOps Toolchain	Creating a One-Page Cloud Strategy for a Midsize Enterprise (Exclusive for Midsize Enterprise Attendees)	From Smart Grid to Smart Machines, Machine Learning and AI			
	PLAN FOR THE DIGITAL FUTURE	TRANSFORM THE TECHNOLOGY CORE	MASTERING LEADERSHIP	PLAN FOR THE DIGITAL FUTURE	ARCHITECT THE DIGITAL PLATFORM	MASTERING LEADERSHIP
	Connected! Exploring Life and Work in the Digital Society	2018 Top 10 Trends and Technologies With the Greatest Impact on Infrastructure and Operations	Creating High Performance Multidisciplinary Teams to Win at Digital Business	Digital Business Demands New IT Operating Models	Drive Collaboration in Your Business Ecosystems: Digital Workplace Meets Digital Platforms	Five Practical Steps to Hone Digital Leadership Thinking
	DRIVE BUSINESS PERFORMANCE	MASTERING LEADERSHIP	MASTERING LEADERSHIP	BUSINESS EXECUTIVE		
	How to Use Infrastructure as a Service to Optimize Costs	Optimize Business Outcomes Through Application and Product Value Management	Towards a Purpose-Centric Approach to Leadership	Digital Platform Roadmap: Setting Your Course for Optimization and Transformation		

	Meetups

2:00pm–3:00pm	ROUNDTABLE	ROUNDTABLE	ROUNDTABLE
	Get Hired as a Business Executive: Using the Jobs to Be Done Model to Increase CIO Business Value	The Spectrum of Federal Agency IT Value: From IT Cost Optimization to Digital Enablement	IT Strategy for Midsize Enterprise CIOs (Exclusive for Midsize Enterprise Attendees)

Ask the Analyst sessions, Roundtables, Workshops, Meetups and Contract Negotiation Clinics all have limited seating and require preconference scheduling to participate. Agenda as of September 8 and subject to change.

Time						
2:00pm–3:30pm	**CONTRACT NEGOTIATION CLINIC** Salesforce	**CONTRACT NEGOTIATION CLINIC** Use Four Financial Models to Optimize Negotiations	**CIO WORKSHOP** Are We There Yet? How to Measure Your Digital Journey Performance (Repeat)	**CIO WORKSHOP** New Operating Principles for Talent and Skills Planning	**M3E WORKSHOP** Communications Effectiveness — Getting to What Matters Fast (Exclusive for Mega Enterprise Experience Attendees)	

Time	Content
2:15pm–2:35pm	**Magic Quadrant: Business Intelligence and Analytics Platforms**
2:45pm–3:05pm	**Magic Quadrant: Operational Database Management Systems**
3:15pm–3:35pm	**Hype Cycle: Business Ecosystems**
3:15pm–4:00pm	**Solution Provider Sessions**
	🔄 **Meetups**

Time				
3:15pm–4:15pm	**M3E ROUNDTABLE** Evolving the Leadership Meeting(s) in an Agile Culture (Exclusive for Mega Enterprise Experience Attendees)	**ROUNDTABLE** Best Practice in Application Maintenance	**ROUNDTABLE** How to Scale Digital Banking	

Time	Content
3:45pm–4:05pm	**Market Guide: Virtual Customer Assistants; a Dynamic Vendor Landscape Explained**
4:15pm–4:35pm	**Magic Quadrant: Identity Governance and Administration**

