Voice of Customer (VoC) in Auto Industry

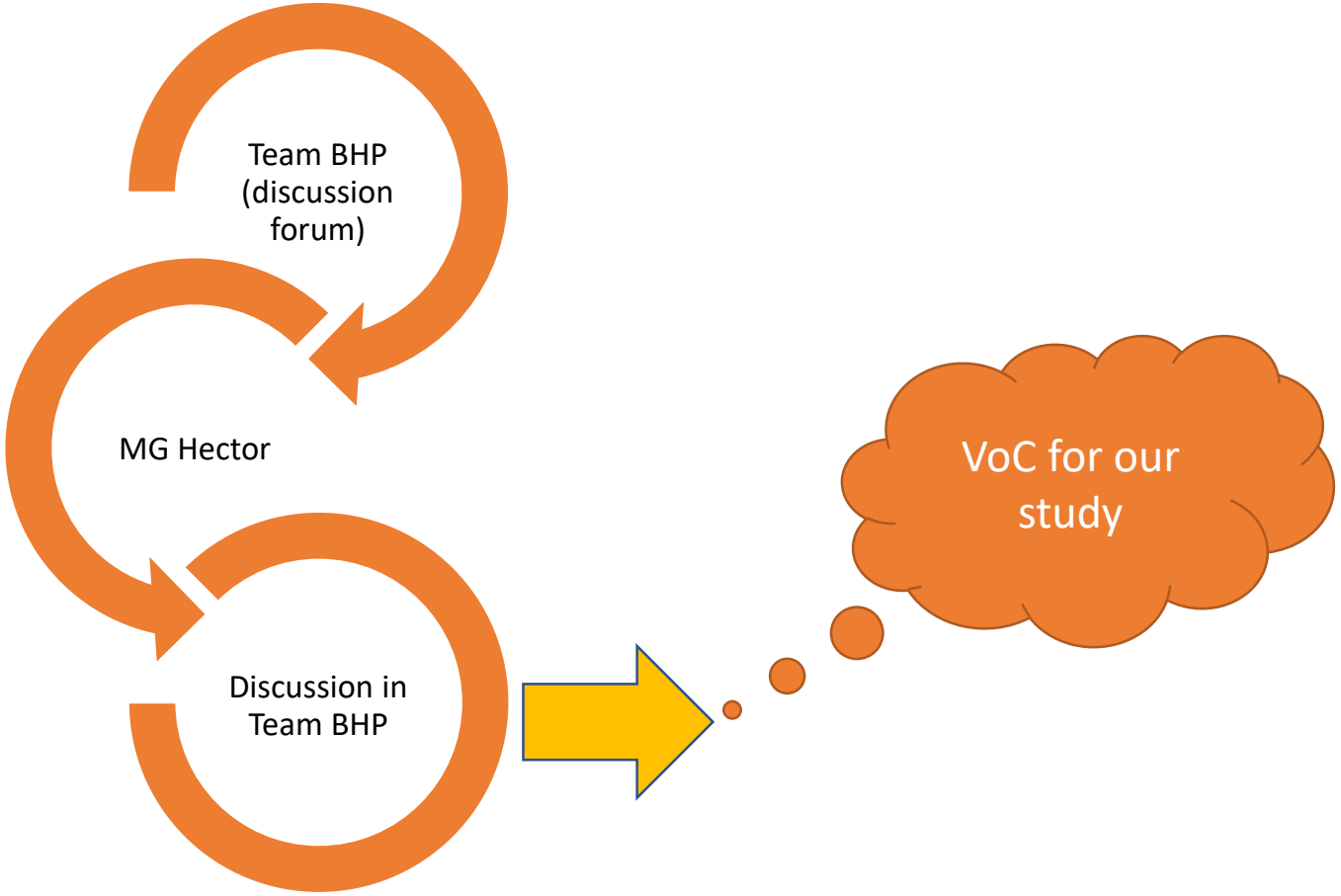
REVA UNIVERSITY

Anand Limbare
Shewatha Arul
Sneha Tiwari
Saumyadip Sarkar
Sudeep Matthew

Topics Covered

- Introduction
- Related Work
- Methodology
- Data Extraction
- Data Management
- Model Building
- Result
- Conclusion

