

Center for Robots and Sensors for the Human Well-being





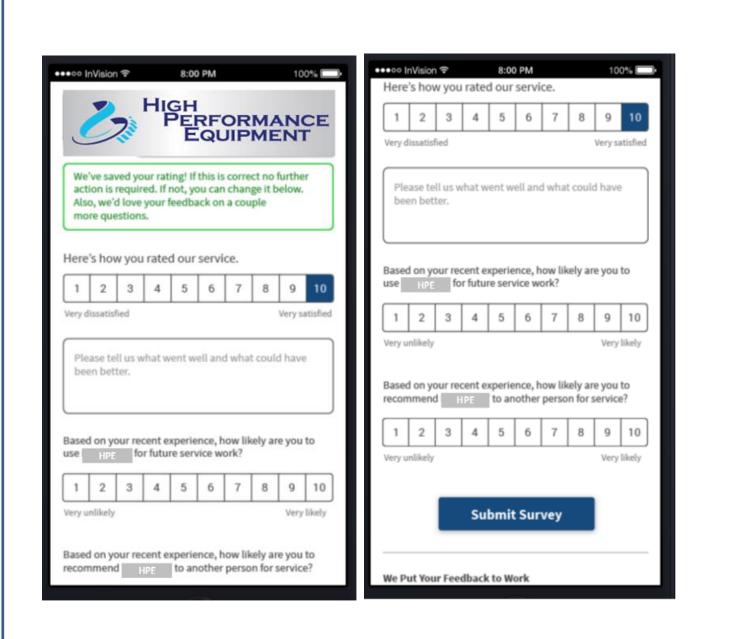




User Friendly NPS-based Recommender System for driving Business Revenue

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Data (2011-2016): Customer feedback: structured surveys + unstructured comments

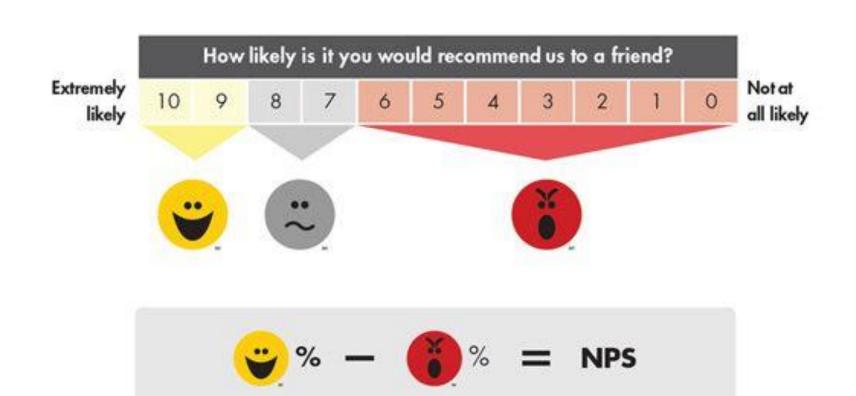


Net Promoter Score

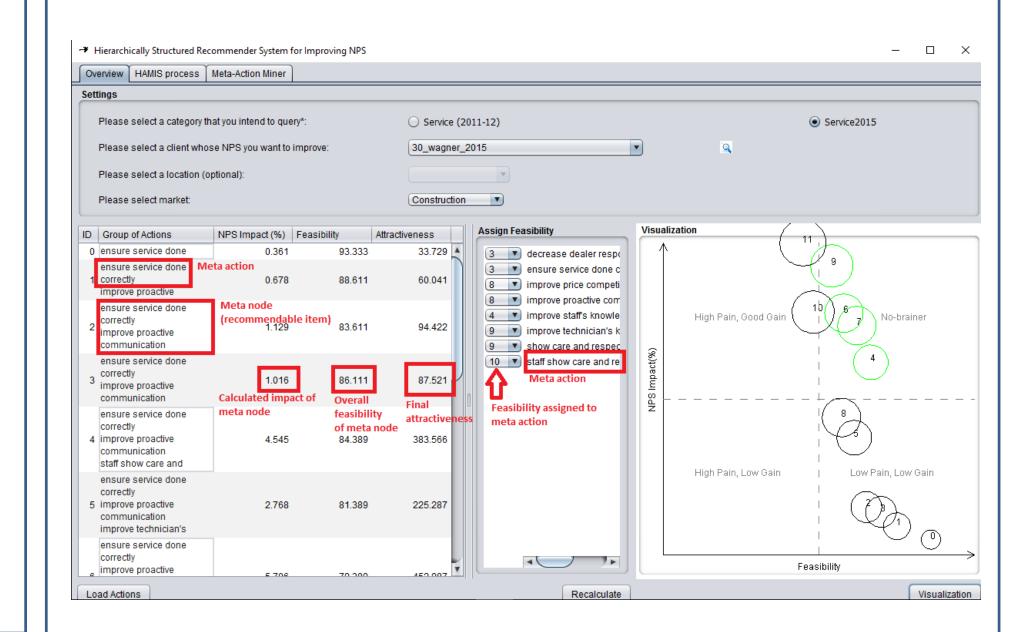
Promoters are loyal enthusiasts who are buying from a company and recommend others to do so.

