

Enhancing Telecom Experiences through AI: An Insightful Perspective from AWS

透過人工智能（AI）提升電訊體驗：

來自 AWS 的精闢觀點

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Mr. Chris Featherstone, the esteemed Principal Data & Generative AI/ML CX GTM Lead at Amazon Web Services, Featherstone started as an engineer and worked at multiple companies doing product and business development. When he developed a call centre, he began building a natural language process model through speech recognition and AI, then joined Amazon and produced both short and long forms of speech recognition technology for call centres or subtitling, helping telecom companies gain access to voice telephony technologies to draw value out of conversations.

AI in Communications: Unlocking New Frontiers

To Featherstone, AI in communications does not only consist of generative AI but also pattern recognition, using machines to find patterns that bleed over to insight generation, automating this repeatable process. After human validation, we can generate hyper-personalised content and, through feeding data into machines, we can get a generative follow-up of what the data means and what we can do with it going forward, changing the telco market value in both the customer and operator journey.

For the operators, the focus is on cost efficiency. For example, in terms of call networks, through observability, cost analysis or proactive level loading of users, AI can understand better signaling and compliance standards. Then, using pattern recognition to do anomaly detection, network engineers can detect, diagnose and remediate exponentially faster and can give better understanding and insights.

Similarly, in the back office, AI can navigate the intricate web of customer types, preventing revenue leaks through discounts, contract misalignments, and device management challenges. Viewing the performance operating systems and business support systems, there's a complex system for different types of customers, so customer service representatives might give away discounts and free credit to leaving customers, or carriers will give discounts that stay for the whole time of contract or people might've left the company but never gave the hardware back, so there's revenue lost in devices, customer pleasure and accidental discounts.

To get ahead of understanding the context of customer interaction with AI and make things frictionless across all communication styles, telecom companies are under a lot of pressure to provide more data and faster pipes with an expectation from customers to be offered at a lower price. As they have to capture the context of the customer, such as if they're high-value or fragile customers, there's an internal value chain that, through AI, can recognise who they are and provide better context. Customer service right now is managed by tactical measures and KPIs, so there's a lot of mismatch on what to do with the customers while finding information, so using AI can find the context of why they're calling and give them the best experience in real-time.

Customers have an unconscious bias of who is providing the best customer experience, so companies can get ahead of providing great service by understanding what's in their network, how to get ahead of the predictability, how to communicate proactively, and who can be the fastest in emergency scenarios.

Ensuring Privacy and Security: A Cornerstone of AI-Powered Experiences

To Featherstone, security is always first and foremost across every system, and in regions where customers need to utilise these workloads, companies are giving customers the decision of how to utilise the servers. Once they gain access, they use it in terms of governance with intrinsic properties on the access management

Chris Featherstone 先生在 AWS 擔任首席數據和人工智能（電訊行業）全球專家主管，他前身是一名工程師，在多家公司從事產品和業務開發工作。當他開發了一個電話服務中心（call center）時，他開始通過語音辨識和 AI 構建自然語言處理模型。之後，他加入了亞馬遜，並為電話服務中心或字幕製作開發了短篇和長篇語音識別技術，協助電訊公司從對話記錄中獲得有價值的資訊。

AI 在通信領域：開拓新的疆域

對於 Featherstone 先生來說，通信領域的 AI 不僅包括生成式 AI，還包括模式識別，利用機器發現可以產生洞見的模式，並自動化這類重複。經過人工驗證後，我們可以生成高度個性化的內容，並通過將資料登錄機器，獲得資料含義及其未來應用的生成式回饋，從而改變電訊市場在客戶和營運商旅程中的價值。

對於營運商的而言，一切都是基於成本效益。例如，在電話網絡方面，通過可觀察性、成本分析或主動的用戶負載平衡，AI 可以更好地理解訊號和合規標準。然後，使用模式識別進行異常檢測，網絡工程師可以更快地檢測、診斷和處理問題，並提供更好的理解和洞察。

同樣地，在後勤辦公室，AI 可以瀏覽複雜的客戶類型網絡，通過管理折扣、合同對齊和裝置管理，防止出現收益洩漏。通過監控運營系統和業務支援系統的表現，AI 可以幫助識別客戶管理過程的複雜性。這可以防止客戶服務代表無意中向離職客戶提供過多折扣或免費信用。此外，AI 還可以確保營運商折扣與合同條款保持一致，並且公司能夠有效管理離職客戶未歸還的硬體。

通過對客戶數據和流程管理的整體性方法，AI 可以優化收益，提升客戶滿意度並降低無意間損失收益的風險。

為了更好地理解客戶與人工智能互動的背景，並在各種溝通方式中實現無縫體驗，電訊公司面臨著很大的壓力，不僅要提供更多數據和更快的網絡通道，還要滿足客戶以更低價格提供服務的期望。由於他們必須捕捉客戶的背景資訊，比如是否為高價值或脆弱客戶，通過 AI，內部價值鏈可以識別到客戶身份並提供更好的背景。目前，客戶服務是通過戰術性措施和關鍵績效指標（KPIs）來管理的，因此存在很多不配接的地方。

