Essential Approaches for Effective AI Application to Social Listening:

A PRACTICAL USER'S GUIDE

The 8 Critical Steps to Take Your Social Intelligence to the Next Level

Artificial Intelligence ("AI") may be a highly-hyped technology, but in the world of social listening and analytics, it is poised to become the most powerful innovation the industry has seen over the last decade.

AI, or more specifically machine learning, can learn from human input and with enough proper training, can approximate (and sometimes exceed) human performance without explicit programming. As Dr. Philip Resnik, a Professor of Computational Linguistics at the University of Maryland (and Converseon advisor) says: "computers simply don't have the brains to handle some tasks, unless they borrow ours."

This is why AI is essential for effective language analysis. Indeed, the power of AI to analyze even nuanced text-based conversations at massive speed and scale to accurately collect critical business insights has made tremendous strides over the past few years. Yet the broad use of these technologies in the areas of social listening and analytics largely remains in its infancy due to several factors. One has been the uneven availability of the most effective technologies combined with user confusion on which technical approaches are most appropriate to specific needs. This is compounded by the fact that if you are also like most organizations, there has historically been a dearth of "AI experts" available to you to help guide decision-making and vendor selection in this area.

> AI emphasizes the creation of intelligent machines that work and react like humans do, making it a key technology to process and analyze human language.

Additionally, most social listening and management companies today are promoting some form of "AI" making it difficult for organizations to usefully distinguish key differentiators and approaches. The term "AI" often includes a broad range of features that can range from simple Bayesian-based anomaly detection to sophisticated deep learning algorithms. Some solutions use statistical methods that generalize results based on a small sample size, others use machine learning techniques to identify a lexicon of positive and negative words and then revert to a rules-based approach for sentiment analysis. On a practical level, this has made the choice and adoption of AI for social intelligence and analytics quite challenging. "Brands should be wary of over-exuberant AI promises" wrote Forrester Research in its recent analysis of Enterprise Social Listening Platforms, Q3 2018.

And we agree.

But healthy skepticism should not give way to cynicism. Indeed, there is a range of AI technologies now available – some native to specific platforms and, perhaps more importantly, others that are provided as third-party integrations that are capable of meeting or exceeding your organization's requirements. More and more listening platforms are opening up to these integrations and partner ecosystems to provide a wider range of solutions to clients. To quote author William Gibson, "the future is here - it's just not evenly distributed."

The next several years will be breakout years for the practical uses of this technology will be a breakout year for the practical use of this technology.   Broader availability of key technologies combined with clear value propositions and the emergence of best practices are driving organizations to aggressively adopt and implement. Companies today are expanding investment into "AI" aggressively and social listening and analytics are clear critical areas of application. According to Gartner Group, by 2021, AI augmentation will generate $2.9 trillion in business value and recover 6.2 billion hours of worker productivity.

When choosing your AI technology, it is important to unpack and analyze these AI technologies separately and in combination with a social listening platform. Many solutions will provide native technologies as well as accommodate other plug-ins if the clients request it.

As you start your evaluation, it is important not to accept providers' AI claims at face value. Solutions need to be fully explainable, verifiable and testable. Equally important, once the preferred technology is chosen, the implementation of the technology must follow best practices to avoid any potential risk associated with half-hazard use, such as unintended bias.

Brands should be wary of over-exuberant AI promises.

FORRESTER

The future is here, it's just not evenly distributed.

WILLIAM GIBSON

Vendors should be willing to answer key detailed questions about their approaches and provide test sets or proofs-of-concept in a timely and transparent manner. This white paper is designed to not only help you better understand and evaluate AI technology for social listening, key options now available, and practical ways to implement it to drive maximum business value.

> Our goal is to provide the knowledge necessary to transform your use of AI from theory to practical application – with the goal of substantially increasing the business value of your social listening initiatives.

IN THIS WHITE PAPER WE WILL:

☐ Review and clarify the key benefits of AI for social listening and analytics

☐ Briefly discuss the history and evolution of technologies to arm you with more information on how to choose the right solution

☐ Describe why taking control of your own data and models is becoming critically important

☐ Discuss why "getting granular" matters

☐ Help you understand the value of "prebuilt" machine learning models

☐ Describe why model measurement is critical and the potential danger of using solutions that don't provide clear performance scoring

☐ Help you align models to business needs with examples of how this data can be used in predictive analytics

☐ Show areas for potential growth including bridging with social with other voice-of-customer data

1 CLARIFY THE BENEFITS

Most organizations have never before had the access to unstructured, unprompted data that they have today. Indeed, unstructured and unprompted consumer-generated text data is only increasing in volume. The analyst firm, IDG, estimates unstructured data growth of 62% YOY and that it will soon comprise 80-80% of the company's data.

For consumer-centric, data-intelligent brands, this represents a potential goldmine of insight.

Yet, only a small portion of this data is currently being analyzed. According to Forrester Research, companies are only processing 21% of unstructured data on average. And when it comes to consumer text in the form of social listening data and other related data sources – such as call center transcripts or long form survey verbatims – there's an understandable reason: the data is not only massive and growing, it is also highly complex and continuously evolving. Slang, sarcasm and implicit meaning often dominate the conversation. Virtually any concept can be verbally phrased or explained in infinite ways.

In the English language alone, it is estimated there are more than 10^{270} potential sentences – which is more than the number of estimated atoms in the observable universe.

