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"Artificial Intelligence in healthcare marketing"

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Introduction

Object of the research

Marketing strategies of pharmaceutical companies.

Subject of the research

Effectiveness of marketing strategies one pharmaceutical enterprise.

Goal of the research

Based on "digital marketing", explore digital marketing tools in different application scenarios and ways, and explore the marketing strategies applicable to pharmaceutical enterprises in the new era.

The asks of the research are:

- Learn the theoretical concept of digital marketing and the application scenarios and application modes of different modes of digital marketing tools.

- Using AstraZeneca as examples, we analyze and study digital marketing tools it uses in the marketing process.

- Through theoretical study and case study, a set of effectiveness, replication and generalization, which is suitable for the marketing strategies of pharmaceutical enterprises.

The development of digital marketing and its tools

The development of digital marketing

The term "marketing in the digital age" first appeared in 1994

In 2012, the rapid development of social information technology has changed the marketing methods of many enterprises and improved the user experience of consumers

In 2021, a Chinese scholar Ren Yubo proposed four different strategies and practices of digital marketing from traditional marketing: intervention, content, touch point, data.

The development of digital marketing tools

	Data sources	Marketing communication tools	Supporting technology	Primary tool provider	Application scenarios	Core competence
1	Market-fishing research data	Sampling statistics and data analysis	sampling statistics	Market research company	Consumer research, market analysis	Analyse
2	Sales,and customer data	CRM tools	Information technology, database technology	The CRM Software Tools company	CRM, sales and marketing	Analysis + management
3	Massive media data	Programmed advertising tool	Big data technology, etc	Internet media, digital advertising service agencies	Advertising marketing communication	Analysis + management + trading
4	Cross-media / channel multi-source dimension data	Whole-process operation and management tool	Cloud computing and Artificial intelligence technology	Independent construction of digital marketing service institutions and enterprises	Intelligent operation of the whole process of marketing and communication	Analysis + management + transaction + operations

The application scenario and function of AI in marketing

Personalized Marketing

Analyze consumers' personal information and behavioral data to provide them with customized product recommendations, content, advertising and marketing information

Intelligent advertising

With a high degree of data analysis, learning and automation, AI makes advertising more personalized, more efficient and with a higher return on investment.

Content generation and optimization

Automatically generate news articles, product descriptions, social media posts, etc

Smart customer service

Artificial intelligence technology can provide 24 / 7 customer service and support in the form of chatbots and virtual assistants, solve common problems, provide personalized advice, and enhance the customer experience

Predictive analysis and optimization

Artificial intelligence technology can analyze historical data and real-time data, help marketers make more accurate decisions, and optimize marketing strategies and activity execution

Intelligent data management

Data cleaning, integration, analysis, and visualization to provide better data management and decision support

The problems in pharmaceutical enterprises

Drug research and development

- The development of new drugs takes a long time and has a high input cost
- Less than 10% of clinical candidates will be approved

Whole-process patient management

Traditional pharmaceutical companies

Focus on developing more effective medicine

Whether use the right medicine?
Whether insist on medication?
When to use medicine?
When to stop medicine?

Real focus：The physical health of the patient

The application of AI in pharmaceutical enterprises

Application of AI in biopharmaceutical research

| Process	The largest conflict contact point	AI use case
The establishment of targets	Identify the relevant druggable targets	BERG uses multiple data sources to create an AI causal inference network to discover new drug targets
Drug research and development	Efficient optimization of the candidate lead compounds	Exscientia Using AI technology to prejudge potency, selectivity, ADME, and other criteria to reduce the design time for candidate lead compounds (about 25% reduction)
Preclinical study	Accurate detection of the candidate lead compounds	Numerate The optimal ADME and toxicity testing protocol were developed through AI technology-based modeling capabilities
Dlinical trial	Identify appropriate patient populations for clinical experiments	Flatiron Health Use the clinical trial and tumor sequencing data obtained by AI technology to group patients by biomarker

Application of AI in medical services

- Test / pathological diagnosis:Improve the accuracy and speed of disease diagnosis
- Hospital informatization: Intelligent medical record management, patient information management and medical resource scheduling
- AI medical assistant: Remote diagnosis, disease consultation, drug recommendation and other services.
- Medical solutions: through AI technology to improve the overall medical operation efficiency, reduce costs, and accelerate the digital transformation of the industry. More and more pharmaceutical giants are starting to use AI technology to improve their business systems