客戶會在無意中會偏好哪家公司提供最佳客戶體驗，因此公司可以通過了解自身網絡的情況、如何提前預測、如何主動溝通，以及如何在緊急情況下快速反應，來領先於競爭對手提供優質服務。

確保隱私和安全：AI 驅動體驗的基石

根據 Featherstone 先生的觀點，安全始終是每個系統中最優先考慮的因素。在客戶需要利用這些工作負載的地區，公司會讓客戶決定如何利用服務器。客戶獲得訪問權限後，會在訪問管理層上運用內在屬性，來實現有效的治理。然後，他們會採取策略發佈可驗證和可審核的優質信息，

layer. Then, they use tactics to publish quality information that can be validated and auditable to feed into the AI. Although the data layer is important, it's the access layer that gives the ability to know what the information connects to. Part of the governance model is making sure they have a good inventory and a knowledge graph or information architecture that helps them understand the metadata of all data systems and what they're used for. Data cardinality is the innateness of data and looks for uniqueness of data, so instead of operators having to sift through huge amounts of data, we can have an embedded framework of this data so they can know what to measure against.

Transforming the Consumer Landscape

Featherstone envisions AI as a powerful enabler for both content generation and productivity enhancement in the hands of consumers. Proactive systems can do all things within the operating system, talk to the web, take that information and utilise the AI to get hyper-personalised suggestions. This will evolve into business assistants, providing hyper-personalised marketing and content creation. The general public will be able to access proactive systems to choose to which organisations they will provide data to, such as when applying for jobs, proactive systems can allow employees to scour companies and choose which companies to provide their personal information to instead of having all of it out in the open on websites such as LinkedIn.

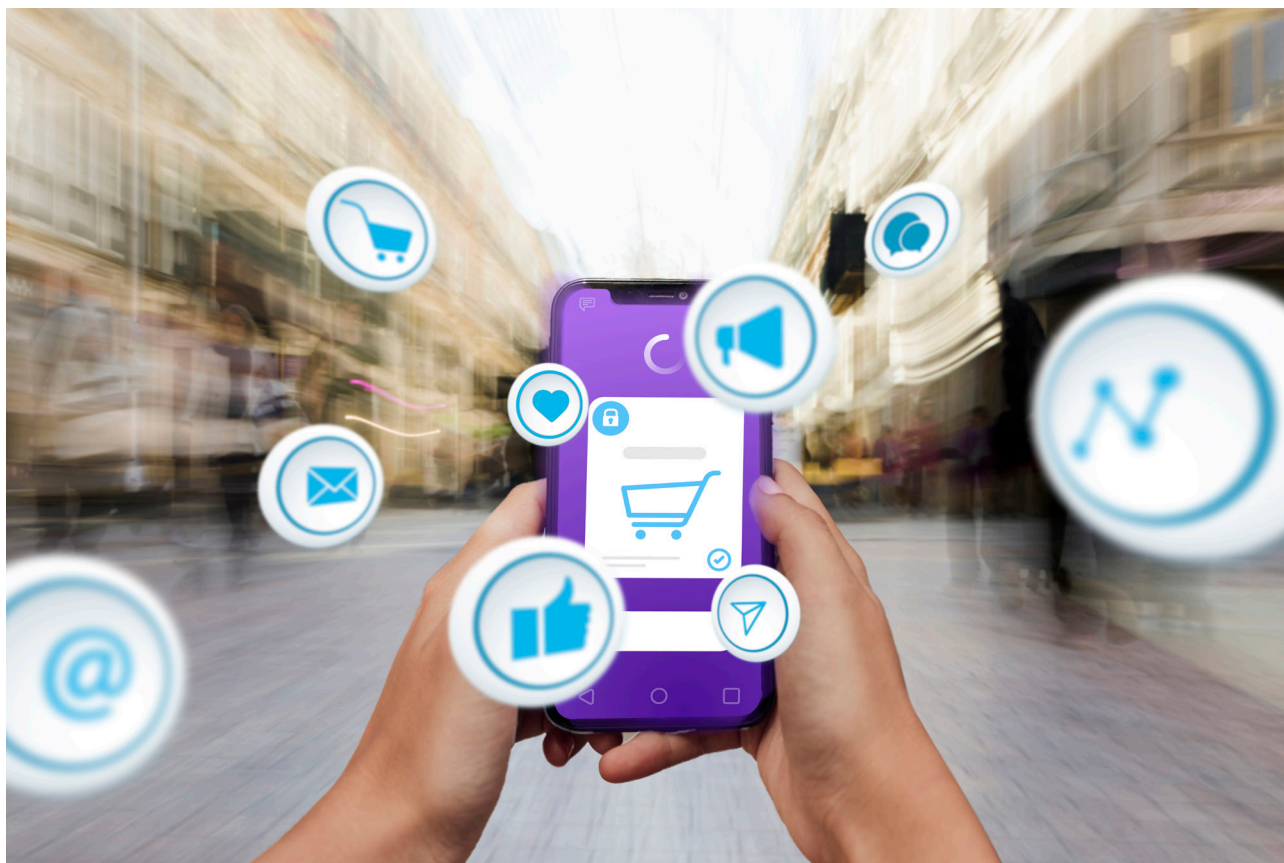
When we observe speeches, some long-form conversations have no structure and no intent but have emotions, speed, pauses and accents. Just by detecting this from the beginning of the conversation, AI can understand and frame the rest of the conversation using speech recognition and natural language processing in real-time, like Amazonconnects, which creates real-time transcriptions or post-call analytics, through detection for keywords for organisations.