You can see why trying to wrangle this data via traditional, Boolean-based keyword approaches has been largely ineffective. Most basic sentiment analysis systems using standard approaches achieve only around 60% accuracy. And just getting to relevant data sets has been a herculean task. This has given many practitioners of social listening an unenviable set of options – use small data sets that humans can review with higher accuracy and risk potentially missing key insights and trends, or attempt to work with generally primitive and potentially inaccurate automated metrics that span the entire data. If asked about the quality of the data, most people must resort to simply "eyeballing" the data to see if it looks "good enough." This certainly does not inspire confidence in the data or support its broader adoption.

This is where AI becomes a game-changer. Social data can be processed by high performing AI with near-human level precision at the speed and scale only software can provide, feeding the needs of customer-intelligence-hungry organizations with strong data science capabilities seeking a competitive advantage. AI can also provide quantitative measurements of performance so that it can be effectively and confidently "mainstreamed" into any organization.

As a result, AI helps unlock the full value of data by classifying language as humans do. For example, most social listening has historically been keyword based in order to capture anger or frustration - so that keyword would have to be present. But most social listening data is more nuanced than that. Take the phrase, "I spent my entire lunch hour trying to exchange my airline tickets." We understand that as frustration and negative, but there is no keyword present that implies that.

THE RISE OF UNSTRUCTURED DATA

IDG estimates

62%
unstructured data growth YOY

Companies are only processing
21%
of unstructured data on average
—
Forrester

AI helps companies process their data with human-level precision at the speed and scale that only software can provide.

Consider the word *"trust."* Few people explicitly say, *"I trust X brand."* Instead, they may say, *"I never would leave home without it."* Or, *"I use the product with my baby at night because it helps her sleep better."* These are expressions of trust that humans recognize and can effectively be captured with solid AI. Indeed, the best technologies are now outperforming average human precision when coding for metrics like sentiment consistently and are doing so at vast scale and speed. This provides many key benefits including:

KEY BENEFITS

Provides cleaner and more accurate data sets by increasing precision by 80-90% in many cases

Accelerates insight by up to 12x over traditional methods

Aligns data to business needs with clean data streams classified specifically to the use - such as customer experience, customer care, or crisis management

Can often deliver insights "better, faster, and cheaper"

Processes all data with human level precision at the speed and scale only software can provide so organizations can act faster

Gets to root cause, actionable analysis

Gets to "one truth" within your organization so that it can confidently believe and act on the data

Enables predictive modeling of the data when "real-time" isn't fast enough

For example

One of the world's largest software companies is using AI-powered social intelligence models to replace its traditional buyer's journey survey-based analysis, providing real-time insight while saving approximately $10 million a year.

$10M
IN SAVINGS
PER YEAR

An automotive company, through just one highly effective machine learning model, was able to more than double the accuracy of its data for its social customer care initiative, leading to cost savings, reduced latency, less human data cleansing and improved customer experience resulting in millions of dollars in ROI.

2X
ACCURACY
OF DATA

The value of these models in many cases now exceeds the entire cost of most traditional annual listening platform contracts and we expect that only to grow as this accurately processed data is integrated into more critical areas of organizations and demonstrate tangible value.

2 CHOOSING THE RIGHT TECHNOLOGY FOR YOU

The standard definition of artificial intelligence is the ability of a computer to perform a task with the intelligence normally expected of a human being. But that begs the question of just what intelligence is. And, given the difficulty of pinning down intelligence, it stands to reason that what we consider AI has changed over the years. Not all "AI" is the same and it's important to understand some of the differences. Let's review some definitions:

> *Machine learning* is a field of artificial intelligence that uses statistical techniques to give computer systems the ability to "learn" from data, without being explicitly programmed.

> *Machine learning* models are defined as the artifact created through learning, also often called training, often a mathematical AI algorithm.

It wasn't too long ago that the ability for a computer to suggest correct word spellings was considered AI, but now that seems so trite as to be almost a parlor trick. But it is that same ability of a machine to "understand" human language that is the key AI ability required to unlock the valuable insights within social media.

Not only have our collective expectations of AI grown as computing power has grown, but the techniques we use to achieve machine understanding of language has swung like a pendulum between human-centric and machine-centric approaches over the years:
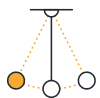
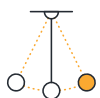**Machine-Learning "models" are core to social intelligence success.**

If software ate the world, models will run it.

THE WALL STREET JOURNAL

STARTING WITH HUMANS
In the 1970s and early 1980s, expert systems created by linguists using thousands of hand-crafted rules parsed and processed text to discern meaning.

SWINGING TO MACHINES
By the late 1980s, faster processors made data-driven approaches possible for speech recognition, clustering thousands of speech patterns to translate sounds into words.
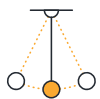
SWINGING BACK TO THE MIDDLE
In the mid- to late-1990s, these human and data-driven approaches came together, spurring a huge increase in the effectiveness of AI under the Natural Language Processing (NLP) umbrella.
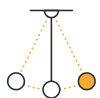
SWINGING EXTREMELY TOWARD MACHINES
In this century, machine learning has come to the fore, building on the explosion of Big Data and processing power, culminating with deep learning approaches that can correctly recognize more patterns than ever before.

SWINGING BACK TO THE MIDDLE
In recent years, so-called human-in-the-loop (semi-supervised) approaches, such as active learning, have taken accuracy to new heights and now allow domain experts - not just data scientists - to leverage the technology to drive substantial business value not available through other types of "black box" approaches.

