

MSI Webinar: How Generative AI Can Reshape Marketing

August 15, 2023 | Virtual | 12:00 pm – 12:30 pm EDT

Speaker:

David A. Schweidel – *Rebecca Cheney McGreevy Endowed Chair, Professor of Marketing, Emory University, Goizueta Business School.*

Overview:

David A. Schweidel (Emory University) examines how generative AI can reshape marketing, not as a human replacement, but as a tool to leverage to enhance efficiency, productivity and cost-effectiveness, while producing the most compelling version of an ad. In his presentation, Schweidel acknowledges ethical issues surrounding AI (compensation, economy, consumer sentiment), but also points to the opportunities and benefits AI can contribute to the field of marketing. In his discussion, he mentions the role of generative AI in developing models, but more importantly, he notes that marketers should place their focus on the application of these models and how they can be built upon to benefit the marketing process. Schweidel then demonstrates a variety of uses of generative AI based on his research in SEO, search engine ad research, display ad research and social media.

Takeaways:

Discussions of Ethical Issues in AI

- Now that we're seeing AI in the art world, we're also beginning to observe the role it is playing in everyday life. The current writers' strike (Writers Guild, Screen Actors Guild) conjures up issues of ethics in AI and "fundamental questions" we are going to have to address.
 - There are growing considerations regarding AI's impact on employment and the economy, in addition to issues surrounding privacy
 - There are issues involving proper compensation to people whose work has been used to develop AI systems.
 - Consumers have voiced their support of artists being properly compensated if their work has had a part in training these AI systems.

What can marketers do with AI and the complexities it brings with it?

- There is a great deal of opportunity in the field of marketing with generative AI, but also a lot of potential issues with adopting this technology.
- A graphic from [Sequoia Capital regarding generative AI](#) highlights model development. Schneider suggests that **marketers should place their focus on the**

application of these models and less on when the next, more improved language model comes out.

A Focus on Model Development

	TEXT	CODE	IMAGE	SPEECH	VIDEO	3D	OTHER
MODEL LAYER	OpenAI GPT-3	OpenAI GPT-3	OpenAI Dall-E 2	OpenAI	Microsoft X-CLIP	DreamFusion	TBD
	DeepMind Gopher	Tabnine	Stable Diffusion		Meta Make-A-Video	NVIDIA GET3D	
	Facebook OPT	Stability.ai	Craiyon			MDM	
	Hugging Face Bloom						
	Cohere						
	Anthropic						
	AI2						
	Alibaba, Yandex, etc.						

- Foundational models that are being developed are going to **allow the building of marketing applications that work on top of them**. These are the tools we can use as markers for specific applications, with text being the most well-examined applications to date.
- There is still great uncertainty in the reaction to AI in the marketing industry.

An Abundance of Opportunity: Marketing Applications

	TEXT	CODE	IMAGE	SPEECH	VIDEO	3D	OTHER
APPLICATION LAYER	Marketing (content)						
	Sales (email)	Code generation	Image generation				Gaming
	Support (chat / email)	Code documentation	Consumer / Social				RPA
	General writing	Text to SQL	Media / Advertising				Music
	Note taking	Web app builders	Design	Voice Synthesis	Video editing / generation	3D models / scenes	Audio
	Other						Biology & chemistry

