

**AI in Product Management**  
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**Lecture - 24**

**Case Studies on AI in Competitor Analysis**

Welcome to this NPTEL online certification course. On artificial intelligence and product management. Now, we are talking about module 24, and we will be discussing some case studies on AI in competitor analysis. So, we are talking about part 5, AI in competitor analysis, and we are talking about module 24. So, to give an overview, we will understand the business potential of using AI for competitor analysis, explain the use of AI by Nike and Airbnb for competitor data analysis.

Discuss the case of Unilever in leveraging data for actionable reports. Explain the use of AI in analyzing marketing moves by P&G and Wendy's. Understand the use of AI in processing unstructured data by Walmart. Explain the use of AI in trend analysis by Coca-Cola. And then discuss the use of AI in scrutinizing digital actions by Amazon. So now we will start first with unlocking business potential with AI-driven competitor analysis. Staying ahead of the competition is critical in today's ever-changing business landscape. Companies are increasingly relying on artificial intelligence to gain a competitive advantage through in-depth competitor analysis. Using AI for competitor analysis allows businesses to gain

Data-driven insights that reveal opportunities and potential threats. Let us look at how AI is transforming this critical aspect of strategic business operations through six key functions. The first function is it analyzes competitor data. AI algorithms sufficiently collect, process, and analyze massive amounts of competitor data from various sources. Public records, Social media, financial reports, customer reviews, and other sources are among them. AI-powered tools, for example, can quickly extract valuable information such as market share, pricing strategies, product features, and customer sentiments. This data drives informed decision-making and strategy development. The case study here is that of Nike.

Nike is the world's largest manufacturer of athletic apparel and footwear. It is leveraging AI in competitor analysis. To enhance its strategic positioning and maintain its marketing

leadership in the athletic apparel industry. In a variety of ways, the company employs AI to analyze competitor data. Nike, for example, employs AI to

First, data integration and real-time insights. Nike has invested in acquiring data science and analytics firms such as Datalog, which automates the translation of raw data into actionable insights. This integration allows Nike to analyze competitor activities, market trends, and consumer preferences in real time, enabling swift strategic adjustments. By consolidating data from various sources, including its app ecosystem and supply chain, Nike can better understand its competitors' landscape. The second thing is predictive analytics for market trends. A couple of years ago, Nike acquired Zodiac, a data analytics company. Zodiac allows Nike to obtain profound insights from users using the Nike app and other devices like Fitbits to understand user habits and forecast buying decisions. With the help of data analytics, Nike succeeded in enhancing its customer purchase and retention techniques. By recognizing who to target and when to target them. For example, if a user typically purchases shoes every eight months and it has been over a year since the purchase, Nike will reach out and remind the user to make a purchase. Nike also acquired

3D scanning company Invertex, specializing in using automation tech to create consumer and medical gadgets. Invertex has created Nike Fit, the latest scanning tech that uses a blend of data science, machine learning, computer vision, and suggestion engines to find consumers the best fit for each shoe. The third is personalized marketing strategy. Nike gathered consumer data from its app ecosystem, enterprise data, and supply chain to enhance its global marketing strategies. However, extracting actionable insights was challenging.

Using AI, Nike could segment its customer base more effectively and tailor marketing strategies to specific demographics. This personalization enhances customer engagement and loyalty, making Nike's offerings more appealing compared to competitors like Adidas and Under Armour, who are also investing heavily in similar technologies. AI-driven recommendation systems analyze users' behavior to suggest products that align with individual preferences, thereby increasing conversion rates. The fourth is competitive benchmarking.

AI tools enable Nike to conduct competitive benchmarking by analyzing competitors' pricing strategies, promotional activities, and product launches. Nike employs dynamic pricing strategies powered by AI to optimize pricing based on demand, inventory levels, and customer behavior. This approach ensures that prices are competitive while

maximizing revenues, creating a win-win situation for both Nike and its customers. The dynamic pricing model also allows Nike to offer personalized discounts and promotions, further enhancing the customer experience.