SOURCE:
DR. PHILIP RESNIK

THE RISE OF HUMAN-IN-THE-LOOP

Semi-supervised, human-in-the-loop machine learning is the key methodology that utilizes "active learning" to leverage both human and machine intelligence to create models that continuously improve and adapt to a specific business need in a virtuous circle of training, tuning and testing. The mission here is to not replace human intelligence, but to scale that intelligence rapidly and effectively. For social listening, keeping a human-in-the-loop is critical because language itself is so intrinsically human.
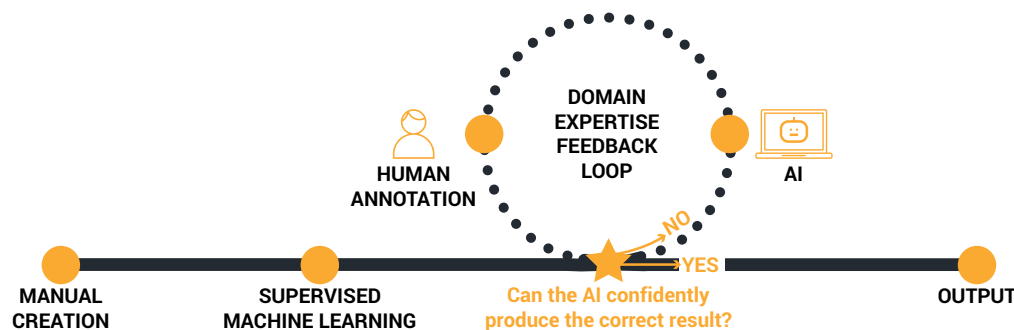
Forrester Research also supports the importance of this technique in the newest Wave of Enterprise Listening (Q3, 2018) – *"understand that social listening platforms still require humans to train the data in a semi-supervised environment before becoming operational."*

But "What human?" you may ask. Answer: YOUR Human!

Until recently, building machine learning models required IT teams and data scientists to be the intermediary between the subject matter expert and the model itself. Or it was built by third parties in an off-the-shelf, one-size-fits-all manner that was provided as a default in your social listening or management platform. The problem was that these models were often built in isolation from your brand or business function and failed to leverage your own organization's knowledge, expertise and view of the world.

Today, however, new innovative Machine-Learning-as-a-Service Platforms allow subject matter experts like research, sales or a line of business to get involved directly in the model design. The knowledge and experience of these experts is transferred directly into these models without requiring data science skills. This is the "democratization or AI" and the ability for your organization's experts to take control of their data through AI models is an important game-changer for the use and adoption of this data. The closer the model is designed to the center of expertise, with the fewest number of "intermediaries," the better it will perform. These models then generate stronger adoption and use within your organization.

But training it properly is key. If a model is trained from poor or biased data, it will perform poorly.

In general, we advocate that basic models (like sentiment, emotion and intensity) with lots of subjectivity, are trained via multiple independent coders. For more specific models to your business, an intercoder consensus is not always required.

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"What human?" you may ask.

Answer: YOUR Human!

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But proper training is key.

If a model is trained from poor or biased data, it will perform poorly. The inverse is also true.

3 TAKE CONTROL OF YOUR MODELS

New Machine-Learning-as-a-Service platforms work together with listening and management platforms and allow your brand to take control of its own data and models.

Conversus.AI, for example, allows users to easily build, test and deploy models seamlessly with many leading platforms.

It is important that the platform chosen allows brands to also adjust the models to fit their own unique taxonomies (not all brands define "trust", for example, the same way) and better align the models to their specific data and insights requirements. They also should allow you to protect your IP and ensure data quality can be consumed with confidence. Finally, allow your organization's resident domain experts to be in-the-loop to manage, oversee, and improve models for maximum impact (and minimum risk) by putting the power of machine learning directly into their hands.

Key to this approach is choosing and working with social listening and management platforms that support these model integrations. Open ecosystems and APIs are essential -- social data can no longer live siloed in a platform. Data is increasingly being blended with other data sets and exported into analysis solutions and business intelligence platforms such as Tableau and Domo. If your social listening platform cannot or will not integrate third party models into their platforms, an alternative approach is for data to be batched out of the platform, passed through your custom machine learning models and ported to a custom dashboard. We see this trend increasing significantly over the coming years.

New Machine-Learning-as-a-Service platforms work together with listening & management platforms

4 GET GRANULAR

It is important to make sure your models can go beyond simple document or sentence level analysis to capture and analyze every expression of opinion.

Take this tweet: *"I really liked the packaging but the taste was underwhelming."* Most listening and management platforms report this as either neutral (two opposing points-of-view cancel each other out) or "mixed" because it contains multiple opinions, but doesn't process them individually.

Our research has shown that document-only analysis misses more than half of the opinions expressed in relevant conversations. This "half-listening" is detrimental when looking to understand root-cause drivers. It also is detrimental if you are looking to input this data into advanced analytics efforts where model performance for precision and recall matters. Look for solutions that can provide targeted or "facet" level analysis.

