

**AI in Product Management**  
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**Lecture - 22**

**Competitor Monitoring using AI**

. Welcome to this NPTEL online certification course on artificial intelligence in product management. Now we are talking about module 22, which is competitor monitoring using AI. This is what we are discussing in part 5, that is AI in competitor analysis, and we are talking about monitoring the competitors using AI. To give an overview of this module, we will start with an introduction to competitor monitoring using AI. Then we will discuss the application of AI-driven social media monitoring. We will explain the various AI tools for competitor monitoring. We will understand competitor data analysis techniques using AI.

Then we will learn about the strategic implications of competitive insights using AI. And then we will discuss the future trends in competitor monitoring. So, now we will start with the introduction to competitor monitoring using AI. So, what is competitive monitoring? Competitive monitoring is also known as competitive intelligence.

It is the process of systematically tracking and analyzing competitors' activities, strategies, and market positioning. The goal is to gain insights into competitors' strengths and weaknesses and to identify opportunities and threats. When it comes to monitoring competitors, there are multiple factors to focus on, depending on the industry and position within an organization. So, competitor monitoring can be used across six areas: pricing, product development, website monitoring, financial tracking, and investment tracking. Competitor monitoring using AI refers to the process of leveraging artificial intelligence technologies to track, analyze, and gain insights into competitors' activities, strategies, and performance. AI-driven competitor monitoring tools automate the collection and analysis of data from various sources, providing real-time and in-depth competitive intelligence.

Competition is understood as the pursuit of a goal by two or more persons or groups. The degree of goal achievement by one of the persons or groups usually results in a lower degree of target achievement by the other party. There are three types of competitive

relationships between two companies: direct, indirect, and potential. So, these are the three types of competition.

The competition between two companies is determined by the competitor's market commonality and resource similarity compared to the focal company. Now, let us look at what market commonality is. It refers to the degree to which two companies serve similar customer needs. In contrast, resource similarity refers to the extent to which the competitors have strategic assets comparable to those of the focal firm. The synergy of these two factors results in a matrix, and this is the matrix mapping the competitive terrain.

So, this is market commonality and resource similarity. So, when market commonality is high and resource similarity is low, it is an indirect competitor. When resource similarity is high and market commonality is high, it is a direct competitor. And when market commonality is low and resource similarity is high, then they become potential competitors. Secondly, from the focal firm's perspective, competitors can be identified from two different business perspectives.

Existing businesses, that is, existing markets and products, and new businesses, new markets and products. Now, let us look at AI-driven social media competitive monitoring. To stay ahead of your competition, it is important that social media marketers apply modern techniques to monitor what the competitors are doing. By using technologies to monitor the activities of a business competitor, social media marketers will be able to retain and attract many more customers. Therefore, closely monitor the competitors. Social media marketers need to apply the best technology, and this is where AI comes in. The social intelligence advisor that we will see later is an innovative, intelligent system that analyzes social media data and draws useful conclusions for marketers automatically, without needing any human intervention. Thus, combining the principles of an autonomous helper with minimal user interference. Intervention which analyzes big data automatically while giving actionable advice that makes sense to every marketer, not only to digital analysts. This is the social intelligence advisor process. So here, data gathering, then here we have AI analysis, then we have insights, advice, and reassess. So what happens in insight? Discover knowledge and patterns from algorithms applied to sets of mentions automatically.

Results are presented to the user. In advice, customized advice is generated, personalized for each case based on results from previous steps. Then AI's analysis analyzes individual mentions to extract knowledge, sentiment, image, and context, etc. In reassess, we have

follow-up and repeat the measurements at regular intervals to see how online presence has improved to optimize further. So this is what a social intelligence advisor process is.

Applying intelligent social media monitoring. Every business, no matter the industry, uses social media to engage customers. Therefore, there is a very high chance that a business competitor is using social media. For example, before rolling out a promotion, there is a high chance that there will be a post on social media to popularize the promotion. However, how well the tool is used.

Help in monitoring your competitors depends on the techniques used. Adopting a competitor monitoring tool that applies artificial intelligence comes with an added advantage. Through an intelligent monitoring tool, social media marketers are able to capture every social media post by their competitors and clients. As such, it is possible to identify the complaints raised by the competitor's current clients and effectively target the complaining clients with alternatives. Using AI for Competitive Intelligence

Identifying new strategic moves by competitors. Through the use of AI, social media marketers can identify competitors' moves, such as the launch of a new product. Such advanced monitoring enables them to prepare how to counter the move and retain the customers ideally. AI enables us to do this by monitoring online activities. For instance, we have online communities where companies engage their customers for ideas.