The fifth is enhanced customer experience. Nike employs AI to improve customer interaction through personalized experiences and virtual assistants. These tools not only assist customers in finding products but also gather insights into customer preferences that can inform competitive strategies. By understanding what drives customer loyalty and satisfaction, Nike refines its approach to outperform competitors. Nike has its own generative AI model to design products using exclusive athlete data.

It uses a bespoke large language model that leverages performance data from athletes, combining it with public data to create a private garden of information for training the model. This AI initiative is part of Nike's broader strategy to revolutionize product design and manufacturing. The integration of AI with other technologies like virtual reality and 3D printing is a new alchemy that drastically expedites the prototyping process, allowing Nike to bring athletes' vision to life much faster. What usually took weeks or months now takes hours, highlighting the enhanced engagement with athletes through rapid prototyping.

Another case is Airbnb, which uses competitor data to offer dynamic pricing. So, now we will look at the case study of Airbnb. Airbnb, founded in 2008, turned the idea of renting out extra space in your home into a global phenomenon. With millions of listings worldwide, managing pricing was a huge challenge. They needed a system to ensure prices were competitive and optimized for both hosts and guests.

Airbnb utilizes a dynamic pricing strategy to optimize revenue and occupancy rates for hosts. This is achieved by adjusting prices in real time based on a variety of factors such as local demand, seasonality, and special events. One of the tools Airbnb offers to hosts is smart pricing, which automatically adjusts nightly prices based on current demand. The dynamic pricing software that Airbnb uses employs machine learning algorithms to analyze market data and adjust rental rates accordingly. The algorithm analyzes historical booking data, competitor pricing, and external factors to optimize listing prices in real time, maximizing revenues for hosts.

While ensuring competitive rates for the guests, Airbnb's dynamic pricing model has led to increased booking rates and revenues for hosts, with reports indicating that hosts using dynamic pricing tools earn up to 40 percent more compared to those who set fixed prices.

The second aspect shows insightful reports. AI-powered analysis generates detailed and actionable reports. These reports highlight key insights and trends and present them in simple formats, graphs, charts, and predictive models help stakeholders make quick, well-informed decisions. The following case study on Unilever depicts AI use in producing actionable reports. Now, we are discussing the case study of Unilever. Unilever is a multinational conglomerate that manufactures consumer goods.

The company employs AI to generate insightful reports on a variety of topics. In the next slide, we will discuss how Unilever employs AI. So, Unilever is a British consumer goods company made by a sugary sweet move to freeze out their competition when they implemented the usage of 26 AI data centers across the globe to synthesize insights from a range of sources, including social listening, CRM, and traditional marketing research. Unilever owns over 400 brands spread across 190 countries, and 13 of these brands have sales over a billion dollars.

Such brands include Lipton, Sunsilk, Dove, Knorr, Magnum, and hundreds of other food, vitamin, beauty, and cleaning products. While Unilever has used AI to sort through its structured data for years, it recently took a deep dive into its qualitative data by gleaning through text, audio, social media, and phone activity as a means to influence more of its marketing. Partnering with American, Chinese, Israeli, and UK startups to analyze information from content people post and reactions to that content, Unilever has been able to unearth insights in gap areas in their marketing that would have otherwise been missed.

A prime example of their development is Ben & Jerry's cereal-flavored ice cream. Fruit Loops and Frozen Flakes were created after listening to over 50 songs in the public domain that had lyrics talking about ice cream for breakfast. One of the AI algorithms Unilever enlisted in a partnership with a startup recognized a dataset that revealed an opportunity for a new product. Although Dunkin' Donuts sold ice cream in the morning for years, Unilever never had the data to prove this customer pain point. As a result, ice cream companies like Ben & Jerry's missed this niche.

Market opportunity with this new product on the shelves, competitors are now incorporating breakfast ice cream into their own name-brand product lines, and that's just the icing on the ice cream cake. The third is to analyze marketing moves, analyzing competitors' marketing campaigns to identify winning strategies and areas for improvement. It looks at performance, target audience engagement, and content effectiveness across different platforms. This analysis aids in the refinement and

optimization of one's own marketing strategies. The following case study on Procter & Gamble depicts AI use in analyzing marketing moves. Procter & Gamble is a multinational consumer goods company in a variety of ways.