Introduction



Current Challenges

- Voice of Customer (VoC) is often available in the form of reviews and comments in various discussion forums or web portal
- Data is unstructured in nature and can be humongous for popular products
- Identifying overall customer feedback and satisfaction level becomes extremely difficult

Proposed Approach

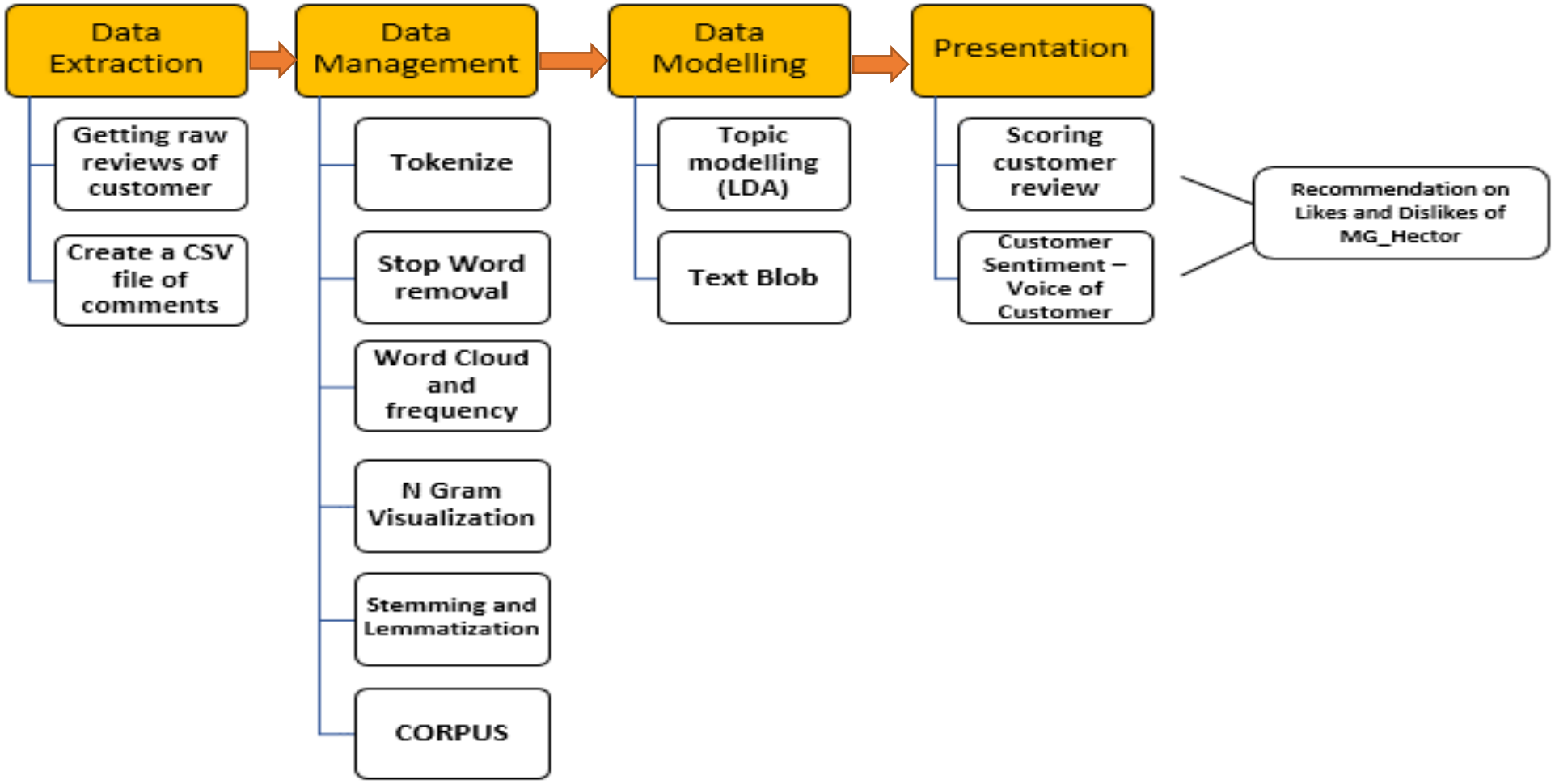
In this work, a framework for the development of VoC template from unstructured data is proposed. VoC in general and a specific case study for demonstrating the efficacy of the proposed framework are presented.

