

AI in Product Management
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Lecture - 34

Case Studies on AI in Product Strategy

Welcome to this NPTEL online certification course. On artificial intelligence in product management. We are talking about module 34, which is case studies on AI in product strategy. So, this is what we are talking about. This is the last module in part 7, which is developing AI-enhanced product strategy.

Now, to give you an overview. So, we will start with introducing AI in product strategy, discuss Peloton's AI product strategy, then understand PepsiCo's AI strategy for product design. Discuss AI product management for a software-as-a-service company and understand AI use for product development by P&G. And then we will learn Tesla's use of AI for product functionality and design. So, let us start with the introduction to AI in product strategy.

AI is an abstract concept often reserved for data scientists and engineers who train machine learning models. Machine learning models. However, when planning AI-based products, it is crucial to gather a team of engineers, product experts, and business leaders to understand product improvements and think about their impact on customers. Planning a product that leverages AI needs to be both business- and customer-focused, forcing one to think about how to enhance user experience. Reimagine customer-business interactions to drive engagement, loyalty, and new business opportunities.

To illustrate the process of planning an AI-enhanced product, This case study focuses on Peloton, an interactive fitness platform that has become an integral part of 6 million users' workout routines across the globe. So now we are talking about Peloton's AI product strategy. So why do people love Peloton? Glowing reviews of Peloton showcase many recurring themes.

People love getting in shape from the comfort of their own homes, saving both time and money on gas and gym memberships. Furthermore, members can work out on their own time, listen to a variety of music choices, be encouraged by a fleet of diverse instructors,

engage in social features, and gain recognition badges. From cycling to walking, running, and even doing yoga, Peloton provides the ultimate workout experience. However, no platform is perfect, and it is essential to analyze customer pain points, needs, and areas of interest.

in order to understand how to improve it. Now look at how to analyze pain points, needs, and interests. A manual review of Peloton users' social media posts highlights specific pain points, detailing requests to add specific artist music, regarding instructors' chatter, and adding additional difficulty levels. Analyzing and understanding current user experiences is a necessary step before planning new features and capabilities. The Peloton product team may leverage quantitative methods such as internal matrix analysis to evaluate trends in instructors and class popularity, AI-based text analysis, or sentiment analysis for large data samples.

For smaller data samples, qualitative analysis, questionnaires, and focus groups can be used to review customer feedback as well. The result of these analyses can be categorized and treated as a feature roadmap to enhance user experience. However, in order to create personalized user business interactions and drive AI product strategy, it is necessary to analyze each relevant member's profile and incorporate relevant data points like preferred classes, instructors, music, difficulty levels, workout patterns, and more.

Then, how to deepen individual profiles and create personalized experiences with AI. AI models can leverage user data to deepen their profiles, but it is not a standalone magic wand. Before running AI models, we need to define goals and added values for both the businesses and customers, identifying which data is needed to create them. Data scientists can then pull these data points and build AI models that can predict and anticipate user preferences.

For example, an algorithm can predict which class, structure, and music to recommend to users on a specific day. So, what are the relevant data entities needed to deepen member profiles and how can AI help to create these personalized interactions. So, let us look at Peloton's recommendation system. Peloton's homepage currently presents class recommendations, displaying instructors at the top of the page.

This is also a section called Your Daily Picks, which includes general recommendations, one of which is for your This section refers to the type of exercise: running, walking, etc. and the length of the workout: 20, 30, 40 minutes, disregarding preferred instructors and musical preferences. Strength building does not always match personal difficulty

preferences, and quick workouts present fast regimes without taking instructor preferences into account. The classes screen presents all of the options; however, it is sorted by date and time.

not personal preferences, requiring an additional step of adding filters to find the best personal choice. Improving the accuracy of Peloton's recommendations by integrating user preferences and performance history, in conjunction with personal motivation, will drive users to make better workout decisions based on their personal goals. Next, we will analyze individual motivations with AI to improve recommendations. Peloton's customers are driven by various motivations, ranging from losing weight, stress relief, leading healthy lifestyles, mood regulation, and many more. Identifying users' personal motivations will help the app recommend relevant classes to each individual.