This includes the use of different social media tools such as webinars. This is where the next big ideas are laid out, and therefore it becomes very important to monitor such discussions. As a matter of fact, the infinite messaging occurring every day millions of times is a wonderful source of information. Insights from online consumer conversations not only help to identify gaps in the competitors' strategies but also let social media marketers know the next big ideas.

Use of AI-powered analytics tools to monitor the performance of competitors' campaigns and ads. AI can also be applied to monitor the performance of competitors' online campaigns. The reason why this is important is that social media marketers can identify where and how they are getting their customers. Basically, by being able to monitor such campaigns rolled out and also check out the performance of these campaigns, it gives insight into what the competitors are doing right.

By monitoring the performance of competitors' campaigns, social media marketers can understand the expectations of their customers. For instance, they can check out the number

of likes and shares, and reading the comments tells them what these customers like the most. Such efforts help them by crafting counter-advertisements that will reach and attract more engagement than their competitors. With an AI-enabled advertisement analytics tool, marketers are aware of the type of advertisements run by their competitors that gain more engagement.

With this knowledge, they are then able to come up with better advertisements and target the same audience. Using intelligent features to monitor what competitors and their customers say about a brand. A business has to successfully monitor mentions even when the competitors are not mentioning the brand name or the product name through an intelligent monitoring tool. Such a tool will allow monitoring and analyzing all posts sent out by the competitors and Through the use of ML, a social media marketer can identify when a post is referring to a brand or a product.

This way, a brand can intelligently guard its reputation online. The sad reality is that most business managers are not aware of the nicknames being used by their competitors and their customers when referring to them online. Unless the names used refer directly to the company, that is when they respond. Through the use of an intelligent monitoring tool, social media marketers can analyze different posts and be aware of what the competitors and their customers say about the brand. The adoption of an AI monitoring tool enhances competitor monitoring and identifies negative emotions.

Using AI to discover how customers perceive competitors' products. An intelligent social media monitoring tool not only focuses on what competitors are seeing, but such a tool is also capable of highlighting what customers say about products. Ideally, this is important because social media marketers are able to come up with various selling points. For instance, let us say that a brand's competitor's customers are complaining about certain elements missing from a product. Immediately, social media marketers are able to put up an advertisement that shows how their product meets that requirement.

As if that is not enough, they will also be able to target the complaining clients. This capability is enabled by using an advanced intelligent social media monitoring tool. In addition, through AI-enabled competitor monitoring, social media marketers will have the ability to get real-time intelligence. Therefore, they will be able to respond to the comments in real-time, having a high ability to convert the complaining competitors' clients. The next comes competitor monitoring tools using AI.

AI-driven competitor monitoring tools automate the collection and analysis of data from various sources, providing real-time and in-depth competitive intelligence. They identify gaps in the market and customer pain points that competitors are missing. Also, you can easily compare your business to others. All of this enables you to stay ahead.

Following are some competitor monitoring tools. One is Brand24. It is a media monitoring tool that helps you monitor your competitors on social media, websites, forums, blogs, podcasts, newsletters, review sites, and other sources. With Brand24, you can track mentions of your competitors across the internet. It provides real-time data

on competitor mentions, which helps you stay informed about their campaigns, activities, and customer interactions. It allows you to benchmark your brand's online performance against competitors. So the key features of this tool are media monitoring, anomaly detection, sentiment analysis, influencer identification, and topic analysis. Next is SimilarWeb. It can evaluate the traffic and engagement metrics of your competitors' websites. It gives you an idea of their total visits, page views, bounce rates, and average visit duration. By analyzing this data, you can determine how popular your competitors' websites are compared to yours.

It provides information about the sources driving traffic to your competitors' websites. You can identify which channels—search engines, social media, or referrals—generate the most visitors. The key features are website traffic analysis, audience demographics, competitor benchmarking, competitor detection, and audience interest. The next is Google Trends.

It is a free tool that provides valuable competitor insights and their online presence. With Google Trends, you can compare the search interest of various keywords or topics, such as competitors' brand names. By analyzing the search interest over time, you can determine your competitors' brands, market trends, and popularity. It provides valuable information about the regions where the search interest of specific keywords or brands is highest. This data helps you understand the regional markets where your competitors are gaining traction or facing challenges.