Related Work

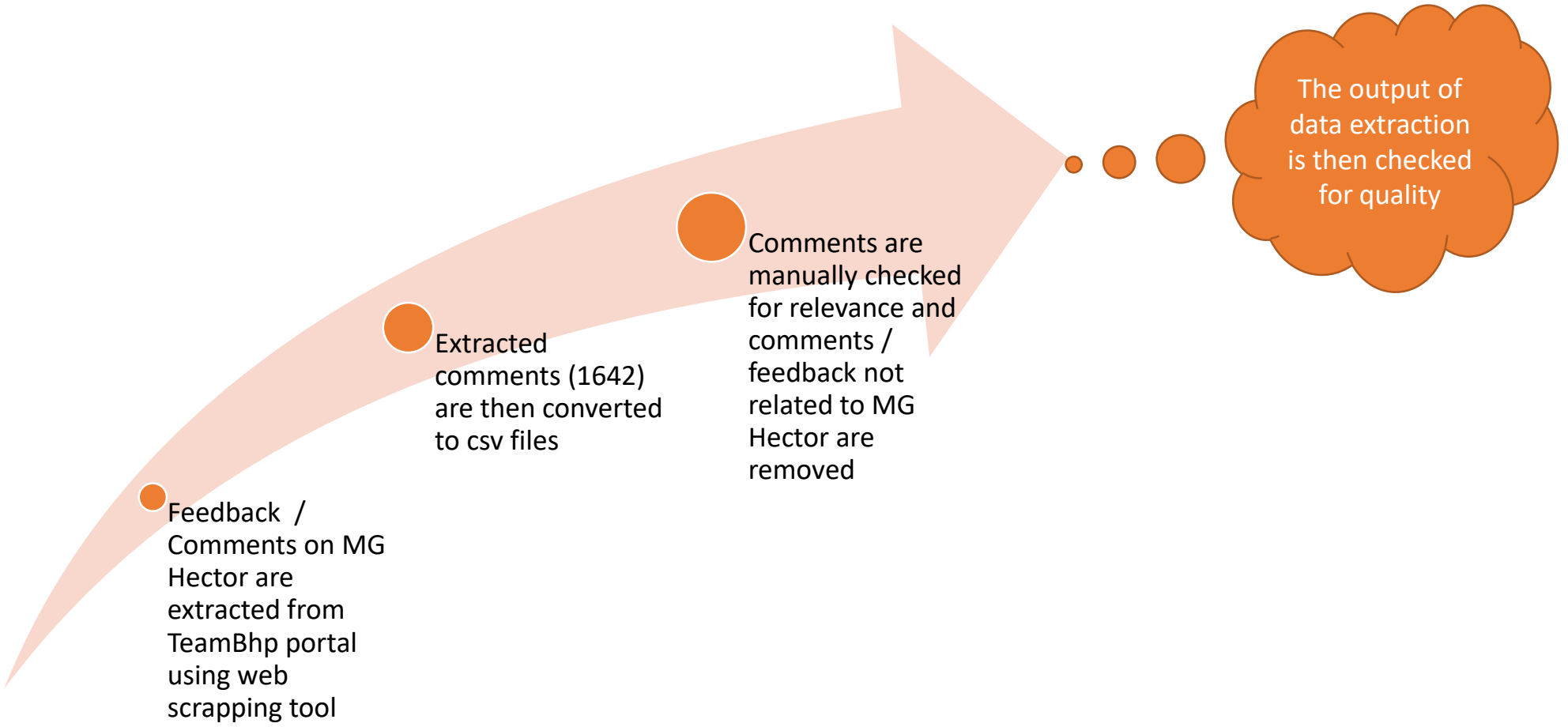
Some Key Papers

Sentiment analysis using product review data	• Fang, X., & Zhan, J. (2015). Sentiment analysis using product review data. Journal of Big Data, 2(1), 5.
Opinion Mining and Sentiment Analysis	• Pang, B., & Lee, L. (2008). Opinion mining and sentiment analysis. Foundations and Trends® in Information Retrieval, 2(1–2), 1-135.
Product weakness finder	• Zhang, W., Xu, H., & Wan, W. (2012). Weakness Finder: Find product weakness from Chinese reviews by using aspects based sentiment analysis. Expert Systems with Applications, 39(11), 10283-10291.
Sentiment Analysis: A Multi-Faceted Problem	• Liu, B. (2010). Sentiment analysis: A multi-faceted problem. IEEE Intelligent Systems, 25(3), 76-80.
Comparative Experiments on Sentiment Classification for Online Product Reviews	• Cui, H., Mittal, V., & Datar, M. (2006, July). Comparative experiments on sentiment classification for online product reviews. In AAAI (Vol. 6, No. 1265-1270, p. 30).

