Sentiment Analysis:

Unlocking improved confidence & faster results in research analysis

SPECIAL REPORT

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Introduction

Insightful research analysis has long been the core of successful market introductions and marketing implementations. In the healthcare industry, where level of confidence and speed are among the most important deciding factors for implementation strategies, it is essential that the stakeholders identify and understand potential outcomes prior to implementations.

Fixed sets of questions provide data that is comparable between participants to identify patterns (or a lack thereof) and project behaviors. Open conversations allow us to explore relevant topics based on answers and ultimately reconstruct the conversation going forward. The combination provides the depth to better understand the feedback we get in context.

The Challenge of Research & Analysis

Historically, the bottleneck of the process has been people: research teams need to take detailed notes and/or transcribe recorded text, read the transcripts, review video, and search multiple elements for relevance to the topics at hand. Only then can we apply human craftmanship to the analysis. People often bring bias, which layers in a challenge to overcome.

The way we conduct research and surveys has adapted to the advantages of technology. Today, we are able to gather more information faster and less expensively than ever before. Remote recording offers us the ability to capture the words that people speak, an advance over words alone from a typed survey, without the cost of an in-person presence. Add video and we also capture additional non-verbal clues and reveals from not only what is said but the way it is said and its context.

The Research & Analysis Process
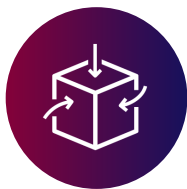
Gather

New and existing research is coordinated to provide the needed input and raw data.

Discover

AI and machine learning helps to navigate the data faster and group into patterns.

Deliver

Demonstrate what the patterns reveal and use that to decision most productive actions.

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Technology & AI

Empowers improved confidence and faster implementation

Using technology to enhance research and analysis isn't new. But the tools we have now and the way we can use them provides a substantial gain in performance over that of even a few years ago. Technology has placed cameras on nearly every laptop computer, decentralizing video capture and virtually eliminating its cost to collect it. Voice to text software speeds the process of transcription itself.

What that provides is more raw data in multiple formats and the need to align it all. We are still faced with how we best use it to get information from its raw form to the structure we require to understand the significant and sometimes hidden patterns within.
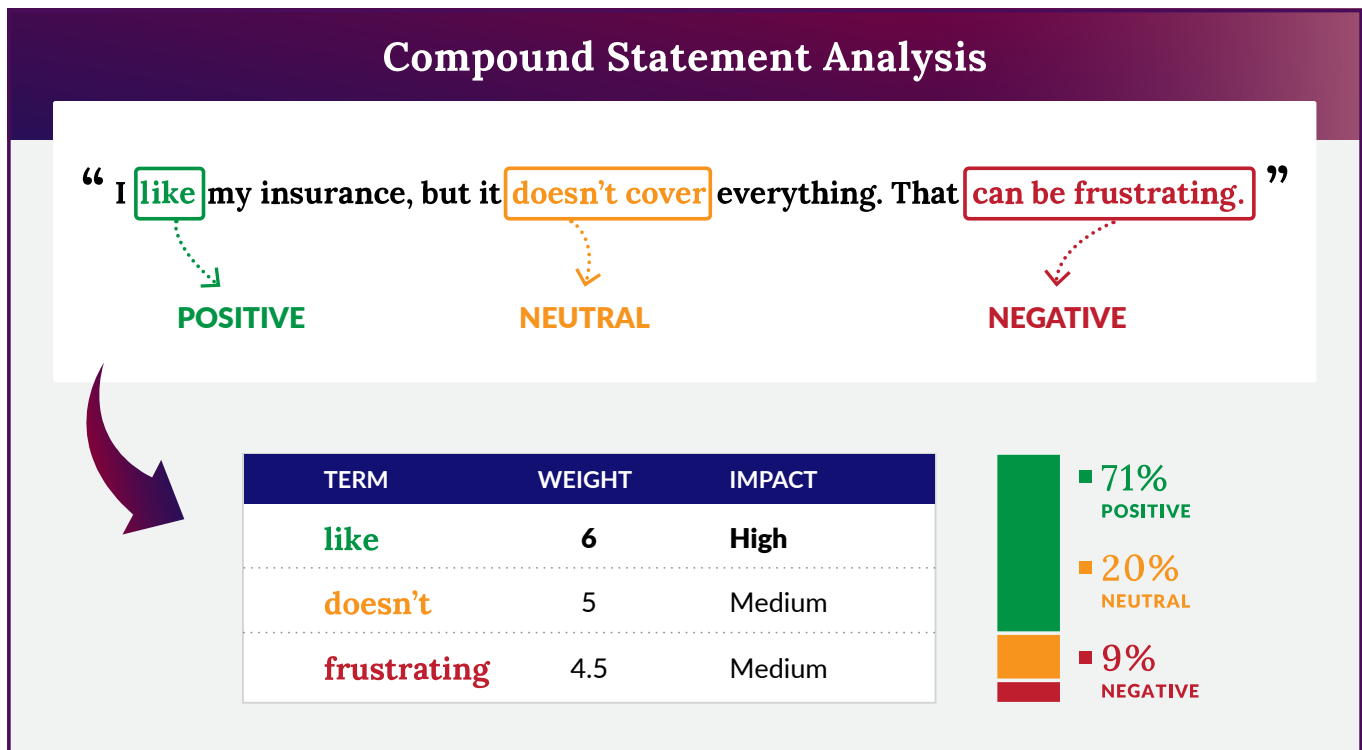
Sentiment Analysis Revolutionizes Research Analysis

