



**APPLYING
THE POWER OF AI**
TO YOUR VIDEO PRODUCTION STORAGE

Quantum[®]

SECTION 1

A professional video camera is mounted on a tripod in the foreground. The camera's LCD screen is visible, showing a woman sitting at a desk with a laptop. The background is a blurred office setting with a woman sitting at a desk.

**FINDING WHAT
YOU NEED**
IN YOUR IN-HOUSE
VIDEO STORAGE

You need ways to generate metadata for stored videos without time-consuming manual tagging.

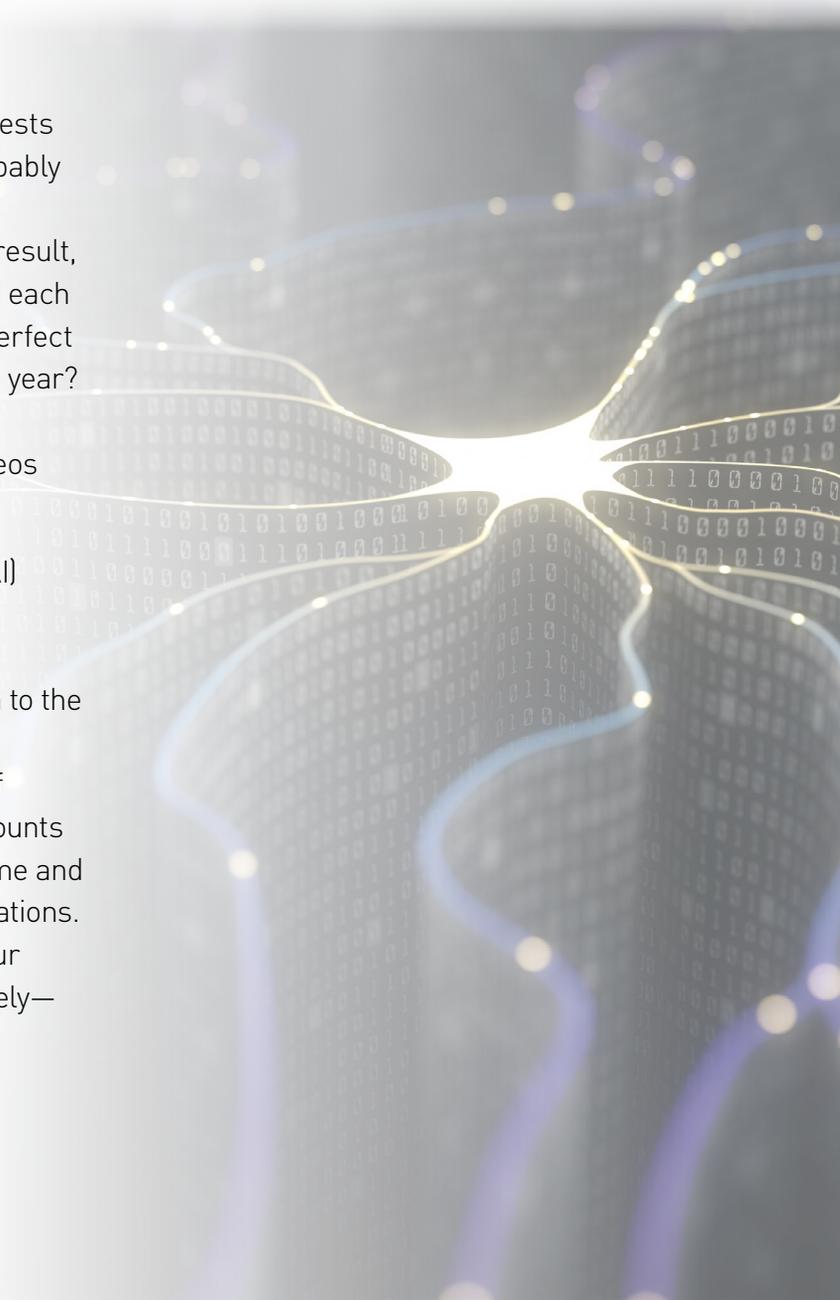
Your video production team is creating more and more valuable content. Responding to a rising stream of requests, you're generating compelling, high-quality video for a wide range of corporate uses, from customer-facing marketing and sales training to HR recruiting and investor relations.