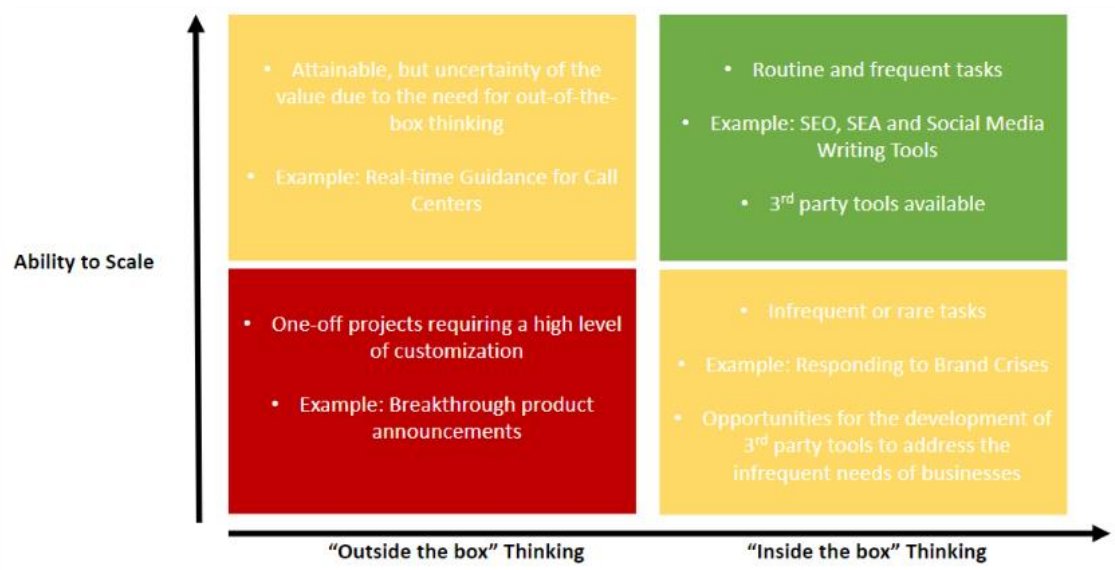
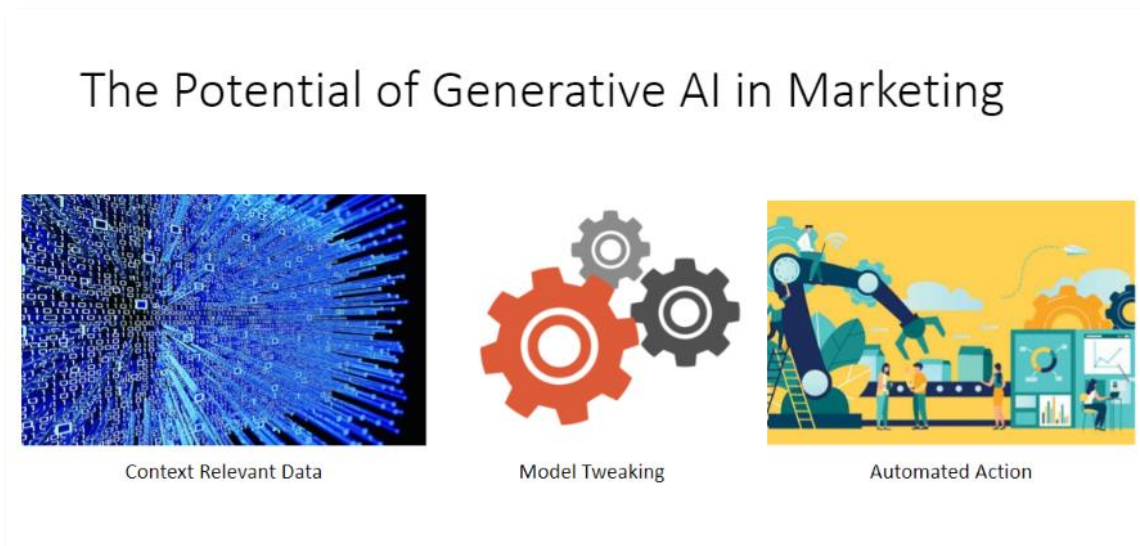
Content is King or is it Context?

- Large language models are trained to provide human-like responses. **The challenge for large language applications** such as ChatGPT is that **they are not trained in any type of context.**

Models vs. Solutions.

- **How do we take an existing model** that has been made open-source or made available through an API and **refine it for use in a particular application?**

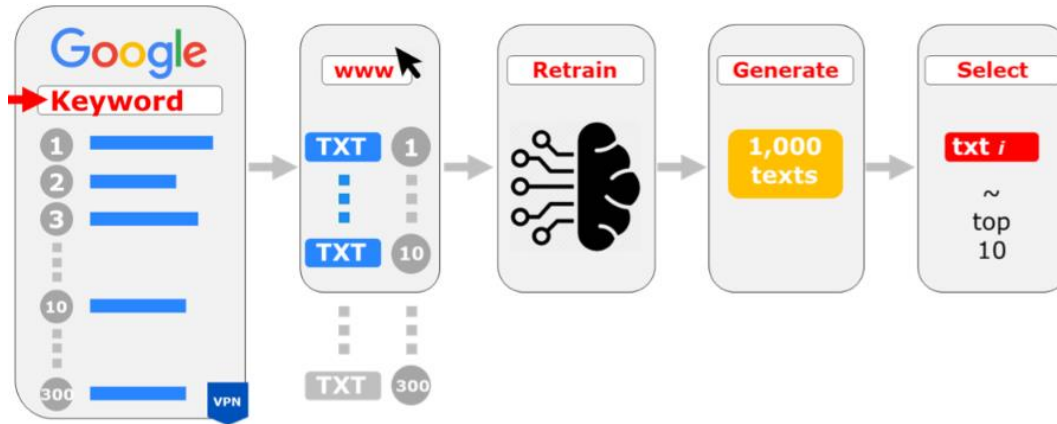
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SEO Research