Passives are satisfied but unenthusiastic customers who are open to offers from competitors.

Detractors are the least loyal customers who may urge others to avoid that company.



Recommender System Engine (JAVA-based)



Web Interactive Interface

(Javascript-based)

1. Select the entity you'd like to analyze by clicking on the applicable dot below

2. Rate Feasibility of Improvements

Rate the feasibility of improving your company's performance in each area below, from 0 (not possible) to 10 (easy)

Price Competitiveness 5 Service Done Correctly 5 Proactive Communication 5

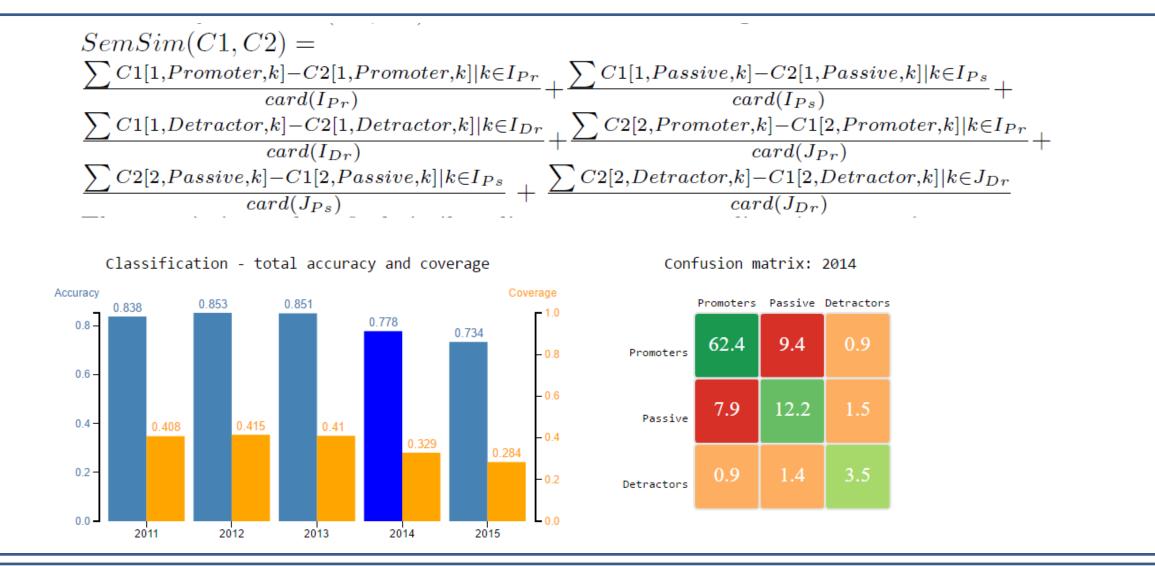
Technician Knowledge and Expertise 5 ▼ Dealer Response Time 5 ▼ Care and Respect from Technician