If you're like many other in-house teams, you might be finding that the drive to deliver more video presents storage challenges. The content you're creating—much of it in HD and 4K—can quickly fill your production storage system. Integrating an archive solution can help address that challenge by allowing you to offload completed projects to more cost-effective storage media.

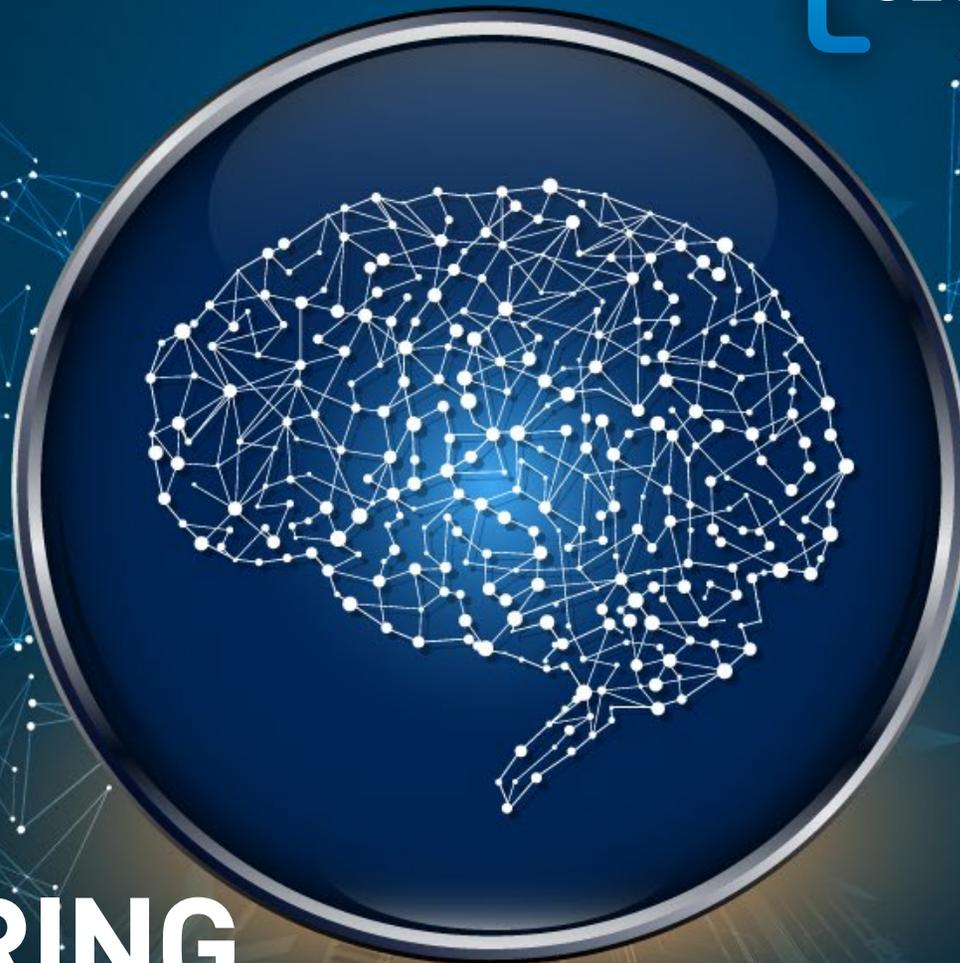
But another key storage-related challenge remains. You need ways to quickly and efficiently find specific elements—shots, people, objects, and words—wherever they reside. Finding content quickly can help you more easily reuse and remonetize your video assets.

Using metadata tags for files makes it simpler to locate and retrieve content. Unfortunately, with so many video requests continuously pouring in, your team probably has little time for the tedious and time-consuming work of tagging clips. As a result, it can become incredibly difficult to find each needle in the haystack. Where is that perfect building exterior shot you captured last year? That clip of your CEO discussing your company's new strategy? Or all the videos you need produce for that law suit?

