Riding the AI Wave

Travel & Accommodation Exec Breakfast

July 19th 2023
LLMs, led by ChatGPT, have grown at an unprecedented pace

Months Taken To Reach 100m Global Monthly Active Users

But today’s iterations still have limitations (which are being rapidly addressed)

**Difference vs. Traditional Search**
- LLMs use **generative** search and creates new content based on patterns recognised from its training data
- Traditional search engines use **discriminatory** search and make inferences based on indexed data

**Capabilities Today**
- Use cases include text, image and code generation, use cases in travel including writing travel content, planning holidays, communicating to customers etc

**Limitations Today**
- **Hallucinations** – LLMs confidently output false information
- **Outdated** – models are calibrated on fixed datasets, with limited ‘real-time’ input
- **Speed / cost** – limited by resource required and cost to deliver
Numerous different actors are rapidly developing LLMs

**ChatGPT** has made Generative AI mainstream

**Big Tech** is investing heavily

**Start-ups** are receiving extensive backing

- OpenAI’s ChatGPT is by far the most popular LLM today in terms of customer adoption
- Google has released its **upgraded model**, PaLM-2, which is **integrated across its suite of products** (incl. advertiser usability) and represents the base for Google’s Chatbot Bard
- Meta’s **LLaMa model integrated in content discovery of Meta apps**
- Anthropic, founded by former OpenAI employees, **recently raised c. $300m** in venture funding
- Inflection AI plans largest AI cluster after **$1.8bn funding**
- A121’s Jurassic-2 model **cites internet-based sources** to reduce hallucinations
Cost and computing resource are currently significant barriers to widespread adoption, though areas of intense developmental focus.

ChatGPT queries are currently significantly more expensive than Google.

<table>
<thead>
<tr>
<th>Chat GPT cost per query (Dec 2022)</th>
<th>Google cost per query</th>
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<tbody>
<tr>
<td>$0.01–$0.09</td>
<td>$0.00005 = $0.17 per kWh (US, May 2023) * 0.0003 kWh per query</td>
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c. 200–2000x difference

This will fall – albeit not immediately

- Most solutions to this problem focus on **software improvements to reduce the size of the models**
- There is **general optimism of improvement** in this area
  - “You have some of the smartest people in the world working on this I see it coming down – it’s just going to get faster and cheaper”
    - Former Research Team Leader, OpenAI
  - But the **extent to which costs will fall is unclear**
    - “To scale to Google levels right now is completely unfeasible. To what extent it will be feasible is unclear”
      - AI Research Scientist, Meta
  - …On this basis we should assume some queries remain served by ‘traditional’ indexed search
Inspiration and post-booking customer service have readily usable LLM solutions.

AI quickly making headways into the travel journey, though it’s not yet directly changing booking …

<table>
<thead>
<tr>
<th>Inspiration</th>
<th>Detailed itineraries, highly responsive to user specification</th>
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<tbody>
<tr>
<td></td>
<td>iplan.ai generates customer tailored itineraries with photos &amp; links</td>
</tr>
<tr>
<td>Research</td>
<td>Offering through plugins and input from training data (not live)</td>
</tr>
<tr>
<td></td>
<td>ChatGPT suggests options based on customer preferences</td>
</tr>
<tr>
<td>Booking</td>
<td>Booking process for end-users remains the same</td>
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<tr>
<td></td>
<td>There are first applications for AI booking assistants to support booking processes</td>
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<tr>
<td>Post-Booking</td>
<td>Improved response times and quality of response</td>
</tr>
<tr>
<td></td>
<td>Airbnb and Hospitable are using conversational AI to improve their customer service</td>
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A clear consumer use case for LLMs is for travel exploration and inspiration – various businesses facilitate this, eg iPlan.ai

iPlan.ai uses ChatGPT to produce itineraries filled with photos and handy links to maps
Travel recommendations of LLMs such as ChatGPT are still generic; this will evolve, but trust will take longer to build.

We should assume rapid advancement in recommendation and trip planning through ‘trained AIs’

However, building trust may take longer – especially on complex / ‘important’ (eg family vacation) trips

ChatGPT suggests a very generic travel route, with little differentiation for a different group mix…

**Family Vacation Suggestion**
- Day 1-3: Cape Town
- Day 4-6: Garden Route
- Day 7-9: Kruger National Park
- Day 10-12: Durban and the Drakensberg Mountains
- Day 13-14: Johannesburg

**Friend Group Trip Suggestion**
- Day 1-3: Cape Town
- Day 5-8: Kruger National Park
- Day 9-11: Garden Route
- Day 12-14: Johannesburg
Booking capabilities in LLMs are already supported through plugins – Expedia & Kayak were early releases – requires click out to book

Live data pulled in from Expedia / Kayak and presented in text format

ChatGPT surfaces link to book on the website

Consumer able to request more information about the options provided

Does not show as wide a range of options as on Expedia website
Intermediated booking solutions will likely persist as a way of presenting real-time inventory to users.

