Employee Feedback and Artificial Intelligence

A guide to using AI to understand employee engagement

We all know that a happy workforce is good for the bottom line; employee satisfaction and engagement are positively correlated with company revenue and ROI. But how can companies determine how engaged their employees are and – more importantly – *why* their employees are engaged or not?

Uncovering the reasons behind satisfaction and engagement scores is key to understanding what should be maintained or changed in your HR policies to improve satisfaction levels. Until recently, however, there were limited tools available to analyze employee comments, and those that existed were cumbersome and resource-intensive.

Improvements in artificial intelligence (AI) and natural language processing (NLP) have made it possible to glean insights from unstructured employee feedback more rapidly. Many companies are moving towards these new approaches to make sense of their internal data.

However, because the technology is so new, there are a lot of questions that come up while researching and implementing new tools.

The challenge is actually implementing AI and NLP solutions and making it a part of your HR analytics process. What developments in AI and NLP should you care about? How can they help you gather and process employee feedback more frequently? What should you look for when choosing an HR analytics provider? This goal of this white paper is to shed some light on those questions.

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The benefits of better HR analytics

Most companies are aware of the value inherent in employee feedback; between 50% and 75% of organizations administer workplace surveys to their employees.[1] However, analyzing and acting upon that data is another story. This data is rarely well analyzed; 52% of managers say that they review employee feedback but took no action on it, while 27% never reviewed the feedback at all.[2]

Despite the challenge of processing and reviewing as many as hundreds of thousands of comments each time a survey is administered, the benefits of understanding employee feedback is clear.

22%
Higher productivity

First and foremost, employee satisfaction and engagement has an impact on the bottom line. Organizations that enjoy a high level of employee engagement have on average 22% higher productivity compared to those that don't.[3]

Out-perform
The stock market

In addition, research conducted amongst multiple global companies found that those whose employee engagement was at the 75th percentile or higher outperformed the total stock market index, and also posted total shareholder return that was 50% higher than average. In contrast, companies whose employee engagement was at the 25th percentile or lower posted shareholder returns that were 50% lower than the average.[4]

50%
Higher shareholder return

In addition, employee engagement has a positive and measurable impact on retention. Organizations with highly-engaged employees report 25% to 65% less attrition than other companies, according to research from Gallup.[5] The engaged employees also score higher in productivity and customer satisfaction.[6]

25 - 65%
Lower attrition

And this is not to mention the less-easily-quantifiable benefits of employee engagement, such as improved company culture, higher morale, and greater wellbeing.

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Barriers to a successful HR analytics program

Unfortunately, often not as many resources are given to HR analytics as to customer feedback programs, and it can be difficult to get internal support to implement changes when these benefits are perhaps less obvious. This might be partly because changes that are made to address employee concerns aren't often communicated back to stakeholders and employees, so the ROI isn't as clearly demonstrated, despite the research that shows it pays off.

One of the most prevalent, yet most easily addressable, challenges is that HR data is not analyzed frequently or thoroughly enough. For most companies, employees are surveyed quarterly at best, but most often on an annual or bi-annual basis. While there are many reasons why this is not done more frequently, the upshot is that it makes it more difficult to manage and influence employee satisfaction and engagement. If companies only "check in" with their workforce once a year, it's near-impossible to tell what impact, if any, new programs and policies are having; and any red flags are often not caught until they've snowballed.

To avoid these pitfalls, of course, employee data needs to be looked at thoroughly and often. But there are barriers that most businesses face in frequent analysis of data.

1 · High volume

Employee data can generate tens to hundreds of thousands of comments, many of them extremely detailed.

2 · Unstructured, text-based format

The most detailed and critical insights are in the employee comments, not their raw satisfaction scores. But comments are far more difficult to analyze than scores and ratings because of their unstructured, text-based format. Most legacy analytics systems simply can't process data that isn't coded, labeled, or otherwise structured.

3 · Messy data

As with all data, employee feedback is messy and often contains misspellings, slang, or different ways of describing the same issue. Having to think of such misspellings and synonyms in order to search for them would significantly slow down the analytical process when keyword search-based systems were the norm. (For more detail on these and other methodologies, see the next section.)