Time						
4:30pm–5:00pm	**MAVERICK** The Emergent Machine Society — Where Machines Meet, Talk, Scheme, Fight and Get Married	**CREATE A DYNAMIC ORGANIZATION** Adopt a Lean Digital Security Organization to Mitigate the Skills Shortage	**DRIVE BUSINESS PERFORMANCE** Building the Best B2B Customer Experience Program	**ARCHITECT THE DIGITAL PLATFORM** Digital Twins: The Future of Better Digital Business Decisions	**PLAN FOR THE DIGITAL FUTURE** Everything You Need to Know About Data Ownership, Sovereignty and Rights	**ARCHITECT THE DIGITAL PLATFORM** Investing, Building and Running a Winning Multisided Platform
	CREATE A DYNAMIC ORGANIZATION Modern Meetings: From Monotony to Mayhem to Mastery	**DRIVE BUSINESS PERFORMANCE** Prepare for the Next Generation of Customers, Today	**BANKING & INV SERVICES** The Natural Way to Pay	**CREATE A DYNAMIC ORGANIZATION** The Value of Story Telling for Culture Change	**MASTERING LEADERSHIP** This Is Your Brain on Digital Leadership: Harness the Hidden Powers That Shape Behavior	**DRIVE BUSINESS PERFORMANCE** Use Data and Analytics to Drive Measurable Business Value
4:30pm–5:15pm	**ASK THE ANALYST** IoT & Retail	**ASK THE ANALYST** PPM				
	🔄 **Meetups**					

Time	Content
5:30pm–6:15pm	🔑 **Guest Keynote: Competing Against Luck** Clayton Christensen, Kim B. Clark Professor of Business Administration, Harvard Business School
6:15pm–7:30pm	🍸 **ITxpo Reception**
7:30pm–9:30pm	🍸 **US and Canada Commercial Sector Reception** 🍸 **Latin American Reception**

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THURSDAY, OCTOBER 5

Time	Content
7:00am–9:00am	🍴 **Attendee Breakfast**
8:00am–8:45am	**CIO Story:** Steve Betts, Senior Vice President and CIO, Blue Cross Blue Shield of Illinois, Montana, New Mexico, Oklahoma, and Texas
9:00am–9:45am	🔑 **Gartner Keynote: THE FOUR - The Hidden DNA of Amazon, Apple, Facebook, and Google** Scott Galloway, Founder, L2; Professor of Marketing, NYU Stern

Time				
10:15am–11:00am	**ROUNDTABLE** How Midsize Enterprises Can Be More Secure Without Spending a Penny (Repeat) (Exclusive for Midsize Enterprise Attendees)	**ROUNDTABLE** Deciphering the Midsize Enterprise Operational Environment (Exclusive for Midsize Enterprise Attendees)	**ROUNDTABLE** AI Technology in Manufacturing – Beyond Augmented Reality, Head Mounted Displays, and IoT (Repeat)	**SOLUTION PROVIDER SESSIONS** Solution Provider Sessions

Time	Content
11:00am–12:20pm	**Magic Quadrant: Customer Engagement Center**

Time					
11:00am–12:30pm	**ASPIRING CIO WORKSHOP** Communications Effectiveness — Getting to What Matters Fast (Repeat) (Exclusively for Executive Programs Attendees)	**ASPIRING CIO WORKSHOP** Next Stop — CIO (Repeat) (Exclusively for Executive Programs Attendees)	**WORKSHOP** Report Cybersecurity and IT Risk to the Business (Exclusive for Midsize Enterprise Attendees)	**WORKSHOP** Business Model Leadership: The Higher Education CIO's Greatest Value	**WORKSHOP** The Myth of the Glass Ceiling — How to Recruit, Retain and Promote for Inclusion and Diversity