The company employs AI to analyze marketing moves. We will discuss how P&G employs AI in the next slide. So, on its R&D website, P&G cites the challenge of accurately capturing customer behavior to inform product development. Traditional data collection techniques, such as surveys, discussion panels, and focus groups, primarily consist of self-reported information, which could be flawed due to errors.

A data gap between reported and actual consumer behavior resulted in skewed data P&G was using for product development and innovation. To bridge this gap, P&G's R&D team leveraged AI to analyze real-time usage data from smart products such as the Oral-B iO toothbrush. P&G's smart products are equipped with sensors that collect real-time usage data. This data is often used to create new products or customize product lines to consumer preferences. For example, the Oral-B iO toothbrush was the result of algorithms revealing the average brushing time was only 47 seconds compared to the 2 minutes reported by users.

AI and machine learning technologies processed these granular computer-generated data points through predictive analytics, data mining, and pattern recognition. IoT analytics further analyzed the sensor data to understand customers' interactions. The output of this processing was new product combinations, real-time feedback for R&D engineers, and consumer behavior insights. This led to tangible business outcomes, including enhanced product development and more timely and accurate consumer insights. Another implication of AI in analyzing marketing moves is depicted by Wendy's social media strategy.

Now we are talking about the case study of Wendy's. Wendy's has a strong online following across most social media platforms thanks to its sassy, all-hands-on-deck approach. By tracking social media trends, the brand is smart and quick to get ahead of viral memes and trending topics. AI-powered tools can continuously monitor competitor online activities, news, and social media through real-time analysis, allowing businesses to stay informed about changes in competitor strategy. Partnerships and product launches allow for timely responses. It is more time-sensitive and concentrates on tracking immediate and recent activities, allowing businesses to respond swiftly to changes in the competitive landscape.

Wendy's social media strategy is something most brands would love to have. This allows them to keep track of all mentions.

Of all their biggest competitors and use it to their advantage. One such instance in which a radio station posted on X about McDonald's and how they are changing their burgers. The post mentioned McDonald's announced that they are changing their burgers. Big Macs and other burgers are getting softer buns. Meltier cheese, tastier onions, and Big Macs are getting more Big Mac sauce.

The changes are rolling out slowly. What do you think of this? To this post, Wendy's reply was, 'Where is the beef?' Thereby conveying that despite its new buns and meltier cheese, along with its curious onion decision, McDonald's still sells the same burger patties it did in the 1980s. The reply by Wendy's also reinforced its business built on its square, fresh, never-frozen burger patties, which were created essentially to offer a better product than what McDonald's and Burger King sold.

The fourth is processes unstructured data. Because of AI's natural language processing capabilities, it can extract valuable insights from unstructured data sources, such as customer reviews, articles, and multimedia content. It converts unstructured data into actionable information for strategic decision-making. The following case study on Walmart depicts AI use in processing data to guide decision-making. So, Walmart, with its following network of stores, processes an unfathomable amount of data daily.

Every beep of a barcode scanner, each swipe of a credit card, and the tap of a foot on the store floor all create ripples in the vast pool of information. The journey begins with the collection of this data. An integrated process captures the essence of every transaction and customer interaction. Walmart Deals With a spectrum of data types that go beyond mere sales figures.

Consumer demographics, purchasing behavior, supply chain logistics, and even weather patterns all weave into the fabric of Walmart's data universe. By harnessing this comprehensive range of data, Walmart gains insights that extend far beyond the traditional retail landscape. At the heart of Walmart's data-driven decision-making lies the behemoth known as Big Data. This colossal amalgamation of structured and unstructured data empowers Walmart to detect patterns, identify correlations, and extract actionable insights. It is not just about collecting data for the sake of it; it is about making sense of it and turning raw information into strategic brilliance.

Walmart has an enormous storage space called a data lake. It is like a super-organized library but for data. Every time a user buys something, Clicks on a website, or talks about Walmart on social media, that information goes into the lake. Hadoop is a superhero for handling massive amounts of data.