It is also important that the technologies process all records to not just understand key drivers, but also identify outliers and proverbial "black swans." Some solutions use only an extrapolation of the results of smaller sample sets to provide results.
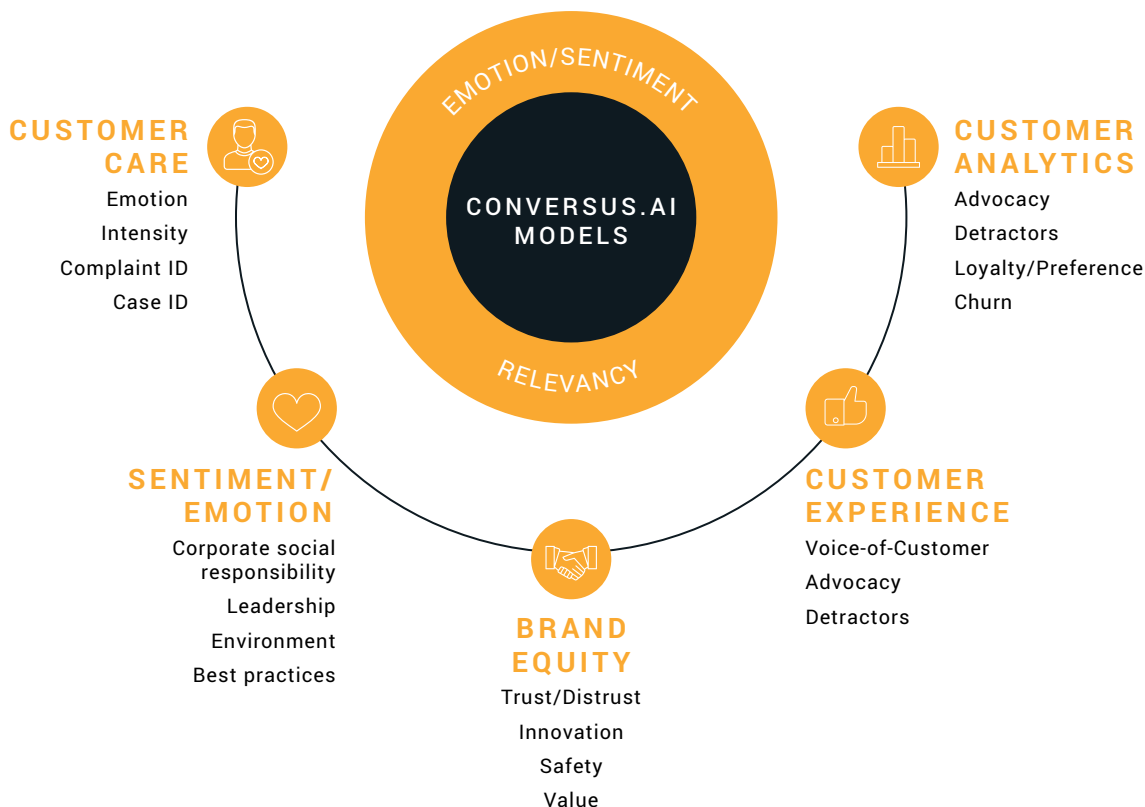
5 CONSIDER PREBUILT MODELS

One way for brands to rapidly access and deploy advanced AI models is by accessing prebuilt machine learning models that have already been designed, validated and made ready for use. These are generally "pre-tuned" to your industry and ready for immediate deployment across multiple listening platforms. Most models are provided on an industry basis given that language often changes by industry. The word "small" for example may be good for smartphones, but bad for hotel rooms.

Aligning these models to specific business functions will make it much more efficient and effective for diverse parts of the organization to make use of this data. Think of this as an "App Store" for social listening. While there is also great demand for custom models, since many organizations have their own unique needs and definitions, the move toward prebuilt models will save companies substantial time and money, unlock insights more effectively and accelerate their use of AI within the enterprise.

MACHINE LEARNING "APP STORE" BY INDUSTRY

- Hospitality
- Telecommunications
- Automotive
- Aviation/Airlines
- Insurance
- Enterprise Technology
- Retail
- Food & Beverage

CUSTOMER CARE
Emotion
Intensity
Complaint ID
Case ID

CUSTOMER ANALYTICS
Advocacy
Detractors
Loyalty/Preference
Churn

SENTIMENT/ EMOTION
Corporate social responsibility
Leadership
Environment
Best practices

BRAND EQUITY
Trust/Distrust
Innovation
Safety
Value

CUSTOMER EXPERIENCE
Voice-of-Customer
Advocacy
Detractors

EMOTION/SENTIMENT

CONVERSUS.AI MODELS

RELEVANCY

For example, if you are a bank and interested in "*trust*," you can access, subscribe to and deploy a "*trust*" model and begin using it immediately. A telecom company seeking a "customer care" model can do the same thing and avoid the time and expense of building one from scratch.

Forrester Research forecasted in its Tech Radar 2017 Report the emergence of prebuilt machine models and benefits: *"While many open source machine learning platforms are available, the cost to successfully implement them and produce useful models can range into the hundreds of thousands or even millions of dollars due to the need to train them on large, clean data sets and the time needed to experiment with several different models before deploying into production. Using prebuilt models from cloud-based platforms can be much more cost-effective."*

6 TEST AND VALIDATE MODELS BEFORE USE

Anyone with enough technical chops, some training data, and access to open source technologies can build a crude machine learning classifier to analyze language that might function with some level of competency, but only in a highly-controlled setting. But with growing recognition of potential unintended bias in machine learning models, and the demands for high, verifiable accuracy, it is critical to test models for how well they "generalize" effectively (that is, work effectively with datasets it has not seen before). In short, the models need to be tested to make sure they work effectively and accurately in a real-world setting. As you evaluate machine-learning providers the following are key questions to ask:

KEY QUESTIONS TO ASK

? How have your models been trained?

? Where does the training data come from?

? How is it validated for accuracy?

