Crimson Hexagon

The Fundamentals of Image Analytics
A Brand's Guide to Understanding and Using Image Analysis

ACTION

FACE

OBJECT

FACE

LOGO

LOGO

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Introduction: The Power of Images

The fact that creating and sharing images is easier than ever is not the only reason that image sharing is becoming so popular: images are more impactful than text. More memorable. More engaging. More likely to be shared and reshared.

The power of images and the ubiquity of camera-enabled smartphones means the volume of images on the web continues to grow exponentially. There are well over three billion photos shared daily on social media. The barrier for self-expression has continued to drop as wireless network speeds, camera access, and photo quality continue to increase across the board.
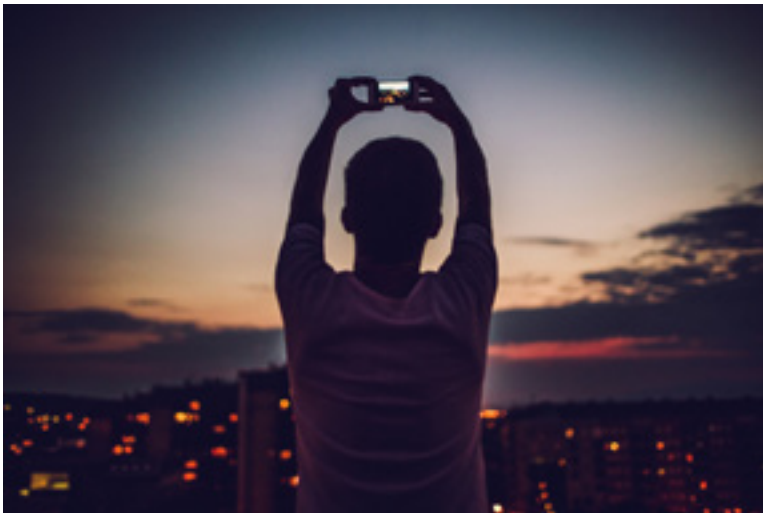
The fastest growing social media sites are image-based. Snapchat, Instagram, and Pinterest and Tumblr put the focus on images, with text seen as secondary. Even the original social networks like Twitter and Facebook now focus much more on visual communication. Facebook is now the largest image-sharing site on the web and Twitter gives extra space to posts including images. Of course none of this means that text-based social communication is going away anytime soon, but it is being supplemented and improved with images.

> **"Photos are no longer just a means of capturing a moment, they are a means of communicating."**
> —*Evan Spiegel, Snapchat Founder*

In addition to the explosion of image sharing on the web, images are proven to make your online content and social posts more engaging:

• For brands and marketers, content that contains a relevant image gets a whopping 94 percent more views (Content Marketing Institute).

• Facebook posts with images have 2.3x higher engagement than those without, and Twitter updates containing images generate 150% more retweets than text updates without images (BuzzSumo).

There's a reason behind the growth and popularity of image sharing beyond the fact that the latest technology makes creating and sharing images easier than ever. Our brains are built for visual communication. We process visuals faster, we remember them longer, and they elicit a stronger emotional response. In fact, visuals are processed 60,000x faster than text (HubSpot). It's also more efficient for the person doing the communicating. Expressing "I'm sad" is a lot faster and more effective with an emoji (😢) than with text.

But this influx of image-based conversation isn't just changing the way we communicate with each other, it's changing the way brands communicate with consumers.

Why Image Analysis Matters for Business

Given that images are more impactful and memorable than text, it's obvious that brands need to pay attention to photos in their social listening strategies. The increase in image sharing also provides a huge opportunity for social media analysis since images can provide new insights about your audience and industry than text.

Getting the whole story

As social and the web as a whole become more visual, brands can't rely on text alone when analyzing social media data. Of the billions of photos shared daily on social media containing brand logos, 85% don't include a text reference to the brand. Without image analysis, companies are missing out on a huge chunk of the social conversations about their brand, products, customers, and competitors.

While image analysis technology is still new, it allows brands to gain more powerful insights on who is using their product, how they are using it, and how they feel about it—all without the need for text.