4 · Highly industry- and company-specific language

By its very nature, employee feedback is highly specific to a particular department, company culture, and industry. This makes analysis a huge challenge when relying upon keyword- or ontology-based systems, which use a search-and-retrieve approach to making sense of text-based data. Before such a system can be used, a company-specific ontology must be created and continuously updated and maintained. The resources required to make that happen are a huge barrier for most HR Analytics teams.

Making sense of employee data: Changing methodologies

The traditional approach to analyzing data was to do it manually (hand-coding) or by resource-intensive text analytics methodologies. These methodologies included creating long lists of keywords, ontologies, and Boolean queries, and using programs that would simply return any exact matches to those lists.

This was, of course, time- and resource-intensive, and a group of consultants was needed to compile the work. The setup time was lengthy and unexpected insights could be missed. For example, if a term wasn't in your ontology, it wouldn't have been uncovered in the data, meaning that unanticipated events or key issues would go unnoticed.

Advancements in artificial intelligence (AI), natural language processing (NLP), and machine learning (ML) over the last ten years have dramatically changed the way employee insights can be analyzed and implemented. They have made it possible for companies to collect, analyze, and respond to employee feedback on a monthly or biweekly basis, instead of quarterly or annually.

Boolean search: "Target"

(target OR tarjay OR targetstyle OR "tar-jay") AND -goal AND -goals AND -joke AND -operation AND -operations AND -audience AND -audiences AND –shoots AND -journalist AND -journalists AND -sanctions AND -market AND -"on target" AND -"hit the target" AND- "is the target of" AND -"target weight" AND -"become the target" AND - "to target the" AND -"target shooting" AND -"target date" AND -middle AND -class AND -gun AND -guns AND -debt AND -deficit AND – police AND - pass

There is now significant movement towards understanding human language as it's naturally spoken and written, rather than having to adjust the way we speak for a machine, or having to turn written feedback into a structured format so that computers can make sense of it. Businesses are beginning to see real applications for this, and not just in the areas of customer feedback and HR.

Applying AI and NLP to text-based data enables companies to look at text as concepts and ideas instead of words… and to focus on the all-important relationships between those ideas instead of wordcounts. Concept-based text analytics systems, for example, allow you to upload data and immediately begin to derive insights rather than having to tell a system what to look for. This has significant benefits for HR.

Concept relationships derived from AI and NLP: "Target"
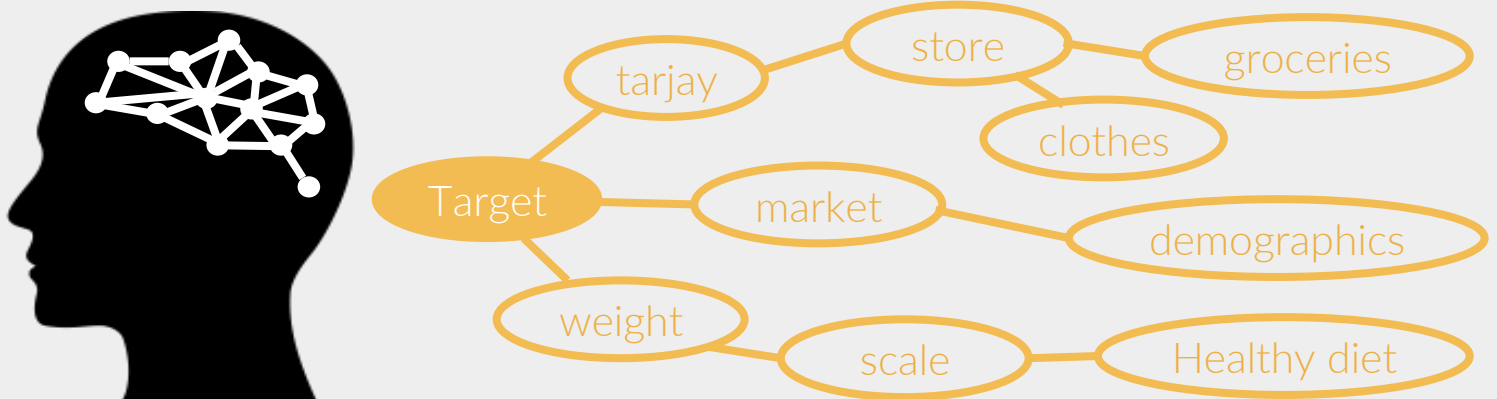
Such approaches make it far easier to aggregate employee feedback from multiple sources – and even combine it with customer feedback to find deeper connections between employee and customer sentiment.

