

## Tool by Crealogix Makes It Easy to Search Audio and Video Content

CREALOGIX  
Best Advance in Emerging Learning Technology  
February 2018



### Company Background



Company At-a-Glance	
Headquarters	Zurich, Switzerland
Year Founded	1996
Revenue	100m USD
Employees	400
Global Scale	Global
Customers/Output, etc.)	Corporate education for banking sector (UBS, ZKB), manufacturing (Bühler), government sector (Swiss Federal and Cantonal governments); tertiary education (University of Geneva, Freie Universität Berlin)
Industry	Software Technology
Stock Symbol	clxn
Website	<a href="http://www.crealogix.com">www.crealogix.com</a>

### Value Proposition

SPEXIAN AI, the newest tool by Crealogix, addresses the following needs of companies and individuals who own large and growing video and audio resources for educational and marketing purposes:

- **Access.** Hearing-impaired persons and non-native speakers may struggle to follow and understand some of the audio and video content.



- **Deep search.** Video and audio libraries usually can only be searched using a limited number of key words that have to be tagged to each resource manually. More detailed searches are only possible if the content has been transcribed manually by humans in a costly, time-consuming, and potentially error-prone way. People miss the important information because video titles only partially describe what is in the video. Moreover, people can find a video but do not know where exactly in the video to find the useful information, so they waste time by watching a video until they get to the useful information.
- **Discovery.** If users cannot conduct detailed and accurate searches and the video content is unknown, they cannot be provided with useful, specific recommendations based on their viewing history.
- **Analytics.** If users cannot conduct detailed searches, there also is no detailed-search history available for further analysis about actual use, effects, and efficiencies by those responsible for managing and creating video and audio libraries.

### The SPEXIAN AI Solution

SPEXIAN AI is an intelligent technological solution that satisfies those needs in an extremely cost-effective, fast, accurate and comprehensive way. Its powerful combination of search- and-analytics functions multiplies the value and reach of the client's video and audio resources, not just for internal learners and employees but also for external clients.

SPEXIAN AI automatically transcribes video, audio, and other very diverse media in an accurate way and simultaneously time-stamps every word. This ability allows SPEXIAN AI's powerful search- and-analytics technology to address the business needs:

- **Wider access.** Detailed, comprehensive transcriptions give hearing-impaired and non-native speakers full access to the content and meaning of video and audio material regardless of different dialects, pronunciations, quality of recordings, etc.
- **Accurate, immediate, deep searches.** Due to the detailed, time-stamped transcriptions, users find and get quick access to relevant content that might be located in different parts of the material. They do not have to watch, listen to, or browse countless video/audio resources. They can search new material immediately when a resource becomes available without having to wait for human tagging or transcription.



- **Useful discovery.** Users get relevant recommendations based on their detailed viewing history and interests.
- **Powerful analytics.** More detailed transcriptions, searches, and recommendations translate into more powerful analytics options. Records of user behavior and relevance of specific material allow video- and-audio content owners and producers to identify content that is useful as well as which resources are missing or need to be extended or developed further.

However, SPEXIAN AI does not simply address those individual business needs, but it can have game-changing impact on the way video- and-audio resources are used and further developed within an organization. The combination of search and analytics functions is amplified by artificial-intelligence functions: SPEXIAN AI has created an ecosystem for internet-media transcriptions that improves with every use due to its AI functions. In essence, all users together constantly improve and tailor SPEXIAN AI to their specific individual and collective needs.

### **Client example: University of Geneva**

The University of Geneva uses SPEXIAN AI to give its students access to a wide range of audio resources such as lectures. More than 5,000 hours of material can be searched within seconds. In the future, the service easily can be extended to videos as well.