There are some big advantages to looking at both text and images when analyzing social media data:

- Images don't require translation, making image analysis extremely useful in a global strategy.

- Looking at a more complete data set enables businesses to more effectively incorporate social insights into decision-making.

- Images can tell a completely different story than text mentions (Example: Text-based analysis of conversation around Disney's Frozen, shows the audience as adults in their 30s. Image analysis of the same conversation shows the movie's true audience, children.)

Images can also tell a very different story than text mentions.

The technology behind image analysis is advancing quickly—making image analysis at scale much easier. Images show contextual, environmental, and emotional factors that you can't get with just text. But how does image analysis actually work?
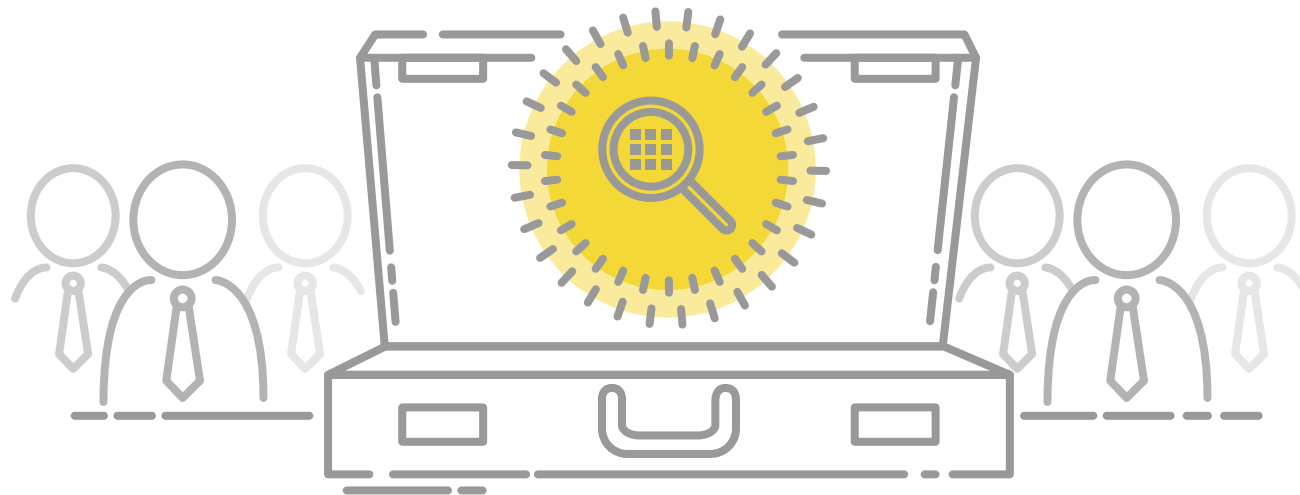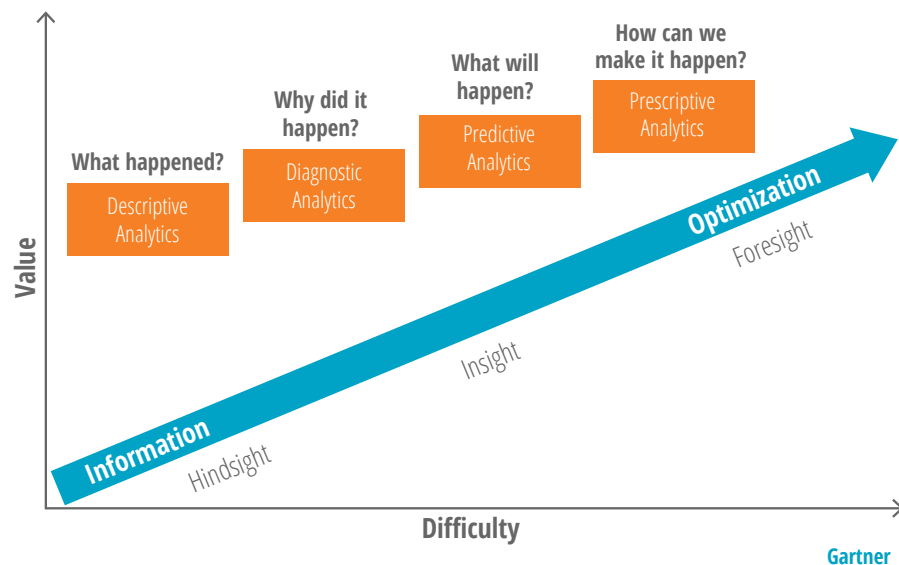
How Image Analysis Works

