

Costco

Introduction Activity

Team Name: Costco Wholesale MSDS 25.4

Team Members: Priyal Sunil Joshi

Hrishikesh Dhole

Lakshit Gupta

Tejaswi Neelapu

Mustafa Bhavanagarwala

Team Agreement

- 1. What do you expect out of your teammates and yourself? Think specifically about communication and accountability here.**

Common expectations among the team members are mostly focused on open communication. Accountability is also another key factor with each member responsible for completing the task on time. Teamwork and equal contribution from all the members is essential for the aim of this project. Another common expectation is to be present on time in the weekly group meeting by the end of every week and stay in contact with the liaison as well as the project advisor for the updates.

- 2. What strengths do you think you bring to the team? What weaknesses or hesitations do you have?**

- **Lakshit:** For strengths the knowledge of machine learning, data visualization along with some experience in software development. For weakness is no prior experience in working with chatbot frameworks and public speaking skills.
- **Hrishikesh:** My strength lies in a strong foundation in data science and machine learning and ability to articulate complex ideas clearly while ensuring smooth execution of work and fostering a collaborative environment. My weakness is sometimes I struggle to summarize ideas concisely within a time limit which leads to over-explaining or missing some key points.

- **Tejaswi:** My strengths are analyzing data, building machine learning models, and creating clear visualizations. I work well in teams and deliver impactful results, like improving data workflows and summarizing. One area I'm working on is building more confidence when presenting complex ideas to diverse audiences.
- **Mustafa:** Strengths includes the data science skills such as Machine learning and data analyses. And for weakness, it might be a task to get through a challenging dataset.
- **Priyal:** I believe my strength lies in problem-solving, effective communication, and being a good team player, which helps me collaborate efficiently with others. A weakness I face is managing my time effectively when juggling multiple tasks, and I'm still working on improving my skills.

3. Are there any aspects of the project that you are particularly eager to work on, or something new you want to learn?

The team as a whole is eager to work on sentiment analysis, development of chatbot and most importantly to work for an industry project. Everyone in the team is enthusiastic about extracting information from the social media platforms, cleaning it up and to create a dynamic recommendation website. This project will also provide everyone with the opportunity to apply concepts of data science, learn sentiment analysis tools and contribute to Costco's capability to analyze customer sentiment trends for the purpose of improving their service.

4. What are your goals for the capstone project? What do you hope to gain from this experience?

The goal of the capstone project will be to provide a robust, real-time sentiment analysis system with a functional chatbot for Costco, aiming to provide insights about the products that would help Costco in improving their customer satisfaction. Team members are looking forward to gaining industry experience in applying natural language processing, working with new tools and implementing that to a real world business solution. This will allow everyone to enhance their technical skills by deploying machine learning models, presenting insights more effectively while improving critical thinking ability.

List of questions for the sponsor

1. Any permission required for access of data, Are there any privacy or compliance considerations we should be aware of while using the data?
2. What functionalities do you expect the chatbot to have? (e.g., handling FAQs, providing product recommendations, etc.) How will the sponsor evaluate the chatbot prototype? Are there specific functionalities they prioritize?
3. Any specific products or categories we need to prioritize for the recommendation system?
4. Is there any pre collected data that we will be provided or all of the data needs to be scraped from the social media platforms?
5. Is there an existing chatbot or AI powered service at Costco that assists customers, which we can explore?
6. Are there any past or ongoing projects within Costco that we can reference for context?
7. Are there specific insights or trends that Costco is particularly interested in uncovering?
8. Is there any specific database that you want us to store data in? (e.g MySQL, Firestore, S3)
9. How will feedback on deliverables be provided throughout the project?
10. Should sentiment analysis only show products and feelings, or should it also include information about the people talking (Mp4 or Mp3 format)?
11. Is the AI chatbot, if present, built using the same technologies we are supposed to use, or different ones?

Bibliography

1. **Atliq Technologies.** (2024, October 30). *The Future of Retail: How Costco is Using AI to Stay Ahead of the Competition.* Atliq AI. [Atliq AI. The Future of Retail: How Costco is Using AI to Stay Ahead of the Competition.](#)

This article highlights how Costco leverages AI to optimize inventory management, personalize customer experiences, and improve operational efficiency. It provides insights into the innovative ways Costco is using predictive analytics and recommendation systems to stay competitive in the retail sector. The article also underscores the growing importance of AI in driving data-driven decision-making within retail organizations.

Key Takeaways from this article:

- Automated replenishment systems and real-time tracking ensure Costco maintains optimal stock levels while minimizing overstock and stockouts.
- Costco enhances member satisfaction by leveraging personalized marketing and AI chatbots for tailored recommendations and 24/7 support.
- Workforce scheduling and predictive maintenance are optimized through AI, ensuring seamless operations and reducing costs.
- AI-powered energy management systems enable Costco to lower energy consumption, reduce its carbon footprint, and promote sustainability.