The good news: Artificial intelligence (AI) engines can help create metadata automatically. The bad news: Many AI engines require you to upload your data to the cloud. That approach might be fine for conducting analytics on a modest set of business data. But uploading large amounts of video content could take too much time and cost too much money for many organizations. You need a way to run AI engines on your video content—simply and cost-effectively—within your in-house environment.



SECTION 2



DISCOVERING HOW AI CAN HELP

Cognitive technologies can help streamline searches and enhance your existing videos.

AI engines—sometimes called cognitive or machine learning solutions—can dramatically improve your ability to find what you need amid large, growing volumes of content. And by extracting information from captured content, they can also provide new opportunities to enhance the value of existing videos.

Using AI engines is much more efficient than employing manual processes. AI engines can rapidly analyze every frame of your content and intelligently recognize words, objects, and other meaningful elements. They can generate metadata tags, associate those tags with files, and extract information from analyzed elements—presenting them in formats that are easy to search and work with. Many AI engines also have machine learning capabilities, so their ability to recognize elements within videos improves with the more data you analyze and the more analyses you run.

Here are a few types of AI engines and their use cases.

AUDIO TRANSCRIPTION

Let's say you're changing the name of one of your products, and you want to refresh a number of existing product videos you've created over the past several years. The process could be as simple as replacing a few frames in which the name appears on screen and punching in the new name on a voice-over track. But unfortunately, the product name could occur in a large number of videos, including ones with filenames that refer to other products. How do you find all the videos you need?

An AI engine for audio transcription can analyze the spoken content in every video in your library and generate transcriptions. Finding the product name you need to replace becomes as simple as searching the transcriptions for that text.

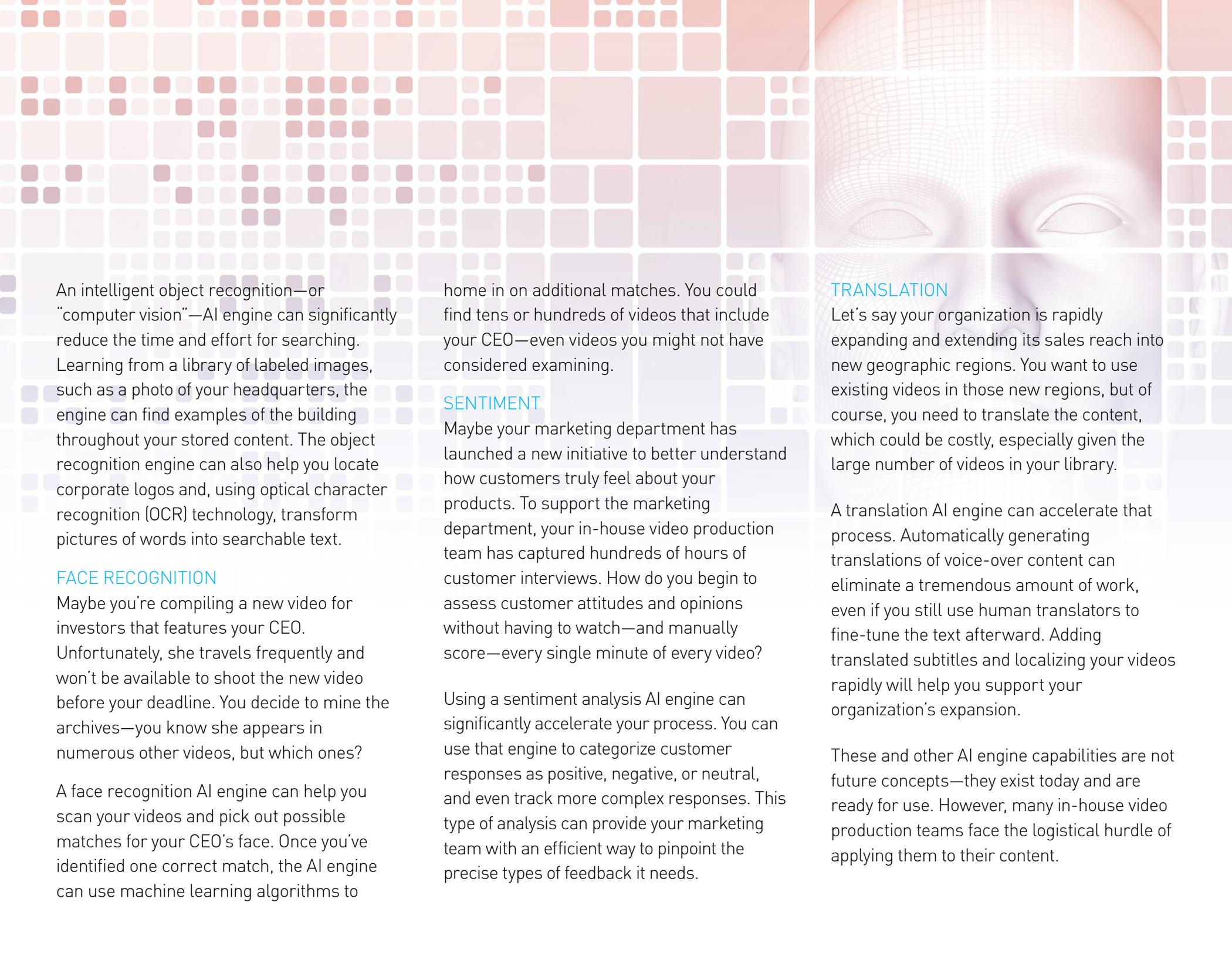
You can also use an audio transcription engine to enhance videos. By producing transcriptions of spoken content, you can create closed-captioning tracks or subtitles. Doing so enables viewers to watch the videos, and read along, even when they are not able to listen to the audio.