When looking at how to apply image analysis to social data, it's helpful to think in the same terms as traditional text-based social analysis. But what are the differences in the technology? Can image analysis do everything text analysis can do?

Here's a chart explaining the progression of analysis technology in terms of business value and degree of difficulty:

Let's look specifically at how image analysis fits in this framework.

What happened?

Descriptive Analysis can recognize multiple elements within a photo like logos, faces, activities, objects, and scenes. The technology can also automatically caption images i.e. "Boy riding bicycle outside with dog wearing Nike T-shirt."
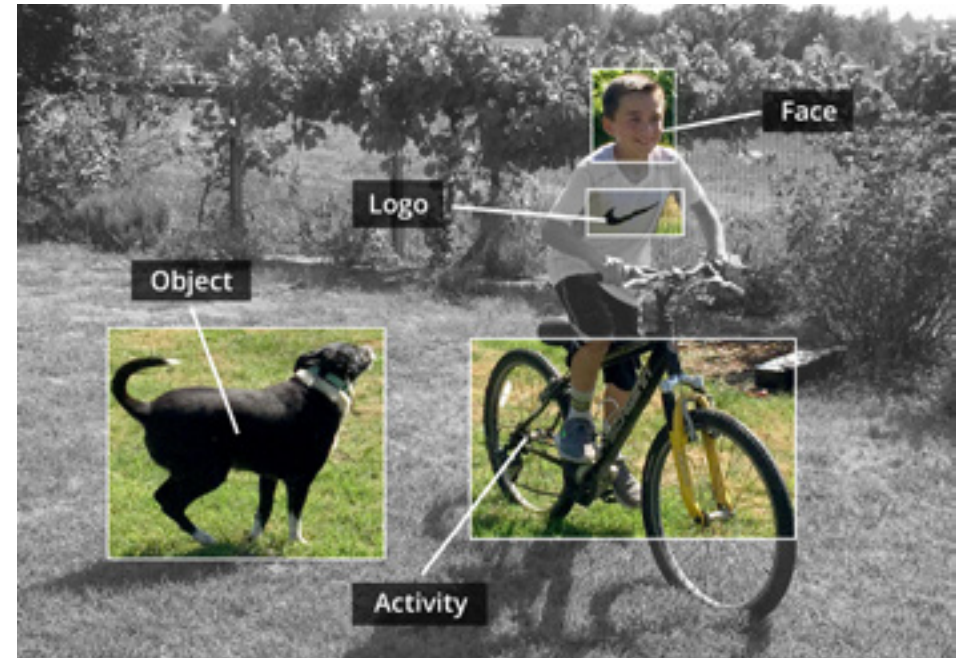
Why this is useful for businesses:

Many companies are already using this technology to incorporate images into their social listening strategy. We'll go into some specific examples like logo recognition and identifying moments of consumption in the next section.

Why did it happen?

Diagnostic Analysis is the one area where image analysis just isn't quite there yet. The reason it isn't here yet is because it requires the technology to have a common sense understanding of the world, which is much more difficult for a machine to learn. For example, current image analysis technology wouldn't be able to know "why" people are laughing at something in a photo or why a particular photo is funny.

Why this is useful for businesses:

Once image analysis technology can do true diagnostic analysis, it will be possible to understand even more about the intention behind a photo. Is the photo meant to convey humor, sadness, anger, etc? This is partially possible now with a combination of text and image analysis, but the future will allow for deeper insights from photos alone.

What will happen?

Predictive Analysis can look at an image and determine what is likely to happen next. While this technology is still very new, MIT recently demonstrated that their image analysis technology could predict things like a kiss or a handshake based on the setting and body language in photos.

