

Voice-ordering Technology: A Case of McDonald's AI Drive-thru



Source: Pexels (2021)

Background

In the modern digital landscape, restaurants are actively searching for ways to drive down labour costs by introducing artificial intelligence. According to the National Restaurant Association, 16% of restaurant owners plan to invest in AI, including voice recognition (CNBC, 2024). However, the following case study regarding McDonald's withdrawal from its AI drive-thru ordering investment suggests that voice-ordering technology still has years to go.

McDonald's investment in the technology began in 2019 with the acquisition of AI speech company Apprento (Business Insider, 2019). Hoping to provide "faster, simpler, and more accurate order taking," the fast food giant began developing automated drive-thru systems under a new research unit called "McD Tech Labs," using Apprento's AI voice-based conversational system (Business Insider, 2019). After experimenting at 10 restaurants in Chicago, the company reported "substantial benefits" but acknowledged the long road ahead, citing an 85% accuracy rate and requiring human intervention for 20% of orders due to issues with accent and dialect interpretation (Engadget, 2021).

Two years later, seeking to explore voice ordering more broadly, McDonald's announced a global partnership with leading tech firm IBM (CNBC, 2024). As part of the agreement, McDonald's would receive help from IBM with its development of automated order-taking technology, while IBM would acquire McDonald's research unit, McD Tech Labs (IBM, 2021). With IBM's expertise in AI customer solutions and natural language processing, McDonald's was able to tackle integrations including additional languages, accents, dialects, and menu variations (IBM, 2021). The partnership also enabled a larger-scale experiment at roughly 100 restaurants across the US (CNBC, 2024).

Challenges

Unfortunately, McDonald's venture with automated drive-thru did not prevail, as videos of frustrated customers with inaccurate orders went viral on the Internet. It became evident that

accuracy remains a serious challenge, with customers receiving piles of butter and ketchup packets along with their ice cream orders (CBS News, 2024). Furthermore, integration with existing point-of-sale systems proved problematic, as customers found orders from other people being added to their bills (BBC, 2024). In light of overwhelming criticism, McDonald's shut down all AI drive-thru operations nationwide, ending its three-year partnership with IBM (New York Times, 2024).

However, this does not entirely mean the end of AI drive-thru or voice ordering for McDonald's. In a public statement, the company said it remains confident that a voice ordering solution for drive-thru will be part of the restaurant's future (BBC, 2024). In the meantime, McDonald's will continue to evaluate future development plans for automated drive-thru and potential providers of voice ordering solutions (The Register, 2024).

Discussion Questions

1. What motivated McDonald's to invest in AI-powered drive-thru ordering systems?
2. What role do customer experiences and feedback play in the development and implementation of AI technologies in the restaurant industry?
3. Do you support McDonald's decision to continue pursuing voice-ordering technology in the future? Why or why not?
4. What steps should McDonald's take before reintroducing AI-powered drive-thru ordering in the future?

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Keywords

- Food and Beverage
- Drive-thru
- Point-of-Sale Integration
- Automation
- Artificial Intelligence (AI)
- Voice-ordering

语音点餐技术：以麦当劳 AI 汽车餐厅为例



Source: Pexels (2021)

背景

在现代数字化环境中，餐饮业正积极寻找通过引入人工智能来降低劳动力成本的方法。根据全国餐饮协会的数据，16%的餐厅业主计划投资人工智能，包括语音识别技术 (CNBC, 2024)。然而，以下关于麦当劳终止其 AI 汽车餐厅点餐投资的案例研究表明，语音点餐技术仍需要数年时间才能成熟。

麦当劳对该技术的投资始于 2019 年对 AI 语音公司 Apprente 的收购 (Business Insider, 2019)。这家快餐巨头希望提供“更快、更简单、更准确的接单服务”，并开始在一个名为“McD Tech Labs”的新研究部门中，利用 Apprente 基于 AI 语音的对话系统开发自动化汽车餐厅点餐系统 (Business Insider, 2019)。在芝加哥的 10 家餐厅进行试验后，公司报告了“显著的效益”，但也承认前路漫长，指出其准确率为 85%，并且由于口音和方言理解的问题，20%的订单需要人工干预 (Engadget, 2021)。

两年后，为了更广泛地探索语音点餐技术，麦当劳宣布与领先的科技公司 IBM 建立全球合作伙伴关系 (CNBC, 2024)。作为协议的一部分，麦当劳将在开发自动化接单技术方面获得 IBM 的帮助，而 IBM 将收购麦当劳的研究部门 McD Tech Labs (IBM, 2021)。借助 IBM 在 AI 客户解决方案和自然语言处理方面的专业知识，麦当劳得以解决包括多种语言、口音、方言和菜单变体在内的整合问题 (IBM, 2021)。该合作还使麦当劳得以在美国各地约 100 家餐厅进行更大规模的试验 (CNBC, 2024)。