Transcription capabilities can also help reduce the need for human transcription services. A law firm could use a transcription AI engine to rapidly and cost-effectively transcribe a large number of depositions captured on video, for instance.

OBJECT RECOGNITION

What if you are producing a new video and want to draw from previously captured B-roll content, including video of your corporate headquarters? Many video production teams would rather reshoot the video than spend time and money searching through terabytes of stored content.





An intelligent object recognition—or “computer vision”—AI engine can significantly reduce the time and effort for searching. Learning from a library of labeled images, such as a photo of your headquarters, the engine can find examples of the building throughout your stored content. The object recognition engine can also help you locate corporate logos and, using optical character recognition (OCR) technology, transform pictures of words into searchable text.

FACE RECOGNITION

Maybe you’re compiling a new video for investors that features your CEO. Unfortunately, she travels frequently and won’t be available to shoot the new video before your deadline. You decide to mine the archives—you know she appears in numerous other videos, but which ones?

A face recognition AI engine can help you scan your videos and pick out possible matches for your CEO’s face. Once you’ve identified one correct match, the AI engine can use machine learning algorithms to

home in on additional matches. You could find tens or hundreds of videos that include your CEO—even videos you might not have considered examining.

SENTIMENT

Maybe your marketing department has launched a new initiative to better understand how customers truly feel about your products. To support the marketing department, your in-house video production team has captured hundreds of hours of customer interviews. How do you begin to assess customer attitudes and opinions without having to watch—and manually score—every single minute of every video?

Using a sentiment analysis AI engine can significantly accelerate your process. You can use that engine to categorize customer responses as positive, negative, or neutral, and even track more complex responses. This type of analysis can provide your marketing team with an efficient way to pinpoint the precise types of feedback it needs.

TRANSLATION

Let’s say your organization is rapidly expanding and extending its sales reach into new geographic regions. You want to use existing videos in those new regions, but of course, you need to translate the content, which could be costly, especially given the large number of videos in your library.

A translation AI engine can accelerate that process. Automatically generating translations of voice-over content can eliminate a tremendous amount of work, even if you still use human translators to fine-tune the text afterward. Adding translated subtitles and localizing your videos rapidly will help you support your organization’s expansion.