Why this is useful for businesses:

This technology will allow businesses to better understand the context around a photo. While a photo is only a still that shows a moment in time, predictive technology can add context to that moment, letting you know what just happened (just fell off bike) or what's going to happen next (about to throw baseball).

How can we make it happen?

Prescriptive Analysis gives recommendations based on image data. A recent example comes from OpenAI research scientist, Andrej Karpathy, who analyzed selfie photo data and determined what types of photos got the most likes. He developed a program that didn't just give recommendations on how to improve your selfies, but actually edited selfies to optimize them for more likes based on the data.

Why this is useful for businesses:

Similar to the selfie example, technology will be able to not only give you recommendations on how to better engage your audience or make a splash on social, but automatically make adjustments to your posts and photos to give them a better chance of success. Right now, it's still important to have a human involved to look at the results and make a decision, but in the future, a fully automated AI program could be used could be used to automatically make the right data-driven decisions.
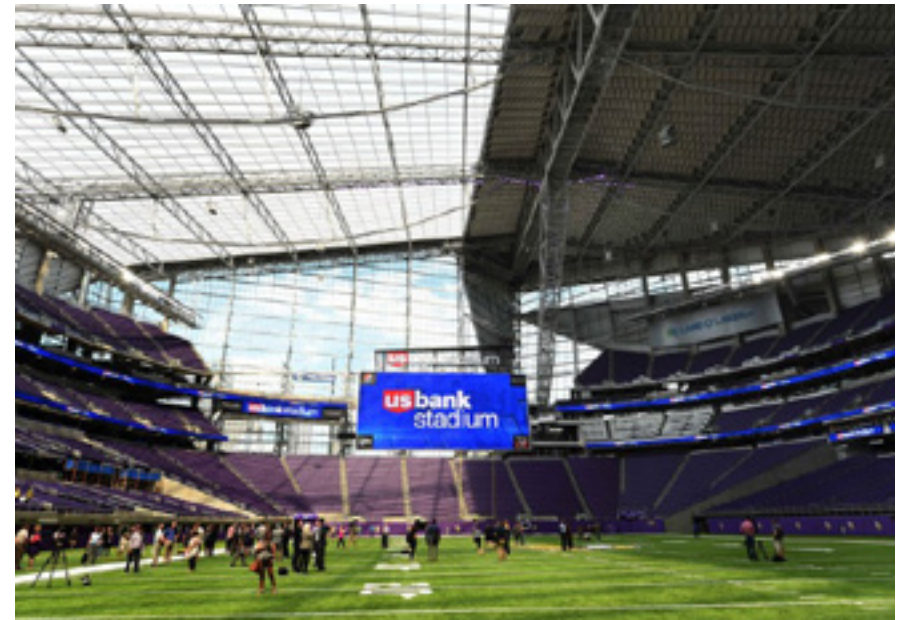

Source

Practical Business Use Cases for Image Analytics

Image analysis technology may sound great, but it isn't helpful to your strategy if it's all theoretical. It's important to look specifically at how companies can use social image analytics to uncover new insights about their audiences and industries.

1. Measure ROI with Logo Recognition

Beyond just looking at a brand's share of the visual or text-based conversation, there are many more specific uses for brand-related image analysis. One of the easiest and most helpful is logo detection. While the concept of crawling the web to find images that contain your logo is straightforward, logo detection technology can be applied in multiple ways.

How can you determine if your brand's logo in a sports stadium is worth the investment? Was it worth it to sponsor that big event? These types of questions have been raised in marketing discussions for years, but logo recognition technology can finally start to give some answers to the "ROI of offline advertising" question.

Source

Finally understand the full value of your sponsorships

Typically people measure something like a sports sponsorship by looking at how many people were at the game and how many people watched on TV, but there is not a good way to analyze the sponsorship ROI on social. People posting about the game on social media aren't going to be directly mentioning the sponsoring brands, but they are posting photos of the stadium and the players that are heavily branded.