This is like the muscles that lift and carry all the heavy information in Walmart. With Hadoop, Walmart can store and process tons of data. Walmart uses Spark to make quick decisions, like figuring out the best prices or making sure they never run out of your favorite snacks. Walmart uses clever ML algorithms to learn from the past and guess what you might want next. It uses Tableau to turn boring data into cool pictures using colorful charts and graphs.

Through the insight gained from data, Walmart employs dynamic pricing algorithms that adjust product prices in real-time based on various factors like demand, competition, and weather. For example, during a heat wave, prices for summer essentials might be adjusted to reflect increased demand. This maximizes revenues and ensures that customers get fair prices in different scenarios. Additionally, Walmart uses heatmaps gathered from customer data to optimize the arrangement of products by analyzing which areas of the store attract more attention and correlating them with sales data. Walmart ensures that high-demand items get prime real estate on the shelves. It is like a chess game where every move is backed by data. The fifth is AI aids in trend analysis. AI analyzes trends by identifying patterns and forecasting future market trends. It combines historical data and real-time data to forecast market movements and consumer behavior.

Allowing businesses to adapt more quickly. The following case study on Coca-Cola depicts AI use in trend analysis. So, Coca-Cola is a multi-billion dollar beverage conglomerate in a variety of ways. The company employs AI to aid in trend analysis. Coca-Cola, for example, employs AI for social data mining.

With 105 million Facebook fans and 35 million Twitter followers, Social media is a hugely important source of data for the company. Coca-Cola quickly tracks how its products are represented across social media and in 2015 was able to calculate that its products were mentioned somewhere in the world an average of just over once every two seconds. Knowing this gives insight into who is consuming their drinks, where their customers are, and what situations prompt them to talk about their brands. The company used AI-driven image recognition technology to spot when photographs of its product or those of competitors are uploaded to the internet and used algorithms to determine the best way to

serve them as intended. Ads targeted in this way had a four-times greater chance of being clicked on than other targeted advertising, the company has said. The sixth is scrutinized digital actions. AI tracks competitors' digital footprints. Such as website changes, SEO strategies, and user engagement metrics.

The scrutiny provides valuable insight into their digital strategies and enables them to respond quickly. In the next slide, the case study on Amazon depicts AI's use in scrutinizing digital actions. So, Amazon is a multinational technology company based in the United States. In a variety of ways, the company employs AI to scrutinize digital actions. Amazon's fulfillment centers use robots to pick and pack items.

Which allows for faster and more efficient order processing. But beyond that, Amazon is also using AI to optimize its inventory levels and predict which products are likely to sell out. By analyzing data on customer behavior, including search queries and purchase history, Amazon can adjust its inventory levels in real time and ensure that popular products are always in stock. AI is also playing a big role in price optimization on the Amazon marketplace. Amazon uses sophisticated algorithms to monitor competitive prices and adjust its own prices in real time.

This allows Amazon to stay competitive and offer customers the best possible prices while also maximizing profits for sellers. AI's influence is profound in enhancing the customer experience on Amazon. Not only does it offer personalized product recommendations, but it also aids in streamlining the buying process. From tailored search results to intelligent customer service, AI contributes to providing a seamless and frictionless shopping journey for Amazon customers. AI-driven chatbots, for instance, can provide instant customer support, helping shoppers with queries or providing solutions to problems.

Finally, AI-driven competitor analysis enables businesses to more effectively navigate the competitive landscape. Companies gain a strategic advantage by leveraging AI's data collection and interpretation capabilities, fostering innovation, growth, and sustainability in today's volatile markets. Embracing AI in competitor analysis isn't a choice for businesses looking to thrive in an increasingly competitive world. It is a requirement. So, to conclude this module, we have discussed the business potential of using AI for competitor analysis.

Then we discussed the use of AI by Nike and Airbnb for competitor data analysis. We also learned about the case of Unilever in leveraging data for actionable reports. Thereafter, we understood the use of AI in analyzing marketing moves by P&G and Wendy's. Then we

discussed the use of AI in processing unstructured data by Walmart. We also learned about the use of AI in trend analysis by Coca-Cola.

Finally, we understood how Amazon scrutinizes digital actions through AI. These are some of the references from which the material for this module was taken. Thank you.