August 2021

Data Analytics by E-commerce Platforms to Generate Recommendations for Merchants

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ABSTRACT

Merchants promote and sell their products and services via advertisements on websites and/or enrollment in e-commerce platforms. Online advertising and aggregation platforms enable merchants to increase their visibility and geographical reach for attracting potential consumers. This disclosure describes techniques for e-commerce platforms to provide merchants with guidance to improve their customer reach by reaching additional potential customers and to and/or to increase customer satisfaction. Such guidance is based on customer data obtained and analyzed by the platform with appropriate user permissions, e.g., using machine learning or other suitable techniques. Implementation of the techniques with permission can help businesses enhance the services and grow their customer base.

KEYWORDS

- Merchant services
- Merchant guidance
- E-commerce platform
- Customer satisfaction
- Customer feedback
- Customer reviews
- Interaction analytics
- Customer analytics

BACKGROUND

        Merchants promote and sell their products and services via advertisements on websites and/or enrollment in e-commerce platforms, product delivery services, etc. For example, a restaurant can provide its menu offerings for purchase via an online delivery platform that enables customers to order food from various restaurants. Online advertising and aggregation platforms help merchants increase their visibility and geographical reach for attracting potential consumers.

        While some platforms for advertising and e-commerce offer portals for merchants to view and analyze information on orders and sales via the platform, the information does not include specific guidance for improving customer satisfaction or increasing customer base, e.g., by promoting products and services to individuals who are likely to be interested in them. Although some platforms employ computational analyses, such as reinforcement learning, that take into account the actions of consumers on the platform, such implementations are designed to optimize the operation and gross merchandise value (GMV) of the platform, not of the merchants who sell via the platform.

        An option for merchants to learn about their customer's preferences and identify growth opportunities is to rely on market research and customer feedback gathered via surveys. However, conducting surveys is expensive and time-consuming and the response rates are typically low. Alternatively, or in addition, merchants can simply rely on intuition or heuristics when devising a strategy for customer growth and improved customer satisfaction. Such an approach may have limited effectiveness as it is not based on empirical data.

DESCRIPTION

This disclosure describes techniques for e-commerce platforms to provide merchants with guidance to improve their customer reach by reaching additional potential customers and to and/or to increase customer satisfaction. Such guidance is based on customer data obtained by the platform and utilized with permission to perform analyses to generate such guidance. Such user-permitted data can include data of customer interactions with the e-commerce platform and/or explicitly provided feedback, such as reviews, ratings, survey responses, etc. The data can include order information, information on how customers use the e-commerce platform (e.g., search or browsing information, clicks, etc.). Only such data as permitted by the customers of the platform are utilized for this purpose. Customers are provided guidance that such analytics may be performed, and are provided with options, in compliance with applicable regulation, to permit or limit the use of their data for such purposes.

To generate guidance for merchants, aggregated customer data (of permitting customers) is generated wherein the data aggregation is performed such that individual customer data is not recoverable from the aggregated data. Next, the data is provided as input to a trained machine learning model (or other suitable analytics technique) to derive insight for specific actions that a merchant can take to reach additional potential customers and/or improve customer satisfaction. The model can generate recommendations for the merchant.

The actions suggested to a merchant can be based on customer information only for that merchant. For instance, automated analysis of reviews of the patrons of a restaurant can be performed sentiment analysis and/or summarization can help identify salient issues, such as long wait times, small portion sizes, etc. Corresponding remediation actions can be suggested to address the customer-reported problems, such as increasing staff, increasing portion sizes, etc.

