

DISCOVERING NEW MARKET POSITIONS



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New Market Spaces

Which sub-categories?
What are the competitive advantages?

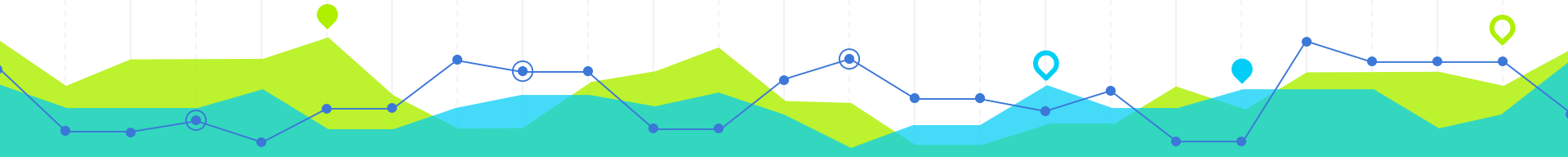
SERVICE OFFERING

Preprocessing

Clustering

**Cluster
Selection**

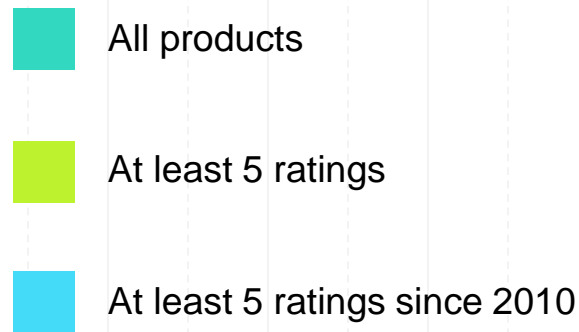
**Text
Analysis**



PREPROCESSING

Assumption:

- # of ratings \propto sales
- Recent ratings reflects future trend



CLUSTERING

1. Feature hashing from title and descriptions
2. K-means with 2000 clusters



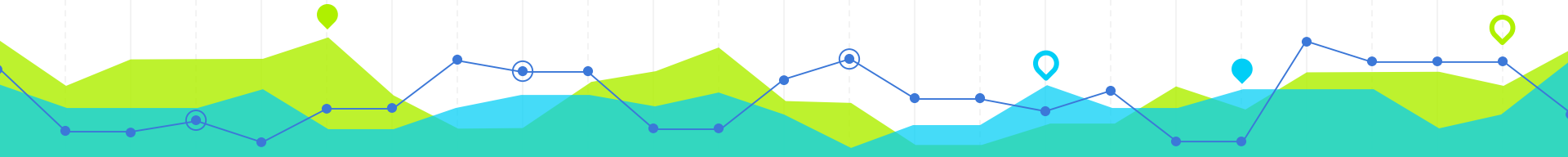
CLUSTER SELECTION METRICS

User dissatisfaction (UD)

- UD higher, users more dissatisfied

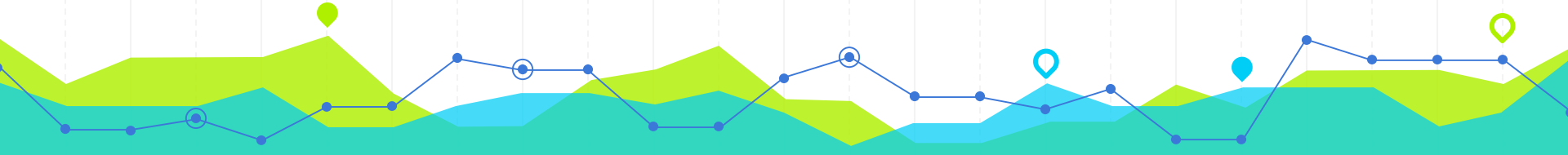
Market fragmentability (MF)