2. **managementconsulted.** (2024, December 21). *Behind the Numbers – Cracking the Costco Code (Costco Business Model Breakdown)*
<https://managementconsulted.com/podcast/costco-business-model-breakdown/>

This podcast explores the difficulties of Costco's business model. It highlights key metrics like membership growth, shopper traffic, and inventory turnover, while providing insights into Costco's unique strategies, such as razor-thin margins, capped gross profit percentages, and a focus on high membership retention. The discussion also addresses opportunities for future growth, including e-commerce expansion and international market penetration.

Key Takeaways from this article:

- Costco's focus on value-driven memberships and maintaining low prices through capped margins highlights its customer-centric philosophy.
- Its inventory management and supplier payment strategy shows exceptional operational foresight, creating a cash flow advantage.
- The emphasis on future-proofing, such as considering e-commerce and new markets, highlights Costco's adaptability in an evolving retail landscape.

3. Costco. (2024, Dec 26) *Costco Wholesale Corporation Your Privacy Rights, Costco*

<https://www.costco.com/privacy-policy.html?>

This article explains the privacy notice of the Costco Wholesale Corporation. The personal information collected by Costco includes contact information and identification information, based on interaction with Costco. The automatically collected information includes Identifiers information, Guest Wireless Access, and Video/Images. There is information that is obtained from other sources like account holders and other companies with which we engage, which involves a combination of offline and online data. They also use digital trackers like cookies when their services are used. Costco also gives a choice if a person wants to opt out of giving personal information.

Key Takeaways from this article:

- Good amount of directly provided information is collected by Costco in order to get proper understanding of its customers
- The different kinds of information collected automatically and other sources would be really useful to enhance the services provided
- Costco makes good use of digital trackers to ease the customer's work and also having a strong back-end
- Data collected is well secured by Costco and is benefitting customers as we get good customer support
- Costco gives choice to customers to opt out from number of options including marketing communications, & disclosure of personal information

4. Yahoo. (2024, Apr 22). *The Most Popular Costco Items, State By State*

https://www.yahoo.com/lifestyle/most-popular-costco-items-state-164100574.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLnNvbS8&guce_referrer_sig=AQAAAFbNt6k4W0wFqTwLnaDWa_5NPF3oF0tE9t_e7ppJcNZ_HytsKiXRPluKXXjbdyTTmDYtEAtuMIYpPIWZAI6b2vfgHoCRDOzxmudIH8wPRv6pu9O8ejGU4_DWINVcefnzZt0iLzUa4BaU1SvakPjKZtiJouOenSiH9ZrzRY6K4cUs

Costco in different regions has inventory as per the customer preferences giving them the options for unique items like reindeer sausage in Alaska. According to the study by CuponBirds Kirkland Signature is one of the most popular brands across many states with items like Prosecco in California and Illinois and Kirkland vodka in Delaware. Daily use and essential items like Kirkland Premium Paper Towels and toilet paper also takes the top spot in the list for states like Alaska and Maine. An infographic also showed state favorites like Woozoo Globe Fans in Missouri and Trident Fish Sticks in Washington while eight of the states in the infographic lacked data. Social media platforms and tools like Google Trends played an important role in collecting data from over 15000 posts.

The combination of affordability and regional specific items shows Costco's ability to serve different customer needs all over the United States.

Key Takeaways from this article:

- Costco tailors its inventory to regional preferences, offering unique items.
- Kirkland Signature is a favorite brand across many states, with products like Prosecco in California and Illinois.
- Daily essentials such as Kirkland Premium Paper Towels and toilet paper are highly popular in states.
- Insights were gathered from over 15,000 posts on social media and Google Trends.
- Costco's combination of affordability and regional-specific items highlights its ability to meet diverse customer needs across the U.S.

5. **2immersiv4u.** (2024, July 11). *How AI Helps Costco Decide Which Items to Restock.*
<https://2immersiv4u.com/2024/07/11/how-ai-helps-costco-decide-which-items-to-restock-stories-about-ai/>

The article describes how Costco uses artificial intelligence to optimize inventory management. Using AI-driven tools such as predictive analytics, real-time tracking, and demand forecasting, popular products are available while excess stocks are minimized. Costco's retail strategy uses seasonal trends, personalized recommendations, and supply chain optimization. In addition, AI-powered tools such as automated replenishment, basket analysis, and personalized recommendations make customers more satisfied.

Key Takeaways from this article:

- The use of predictive analytics helps forecast holiday demand.
- Automated replenishment and real-time inventory tracking reduce manual labor.
- Customer preferences are taken into account in market basket analysis.
- Supply chain optimization reduces costs and improves delivery times.
- AI supports a seamless shopping experience by reducing stockouts and improving product variety.