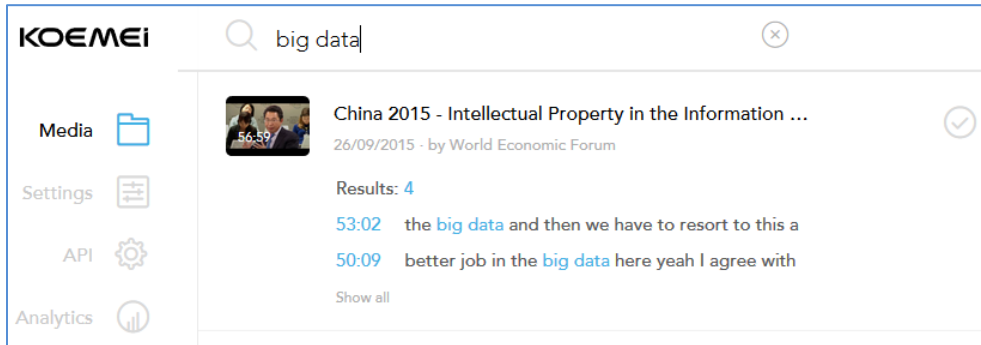
The service is based on an annual fee and a three-year contract as universities and public administrations receive a special price.

### **Client example: World Economic Forum (WEF)**

The search for the expression "big data" provides all occurrences in context and indicates the exact time (time stamp).

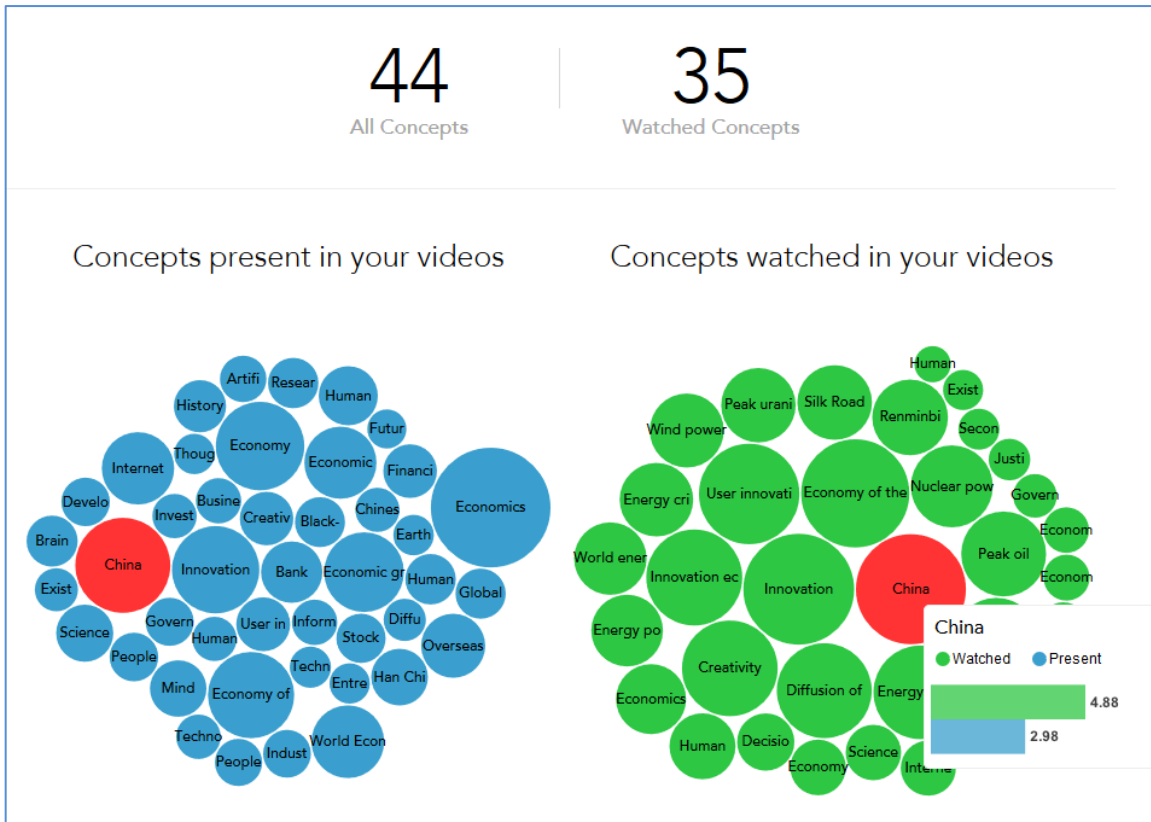
By going to Analytics (left tab, next page), the user sees the search results on the site, browses with the mouse over the graph, scrolls down to see all searched keywords in the last weeks, sees concepts searched in the video, scrolls up and goes to "Content" (right of the Search link).