Moreover, Google Trends also offers demographic insights about the age and gender distribution of search interest, which can help you better understand your competitors' target audiences. So the key features are search and trust comparisons, regional and demographic insights, rising queries and topics, and related topics and queries. The next is Rf. It is a well-known SEO analysis tool that also provides competitor analysis features.

With this, you can identify your competitors' best-performing content, keywords, and organic search strategies. Additionally, this tool provides actionable insights into your competitors' paid search campaigns. It allows you to uncover the organic keywords your competitors rank for, their search volumes, and estimated traffic. This information can also help you gain valuable insights into keyword strategies, identify potential growth areas, and optimize your SEO efforts. It provides various competitive analysis features that allow you to compare your website's performance.

You can analyze their domain authority, backlink profiles, and organic traffic to assess your relative market positions and identify areas for improvement. The key features are competitor analysis, content gap analysis, backlink analysis, and keyword research. Rival IQ is another tool. It is a competitive analysis tool specializing in social media marketing. With Rival IQ, you can monitor your competitors' activity across multiple social media platforms. You can track their followers' growth, engagement metrics, and content performance. This enables you to gain insights into their social media marketing strategy, identify the type of content that performs well, and measure your own performance against theirs. The key features are social media benchmarking, social media auditing, and social media post analysis.

The next tool is Visual Ping. It is primarily used to monitor changes on your competitors' websites. It can automatically track modifications to their web pages and notify you when changes are detected. This could include updates to product offerings, pricing changes, promotional offers, updates to their About Us or Team pages, etc. The tool will help you monitor your competitors' pricing strategies.

You will be notified if they make any changes to the pricing. The key features are website changes, monitoring, product pricing tracking, search engine optimization changes, and content updates. Another tool is Broadfy. It is a pricing intelligence tool primarily used by e-commerce businesses to monitor competitors' pricing.

It automatically tracks price changes and promotions on your competitors' websites and various marketplaces. It tracks the prices of your competitors' products across various platforms like Amazon. The tool can automatically adjust your prices based on your pricing strategy and competitors' charges. It allows you to set up pricing rules and implement them in real time. Key features are price tracking, promotional alerts, dynamic pricing, and marketplace monitoring. Now we will talk about the competitors' data analysis techniques using AI. So the first is the descriptive analysis. It summarizes historical data to understand

what has happened. Over a specific period, it employs measures of central tendency, i.e. mean, median, mode, and dispersion, range, variance, standard deviation, etc.

to provide a clear picture of past performance. Applications are monthly sales reports, website traffic, and summaries. Examples include analyzing sales data from the previous quarter to identify needs. Another technique is diagnostic analysis. This technique seeks to understand the reasons behind observed outcomes by identifying patterns and anomalies in the data.

It often involves hypothesizing about causal relationships. Applications include investigating spikes in sales, or customer complaints. For example, analyzing whether a marketing campaign leads to increased sales. The next tool is exploratory data analysis (EDA), which involves visually exploring data to find relationships, patterns, or anomalies without preconceived hypotheses. It often uses graphical methods like scatter plots and histograms. Applications include identifying factors influencing customer churn. For example, using visualizations to explore correlations between marketing expenses and customer acquisition. The next technique is predictive analysis.

It uses historical data to forecast future outcomes. It employs statistical algorithms and machine learning techniques to identify trends and probabilities. Applications include forecasting customer buying behavior or stock prices. Examples include using past sales data to predict future revenue during seasonal peaks.

Now let us look at the strategic implications of competitive insight using AI. So the first implication is enhanced market understanding. AI tools analyze vast data sets from various sources, including social media, customer reviews, and competitors' websites. This analysis helps businesses identify emerging trends, customer preferences, and technological advancements.

By understanding the competitive landscape, companies can develop products that meet current market needs and anticipate future demands. Examples include an AI system that might detect a growing trend in sustainable products, prompting a company to deliver eco-friendly alternatives. The next strategic implication is data-driven decision-making. AI provides actionable insights that guide product development strategies by analyzing competitive performance and market trends.

Businesses can identify opportunities for innovation and improvement. This data-driven approach minimizes risk associated with product launches and enhances the likelihood of

success. For example, a company may discover through AI analysis that competitors are successfully targeting a specific demographic, leading to tailored product features that appeal to this group. The next implication is continuous improvement and iteration. AI enables continuous monitoring of product performance

post-launch. By gathering real-time data on customer feedback and competitor actions, businesses can iterate on their products to enhance quality and relevance. This feedback loop ensures that the product remains competitive. In a rapidly changing market, for example, if customer reviews highlight a particular issue with a product feature, AI can help identify the root cause and suggest improvements based on competitors' offerings. The next implication is agile product development.