? What is the typical performance of your models?

? How do you maintain performance?

? How do you measure performance?

? How do you avoid overfitting of a model?

? How do you test if it generalizes effectively?

? Will you guarantee a certain performance score and maintain it through a service level agreement?

With sentiment analysis, for example, if the model says that a tweet is positive, is that really true? We automatically assume that as human beings we can properly judge the answer to that question. In truth, for most tasks, individual humans are not 100% accurate. In fact, in our experience, individual humans often agree only between 65 and 85% of the time.

You might ask, how do we judge that? How do we know that a person got it wrong? Establishing a "ground truth" for performance testing requires having multiple people (three is recommended) evaluate a record for accuracy, with a settlement process if there is a disagreement. This technique is called inter-coder agreement. The idea behind this concept is that if three people all agree on one answer, that it is highly likely to be correct. So, the way that you set out to evaluate the model is against ground truth--the agreement of multiple people on one answer, rather than the subjective opinion of one person.

You can imagine that if you show two people a tweet that says "Coors is the best lousy beer" that they might disagree on whether that tweet is positive or negative. Clearly, some tasks are easier to "get right" than others. This is important when evaluating a model because when a person disagrees with another person, they usually agree to disagree or chalk it up to different points-of-view. Whereas when a person disagrees with a machine, they tend to say that the machine is simply wrong. The machine also reflects biases and opinions on its own, based on what it's been taught. If the machine is taught by the common opinion of multiple human judges, it will likely be able to outperform any individual person on accuracy.

METRICS THAT ASSESS THE ACCURACY OF YOUR MODEL

F1 SCORING
Conveys the balance between the precision and the recall.

K1
The k-fold cross validation is a procedure used to estimate the skill of the model on new data.

AUC
The area under the curve is equal to the probability that a classifier will rank a randomly chosen positive instance higher than a randomly chosen negative one (assuming 'positive' ranks higher than 'negative').

Whatever approach you decide to go with, always measure performance before deployment. You should also check in on it on a regular basis because models can degrade over time without proper upkeep.

The F-Measure is always a good starting point, but consider other measures as well. Don't just measure "precision", but also "recall" (you want to be sure you're capturing ALL the relevant records and not just the most obvious). It can be easy to provide a high precision score if the recall is low. Ask your providers if you can measure the performance directly and modify the models yourself if need be. If your provider doesn't allow you to measure performance, look at alternative solutions.
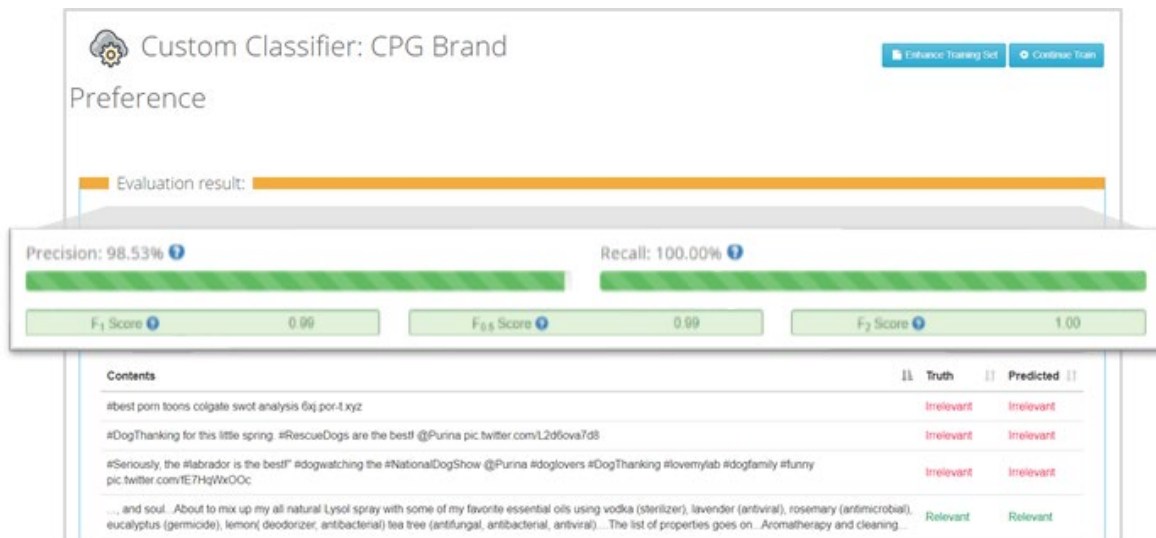
For most tasks, individual humans are not 100% accurate.

In our experience, individual humans agree only between 65%-85% of the time.

This measurement process may seem resource intensive. The good news is that platforms like Conversus.AI provide automated measurement of your models before use and allow you to build and improve models as needed.

Keep in mind that measurement approaches and use of AI should eventually align with broader AI frameworks that are emerging around fairness, transparency and the ability to intercede if a model appears to be performing in a biased manner. This is early on but something we expect to see more of in the years ahead. Indeed, the emergence of a new industry regulatory and ethical environment, driven through efforts like GDPR, The World Economic Forum and The Partnership on AI require high data accuracy, accountability, and fairness to consumers. According to Gartner, it is expected most large organizations will put in place an "AI Center of Excellence" by 2022.

Social listening will need to align with these emerging frameworks for transparency and accuracy. Smart brands got ahead of these types of issues in 2019.