AI can help by leveraging and understanding people's motivations to choose specific classes and using this data to offer similar relevant activities. Here are some examples of potential implementation. Please start with AI motivation. The AI algorithm will present some recommended classes.

Each class will emphasize using hashtags for a different motivation. Lose weight, improve your mood, gain a special badge, etc. The algorithms will then learn and analyze these individual decisions and calculate the probability of each specific motivation when there is a systematic pattern at play. For example, when an individual consistently chooses classes with the motivation of stress relief, the AI algorithm will increase the probability of similar classes and rank them higher on that user's personal interface.

The next is the virtual assistant's motivation conversation. Another way to learn about an individual's motivation is to add natural language interaction with a virtual assistant, or VA. VA enables free conversation, as a person can ask for recommendations based on their personal motivations. VAs can also initiate conversations with users anytime they choose a class to better understand their motivations. The AI conversation analysis will then create insights about the person and effectively assist with improving recommendations.

The clear added value to this dynamic conversation is that motivations can change from day to day, and the recommendations will be customized accordingly. The next is dynamic AI prompts. AI models can recognize dynamic changes in user behavior and apply them to insights that affect recommendations. For example, suppose the model recognizes churning from a specific class type or a pause in training for over a week.

In that case, it can send a prompt or initiate a conversation based on the user's profile to help them resume their training regimen. The next is the AI headband. The AI headband or smartwatch has sensors that recognize a member's profile without the need to actively select and track it during training. This includes heart rate, change of speed, and most importantly, identifies challenging movements and provides emotional support. This support can be through special gestures such as virtual high-fives, positive voice feedback, or playing one of the user's favorite songs to encourage and motivate them to complete the workout.

When it comes to AI, it was synthesized for cheers. Since we identify an individual's personal motivation, we can boost it by celebrating small wins during class. At Peloton, part of the class ritual is to celebrate milestones and birthdays when instructors go over the list of participants who are training live by calling out their names. It is possible to train AI models through text-to-speech capabilities to read the names of members in the voice of the trainer and provide a personal celebration to more members, especially to those not riding live.

In addition, the celebrations will be personalized and aligned to the specific motivation of the individual. For example, if the motivation is to lose weight, for every X amount of burned calories to be decided by the domain expert, the virtual AI voice synthesizer will recognize the milestone and cheer them on. This advanced personalization will drive more engagement and increase user motivation. The next is Peloton's user dashboard. The second source of user data that can be improved with AI is Peloton's dashboard.

The dashboard includes completed workouts. With performance data including calories, distance, activity, and the leaderboard, comparing user performance to others who took the same class. Users can currently track their previous classes and performance, but AI can improve and personalize this experience even further. For example, AI models can recognize the class type, level of difficulty, length, and instructors, setting accurate goals for the next training, daily, weekly, or monthly. And analyze progress across all workouts rather than looking at them individually.

In addition, there are many opportunities to enrich lifestyle and long-term personal aspects of the Peloton experience, just like a personal trainer or health coach. For example, Peloton can recommend nearby sports events based on location or long-term goals like running the Boston Half Marathon or completing a 50-mile bike ride. The long-term goals can also be specific to the Peloton device. Such as riding 100 miles a month or hitting a specific PR

within three months. Once goals are set, the personal tactical class recommendations and selection become easier and more meaningful for the user.

Now we will look at Peloton's AI implementations. So Peloton has already started the journey of powering AI experiences for its members. The two main examples are, one is Peloton Guide, a new connected device that uses computer vision And machine learning technology to recognize a user's activity and encourage them to keep up with their instructor's cues, get credit for following along, and receive class recommendations to work on all muscle groups. Cognitive Services for Speech, part of the Microsoft Azure AI platform,

To implement live subtitles for its classes and create more accessible and engaging experiences, especially for those who are deaf or hard of hearing. Now we will talk about PepsiCo's AI-powered innovation. Designing the perfect Cheetos. PepsiCo, a significant player in the food and beverage industry, has turned to generative AI and deep reinforcement learning to explore design possibilities and optimize product features. They have created innovative solutions that appeal to customers.