Customer Loyalty Improvement Recommendations

Client Semantic Neighbors, 2015

Semantic similarity

Defined based on differences in confidence of corresponding classification rules

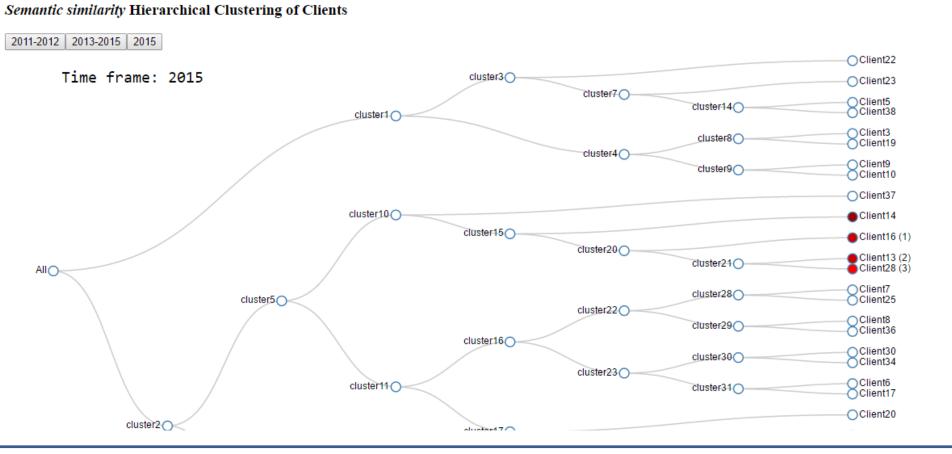


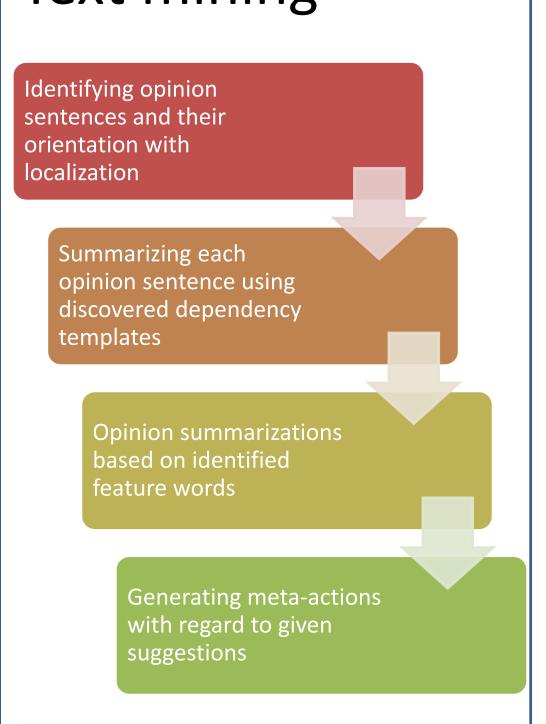
HAMIS – Hierarchical Agglomerative Method for Improving NPS

Based on hierarchical clustering algorithm

Action rule:

2014





Text mining

More Timely Invoicing 5 ▼ Care and Respect From Staff 5 ▼ 3. View Your Recommended Improvement Options **Action Areas** Negative Comments 13685848 == Noel said that they communicated well to the customer. 13686554 == He stated that they communicated well throughout the whole 12740469 == He stated they have good personal contact, they took time to 14649902 == James said they have good communication and kept him informed technician was easy to get along Price Competitiveness 13602587 == He stated that they provided great service. The technician was on 15098796 == Boog stated that they time, very knowledgeable and the pricing was good. repaired the machine and got it 12262972 == He said they are very thorough, easy to work with, and the pricing going, but it is high priced. 15146035 == Hank stated while is reasonable. they are fast, and have good service, he feels the prices are too 13741853 == Robert stated they 14969790 == Cole stated the job was done correctly the first time. Service Done Correctly 14027457 == He stated it was the way they handled the issue and got fixed in a made sure the problem got fixed 12490730 == Joel stated the technician is efficient, came out right away and able 12994165 == Keith stated that the to get right to the job and repair it correctly. technician was very friendly,

Actionable knowledge mining

= 0 = 1.12 = 2.24 = 3.37 = 4.49 = 5.61 = 6.73 = 7.86 = 8.98

φ – "Detractor" =>(Detractor->Promoter) sup= 5.0, conf= 100.0 ψ -"Promoter" ((Benchmark: Service-Repair Completed When Promised, (8->3))* (Benchmark: All Dealer Communication, (1->10))) =>(Detractor->Promoter) sup= 5.0, conf= 100.0 Analysis of relevant benchmarks – feature selection Select Client: All ▼ Select Category: Service Reducts: All B12 B13 B14 B15 B16 Net Promoter Score 2013

Examples of action rules:

(Benchmark: All Dealer Communication, (1->5)))

 $[(\omega) \wedge (\alpha -> \beta) => (\varphi -> \psi)] \text{ ((Benchmark: All Overall Satisfaction, (1->10))*}$