Logo recognition technology allows you to quantify the number of impressions and exposure that your brand is getting from something like a stadium sponsorship. Otherwise, you have no way to track those visual-only mentions.

Anyone who's been to Boston knows there is no shortage of Dunkin' Donuts in the city. In addition to having hundreds of locations in the greater Boston area, it makes sense that Dunkin' would be a big sponsor of Boston-area sports teams. Venues like TD Garden, Fenway Park, and Gillette Stadium always seem to have the Dunkin' logo in multiple prominent locations, season after season. But how can a brand identify which of these sponsorships are helping them achieve their brand goals?

With text-based social analysis they could track brand mentions associated with games and events with one of the sponsored stadiums, but like earlier examples, it's unlikely that sports fans will be specifically mentioning Dunkin' in their posts. With prominent brand placement somewhere like the scoreboard at Fenway Park, many fans are exposed to their sponsorship, but few are specifically mentioning it.


Source

Source

Image from Dunkin Donuts

Enter logo recognition, which allows a company like Dunkin' to analyze how many photos posted to social media contain their sponsorship branding. This technology opens up a lot of possibilities for optimizing these stadium sponsorships based on data that previously would have been impossible to collect.

Logo recognition allows you to measure which sponsorships, in which locations within each stadium, are being photographed the most. The most shared branding is also likely the most valuable as the reach goes far beyond just those in attendance at a game or watching on TV. The results of such an analysis could allow Dunkin' to double down on the most photographed locations for their logo and remove or reduce sponsorship from places that don't get photographed as often. These insights on the visual reach of sponsorship could allow brand a like Dunkin' Donuts to make better sponsorship decisions to boost brand awareness.

2. Track Visual Mentions

When a big brand like Nike wants to measure the impact of a new ad campaign, one of their first steps may be to analyze their share of voice on social. How much of the social conversation are they owning compared to major competitors like Adidas or Under Armour? How many people are using their branded hashtags? Who is specifically mentioning new products? But, as we've discussed, looking at these direct mentions is only one piece of the puzzle. What about the sportswear conversation that doesn't involve text? This is where "share of eye" is important.
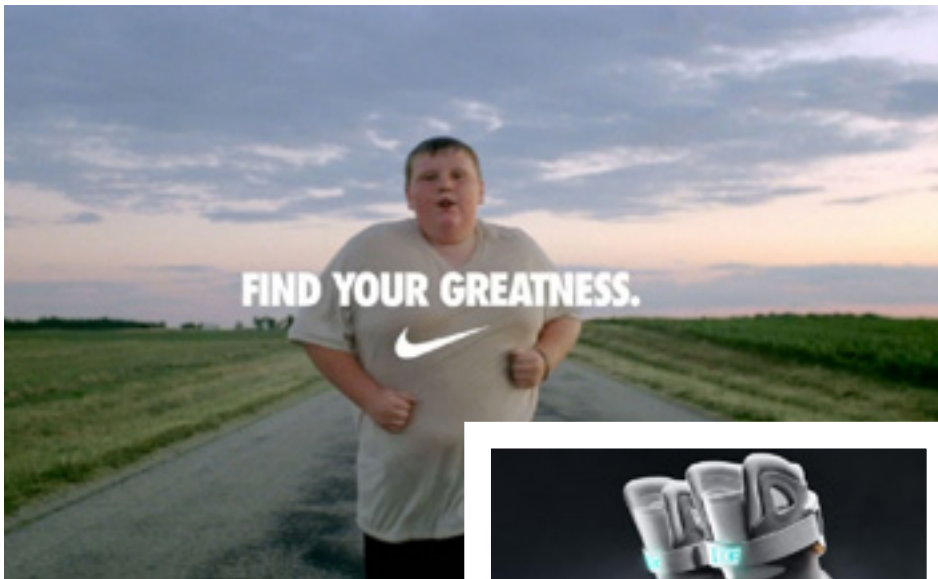
Share of Eye

When measuring your brand's reach, it's important to not only look at posts involving words alone, but also images, especially logos. Given that recall increases by 55% with image-based content when compared to text, you want to make sure your brand is getting enough visual mentions.