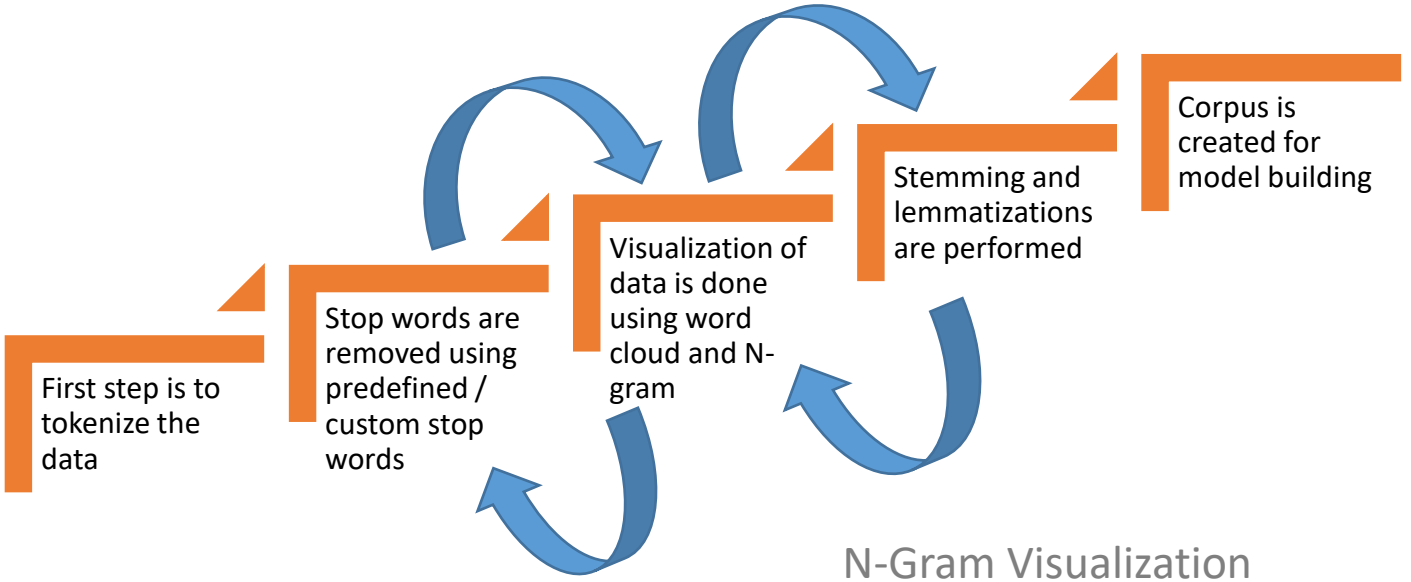
Methodology



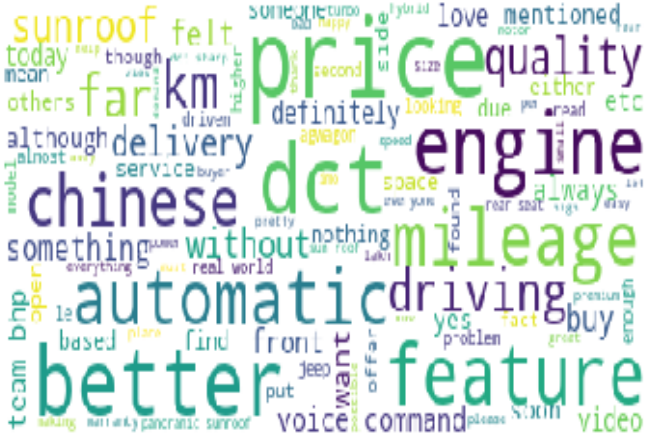
Data Extraction



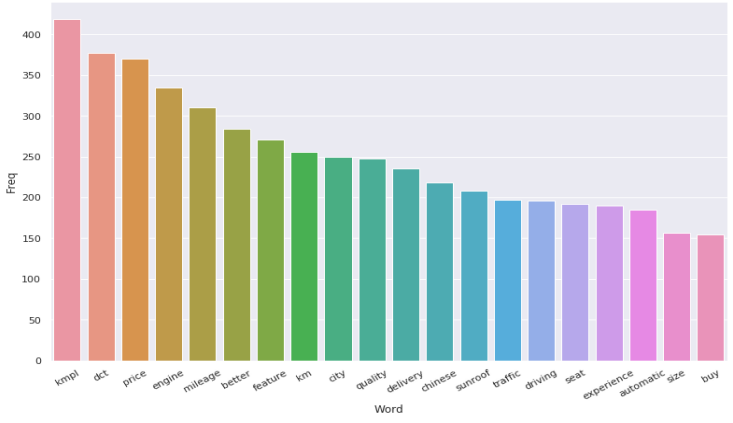
Data Management

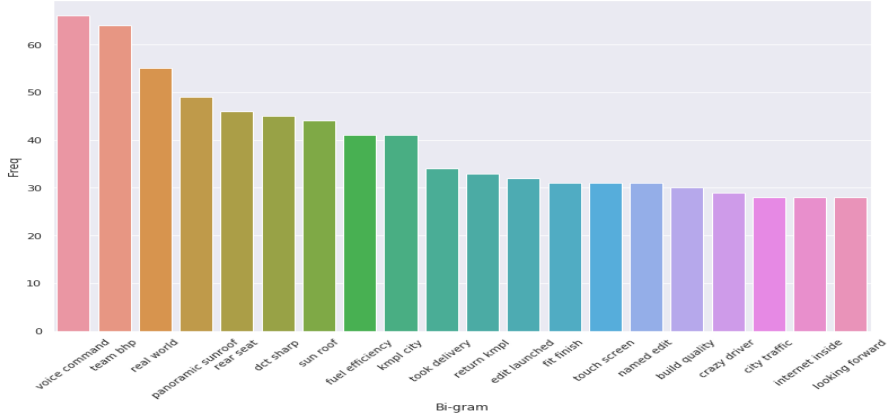


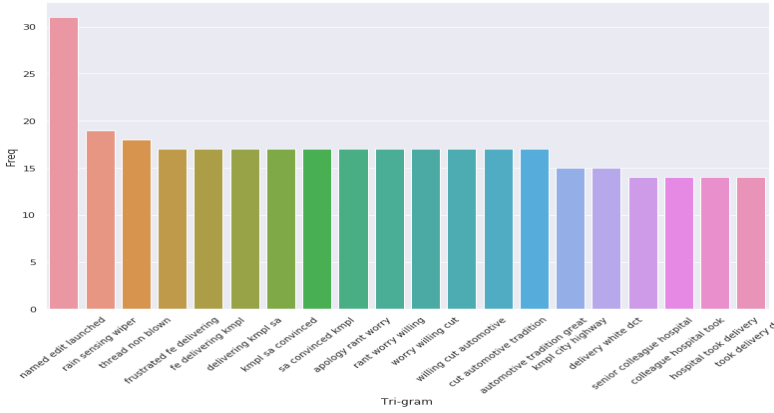
Word Cloud



N-Gram Visualization

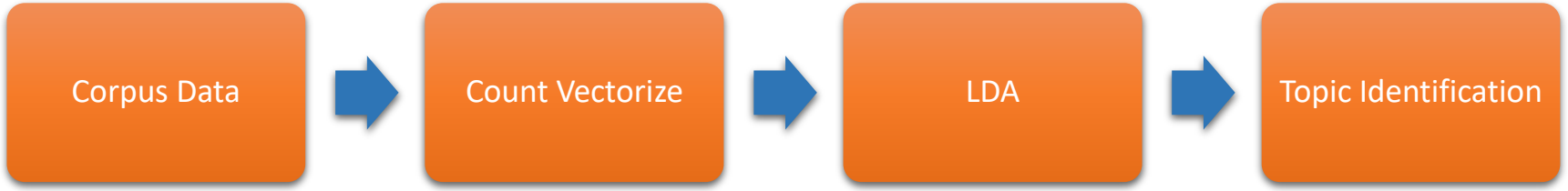




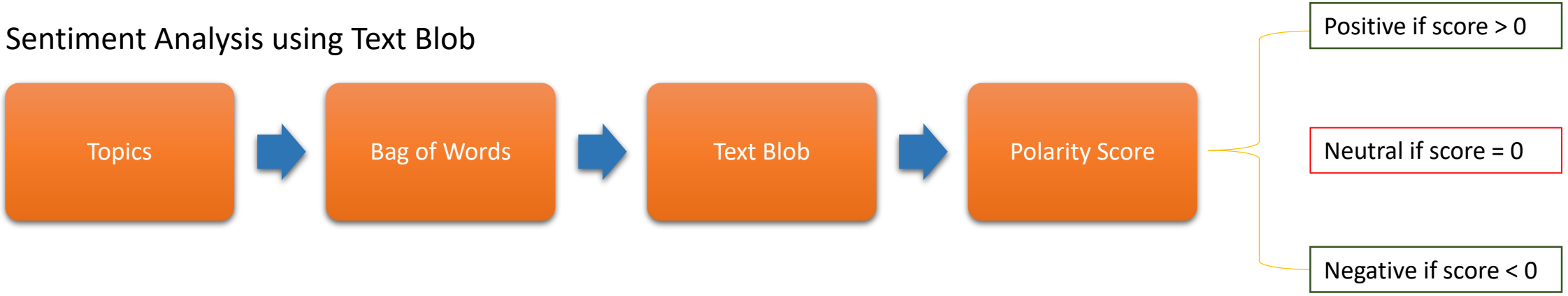


Model Building

Topic Model using Latent Dirichlet Allocation (LDA)



Sentiment Analysis using Text Blob



Result

Topic Model Result → **5 topics are identified**

Topic 1 Most Frequent 10 Words	Topic 2 Most Frequent 10 Words	Topic 3 Most Frequent 10 Words	Topic 4 Most Frequent 10 Words	Topic 5 Most Frequent 10 Words
engine	well	suv	light	petrol