AI and Pharma Collaborations in 2021-2022
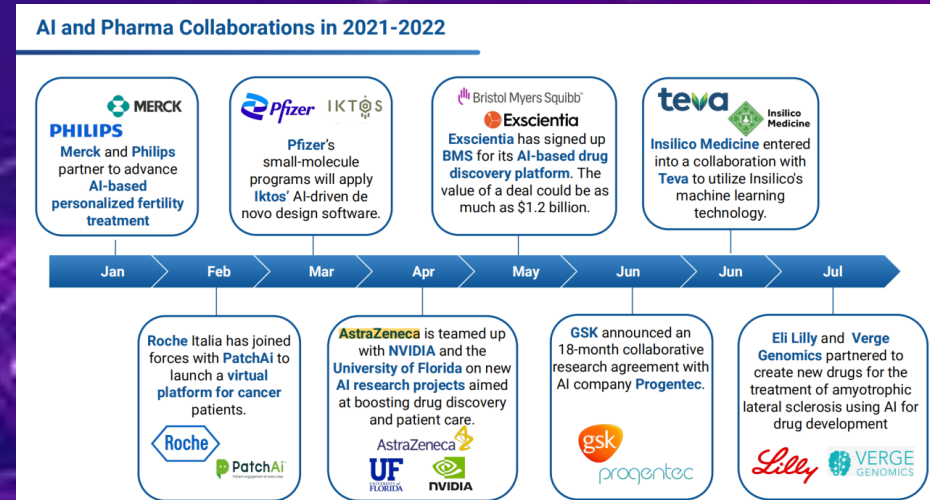
How AstraZeneca uses AI in the Chinese market

AstraZeneca is the world's leading pharmaceutical company, in 2022 with annual revenue of $44.351 billion, ranking ninth among the global pharmaceutical giants; and $5.792 billion in China, accounting for nearly half of the company's emerging market revenue (49.3%). As an industry giant, AstraZeneca is also actively participating in the innovation and integration of AI
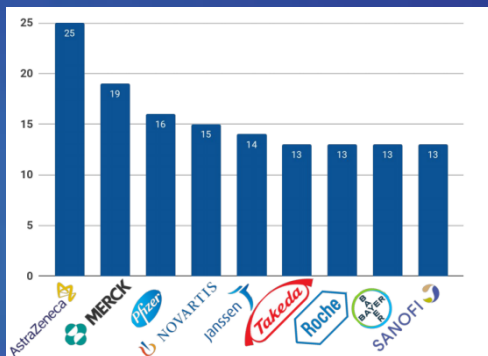
According to the DPI report, as of the first quarter of 2022, AstraZeneca had 25 partners in the AI pharmaceutical sector, ranking first among all pharmaceutical companies.

AstraZeneca China has done in AI in recent years:

03.2017	The China Health Internet of Things Innovation Center was launched in Wuxi
06.11.2019	AstraZeneca and CICC set up a health industry fund with an estimated $1 billion fund
10.07.2020	It debuted at the World Artificial Intelligence Conference, released the top ten "AI + medical" application scenarios and recruited partners
26.10.2020	The intelligent assisted PD-L1 interpretation software for non-small cell lung cancer developed in cooperation with Diinga Technology has been approved for clinical application
11.2020	Reached strategic cooperation of "Internet Hospital" project with Hillhouse Venture Capital
10.07.2021	Medical artificial intelligence innovation AI iLab landed in Jing'an, Shanghai
10.07.2021	Announced joint investment to build Lingang AI innovation
30.07.2021	AstraZeneca's Eastern China headquarters and the International Life Science Innovation Park were officially opened

- In the business
- On the channel
- Industrial fund participated in the investment

The success of AstraZeneca's AI strategy

Head pharmaceutical companies in China region revenue comparison chart

	2019	2020	2021	2022
AstraZeneca China Region	48.8	53.67	60.11	57.92
Novartis China Region	22	25.73	30.52	29
Merck East China Region	31.41	34	42.62	51.02
Sanofi China Region	\	29.75	30.98	34.35
Roche China Region	34.88	35.32	35.33	33
Lilly China region	\	11.17	16.61	14.53

Unit:billions of dollars

Thinking on the AI in pharmaceutical enterprises

How to conduct scientific and effective legal regulation on medical AI？？？

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Artificial intelligence is a mechanical execution instruction, and whether they can really understand their behavior？？？

Conclusion and suggestions

Conclusion

1 As the most cutting-edge and efficient digital marketing tool, AI technology has been actively applied in personalized marketing, intelligent advertising, content generation and optimization, intelligent customer service, predictive analysis and other aspects.

2 It is the future development direction of pharmaceutical enterprises to build conflict marketing as a whole process, all-channel and comprehensive model of AI services.

Suggestion

Pharmaceutical companies should actively join the process of digital is given priority to with AI, GPT as the latest artificial intelligence technology, pharmaceutical companies can consider applying GPT technology to the whole process of patients, in patients with communication, patients after medication tracking, 24 hours medication consultation, and even patients with emotional relief, greatly overcome the artificial timeliness.

Thanks for your attention！

Reporter： Chongjun Chen