7 ALIGN MODELS TO BUSINESS NEEDS

Now that you've chosen the preferred technology, ensured it can be integrated into your listening platform and have tested performance, the next step is to prioritize and align your chosen model to the areas where they can provide the most value. While accurate sentiment and emotion are important as a baseline, a much broader range of use cases can be addressed with sophisticated "custom" machine learning models.

Measurement of "trust/distrust" and other brand attributes like "safety" or "innovation" are now available. "Relevancy" models can clean up your data sets to near 80-90% accuracy – filtering out "Sprint" the phone company for example, from high school races or eliminating job listings and advertisements to get to the true authentic voice-of-customer.

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Keep in mind that measurement approaches and use of AI should eventually align with broader AI frameworks

As discussed earlier, these models work because they can effectively classify data even if a specific word is not present.

Other popular models include "advocacy" (a type of social "net promoter" score), loyalty, and much more. Use and deployment of these models will separate basic listening efforts from more advanced and valuable ones. Below are just some examples of new models now available:

NEW MODELS AVAILABLE

CRISIS & REPUTATION MANAGEMENT

Communications professionals need to monitor breaking stories that negatively affect brand image and therefore need to understand not just sentiment but also emotional engagement. Key to this is "facet" level analysis which captures all opinion signals to understand root cause drivers.

BENEFITS | Predict which events may transition into crises. Understand root cause drivers and impact on crisis on reputation and brand equity.

APPLICABLE MODELS
Sentiment
Emotion
Intensity
Trust/Distrust

SALES LEADS

Salespeople use social media to identify potential purchasers for their offerings, requiring custom machine learning models to help separate potential leads from the social noise and identify potential customers in the purchase funnel.

BENEFITS | Identify and capture sales opportunities further up in the purchase funnel. Filter qualified leads from social noise.

APPLICABLE MODELS
Lead Identification

VOICE-OF-CUSTOMER

VoC is used to describe the needs and requirements of the customer via social media. It is the process of capturing all of what a customer is saying about your business, product or service. These models separate authentic consumer voices from the irrelevant noise (such as job listings, mainstream media and company-produced content). It helps you visualize the gap between customer expectations for your brand and their actual experience.

BENEFITS | Filter out the 60-80% noise in social media generated via mainstream media and third parties. Accelerate insights by capturing and analyzing only authentic voice of customer data.

APPLICABLE MODELS
VoC models

BRAND EQUITY

Trust, innovation, and safety are all common attributes many companies need to track on an ongoing basis. Generally, trackers have exclusively used survey-based approaches, but social data has proven to be a critical ingredient for accelerated insight and understanding key underlying drivers, and often at a lower cost. Trust, for example, is at the heart of building a brand and a critical metric to measure in 2019 for most organizations. Brand trust reflects a consumer's expectation that a brand's product or service and corporate behavior reflect the promises of the brand. Trust in institutions is in constant flux, yet multiple studies demonstrate that brand trust is critical to business success.

BENEFITS | Accelerate insight by 12x, and predict results of survey-based results up to 4 months in advance. Identify key attributes that drive and predict business outcomes. Identify new potential attributes before they surface through other research methods.

APPLICABLE MODELS
Trust
Distrust
Safely
Value
Innovation

These models can be expanded to mirror most brand equity attributes.

NEW MODELS AVAILABLE

CORPORATE SOCIAL RESPONSIBILITY (CSR)

CSR is broadly defined as a company's effort to improve society in some form -- such as environmental and hiring practices. According to Forbes magazine, more than 88% of consumers think companies should try to achieve their business goals while improving society and the environment. Effective social listening can help brands understand their positioning within CSR discussions and provide input into areas of unmet needs to guide strategy.

BENEFITS | Evaluate resonance of brand purpose. Be proactive re CSR issues and understand positioning against competitors.

APPLICABLE MODELS
CSR
Leadership
Hiring practices
Environmental policy

CUSTOMER CARE

According to one study, 84% of consumers expect companies to respond within 24 hours after posting on social media, while 72% of Twitter complainants expect a response within an hour. Currently, agents' queues are flooded with social media noise. Productivity is lost by having agents reading and deleting all that noise. Providing clean data streams enables your organization to focus and respond immediately to customers who have a genuine need – and reduces operating costs while improving customer experience.

BENEFITS | Cleaner data streams by up to 2-3x. Capture all relevant data. Reduce response time by up to 80% and cut operating cost in half by filtering irrelevant data.

APPLICABLE MODELS
Customer Care

LOYALTY & PREFERENCE

Companies that can establish a strong loyal customer base are at a strong competitive advantage versus those who do not stimulate brand loyalty. To measure this, you must capture expressions of loyalty and preferences to specific brands. Importantly, a good model for this task captures statements of loyalty even when customers are angered, making this an excellent tool for identifying drivers of churn. For example: "I've been an <insert brand> customer for 10 years, and they still haven't responded to me about my overdraft charge. This is the last straw!"

BENEFITS | Reduce costs of traditional research by 60-80%.

APPLICABLE MODELS
Loyalty and Preference

CUSTOMER EXPERIENCE

Customer experience is the product of an interaction between an organization and a customer over the duration of their relationship.

BENEFITS | Accelerate insight by 12x, Reduce costs by up to 30% from other CX measurement.

APPLICABLE MODELS
Advocacy
Detraction
Purchase Stage

PRODUCT INNOVATION/TREND ANALYSIS

Product managers mine social media to determine popular product features and identify needed features. Identifying innovation works to capture emerging unmet needs, tastes and wants. This is essential to effectively inform product and marketing strategy.

