Social Media for Collaborative Demand Forecasting

The apparel industry often deals with stock out or over-stocked inventories which result into high losses. Most purchasing decisions are made at the point of sale and consequently the availability of a product is crucial for the companies' success. Therefore, companies require accurate information about future demands in order to secure their stocks. Often, there is a lack of precise information since different factors such as changing weather conditions, competition or holidays influence the demand. In addition, fashion trends are very short lived and approximately 95% of fashion items of a collection will be replaced in the following season. Furthermore, most production plants are located in Asian countries such as China, Taiwan or Bangladesh, while the target regions are mainly European countries. Due to the long time-to-market, additional production of well selling products is rarely possible. One option is to produce these items and fly them to Europe or to establish a plant in Turkey or North Africa. Both possibilities are related to high costs. Due to the described factors and the lack of historical data, applying traditional forecasting methods is difficult and therefore considering new approaches is necessary.

Integration of Social Media Text Data

Since the fashion industry is a highly consumer-driven industry, it is suggested to integrate consumers opinions within the demand forecasting process. Especially, with the rise of the Web 2.0 and the emerging social media applications the ordinary user has obtained a new role: S/he is an active and producing entity and not purely consuming. S/he publishes and discusses through various platforms on different topics or products. However, one crucial concern is the transformation of the published data into valuable information for the companies. However, the reliability of this information, is a further issue. Therefore, analysis of social media text data will be conducted. The generation of a corpus, as a first step, will be done by means of web mi-

ning tools. For the preprocessing step of text data, different text mining methods have to be applied.

In a following step, sentiment analysis and opinion mining will serve for analysis purposes. One goal is to be able to identify target groups perceptions on products, brands or current trends and to integrate them in the demand forecasting process. For this purpose, correlation analysis to real sales data will be conducted. A requirement analysis for an adequate integration of social media data in real life demand forecasting processes will be built on the ground of expert interviews with fashion companies.
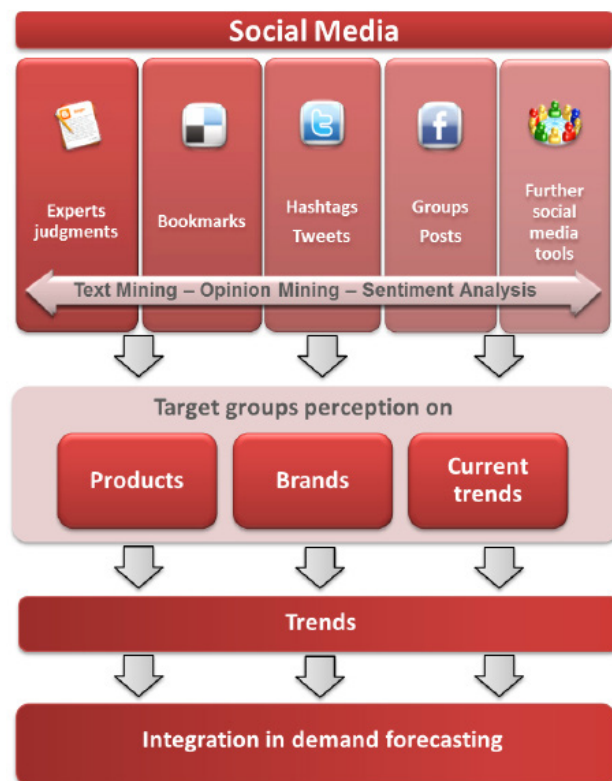
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