Here's an example to illustrate the power of visual communication: What's the first insurance company that comes to mind off the top of your head?

If your answer is Geico, you aren't alone. Geico's share of eye is much larger than any of their competitors. Just think of all of the different, memorable Geico ads you've seen over the years. Some could argue their lack of consistency in their mascots and ad themes could be a misstep, but it's clear that their constant visual representation of the brand is enough to keep them ahead of the pack when it comes to consumer awareness.

Asking the right questions

Just like a brand wants to understand their "share of voice" on social media and across the web, they also want to look at their "share of eye" in terms of visual mentions. Tracking your share of eye effectively requires asking the right questions. Otherwise you are just looking at all of your visual mentions with a lack of context or goals.

Here are some questions you should be asking when tracking your share of eye:

☑ How do your visual mentions across the web compare to your competitors?

☑ What impact did your recent campaign or sponsorship have on your share of eye?

☑ How has your (or your competitors' share of eye changed month over month?

☑ What are the overarching themes and sentiments behind your visual mentions?

☑ What is the main source of your visual mentions? (sponsorships, product use photos, promotional photos, etc.)

☑ Who is sharing these images? What are their other interests?

Without incorporating images into your social analysis, all of these important questions go unanswered.

3. Identify Moments of Consumption

One of the most interesting and useful applications of image recognition technology is identifying moments of consumption. Every company wants know as much as possible about how, when, and where people are using their products, but the limits of text analysis can't provide a complete picture of actual product use.

No mention? No problem.

Unlike text, images provide real life validation that someone is using your product. Without image analysis, your fans and customers have to specifically mention your product, which is less likely to happen.

For example, think of amount of brand logos that appear on clothing and beverages in social media photos. The person posting the photo is unlikely to tag or even mention the brands in the photo. Rarely would someone say "Here's me wearing a Lacoste shirt drinking Coca-Cola." But image analysis would allow Lacoste and Coke to track those specific uses of their products and the context around their use.

Tracking visual evidence of product usage in the wild provides a much more powerful metric for brands. Taking it a step further, you can start to correlate sales data with the number of times your product is appears up in social photos. Crimson Hexagon's research has shown a strong correlation between sales numbers and the volume of social photos showing use of your product.

Going beyond sales data

Big beer brands spend a lot on advertising, but how can they make sure the themes in their ad campaigns appeal to their target audience? How can they ensure that they are making the right advertising and branding decisions? Sales data can tell them how much beer they are selling and where, but it's particularly difficult to get specific context around how people are actually enjoying their products.

Beyond general point of sale data for where people are buying cases of Miller Lite, how do people drink it? At home? At parties? In the backyard? Weeknights or weekdays? Like the other examples, there will certainly be a small segment of people drinking Miller Lite who will specifically mention the brand in posts, but the vast majority of photos containing cans or bottles won't have any text reference to the brand.

Combined image recognition and text analysis in your social listening allows you to find all of the mentions of your brand, with or without a specific tag or mention. Beyond providing a far more accurate view of the social conversation around your brand, an analysis of the image results gives you the ability to identify scenes and get context and volume data around the use of your product.

## Making data-driven decisions

For example, say that sales data shows a spike in Miller Lite sales in Chicago in October. That data doesn't give any context as to "why." With combined image and text analysis, perhaps you'll find that social photos show a trend toward drinking Miller Lite while watching the Chicago Cubs in the playoffs. That data could be compared to the number of photos of Chicagoans drinking Miller Lite while watching the Bears or the Blackhawks. The results could then be used to make decisions about which team's games are best to run ads during. If it turns out that Cubs fans are also the biggest Miller Lite fans, ads during televised Cubs games and Wrigley Field sponsorships for next season might be the best bet.

As image recognition technology advances, other factors like facial recognition can give brands a better idea of the demographics of their customers. It's already possible to get an accurate estimate of someone's age with facial recognition. Miller would be interested in knowing the average age of people appearing in social photos with their beer. Are the majority in their 20s or over 40? How does the average age of the Miller Lite drinker compare with the average age of the Coors Light drinker? How can MillerCoors use that data to identify how to better market each of these similar light beer products?