Figure 1: Keyword Search



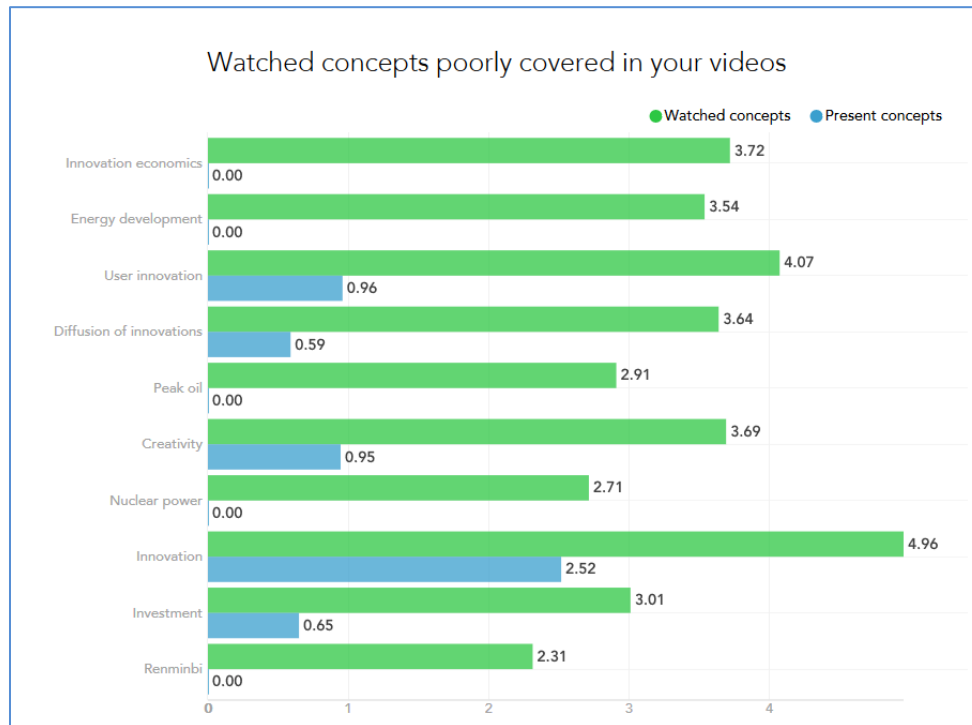
Source: CREALOGIX 2018

Figure 2: Analytics



Source: CREALOGIX 2018

Figure 3: Analytics Includes Concepts Poorly Covered in Available Videos



Source: CREALOGIX 2018

## Product or Program Innovation

The game-changing impact of SPEXIAN AI does not derive from a single innovation, but from the powerful combination of a series of break-through innovations.

- **Accurate technology of speech-to-text engine for video/audio.** This accurate, detailed, quick, and reliable Automatic Speech Recognition (adaptive neural-net speech recognition algorithm) is the basis for the intelligent search and analytics functions across all media gathered in a central management. It automatically tags and time-stamps content (every word has a time stamp). It even recognizes, tags and processes different dialects and even different speakers.
- **Text analytics and powerful real-time search engine.** The search engine is far more efficient and detailed based on the accurate speech-to-text, time-stamping technology. Text analytics and real-time search drive prescriptive analytics.