With AI's ability to provide real-time insights, companies can adopt more agile product development processes. This agility allows teams to respond quickly to changes in customer behavior or competitors' strategies, ensuring that new products are aligned with current market conditions. For example, if a competitor launches a new feature that gains popularity, an agile team can quickly adapt their marketing and product roadmap to incorporate similar or improved features. The next implication is improved customer centricity.

AI-driven competitive insights facilitate a deeper understanding of customer pain points and desires. By analyzing competitors' products and customer feedback, businesses can design solutions that directly address user needs and enhance overall customer satisfaction. For example, analyzing competitors may reveal common complaints about user experience, prompting your team to prioritize usability in your own product design. The next implication is strategic positioning. Understanding competitors' strengths and weaknesses allows businesses to position their products effectively in the market. AI tools can automate SWOT analysis, helping teams identify where they can differentiate their offerings. For example, if the analysis shows that competitors lack certain functionalities but have strong brand loyalty, managers must focus on developing those functionalities while emphasizing superior user experience in marketing efforts.

**Optimized Resource Allocation:** By providing insights into which product features resonate most with consumers and which do not, AI helps companies allocate resources more effectively during the development process. This optimization ensures that investments are directed towards initiatives with the highest potential for return. For example, if data indicates that certain features drive higher engagement rates, resources

can be redirected from less impactful areas to enhance those features further. Now, what are the future trends in competitor monitoring?

The first is artificial intelligence and machine learning. AI and ML are at the forefront of enhanced competitive intelligence efforts. These technologies enable organizations to process vast amounts of data from diverse sources, such as social media, customer reviews, and market reports, more efficiently than traditional methods. Data processing AI algorithms can analyze large datasets to uncover hidden patterns and trends.

providing deeper insights into competitor behavior and market dynamics. Predictive analytics. By leveraging historical data, AI can forecast future market trends and competitor actions, enabling businesses to anticipate changes and adapt their strategies accordingly. Natural language processing. NLP tools analyze unstructured text data from various sources to gauge consumer sentiments and competitor strategies, offering a nuanced understanding of market perceptions.

Integration with the Internet of Things. The integration of AI with IoT devices offers real-time insights into product usage and consumer interactions. This combination allows companies to gather valuable data on how products are used in practice, providing a clear picture of market trends and customer preferences. Real-time data from IoT devices can track users' interactions with products, feeding data back to customers. AI systems for analysis.

Enhanced competitive analysis and understanding actual product usage help businesses identify strengths and weaknesses in their offerings compared to those of their competitors. Advanced data visualization tools. Emerging data visualization technologies enhance the presentation of competitive intelligence findings. These tools transform complex datasets into intuitive visual formats, making it easier for decision-makers to grasp insights quickly.

Interactive dashboards. Businesses can create real-time dashboards that display key metrics and trends related to competitors, facilitating timely decision-making. Visual storytelling. Effective visualization helps convey insights in a compelling manner, aiding communication across teams. Automation in data collection.

Automation technologies streamline the process of gathering competitive intelligence, reducing the time and effort required for manual data collection. So there are some web scraping tools. Automated web scraping solutions can continuously monitor competitors'

websites for updates on pricing, product launches, and marketing strategies. Then there are some social listening tools.

Automated tools track brand mentions, and sentiment across social media platforms, providing ongoing insights into consumer perceptions and competitors' activities. The next is explainable AI or XAI. As organizations increasingly rely on AI for decision-making, the need for transparency in AI processes has grown. Explainable AI provides clarity on how AI models generate insights, helping stakeholders understand the rationale behind recommendations. Trust in AI output. By making AI decisions more understandable, businesses can foster trust among teams relying on these insights for strategic decisions.

Regulatory compliance. Explainable AI helps organizations meet regulatory requirements regarding data usage and algorithmic transparency. So, to conclude, in this module, we have discussed the concept of competitor monitoring using AI. Then, we have learned about the application of AI-driven social media monitoring, understood the various AI tools for competitive monitoring, and understood competitor data analysis techniques using AI. Then, we have learned about the strategic implications of competitive insights using AI. And thereafter, we have discussed the future trends in competitor monitoring.

These are some of the differences from which the material for this module was taken. Thank you.