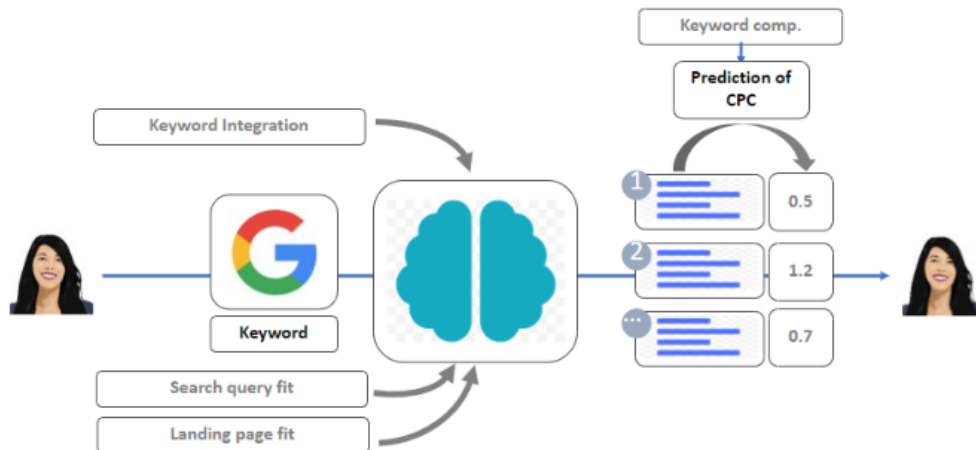
- Research conducted by Reisenbichler, Reutterer, Schweidel and Dan, demonstrates how natural language generation (NLG) can support content marketing by using it to draft content for the landing page of a website in search engine optimization (SEO).

- Traditional SEO projects rely on human-generated content that is both time-consuming and costly.
 - Leveraging a semi-automated methodology using state-of-the-art NLG, the content-writing machine can create unique, human-like SEO content, which will still require a human editor.



Search Engine Advertising Research

- Research by Reisenbichler, Reutterer and Schweidel indicates that generative AI can improve many aspects of marketing, but current large language models (LLMs) are not sufficient on their own.
 - Hybrid AI models that incorporate human judgment focused on individual keywords can optimize search engine advertising (SEA), helping marketers do more with less.



Empirical Setting	Experimental Group	Ad Campaign Performance ³				
		Impr.	Clicks	CPC	Total cost, €	$Q_{S_{ad}}^4$
Education (B2C)	Best QS PPLM ¹	21,252	2,002	.50	952	.43
	Human trained ¹	17,374	1,802	.49	845	.30
	Human experts ²	10,147	1,418	.56	694	.20