供 AI 使用。雖然數據層很重要，但是訪問層才是能夠知道信息連接對象的關鍵所在。治理模型的一部分是確保公司擁有良好的存量清單和知識構造或信息架構，有助於理解所有數據系統的元數據及其用途。數據基數是數據的本質特徵，會尋找數據的唯一性。這樣可以避免運營人員必須篩選大量數據，取而代之的是嵌入式數據框架，讓他們可以知道應該對什麼進行測量。總的來 Featherstone 先生認為安全性是最優先考慮的因素，公司應該為客戶提供決策自主權，並建立有效的治理框架和數據架構，提高數據分析效率。

改變消費者格局

Featherstone 先生設想 AI 是內容生成和生產力提升的強大推動力，消費者可以使用它。主動式系統可以在操作系統內完成所有事情，與網絡對話，獲取信息並利用 AI 獲得高度個性化的建議。這將發展成為商業助手，提供高度個性化的營銷和內容創作。一般公眾將能夠訪問主動式系統，選擇將數據提供給哪些組織，例如在求職時，主動式系統可以讓員工搜索公司並選擇向哪些公司提供個人信息，而不是將所有信息都公開在 LinkedIn 等網站上。

當我們觀察演講時，有些長篇對話沒有結構和意圖，但有情感、速度、停頓和口音。僅僅通過從對話開始就能檢測到這些，AI 就可以使用語音識別和實時自然語言處理，如 Amazonconnects，來理解和框架化其餘部分，包括實時抄寫或通話後分析，通過關鍵詞檢測來為組織服務。




The Future of AI in Communications: Embracing the Exponential Growth

According to Featherstone, the future holds exponential advancements in data as people's need for data and the amount of data they possess continues to grow. Featherstone also predicts that satellite communications will grow rapidly, as satellite-based systems can deliver robust connectivity to even the most remote parts of the world. However, the biggest problem of AI in communications is that it cannot take social cues. Featherstone believes AI won't replace humans soon but people who do know how to utilize AI will take those jobs, so learn and understand about this technology to apply these techniques to your job and move faster with more data.

Companies should provide education on what decisions to make next. Featherstone suggests that companies should start with a small and simple, high demand with a low-risk framework. Thinking about use cases can help companies figure out the path to production, breaking it down step by step. Companies should do a POC, breaking down what the strategic business value is, do a case analysis, and think about the efficiency, revenue and technical feasibility.

Companies should be wary of data that can be compromised by doing a PII and risk assessment and security organisational alignment. Companies should choose whether they prioritise risk or demand, and through this, create a framework and standard they can look to when they eventually move on to more high-risk systems. And throughout the process, Featherstone emphasizes the importance of accuracy over speed - maintaining a robust data lifecycle with the most relevant information is crucial to avoid inaccuracies.

Overall, Featherstone paints a future where AI-driven communications will grow exponentially, but success will require a thoughtful, strategic approach that balances innovation with prudent risk management. 

AI 在通信領域的未來：擁抱指數增長

根據 Featherstone 先生的預測，未來數據將呈指數級增長，因為人們對數據的需求和擁有數據的數量不斷增加。他還預測，衛星通信將快速增長，因為基於衛星的系統可以為世界上最偏遠的地區提供強大的連接。然而，AI 在通信領域最大的問題是無法捕捉社交線索。Featherstone 先生認為如 AI 不會取代人類很快就會被取代，但掌握 AI 技術並將其應用於工作的人將會佔據優勢。因此，您需要學習和瞭解這項技術，並將其應用於您的工作，以便更快地取得進步。

公司應該提供有關下一步決策的教育。Featherstone 先生建議公司應該從小而簡單的高需求、低風險框架開始。思考使用案例可以幫助公司找出通往生產的道路，並逐步推進。公司應該進行概念驗證 (POC)、分析戰略業務價值、進行案例分析，並考慮效率、收入 and 技術可行性。公司應該謹慎處理可能由於進行個人身份資訊 (PII) 和風險評估而受到損害的資料。公司應該決定是否優先考慮風險還是需求，並據此建立一個框架和標準，以最終過渡到更高風險的系統。在整個過程中，Featherstone 先生強調資料的準確性比速度更為重要 - 維護最相關資訊的健康生命週期至關重要，以避免不準確。

總括來說，Featherstone 先生描繪了一個 AI 驅動通信呈指數級增長的未來，但成功需要平衡創新與謹慎風險管理的戰略方法。 