BENEFITS | Identify key trends that drive product sales 6-12 months in advance.

APPLICABLE MODELS
Motives
Innovation

NEW MODELS AVAILABLE

AUDIENCE ANALYSIS

Understand more broadly "who" is talking including on an audience segmentation level.

BENEFITS | Improve ad targeting by 20-30% through social profiling and look alike targeting.

APPLICABLE MODELS

Interests
Demographics
Psychographics

CONTENT STRATEGY

Understand new and emerging language, topics, and concepts.

BENEFITS | More efficient content discovery. Discover new topics in category without looking for them. Identify opportunities 30-45 days in advance over traditional discovery methods.

APPLICABLE MODELS

Organic topic discovery

ADVOCACY

Technology now exists to understand much more clearly who is engaging in conversations and their related demographics and psychographics. This can be used to both deepen insights and to improve ad targeting.

BENEFITS | Capture actual expressions of advocacy (not just intent).
Align and augment with customer sat and experience initiatives.
Identify key root cause drivers.

APPLICABLE MODELS

Advocacy

GO FROM REACTIVE TO PREDICTIVE

As you can see, AI-powered social data is becoming increasingly critical to research and insights. Indeed, simply providing reactive and descriptive analysis from the rear-view mirror is antiquated. Instead, this year, and those moving forward, will be focused on predictive and prescriptive analysis. The accuracy of AI-processed social data is proving to have important quantitative and predictive value in areas ranging from customer experience to sales prediction and brand health. In many cases, social listening can get to the answers better, faster, and cheaper than most traditional techniques.

As a result, you can expect that data scientists will increase their demand for access to data for modeling. Our team has used social data to build out machine learning-powered attribute classifiers that accurately predicted the outcome of traditional brand health surveys as much as 12 weeks in advance of their publication. With this, we provided a greater understanding of key industry drivers. In another recent example, a leading global consumer package firm was able to leverage custom classifiers for "motives" to predict product sales six weeks in advance. Demand for data with this kind of quantitative power is going to become de rigueur for attribution modeling, brand health, customer experience, predicting customer.

AI YESTERDAY
Reactive
Descriptive

AI TOMORROW
Predictive
Prescriptive

8 OTHER GROWTH OPPORTUNITIES: BUILD BRIDGES

For too long, social listening data has been siloed from broader business intelligence and digital analytics efforts. And most platforms were inconsistent in how they annotated data - but this is changing. While many large organizations still have more than one social and voice-of-customer platform, and perhaps even other platforms for social and content management, they are now requiring their data to be fully interconnected, with consistent data annotation to get to the elusive "one truth."

SOCIAL MANAGEMENT PLATFORMS

STANDARD SOCIAL LISTENING PLATFORMS

MODELS

MARKETING CLOUDS/ DMP'S

VOICE-OF-CUSTOMER SOLUTIONS

BUSINESS INTELLIGENCE

AI models can power your listening ecosystem even across different platforms.

This is where the value of API integrations and "model portability" kick in. Model portability allows machine learning models, described above, to be used anywhere this unstructured, unprompted consumer data exists.

Expanded API integrations will provide consistent text processing across all these platforms which will allow different point solutions to be unified with a common data layer. This means that your models in your favorite listening platform can also be applied and integrated seamlessly with a social management platform, another voice-of-customer platform, and a business intelligence solution. Integration of the "data layer" will become critical and allow the use of best of breed "point solutions" as long as the models are consistent. Right now, most large organizations have multiple platforms with little to no consistency in how the data is processed and analyzed. All listening platforms, for example, classify data differently, resulting in a mishmash of data that cannot integrate. The pursuit of "one truth" that unifies the analysis of this data consistently across the organization will demand models that fulfill the "ecosystem" approach rather than walling them off in a specific siloed platform.

These models can also often be applied to other forms of voice-of-customer data with some modification. This can help unify social data with other sources like call center transcripts, long-form survey verbatims and more. We believe AI-powered social language models will increasingly be applied to other VoC data initiatives. Social listening and VoC analysis will naturally merge, providing new opportunities for growth and more substantive chomping into that vast unstructured data for insights.

SUMMARY

As we head into a new year into a time when the collective voices of customers and citizens, empowered through social channels, have become a primary agent-of-change for transforming governments, societies, industries, brands, and products, there's arguably no greater obligation than for the industry to accelerate change to "get it right." And there has never been as much demand for brands needing to understand their customers in real time as right now. AI will be critical to meet this challenge. As Forrester Research wrote in their Enterprise Wave of Enterprise Social Listening Q3 2018, social listening technology has great potential, but its heyday (is) still to come. "We're still holding our breath (for this potential to be fulfilled)…" they write. We expect that given the rapid innovations now available together with a strong appetite for brands to review their social data strategies with fresh eyes, the report's authors, customer-centric brands and the industry itself will be able to breathe more easily as social listening rises to its next level of evolution.

☐ **Use human-in-the-loop AI technologies to build models** that drive substantial value across the enterprise and help with adoption into a broader range of areas. "Research-grade" social data via machine learning has arrived and can be plugged into key areas including market research, especially in the areas of customer experience, brand health, and customer satisfaction.

☐ **Align with your data science and analytics teams.** Data science has aligned with social listening. AI-powered social data can be used effectively in a growing array of modeling and analytics initiatives. Social data must be broken out of its silo and be used with other data sets for better insights and value.