By using AI, PepsiCo perfected the shape and flavor of Cheetos. AI allowed them to experiment with various combinations and precisely control product characteristics. PepsiCo uses a machine brain to ensure consistent product quality during production. This AI agent autonomously controls extruder settings, adjusting parameters like temperature and moisture to maintain the desired quality. This process involves creating a digital simulation model of the extruder.

And training the AI agent using deep reinforcement learning. Subject matter experts, like chemical engineers at PepsiCo, define the control objectives and connect them to the simulation model. The AI agent learns to make optimal decisions through practice. PepsiCo also uses generative AI in its marketing campaigns. They have significantly reduced the campaign cycle.

From six to nine months to three to four months, enabling faster market entry. Athena, PepsiCo's chief strategy and transformation officer, spoke about how generative AI achieved Cheetos' perfect shape and flavor with relevant customer feedback. Feedback-driven adjustments to the shape and flavor of Cheetos have led to a business ROI with a 15% increase in market penetration. This shows how AI can directly impact Product success by aligning offerings more closely with customers' desires and optimizing design to enhance customer satisfaction.

Now let us look at AI product management at work. The background is a leading B2B software-as-a-service company specializing in project management software faced a significant challenge. Understanding which features to prioritize in their next product update to maximize user satisfaction and business impact. Despite having a wealth of customer data, The product teams struggled to make sense of it due to its volume and complexity.

So then comes the AI intervention. The company turned to an AI product management tool to analyze six months of extensive customer data. This data included net promoter scores, comments, support tickets, CRM entries, and product usage metrics. The AI's task was to uncover hidden patterns and insights that could inform the product roadmap. The next comes discovery and insight.

Using advanced data science and machine learning algorithms, zeta.io processed and analyzed the data, revealing several key insights. The high demand for Enhanced collaboration features, a significant portion of feedback pointed towards a need for better collaboration tools within the software, especially from cross-functional teams who found it challenging to coordinate tasks and share updates effectively. Another key issue was usability problems with existing features. The AI identified specific features that, while popular, were also sources of user frustration due to usability issues, leading to a higher churn rate.

Another issue was unmet needs in reporting capabilities. Another recurring theme in the data was the need for more robust reporting and analytics features, which users felt were lacking in depth and flexibility. Now let us look at the strategic implementation. Armed with these insights, the product teams took the following actions.

The first is prioritizing collaboration tools. The product roadmap was adjusted to prioritize the enhancement of collaboration tools, including real-time communication and project tracking functionalities. The next is redesigning usable features. Existing features with high usage but poor user feedback were earmarked for redesign, focusing on improving the user interface and experience. The next was expanding reporting features.

The team expedited the development of advanced reporting capabilities, integrating more comprehensive analytic tools into the software. So, what were the results? The result was increased user engagement. The improved collaboration tool saw a 20% increase in daily active users, indicating higher user satisfaction and engagement.

Another result was a reduced churn rate. By addressing the usability issues, the churn rate decreased by 15%, reflecting better user retention. Another outcome was positive feedback on the reporting tools. Early feedback on the new reporting features was overwhelmingly positive, with a 30% increase in mentions of reporting tools in NPS comments. Now we will look at the AI-tailored product development.

The challenge is, it is a constant challenge for consumer packaged goods companies to innovate at a pace that matches the dynamic demands of their markets. Even leading consumer packaged goods, that is CPG companies like Procter & Gamble, find it challenging too. Innovate at a pace that matches dynamic market demands. For that reason, P&G uses cutting-edge artificial intelligence to reimagine and transform many parts of its business. It wanted to push the boundaries by using AI to increase the speed and innovation of product development, particularly in formulation products.

Formulation selects, processes, and combines the product's ingredients to deliver specific properties, functionalities, and performance. P&G's formulation products, such as dishwashing liquid, are based on a combination of dozens of ingredients selected from thousands of potential components. The formulation development process includes manual steps and can involve physical testing, which can significantly increase the time it takes to get these products to market. Formulation developers who design these products use their expertise to create products that best meet customer needs. They work with a huge amount of information and variables, such as ingredients, compounds, constraints, and regional and customer preferences. They need to strike the right balance to generate a potentially market-relevant product idea that satisfies the company's margin targets. So, what they did

Partnering with Accenture, P&G co-created a human-plus-machine toolset that drew inspiration from other industries to enable faster innovation and deliver new value. An Accenture Labs team worked with P&G data, processes, and product formulation specialists, as well as leading academics, over six months. The first step was identifying potential human-plus-machine collaboration areas in the product development process, which could enable P&G to develop new products faster. Next, Accenture introduced P&G to proven AI assists they developed for other industries and explored how to apply the underlying concepts to CPG. P&G then validated the experimental prototypes.

