

ABSTRACT

Nowadays, social networks and social media are all the rage. The growth of electronic communication via social media increases the necessity of reshaping the healthcare industry and the pharmaceutical sector. Thus, their marketing techniques are also in need of adaptation. Social media has always been observed with a critical eye by the Pharmaceutical Industry. Due to restricting regulations and hence limited derived benefits, up to recent years, only the big players have moved into this field. Although global events have boosted digital transformation in Pharma enhancing the need to leverage digital channels for communication and interaction with customers, many companies are reluctant to venture into social. The primary concern is the complexity of processing and archiving incoming compliance-relevant issues in a timely and standardised operating procedure-conform manner. Compliance, which includes queries regarding medical, regulatory, and patient information, pharmacovigilance as well as product complaints, requires up to 24/7 monitoring. This results either in companies paying agencies for monitoring or in limiting, and even totally disabling the chat function.

This thesis aims to tackle the use of text classification algorithms to automate the monitoring of pharma-owned social media channels, especially for compliance-relevant information. Machine learning algorithms in combination with natural language processing techniques are used to classify textual data into predefined classes using a supervised learning approach. Overall, the performance of three proposed algorithms (i.e., Linear Discriminant Analysis, k-Nearest Neighbour and fastText) is consistent with available research evidence, thus validating the project's findings and demonstrating the viability of a scaled implementation in pharma-owned social media channels on a national and international scale. Overall better performance has been observed in fastText, which is why it was selected for continued project development among the three models examined, despite the good performance of the other two given the rather small data set. This proof-of-concept study serves the purpose of highlighting the feasibility, importance, and impact of the integration of social media as a pull marketing instrument into omnichannel strategies of pharmaceutical companies, for increased compliance and drug safety monitoring as well as increased insight generation and customer-centricity.