**Potential Connections Powering LLM Responses**

A. 3rd Party Aggregator
   - Direct Relationships With Operators
   - Aggregator Database

B. Mass APIs to Operators and OTAs
   - Direct Relationships With Operators
   - Aggregator Database

C. Scraping of Operators
   - Inventory Owner / Operator Websites
   - Live Web Scraper / Indexing

**LLM-Powered Chatbot**

Most likely scenario for major ‘generic’ LLMs given current development path and simpler technical & commercial model.

Potential model for specialist LLMs.

Likely difficult from commercial & legal perspective.
Click-through model provides clear advantages for LLMs vs. self-performing of booking…

...with consumers being used to similar models…

...and travel distributors & operators most likely to play along

### Rational for Click-Through to Complete Booking

<table>
<thead>
<tr>
<th>Proven Business Model</th>
<th>Customer Data &amp; GDPR</th>
<th>Broad Connectivity</th>
<th>High-touch Service</th>
</tr>
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<tbody>
<tr>
<td>• Commercialization of links strongly accepted both on consumer and travel distributor side</td>
<td>• Direct booking through LLM would require handling of personal data of customers – and compliance with GDPR etc</td>
<td>• Integration of booking requires broad set of APIs across all operator types</td>
<td>• Performing bookings through LLMs would require set-up of responsive customer service</td>
</tr>
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<td></td>
<td>• Likely result in shift of marketing budgets from Google to broader array of LLMs</td>
<td>• Coding effort unlikely to be fully covered by LLM-developers</td>
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Chat LLMs are also showing the potential to augment Customer Service and content creation functions – improving speed, quality and cost

LLMs can **generate content** required across multiple digital channels including web content, google text ads, social medial posts etc

They can also **handle customer service requests via chat or email** either responding directly or providing an initial response for an agent to review

Can also ‘read’ complex **Terms & Conditions** to improve accuracy of responses

**Major travel businesses expect LLMs to significantly improve** their customer service

“We have 72 user policies - some of them are 100+ pages long. AI can do much better than an agent in reading the policies and responding to customers”

Brian Chesky, CEO at Airbnb

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“The representative sends the context — listing, reservation and conversation history — to ChatGPT, which generates a reply. Nearly half the time, those responses are sent “as is” to the guest. Many others require only small adjustments.”

Pierre Hamana, CEO at Hospitable

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LLMs may impact the mix of different distribution channels – as may evolve as search engines incorporating LLMs

**Potential Impact of LLMs on Channel Importance**

- **Paid Search**
  - Likely to remain a key channel
  - Existing search engines integrating LLMs to enhance results, but likely to retain existing monetisation models
  - Capabilities required to manage paid search likely to evolve as AI capabilities improve bidding algorithms

- **SEO**
  - Integration of LLMs into search results enables search engines to digest and summarise content from other websites reducing requirement for consumer click-through
  - As a result SEO traffic may become smaller source of traffic for travel operators and intermediaries

- **Direct, CRM & Repeat**
  - Given ongoing inflation of paid search costs and reduction in SEO traffic direct traffic likely to increase in importance of direct traffic
  - Will require travel businesses to build recognisable consumer brands and build customer loyalty and repeat purchase and recommendation behaviours
Near term there are a range of priorities to ‘learn fast’ as well as building resilience into the proposition.

- **Leverage AI Tools to Accelerate Content**: AI tools can accelerate the creation of web-content, social media posts, google text ads etc in order to improve web presence.

- **Develop AI-Supported Customer Service**: Beyond ‘static’ content, conversational can AI will support customers service models including customer service chatbots.

- **Explore Interfaces to LLMs**: LLMs are developing rapidly, leading travel intermediaries including Expedia and Kayak have already developed plugins for ChatGPT.

- **Work Beyond Google SEO and Strengthen Other Channels**: Google SEO may become a less relevant source of traffic over time – creating defensibility to this trend requires strengthening other channels.

- **Brand Awareness**: Building brand awareness can support direct customer acquisition, supporting resilience against decline in SEO.

- **Customer Loyalty and Repeat**: Driving customer loyalty, repeat behaviour (and recommendations) supports improved customer economics.

- **Distinctive Proposition**: Being clear on the distinctiveness of the customer proposition, leveraging unique inventory and proprietary data and expertise will ensure continued relevance.