Using machines to analyze employees' comments enables HR professionals to be able to properly "read" every comment, not just a random sample. This speeds up the process considerably and enables them to collect and analyze data more often and have an in-the-moment understanding of what employees actually care about. Moreover, because it's a machine identifying the key themes and connections in the data, not a person, this eliminates the risk of bias.

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Success story: Calling the data shots

The HR analytics department of large telecommunications company hypothesized that their employees' satisfaction and engagement impacted their customers' satisfaction levels. While the advanced statistical analyses they used worked well with quantitative data such as employee Net Promoter Scores (which measures employee engagement and motivation), they weren't as effective at processing unstructured, text-based data.

Traditionally, they'd resorted to pulling samples of employee and customer comments and reading through them manually. However, this was extremely time consuming, and they feared that relying on people to comb through the data for insights exposed their analyses to bias - intentional or otherwise.

The team decided to switch to an AI- and NLP-based solution. They brought in a provider that could automatically pull in and aggregate employee and customer data from multiple sources. The provider's software relied upon AI, and as such could process the hundreds of thousands of comments within approximately five minutes – compared to the weeks it had previously taken the team to manually read through just a sample of the comments.

The time and resources that the team spent on processing data plummeted, enabling them to spend more time identifying the links between employee and customer concerns – especially training on products and systems. They also now had bandwidth to begin strategizing how to address those concerns and improve employee engagement and, through that, customer satisfaction.

Training and learning the plans and ways to overcome issues **takes a while to learn and they change constantly** which leads to errors

Employees

The company should do a better job at **managing the education and training** of their in-store and phone customer service reps

Customers

Making the switch: selecting an HR analytics provider

Using an AI company can help unlock a treasure trove of employee data. But there are some essential questions you should ask before you engage their services.

How will your data be uploaded into their system?

Can you hand over a file or connect directly via an API, or will your data require cleanup and processing before you can even upload it? Many companies analyze unstructured data by coding it, effectively turning it into structured data. This means a great deal of important detail and nuance can be lost in the process. And this is the gold you don't want to lose.

How long will it take to get set up and running with their system?

If setup time is longer than a week or two, this is a sure sign that the company is using training data sets in the background instead of AI and NLP, which can adapt to new data or changes in data automatically.

Do they ask for sample or training data sets (or say they provide their own)?

If they need sample data sets before they can get you set up, or can't answer the question of how they handle data that may change over time, you're probably working with a team of consultants – not a system based on AI and NLP.

How long is the data processing time?

True AI and NLP solutions can process data in a manner of minutes. If it's much longer than that, it could be a good sign that your vendor is using a team of data coders or consultants. This can increase both the cost to you and the time it takes to find insights.

How complex is the process for integrating the unstructured data analytics solution with your existing systems?

The more complicated or longer the process is, the longer it will take for you to get set up and begin to uncover these all-important insights.

Is it a specialized or general system?

A general toolbox of solutions won't perform as well as a tool designed specifically to analyze unstructured data.

With an increased demand to demonstrate the link between employee behavior and business outcomes, these advancements in predictive statistical analytics have never been more timely for the HR industry. Are you making the most of your employee data?

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References

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About Luminoso

Luminoso Technologies is a leading natural language understanding company that allows clients to rapidly discover value in their unstructured text data. With roots at the MIT Media Lab, Luminoso's artificial intelligence-based software uniquely produces an accurate, unbiased, real-time understanding of what people are saying, including insights that were not anticipated. These insights are used to increase marketing performance and build better customer experiences.

The company provides multilingual, flexible software that can be deployed to meet client needs in either a standalone Cloud or On Premise solution or integrated into an end-to-end client platform via an API. Luminoso serves clients such as Staples, Sprint, and Scotts Miracle-Gro, as well as a growing set of channel partners including Publicis.Sapient and Basis Technologies.

Luminoso is privately held with headquarters in Cambridge, MA. For more information, please visit www.luminoso.com.

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