Time	Content
11:15am–11:35am	**State of Security Monitoring and Analytics 2017**

Time						
11:15am–12:00pm	**PLAN FOR THE DIGITAL FUTURE** A CIO's Guide to Success With Platform Businesses	**TRANSFORM THE TECHNOLOGY CORE** CIO Call to Action: Deliver Pervasive Integration Capabilities to Empower Digital Transformation	**PLAN FOR THE DIGITAL FUTURE** Immersive Augmented Reality and Virtual Reality — The Future of Work Is Interactive	**TRANSFORM THE TECHNOLOGY CORE** Delivering High-Impact Reference Models and Roadmaps to Guide Investments and Execution	**CREATE A DYNAMIC ORGANIZATION** Key Trends in Platform Architecture for Digital Business	**CREATE A DYNAMIC ORGANIZATION** Innovating With Agile & DevOps — Taking It to the Next Level
	PLAN FOR THE DIGITAL FUTURE What to Do and Not Do With AI	**TRANSFORM THE TECHNOLOGY CORE** Privacy Pressures: Attack the GDPR Before It Attacks You!	**TRANSFORM THE TECHNOLOGY CORE** State of Network Security in the Era of Advanced Threats	**PLAN FOR THE DIGITAL FUTURE** Willful Disruption and Seven Disruptions You Might Not See Coming	**DRIVE BUSINESS PERFORMANCE** Top Emerging Business and Societal Trends You Need to Follow Today	**MASTERING LEADERSHIP** Are You a Master CIO?
	CEB, NOW GARTNER Placing Big Bets: The Corporate Strategist's View of Scaling Digital Business	**MAVERICK** The Edge Will Eat the Cloud	**MAVERICK** Your Cybersecurity Is the Hands of Emerging Digital Nations!	**MEETUPS** Meetups		
11:15am–12:15pm	**CONTRACT NEGOTIATION CLINIC** Best Practice in Negotiating Both Traditional and Cloud-Based Infrastructure Contracts	**CONTRACT NEGOTIATION CLINIC** SAP				

Time	Content
11:45am–1:00pm	🍴 **Attendee Lunch**

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Time						
1:00pm–1:45pm	**PLAN FOR THE DIGITAL FUTURE** The State of the IoT Network Landscape	**ARCHITECT THE DIGITAL PLATFORM** The State of Cloud Security	**DRIVE BUSINESS PERFORMANCE** How Analytics Will Change Every Part of Your Organization	**PLATFORM ECONOMY** AI, Chatbots and Event Triggered Applications Enable the Digital Business Platform	**ARCHITECT THE DIGITAL PLATFORM** Building the Digital Platform From the Remnants of Your Application Portfolio	**PLAN FOR THE DIGITAL FUTURE** Evolving Enterprise Capabilities With Natural Language Is Mission Critical
	TRANSFORM THE TECHNOLOGY CORE Cost Optimization Beyond the Data Center	**CREATE A DYNAMIC ORGANIZATION** So Many Ways to Collaborate; Why Is There Not More Collaboration Going On?	**DRIVE BUSINESS PERFORMANCE** Three Steps to Transform Your Business by Leveraging IoT and Cost Optimization	**TRANSFORM THE TECHNOLOGY CORE** How to Prepare for a Perimeterless Work Environment	**MAVERICK** How Will You Fare When Your Device Approaches the Bench?	**MAVERICK** Dangerous Data: Can't Live Without It, Can't Live With It
	ASK THE ANALYST What's Next for My ERP?					
1:00pm–2:00pm	**CONTRACT NEGOTIATION CLINIC** Oracle	**CONTRACT NEGOTIATION CLINIC** Software as a Service (Exclusive to Midsize Enterprise Attendees)	**ROUNDTABLE** How to Make Governance Stick in a Midsize Enterprise (Repeat) (Exclusive for Midsize Enterprise Attendees)	**ROUNDTABLE** Blockchain — Separating Myth and Reality	**ROUNDTABLE** How IT Can Support the Federal Government Reform Initiatives	
2:00pm–2:45pm	**ARCHITECT THE DIGITAL PLATFORM** Deliver Platform-Ready I&O for Digital Business Platforms	**DRIVE BUSINESS PERFORMANCE** Methods for Monetizing Your (and Others'!) Information Assets	**MASTERING LEADERSHIP** Preparing the Board for Digital Business Initiatives	**MASTERING LEADERSHIP** Amplify Your Persuasion Superpowers?	**CREATE A DYNAMIC ORGANIZATION** Scaling Bimodal — The Key Principles and Practices for Digital Success	**PLAN FOR THE DIGITAL FUTURE** Using AI Conversational Platforms for Customer Experience; Better, Faster and Cheaper
	MASTERING LEADERSHIP Practice Makes Perfect — Five Situational Leadership Types	**MAVERICK** Blockchain Undermines The Value Proposition Of Platform Businesses	**MAVERICK** California vs. China — Why It's "Game Over" for Technology Dominance in the 21st Century			

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