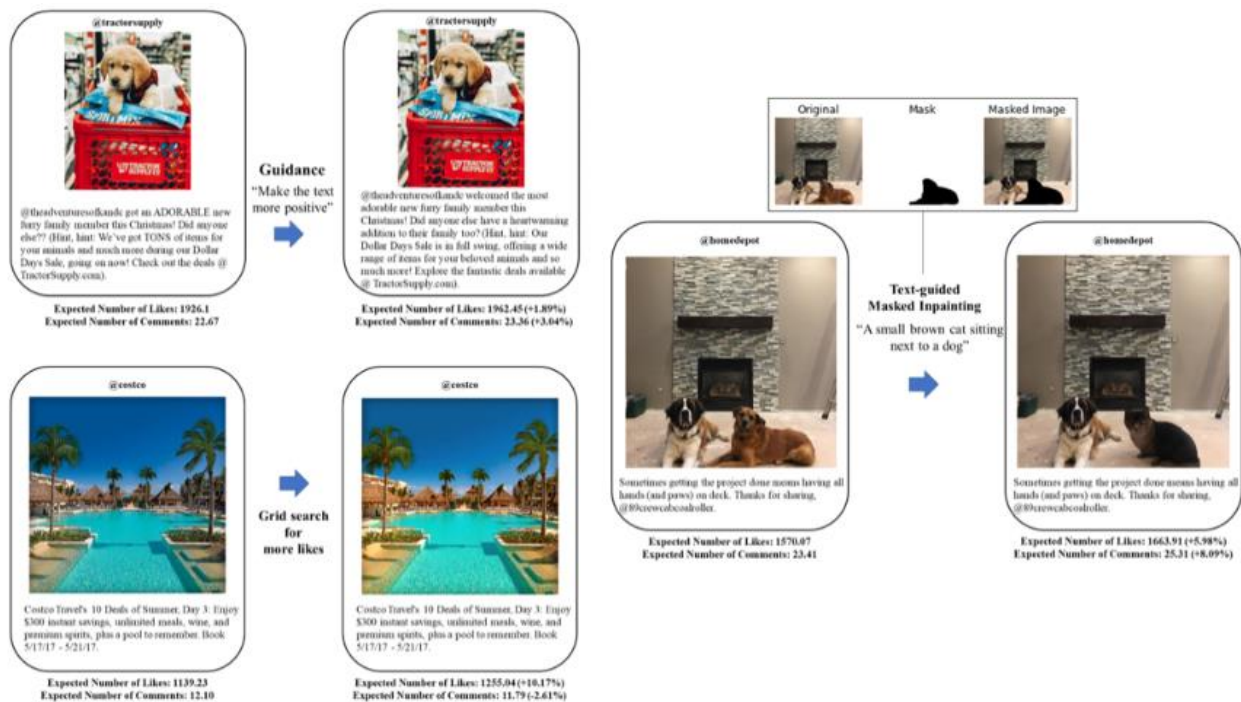
¹ One ad copy produced per target keyword ($KP_{(k,w)}$); ² A few ads produced for many keywords (standard setup in professional campaigns); ³ Best values per setting, experimental group and performance indicator marked in grey; ⁴ Mean quality scores ($Q_{S_{ad}}$) values (of human revised PPLM output or human generated ads) across all ad and keywords used.

Display Advertising Research

- Current research examines **using generative AI for ads to create images that appeal to certain target audiences** (e.g. home decor, clothing) which can address the costly aspects such as hiring a crew, location, model and post-production.
 - Using the car industry as an example, the research explores using generative AI to create car ads that would be just as effective as the traditional and costlier approach.
 - Hundreds of images (360-degree images) of vehicles captured during the car production process could be used to update the models to create ads at a lower cost.
 - The process takes images of the vehicles along with images of other car ads to create the best-performing car ad. By exposing an online panel (MTurk) to car ads to see which ads perform best, those insights can now be used to create new car ads with the images of other vehicles.
 - When evoking brand perception, interest and purchase intention, the AI-generated ad did a better job than more traditionally designed automobile ads.

Social Media Research

- Using a predictive model by feeding it posts scraped from social media can evaluate the performance of a social media post based on historic performance.
 - Combining this scoring model with generative AI can help guide the social media editing process to create more effective posts.



Sources:**Supporting content marketing with natural language generation**

Source: Reisenbichler, M., Reutterer, T., Schweidel, D. A., & Dan, D. (2021). MSI Working Paper. [MSI](#).

Uses state-of-the-art natural language generation to develop a “content writing machine” that takes the search query/target keyword specified by a human user as input, trains on the target keyword-specific content, and generates and outputs a list of the best SEO texts based on anticipated search engine performance measured by a quality score.

Applying large language models to sponsored search advertising

Source: Schweidel, D. A., Reisenbichler, M., Reutterer, T. (2023). MSI Working Paper. [MSI](#).

Uses two field tests to evaluate different approaches to applying generative AI LLMs to search engine advertising (SEA) to improve click-through rates while reducing development costs and costs per click (CPC).

Generative AI: A Creative New World

Source: Huang, S., Grady, P., & GPT-3. (2022, September 19). [Sequoia Capital](#).

This report from Sequoia examines generative AI as an efficient analytical and creative tool.