- MF higher, market is more fragmentable



CLUSTER SELECTION METRICS

Graph of MF vs UD



EXAMPLE CLUSTER

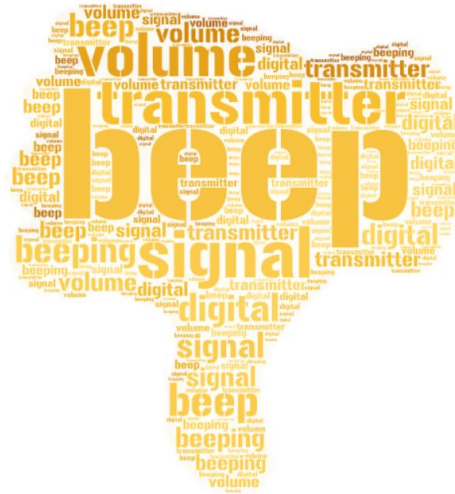
The First Years Two Receiver 49 MHz **Monitor**
Fisher-Price Sounds 'N Lights **Monitor**
NTM-910VIC - Sony Baby Call Nursery **Monitor**
Fisher-Price Sounds 'n Lights **Monitor** with Dual Receiver
Fisher-Price Sounds 'n Lights **Monitor**
Safety 1st Sound View **Monitor**
Baby Einstein Activity Keys
Safety 1st High-Def Digital Video **Monitor**
Sony 900 MHz BabyCall Nursery **Monitor** with Receivers
Graco Digital **Monitor** Mini Baby **Monitor** in White
MobiCam Audio Video Baby **Monitoring** System
Fisher-Price Mom Response Audio Baby **Monitor**, 900MHz - White/Grey
Fisher-Price Long Distance Baby **Monitor**, 900MHz - White/Grey
Fisher-Price Mom Response Digital Audio **Monitor** with Dual Handsets, 900MHz - White/Grey
Summer Infant SecureSleep Baby **Monitor**
The Happiest Baby on the Block DVD + CD COMBO By Dr. Harvey Karp The New Way to Calm Crying, and great sounds!
Baby Heartbeat Bear - Recordable stuffed & teddy bear
Safety 1st Comfort Zone Digital Baby **Monitor**, White
Bambino Wireless Internet Baby **Monitor** w/iPhone, Android, and Web Viewing (Windows PC required)
Fisher-Price Surround Lights & Sounds **Monitor**
Fisher-Price Time for Sleep **Monitor**
Fisher-Price Talk to Baby Digital **Monitor**, White/Blue
Fisher-Price Take Along Cam Video **Monitor**, Grey/White
Fisher-Price Surround Lights & Sounds **Monitor** with dual receivers
Fisher-Price Time for Sleep **Monitor** with dual receivers
Fisher-Price Talk To Baby Digital **Monitor** with dual receivers
Munchkin Disco Tub Lights, Colors May Vary
Graco UltraClear Analog Baby **Monitor**
Motorola Digital Audio Baby **Monitor** with Room temperature Thermometer
Motorola Digital Audio Baby **Monitor**
Safety 1st Baby's 1st 3-in-1 Thermometer
Safety 1st Crystal Clear Audio **Monitor**, White
BecoThings - BecoPotty in Natural
Chicco Lil Piano Splash Walker
Motorola Blink1 Wi-Fi Video Camera for Remote Baby **Monitoring**, Black
Munchkin Baby Food Pouch Organizer
The First Years Crisp and Clear Audio **Monitor**
Motorola Digital Audio Baby **Monitor**
Safety 1st DECT Wee Voice High Definition 1.9 Ghz Digital Audio **Monitor**
Safety First Secure Lights Audio **Monitor**
Stork Craft Beatrice 6 Drawer Dresser, Cherry

TEXT ANALYSIS

Assumption:

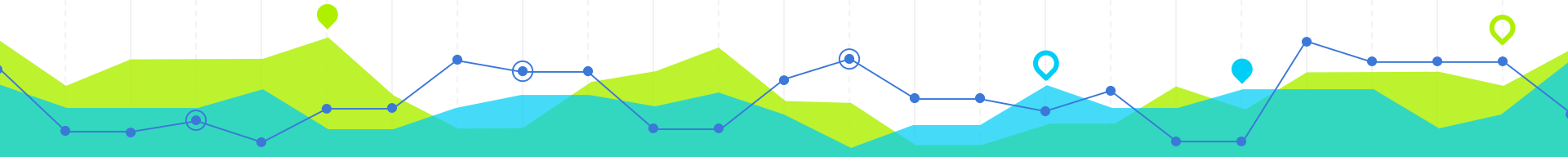
High helpfulness % → meaningful

Good rating → good reviews



LIMITATIONS

- Clusters tend to include products of same brand
- Model requires informative title and descriptions



FUTURE WORK

- Analyze cluster characteristics over time and select clusters with growth opportunities
- Advanced word processing to remove similar words (e.g. beep and beeping)
- Use visual features to improve clustering results



CITATIONS

- R. He, J. McAuley. Modeling the visual evolution of fashion trends with one-class collaborative filtering. WWW, 2016
- J. McAuley, C. Targett, J. Shi, A. van den Hengel. Image-based recommendations on styles and substitutes. SIGIR, 2015
- WordArt (2017). *Word Art - Word Art Creator*. [online] Wordart.com. Available at: <https://wordart.com/> [Accessed 10 Sep. 2017].