- **Customization options.** The SPEXIAN AI technology can be customized and adapted to specific application needs. It is very flexible.
- **API and SDK.** All functionality of SPEXIAN AI can be accessed both through the user interface and through a set of REST APIs. The developers can use SPEXIAN APIs for transcription, search, and analytics to build new solutions or integrate SPEXIAN AI into their existing products.
- **Scalable Amazon EC2/S3 infrastructure.** The transcription process, search, and analytics are accomplished on the flexible AWS infrastructure (EC2/S3), where the computing resources are managed automatically based on the processing load.
- **AI improvement (machine learning).** The technology comprises three main interacting layers (ASR engine layer, parallel computing layer, web-application layer) that allow the underlying ASR engine to be constantly improved as it gets feedback from the web-application layer. This leads to the adaptation of vocabulary and language specific to each organizational and corporate environment.
- **Recommendation engine.** The recommendation engine analyzes search results and video content and gives relevant, useful recommendations to users based on a powerful prescriptive analytics algorithm.
- **Intelligent content and user behavior analysis.** The system records and counts the frequency of the word searches. It records where the users jumped into the video and how they interacted with it. All these functions are valuable to analyze the use of one's valuable resources.
- **Speed of use.** SPEXIAN AI makes new resources immediately available for search and analytics. No need to wait until the resources are transcribed by humans. SPEXIAN AI is quick for the individual users.
- **User friendly.** While the underlying, interacting layers are complex, the search and analytics function are easy to use due to a clear, intuitive, and attractive user surface with clear displays of time-stamped search results.
- **Pricing.** Even the pricing model is innovative. It offers:
  - A SAAS solution that is payable per month and per language per minute of actual use.
  - An on-premise solution with a perpetual license and software assurance.
  - A private cloud solution.



- **Cost effective.** SPEXIAN AI transcription costs turn out to be 10 times lower than comparable transcription by humans.
- **Worldwide client-service approach.** Based in Zürich, Crealogix digitally markets SPEXIAN AI world-wide by using webinars, customized-sales engines, and other communication methods to a wide range of industries, including banking, manufacturing, universities and schools, and government administrations.

## Unique Differentiators

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SPEXIAN AI's biggest selling point is the overall combination of power, speed, cost-effectiveness and accuracy of capabilities, technologies, and features in one product.

SPEXIAN AI is based on a sophisticated- and-accurate, adaptive speech-recognition and prescriptive-analytics algorithm. SPEXIAN AI provides a unique level of accuracy, speed and customization options for even the most diverse range of video and audio resources.

The speech recognition even distinguishes individual speakers and dialects and makes the material searchable by speakers and dialect. Natural-language processing allocates content to topics and concepts.

All media are automatically tagged and indexed. The time stamping of individual words is a huge USP of SPEXIAN AI. This tagging and time-stamping also can be exported.

SPEXIAN AI not only empowers users to access material more quickly and more accurately, but also enables powerful insights to help video-content owners understand how effective their video content drives engagement and ROI.

The AI features allow powerful machine learning. The system can be fed with and learns specific words, such as key words of an industry, corporation, or knowledge area. It also provides recommendations to users based on viewing history.

All those functions are available across a diverse range of media, including video, podcasts, phone calls, telephone conferences, webinars, lectures, radio programs, audio notes, and user-generated videos.

Data security is guaranteed.

## Measurable Results

### Case study: University of Geneva

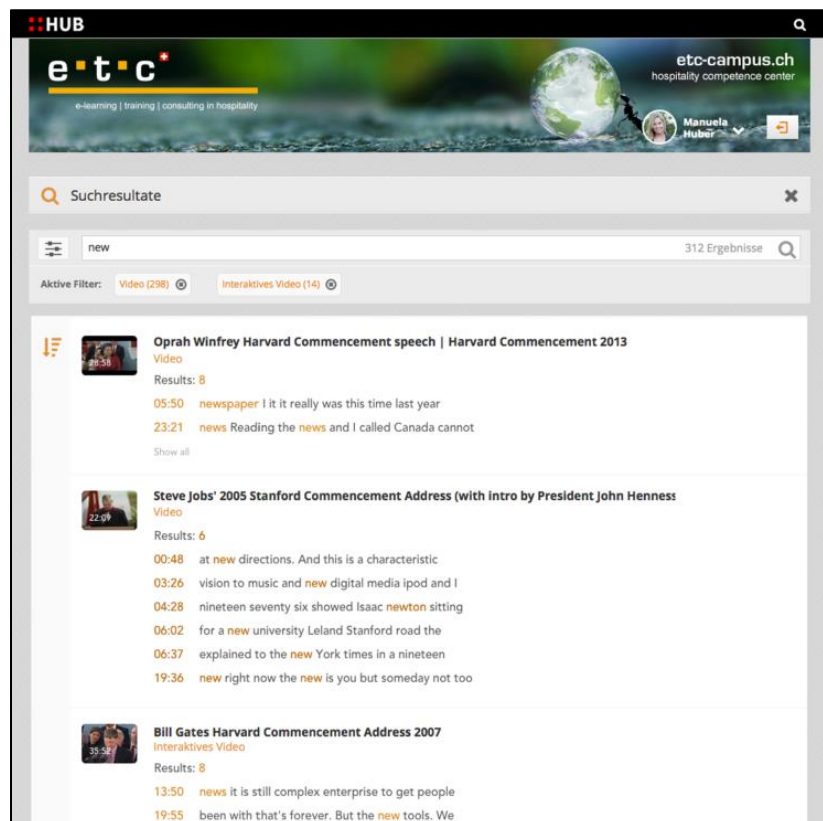
At the University of Geneva, students use SPEXIAN AI to carry out quick, detailed searches of more than 5,000 hours of audio lectures.