Alternatively, or in addition, suggestions can be derived from overall data obtained by the platform, utilized with permission from the customers and merchants associated with such data. For instance, if restaurant patrons in a given region are detected to favor ordering a particular dish, restaurants that do not offer the dish may be provided guidance to add it to their menu, while other restaurants may be provided a suggestion to highlight the dish in their menu.
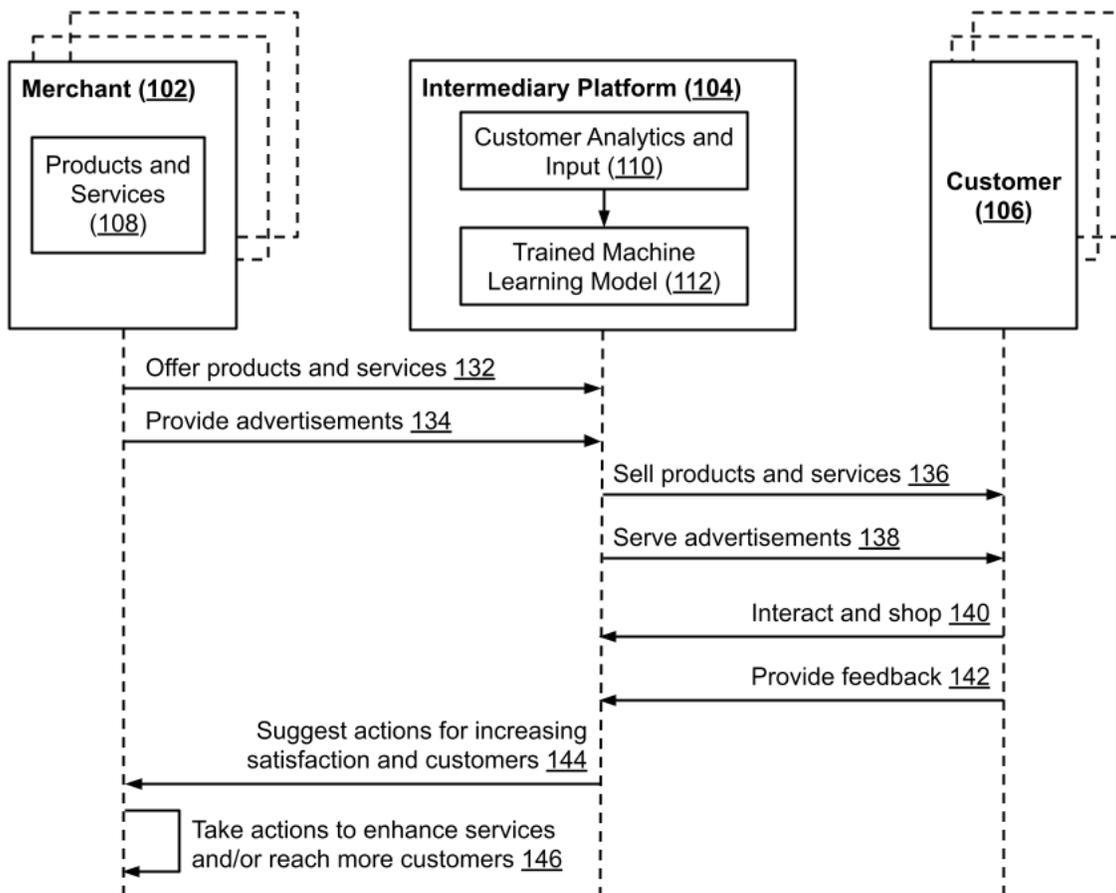

Fig. 1: Generating data-driven suggestions for customer satisfaction and growth

Fig. 1 shows an example operational flow per the techniques described in this disclosure. One or more merchants (102) advertise (134) and offer their products and services (132) via an e-commerce platform (104) to reach one or more of their customers (106). As an intermediary serving the advertisements (138) and selling the products/ services (136), the platform can gather

input and generate analytics (110) based on customer interactions (140) and feedback (142), obtained and used with permission.

Aggregated customer data is input to a suitably trained machine learning model (112) or analyzed using other suitable techniques to generate suggested actions for the merchant to increase customer satisfaction and grow the customer base (144). The merchant can then take these suggestions into account to take appropriate actions to enhance service and/or reach additional customers (146).

The techniques described herein can be used to generate suggestions for any types of businesses in which merchants use an e-commerce platform for advertising and/or sales and/or shipment, such as restaurants, online stores, etc. Implementation of the techniques can help businesses enhance the services offered to the existing customer base and reach individuals with high likelihood of becoming new customers based on data-driven insights. Customers can in turn benefit from the enhanced service and discovery of businesses that can serve their needs.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's purchases and interactions with a merchant via an online platform, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of a user cannot be determined. Thus, the user may have control over what

information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure describes techniques for e-commerce platforms that serve online merchants to provide merchants with guidance to improve their customer reach by reaching additional potential customers and to and/or to increase customer satisfaction. Such guidance is based on customer data obtained and analyzed by the platform with appropriate user permissions, e.g., using machine learning or other suitable techniques. Implementation of the techniques with permission can help businesses enhance the services and grow their customer base.

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