



“The digital transformation piece is key to what we do. We share a common mission with Couchbase in that respect.”

— Dave Starling, CTO

## Empowering Brand Advocates

### Enabling everyday users to create, search, compile, and edit video for powerful grassroots engagement

Predicted to account for 80% of consumer traffic by 2019, video is rapidly taking over the internet.<sup>1</sup> Emily Forbes, founder of Seenit, recognized the potential of combining video with another digital phenomenon, crowdsourcing, to empower large brands to tell more personal, authentic stories. With globally recognized clients like Rolls-Royce, Red Bull F1 Racing, BT Sport, BBC, and Unilever, Seenit depends on a powerful engagement database with sophisticated search capability to simplify editing, speed production, and better tell its customers' stories.



#### The Challenge: Mine the Best Video Clips from Thousands of Hours of Footage

London-based Seenit's grassroots production model enables users anywhere to upload photo and video to Seenit Studio, a cloud-based editing tool, through the Seenit Capture app. From there, APIs automate metadata production on every piece of content so that producers can find specific clips to work with.

The people who know your product best are those using it every day. Seenit helps enterprises change the way they think about storytelling by enlisting customers, fans, and employees anywhere to create original, authentic video clips using mobile phones as the acquisition tool.

“Every company is a media company now, whether they want to be or not,” says Dave Starling, Seenit's CTO. “If you're a large organization, dealing with employee engagement and transformation of values, video is one of the most powerful ways to do that.” Video and photography taken with the Seenit Capture app is normalized into a standard format when automatically uploaded to the library in the cloud. Here, in this vast repository of rough content, producers search through footage for poignant moments in order to create strategic stories, and edit them using a simple drag-and-drop web-based editing tool. Built on Google Cloud Platform, powered by TensorFlow, and running on Python, Seenit is a fully managed service.



<sup>1</sup> Cisco Visual Networking Index: Forecast and Methodology, 2014-2019 White Paper

**To empower users to find the exact moments they need from a vast library of user-created content, Seenit needs a data platform that's searchable by:**

- Visual components that are automatically tagged by sophisticated image recognition software
- Audio content that includes searchable keywords, analyzed for importance and weight
- Sentiment, so that photos and video can be mined for their emotional content

But as organizations accumulate thousands of hours of footage over time, the challenge is how to evaluate, store, and search non-obvious properties of video content and extract intelligence from large volumes of video metadata, then visualize that data in meaningful ways. With multiple users submitting hours of footage, sometimes every day, Seenit customers' video libraries are enormous and constantly growing. When you have five—or five thousand—hours of video, and you only need a 2-second clip, watching it all manually is not realistic. The ability to search on video is imperative, but video search is a notoriously complex and sophisticated mechanism that relies upon accurate and intuitive tagging, among other things.

Seenit's goal was to give users the ability to evaluate content not just by object recognition (what's visually evident in the video) but audio qualities and sentiment analysis. With this capability, someone could conduct a narrow search on, for instance, "people who are smiling while standing in front of a pink sunset talking about family." In order to accomplish this, Seenit needed to find a way to apply intelligence to an enormous database of content in order to make search precise and relevant.



### **The Solution: A Co-Creation Platform Elevated by Couchbase**

The machine learning inherent in Google Cloud Platform was a great start. Google Cloud Machine Learning APIs include Vision, Speech, and Natural Language, making it easy to sort clips by both objective and subjective markers. "The advantage of a machine learning platform is that it's a learning platform," Starling says. "We can tweak it, we can work out what works and what doesn't work, and go from there. But video is a quite complicated beast because of how much data there is."

When users upload content, it's automatically subjected to a set of task views and split into a number of parallel pipelines. A screen grab is taken of each video by the second. Each of those frame grabs is then processed as a single entity, which provides its own data. The results are combined together to give a holistic picture of the entire video. By breaking down the tags into singular frames, it's possible for a user searching the database to find the optimal clip.

All of this data is converted into JSON data by Google Cloud Platform, and results in copious and intricate information about each frame of every video. There's a ton of data to work with, but to fully take advantage of that data, it has to be easy to compile, sort, and search. That's why Seenit is currently using Couchbase Server to pull JSON data out of Google's platform and store it in a Couchbase database where JSON documents are native.

All of the tags applied to a photo or video are aggregated in one document and grouped together across a customer's entire library. Then, tags can be analyzed to see which repeat most often and which are most important. This allows for sophisticated search on objects, words, and sentiment—and any combination of the above.



## About Seenit

Seenit enables businesses to create compelling collaborative video with the people that matter most: their customers.



## The Result: Flexible, Sophisticated Crowdsourced Video

### Native search that supports a crowdsourced business model

Every video uploaded to Seenit Studio is dissected for analysis of its relevant components. The video is analyzed to tag visual components (man, talking, pink sunset) and emotional sentiment (smiling, happy, content). Audio is stripped from the video, transcribed, and analyzed to extract meaning. All of the results are stored in Couchbase as JSON objects, which are fully searchable using Couchbase's Full Text Search, a sophisticated capability ideal for parsing video.

Full Text Search includes the ability to use Wildcarding, fuzzy search, and Boolean search. Customers can also employ search-term boosting to place more importance on certain search terms over others, and faceting to conduct related search or drill down within categories. Key to video search is the ability to search on sentiment—clip where people are talking about something with a particular emotional affect. "Couchbase supports our unique combination of machine learning and video intelligence with highly sophisticated search," says Starling. "That means Seenit can give its customers pinpointed access to the exact clips they need within thousands and thousands of hours of video footage."

### Agile support for new features and offerings

Seenit was built specifically to exploit Couchbase's performance at scale and sophisticated features, including video search. The data is all processed in Couchbase, and it's entirely elastic — new machines can be added or subtracted quickly. This is crucial to Seenit, because as the startup adds customers and builds its business, the amount of data will multiply quickly. Couchbase's ability to easily scale means that Seenit doesn't have to worry about whether performance will suffer with quick growth. "It's very much a marriage made in the cloud," says Starling. "Couchbase offers native performance that makes working with large files easy and allows us to easily and efficiently add the types of nodes we need as we grow."

### New features: From 12 weeks to 1

When Seenit set out to implement new search features last year, they estimated that it would take 12 weeks to accomplish the task--with Couchbase it took only a single week. The startup doesn't have resources like large infrastructure teams and site reliability engineers. But once they dove in, they were able to effortlessly develop, test, and release all of their new features in under a week—and additional "nice to have" search features only a week later. "It was extremely easy for us to set up indexing," says Starling. "We didn't need to make any infrastructure change. There weren't any maintenance worries."





## Looking Ahead: Groundbreaking Video Search Capability

The release was a huge success, which made Starling and his team think about all the search functionality they can implement in the future. Seenit looks forward to becoming a ubiquitous production model for large companies and creating for them a new paradigm of communications video creation. “Really, the hardest part for us is knowing when to stop our development,” says Starling. “We get carried away, like a kid in a candy shop. But we’re excited to be powering a revolution for large enterprises.”

### Learn More

Visit [couchbase.com](https://couchbase.com) to learn more about the world’s most powerful NoSQL data platform.



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## About Couchbase

Couchbase’s mission is to be the data platform that revolutionizes digital innovation. To make this possible, Couchbase created the world’s first Engagement Database. Built on the most powerful NoSQL technology, the Couchbase Data Platform offering includes Couchbase Server and Couchbase Mobile and is Open Source. The platform provides unmatched agility and manageability – as well as unparalleled performance at any scale – to deliver ever-richer and ever more personalized customer experiences.