road	vehicle	mid	panel	india
much	friend	time	issue	get
time	road	drive	plastic	like
well	issue	traffic	attachment	engine
price	guy	even	gap	vehicle
good	http	highway	people	year
Like	screen	experience	vehicle	even
Dct	car	india	seat	car
Mg	get	city	quality	price
drive	like	hector	like	diesel
petrol	delivery	km	sunroof	month
diesel	booking	mg	look	booking
seltos	hector	mileage	hector	hector
hector	mg	kmpl	harrier	mg

Sentiment Analysis Summary

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
Positive	397	194	177	165	278
Negative	77	48	26	50	49

Positive	Negative	Recommendation
No body roll	Delivery Delay	Hindi Voice command and Local Indian language
steering handling	Breakdown issues	
Smooth Drive	Poor Fuel Efficiency	
Performance		
Excellent Price as compared to Competitors		
Road Presence		
Redeem Points		
British Heritage		
Panoramic Sunroof		
Infinity JBL Audio		
Internet Connectivity		

Conclusion

- This paper focuses on Voice of Customer in form of reviews and comments extracted from Team Bhp portal for MG Hector
- We are able to extract hidden topics from the comments and reviews
- Using unsupervised approach, we are able to do sentiment analysis on the identified topics
- Finally we are able to provide some recommendations on the features of the car

The framework of this study can act as key decision making information for any business

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Thank You


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