Accenture developed two leading-edge approaches. One used explainable AI to accelerate the formulation developer's ability to make small, incremental improvements to existing products. In the second, generative networks guided developers toward new formulations

and product areas that have the potential to deliver breakthroughs. The result enabled developers to amplify their talents and knowledge with AI's limitless capabilities.

It suggests formulations that meet parameters the developers specify, providing fast, curated inspiration. For example, if P&G needs to replace an ingredient that increases the foam, For a dishwashing liquid, developers can ask the AI to recommend new formulations without this ingredient at the original price point. If the amount of the new ingredient suggested will impact the color, the developer can then set a limit for this ingredient and ask the AI to generate a new set of formulations. This iterative approach hones in on an optimal formulation.

We will look at AI-powered innovation in product development. So, Tesla's approach to developing autonomous vehicles is heavily reliant on AI and machine learning, which are integral to enhancing both product functionality and design. The company employs a unique strategy that leverages vast amounts of real-world technology driving data collected from its fleet of vehicles to train its AI algorithms, enabling significant advancements in autonomous driving capabilities. The first step was data collection and training. So, Tesla's fleet, comprising over 500,000 vehicles worldwide, continuously collects data from various sensors and cameras installed in each car. This data includes information about the vehicle's environment, driver behavior, and interactions with other road users, such as pedestrians and cyclists.

The core of Tesla's AI strategy revolves around a technique known as imitation learning, where the algorithms learn from the driving behavior of millions of actual drivers. This method allows Tesla to refine its autonomous driving systems by mimicking human decision-making processes in real-time situations. The next step is real-time processing. The AI system processes visual data from eight cameras in each vehicle to create a comprehensive 3D representation of the surrounding environment.

This capability enables the vehicle to identify obstacles, lane markings, traffic signals, and other critical elements necessary for safe navigation. The system's ability to make split-second decisions, such as when to change lanes or adjust speed, relies on this real-time data processing. Next comes continuous learning and improvement. Tesla's AI continuously learns from new data inputs. Each time a vehicle encounters an unexpected obstacle,

or a complex intersection, the system captures this event. Engineers then analyze these instances to further improve the algorithms. For example, if a vehicle makes an incorrect prediction about another driver's behavior, Tesla saves that moment as a data snapshot.

This snapshot is used to enhance the training dataset, allowing the AI to learn from its mistakes and improve future performance. Next, advanced simulation techniques. In addition to real-world data collection, Tesla employs sophisticated simulation techniques to augment

its training process. The company can synthesize various driving conditions, such as adverse weather or unusual traffic patterns, using simulations. This approach allows Tesla to expose its AI systems to a broader range of scenarios that might be encountered in real-world driving alone. Then comes safety and functionality enhancements. The integration of AI into Tesla's autopilot system has led to notable improvements in vehicle safety and functionality.

Reports indicate that vehicles with autopilot engaged have experienced fewer accidents compared to traditional vehicles. The continuous learning process not only enhances the system's reliability but also improves the overall driving experience by reducing driver fatigue and stress during long journeys. So, AI starts with thinking about customer needs and working backward to improve, deepen, and enrich personal interactions to increase engagement and loyalty to a business. Working backward from the customer creates business opportunities through product optimization and new channels for growth, inspiring AI-based product strategy across the industry. AI is a necessary tool that can enable companies to take part in this transformation, but first, it is essential to have a strong AI-enhanced product strategy grounded in customer and business insights. So, to conclude this module, We have discussed the application of AI in product strategy.

We have also discussed Peloton's AI product strategy. Then we have understood PepsiCo's AI strategy for product design. We have also discussed AI product management for a software-as-a-service company. Then we have discussed the use of AI for product development by P&G. And finally, we have learned about Tesla's AI-powered innovation in product functionality and design.

These are the sources from which the material for this module was taken. Thank you.