Sentiment Analysis leverages multiple dimensions of existing information from interviews and surveys to gain deeper, more revealing insights. Sentiment Analysis accomplishes this by leveraging natural language processing (NLP) with Machine Learning software to identify obvious and more subtle patterns within conversations. At the same time, it integrates AI, machine learning, and human analysis to isolate, highlight and compare important data relationships and discoveries. It does so through:

- **Tying together multiple conversations into a coherent summary for analysis**

- **Identification of key phrases and entities - including people, places and organizations - to understand and relate common topic and trends**

- **Classification of specific medical, healthcare and life sciences terminology using domain-specific, pre-defined models**

- **Aggregated results across multiple languages**

- **Quantification of emphasis and meaning within conversations by topic or interview segment**

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Sentiment Analysis Goes Deeper

As a result, Sentiment Analysis offers a better representation of the full picture and can be presented visually, for better application to the decisions to be made. Visualization of the analysis reveals the important details that are often hidden among the other data.

Compound Statement Analysis

" I like my insurance, but it doesn't cover everything. That can be frustrating. "

POSITIVE   **NEUTRAL**   **NEGATIVE**

TERM	WEIGHT	IMPACT
like	6	High
doesn't	5	Medium
frustrating	4.5	Medium

71% POSITIVE

20% NEUTRAL

9% NEGATIVE

The Sentiment Analysis often lead to cost reduction in work and revenue improvements through the faster implementations

Sentiment Analysis drives better research analysis results:

- **Improved confidence in decision-making of up to 3x better accuracy with application of Sentiment Analysis**

- **Answers to questions or factors not originally considered**

- **The improved speed of research and analysis completion**

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Improved Confidence in Decision-Making

An infectious disease life sciences client needed follow-up answers on a previous campaign survey focused on treatment for a new indication on existing disease therapy. The client believed a pattern should exist separating two groups of healthcare consumers but initial research findings did not reveal one. High confidence in the split would justify additional marketing expense.

Knowvanta believed that Sentiment Analysis insights would reveal what conventional research did not. Focused on sentiment specific elements, a deeper nuance of the data analysis could be revealed.

A traditional approach to the new research would be too slow and still miss the data needed. Normally, a detailed follow-up line of questioning requires market research analysts to dig through the research interviews and notes using ad hoc tools and techniques with an indeterminant timeline to complete.

To implement quickly, Knowvanta leveraged technology and applied key word and tagging techniques specific to an infectious disease using opinion-mining algorithms. This allowed the machine learning model to test multiple outputs. The phrasing and key word combinations drove the ultimate threshold levels and results for the improved decision making.

Sentiment Analysis Healthcare Weightings

KEY WORDS	KEY PHRASING	WEIGHTS
Insurance	Coverages, Medicare, reimbursements, co-pay, out-of-pocket	High
Friends, Family	Experience, positive, bad, negative, good	Medium
Doctor	Recently, changed often, trust, judged, misunderstood	High

Sentiment Analysis Healthcare Strength

THRESHOLD	OPINION MINING ACCURACY	SENTIMENT DIFFERENCE	STRENGTH OF SENTIMENT DIFFERENCE
to split Campaign	Based on Key Word and Subject	%	(1 weak -7 strong)
50% Difference In Opinion > 3 strength of difference (1 – 7 scale)	98%	68%	5.3

Sentiment Analysis provided a highly effective solution. Results were produced in a fraction of the time traditional methods would have required. The approach revealed a significant difference of opinion and high confidence in the data and the decision that would be made for additional cost and effort in marketing segmentation.

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Revealing Unexpected Results

A medical device manufacturer sought insights regarding potential use of a new surgical care product in trauma situations over existing products. Research required very specific terminology and detailed dialog in order to elicit a meaningful opinion.

The market research team turned to Sentiment Analysis to break out the specific threads of opinions. This offered the marketing team with clear and consistent patterns across all of the HCP dimensions of interest, including years in practice, hospital setting, location, and similar elements.

The results provided more detailed projections regarding potential market response to the new product introduction, and unanticipated areas of discovery in the reactions of the healthcare professionals.

As an example, the process identified a HCP focus on supply layouts in the storage areas, as well as access levels to supplies, having a significant impact on the choice of products used in traumatic situations. This was not obvious in cursory analysis. Sentiment Analysis and opinion mining suggested a relationship of significance based on conversation mentions. Market research analysts took this pattern reveal to identify an area for more detailed elaboration.

Sentiment Analysis Keyword Results

KEY WORDS	FREQUENCY OF MENTION	# OF SAMPLES MENTIONED
Supply Location	74%	20
Seniority	94%	25
Speed of Application	80%	28
Reviews	20%	9

Sentiment Analysis revealed hidden data. The approach provided important insights for marketing and sales success in terms of decision confidence, specific message targeting, and a more thorough understanding of the client decision-making process.

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Conclusion

>> Contact Knowvanta to learn more about Sentiment Analysis today.

The two healthcare case studies provide insight into the incremental value of Sentiment Analysis over traditional research and analysis.

Improved confidence in decision-making, the ability to answer questions not originally addressed (even in existing research), and improved speed of research and analysis completion offer research teams and their colleagues important benefits and a competitive advantage.

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Knowvanta knows global healthcare and empowers companies with insights through research, cutting- edge analytics, and domain-specific enterprise software. Leveraging human expertise with AI and automation, we offer a deeper understanding of surveys and research results to drive better, more informed decision-making.