Conclusion: What's next?

The use cases we've discussed are only scratching the surface of the possible business applications of image analysis technology. As features like scene and emotion recognition evolve, it will be possible to measure and categorize consumer behavior and sentiment in brand new ways.

While every use case for text analytics can be further augmented by image analytics, there are many insights that can only be gleaned from the images themselves. Ultimately the combination of text- and image-based social analysis is the only way to get the full picture of what's happening on social and ensure that your insights are accurate and actionable.

The Future of
Image Analytics
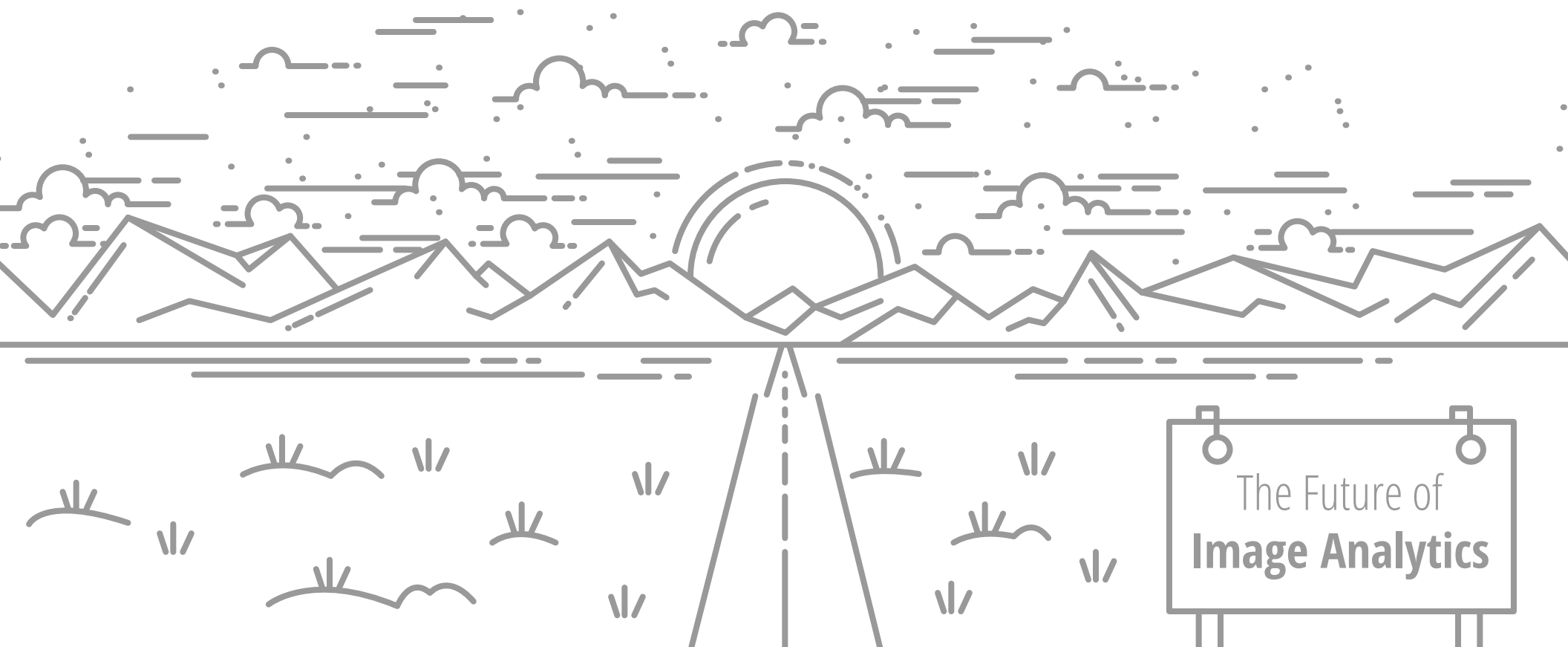
Make better business decisions with customized social insights.

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Learn how image analytics can help your brand make better decisions
with a customized demo of Crimson Hexagon