☐ **Embrace AI but don't take product claims at face value.** Understand techniques and demand data tests that help separate the hype from substance. It is critical to look for "human-in-the-loop" machine learning techniques to help ensure your domain experts can make the best use of the models and avoid any inadvertent bias. Conduct analysis not just on document level but also facet or target level (all opinion signals, not just some).

☐ **Take control of your data.** Now, the door is fully open for you to control your data model quality, and not have to just accept default packages. Machine-Learning-as-a-Service platforms put you in control.

☐ **Leverage ecosystems** – the ability to build, measure and deploy your own models to data wherever it exists and deploy across whichever platforms you use is essential. Look for social listening platforms who have an open ecosystem approach and will accommodate your needs, including integration of your own machine learning language models. Ask if the platform will accept third-party plug-ins if you want them (most will).

☐ **Measure, measure, measure:** don't deploy any model without knowing its performance scores. Some machine learning-as-a-service platforms, like Conversus.AI, allow you to build, automatically measure, and validate performance before deployment to your favorite platform. These platforms are the critical new tools for the advancement of effective social listening.

☐ **Consider prebuilt machine learning models** to accelerate adoption and eliminate the cost of having to build them from scratch. The industry will begin moving from platform-centric to app-centric, with more open ecosystems that let you deploy to wherever you want.

☐ **Ask for data tests from providers** that measure precision AND recall prior to purchasing. Also, ask whether the provider is willing to guarantee specific quality performance. Performance above .80 F-Measure score should be a key objective since it measures both precision AND recall. Make sure that the models will generalize effectively to new data it may not be fully familiar with. Also ask how these AI models align with broader AI frameworks in areas like transparency, fairness, and accuracy.

☐ **Begin to unify your social efforts with other voice-of-customer data.** Your company is likely sitting on an immense amount of unstructured data filled with undiscovered insights. Social listening can be an ideal bridge between the two.

☐ **Consider Conversus.AI**, the leading Machine-Learning-as-a-Service Platform that allows you to take control of your listening, build your own models, access prebuilt models, automatically test model performance and easily deploy across a growing array of leading social listening/management and business intelligence platforms.
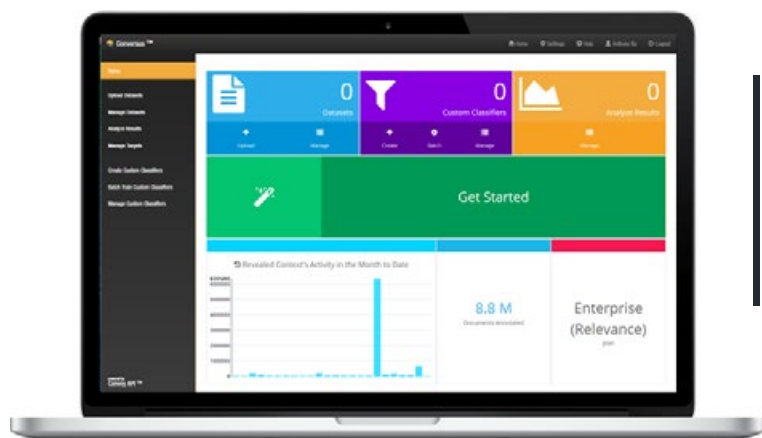
Conversus.AI provides automated measurement of your models before use and allows you to build and improve models as needed.

ABOUT CONVERSUS.AI

Conversus.AI is a game changer in social listening that puts YOU in control of your data quality. This Machine Learning-as-a-Service Platform is designed for data scientists and general analysts alike to put the immense power of machine learning to work on your social and voice-of-customer data, allowing for immediate deployment into many leading social listening, management, and business intelligence platforms.

Choose your data source to build and deploy your own models quickly and efficiently or choose from growing library of prebuilt machine learning models by industry. Measure performance and validate the performance of your model all while avoiding inadvertent bias. The results: increased precision and relevancy of your data by more than 80% in most cases, separate meaningful signals from the noise, clean up messy data, lower your costs of data wrangling and effectively apply the data to a wider range of your organization's needs – including brand health, consumer insights, audience analysis, predictive analytics, customer experience, customer care and much more. The platform is seamlessly integrated into most major social listening/management and business intelligence platforms.

ABOUT THE AUTHORS

Converseon.AI provides the world's best social and voice-of-customer data quality and programmatic insights through AI-powered technology, ecosystem partners and the deepest industry experience (est. 2001). We have been active in the machine learning/AI space since 2008. We don't just do machine learning for text analytics – we "do it right" and give you the tools to do so too. Our team consists of recognized leaders in computational linguistics, market intelligence, social business, and machine learning. We have worked with many of the companies ranked among the largest, most esteemed and sophisticated brands in the world, including those who are clear leaders in data and customer intelligence. We believe in an era where the collective voice of customers and citizens, empowered through social channels, will become a primary agent-of- transformation for governments, societies, industries, brands, and products. There is arguably no greater obligation for our industry than to effectively, thoroughly and accurately capture, analyze, report and act on these needs, wants, experiences, hopes, and opinions, without inadvertent discrimination or bias.

KEY FEATURES

Leverage vast training corpora of previously coded data so you don't have to start from scratch

Let experts build their own models without being data scientists

Deploy easily (and programmatically) with many leading social listening and management platforms that embrace ecosystem solutions and API integrations

Help avoid the potential of bias or discriminatory models

Automatically tests and validates models

For a free Conversus.AI demo or additional information please email sales@converseon.com or give us a call at (212) 213-4297

CONVERSEON.AI