挑战

不幸的是，麦当劳的自动化汽车餐厅点餐业务并未取得成功，因为顾客因订单错误而感到沮丧的视频在网络上广为流传。显然，准确性仍然是一个严峻的挑战，顾客在点冰淇淋时却收到了成堆的黄油和番茄酱包 (CBS News, 2024)。此外，与现有销售

点系统的整合也出现了问题，顾客发现其他人的订单被加到了他们的账单上 (BBC, 2024)。鉴于铺天盖地的批评，麦当劳关闭了其在全国范围内的所有 AI 汽车餐厅点餐业务，结束了与 IBM 为期三年的合作关系 (New York Times, 2024)。

然而，这并不完全意味着麦当劳的 AI 汽车餐厅点餐或语音点餐技术的终结。在一份公开声明中，公司表示仍然相信汽车餐厅的语音点餐解决方案将成为其未来的一部分 (BBC, 2024)。与此同时，麦当劳将继续评估未来自动化汽车餐厅的发展计划以及语音点餐解决方案的潜在提供商 (The Register, 2024)。

讨论问题

1. 麦当劳投资 AI 汽车餐厅点餐系统的主要动机是什么？
2. 客户体验和反馈在餐饮业 AI 技术的开发和实施中扮演什么角色？
3. 你是否支持麦当劳未来继续探索语音点餐技术的决定？为什么？
4. 麦当劳在未来重新引入 AI 汽车餐厅点餐系统之前应该采取哪些步骤？

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关键词

- 餐饮
- 汽车餐厅
- 销售点系统整合
- 自动化
- 人工智能
- 语音点餐

語音點餐技術：以麥當勞 AI 得來速為例



Source: Pexels (2021)

背景

在現代數位化環境中，餐飲業正積極尋找透過引入人工智慧來降低勞動力成本的方法。根據全國餐飲協會的數據，16%的餐廳業主計劃投資人工智慧，包括語音辨識技術 (CNBC, 2024)。然而，以下關於麥當勞終止其 AI 得來速點餐投資的案例研究表明，語音點餐技術仍需要數年時間才能成熟。

麥當勞對該技術的投資始於 2019 年對 AI 語音公司 Apprente 的收購 (Business Insider, 2019)。這家速食巨頭希望提供「更快、更簡單、更準確的接單服務」，並開始在一個名為「McD Tech Labs」的新研究部門中，利用 Apprente 基於 AI 語音的對話系統開發自動化得來速點餐系統 (Business Insider, 2019)。在芝加哥的 10 家餐廳進行試驗後，公司報告了「顯著的效益」，但也承認前路漫長，指出其準確率為 85%，並且由於口音和方言理解的問題，20%的訂單需要人工干預 (Engadget, 2021)。

兩年後，為了更廣泛地探索語音點餐技術，麥當勞宣布與領先的科技公司 IBM 建立全球合作夥伴關係 (CNBC, 2024)。作為協議的一部分，麥當勞將在開發自動化接單技術方面獲得 IBM 的幫助，而 IBM 將收購麥當勞的研究部門 McD Tech Labs (IBM, 2021)。借助 IBM 在 AI 客戶解決方案和自然語言處理方面的專業知識，麥當勞得以解決包括多種語言、口音、方言和菜單變體在內的整合問題 (IBM, 2021)。該合作還使麥當勞得以在美國各地約 100 家餐廳進行更大規模的試驗 (CNBC, 2024)。

挑戰

不幸的是，麥當勞的自動化得來速點餐業務並未取得成功，因為顧客因訂單錯誤而感到沮喪的影片在網路上廣為流傳。顯然，準確性仍然是一個嚴峻的挑戰，顧客在點冰淇淋時卻收到了成堆的奶油和番茄醬包 (CBS News, 2024)。此外，與現有銷售

點系統的整合也出現了問題，顧客發現其他人的訂單被加到了他們的帳單上 (BBC, 2024)。鑒於鋪天蓋地的批評，麥當勞關閉了其在全國範圍內的所有 AI 得來速點餐業務，結束了與 IBM 為期三年的合作關係 (New York Times, 2024)。

然而，這並不完全意味著麥當勞的 AI 得來速點餐或語音點餐技術的終結。在一份公開聲明中，公司表示仍然相信得來速的語音點餐解決方案將成為其未來的一部分 (BBC, 2024)。與此同時，麥當勞將繼續評估未來自動化得來速的發展計劃以及語音點餐解決方案的潛在提供商 (The Register, 2024)。

討論問題

1. 麥當勞投資 AI 得來速點餐系統的主要動機是什麼？
2. 客戶體驗和回饋在餐飲業 AI 技術的開發和實施中扮演什麼角色？
3. 你是否支持麥當勞未來繼續探索語音點餐技術的決定？為什麼？
4. 麥當勞在未來重新引入 AI 得來速點餐系統之前應該採取哪些步驟？

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關鍵詞

- 餐飲
- 得來速
- 銷售點系統整合
- 自動化
- 人工智慧
- 語音點餐