"The SPEXIAN AI video tool for semantic keywords searches, provided by CREALOGIX, automatically indexes our university lectures every day. This makes it very easy for our students to search our extended audio recording collection in seconds." – **Pierre-Yves Burgi**, PhD, Deputy CIO at University of Geneva

### Case study: Swiss Learning Hub

The integration of SPEXIAN AI in CREALOGIX'S Swiss Learning Hub strategy makes it possible for users to searching for a keyword on all videos and audio on the platform.

Figure 4: Swiss Learning Hub



Source: CREALOGIX 2018



### Background

CREALOGIX acquired the learning technology of Koemei and further develops and markets the product as SPEXIAN AI.

[Press release from September 4, 2017, Zurich](#)

#### **CREALOGIX Acquires Deep Learning Technology for Data and Video analytics**

CREALOGIX purchases the cutting-edge artificial intelligence (AI) technology assets of Koemei. The solution, developed by the Swiss start-up and spin-off of IDIAP Research Institute (affiliate of the Swiss Institute of Technology in Lausanne EPFL), enables the handling of big data, among other things, thanks to deep learning technology. This makes it easier to exploit multimedia content. As a result, data categories that are set to grow massively in the future and whose analysis is still largely neglected by companies today, can be used efficiently. Extensive concept search as well as usage analytics further simplify handling. With these innovative AI functions, the digital banking and digital learning specialist is complementing its existing digital products.

Koemei developed a scalable platform for handling large multimedia datasets, the cross-media search and audio and video content analytics. From autumn 2017, the Koemei technology will complement the range of products offered by CREALOGIX. With this integration, ever-increasing volumes of data can be made available to users quickly. Urs Widmer, CEO of Digital Learning at CREALOGIX: "We are delighted that we were able to acquire Koemei's market-leading platform. Combined with our digital banking and digital learning products, this new technology is helping to secure added value and a competitive edge for our customers."

#### **Deep learning software for optimal data analysis**

The Koemei solution achieves one of the world's best recognition qualities for the analysis of audio, podcast and video content. For this purpose, the contents are converted into texts via automated speech recognition (ASR). Next, the texts are evaluated with the aid of artificial intelligence (AI) tools such as machine learning with neural networks and natural language programming (NLP), and automatically assigned to topics; with data security ensured at all times. Keywords are automatically recognized and tagged in the videos. As a result, users can jump straight to the relevant statements in a video. This greatly increases the value of video and audio content and saves time during research. Using the technology, the University of Geneva has already processed over 5,000 hours of lectures in a user-friendly manner, integrating the content seamlessly with text document searches. CREALOGIX is adapting the intelligent functions featuring concept search, content analysis and analytics to the specific requirements of its customers.



## About Brandon Hall Group

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Brandon Hall Group is a HCM research and advisory services firm that provides insights around key performance areas, including Learning and Development, Talent Management, Leadership Development, Talent Acquisition, and HR/Workforce Management. With more than 10,000 clients globally and more than 20 years of delivering world-class research and advisory services, Brandon Hall Group is focused on developing research that drives performance in emerging and large organizations, and provides strategic insights for executives and practitioners responsible for growth and business results.

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