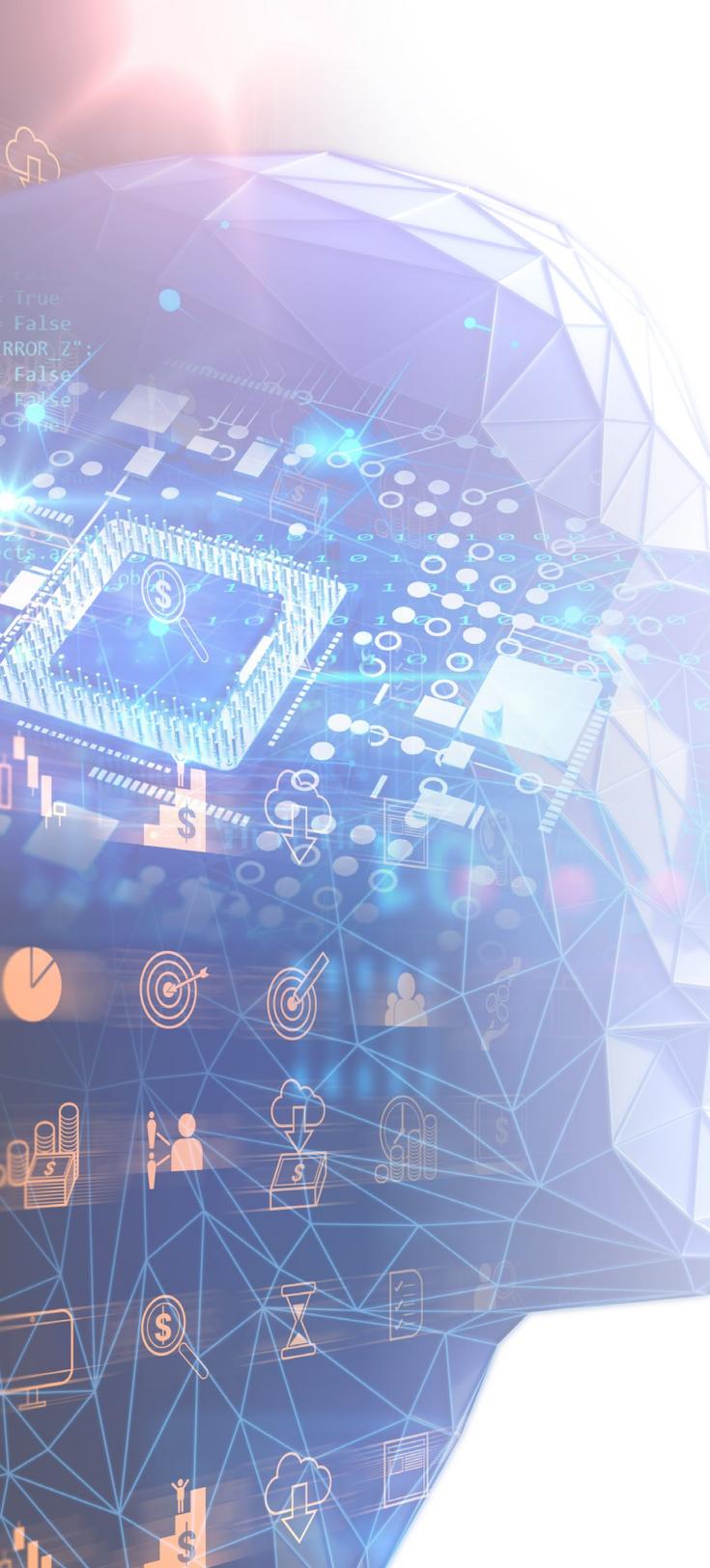
These and other AI engine capabilities are not future concepts—they exist today and are ready for use. However, many in-house video production teams face the logistical hurdle of applying them to their content.

SECTION 3

APPLYING AI TO YOUR VIDEO CONTENT

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elif operation == "MIRROR_X":
    mirror_mod.use_x = False
    mirror_mod.use_y = True
    mirror_mod.use_z = False
elif operation == "MIRROR_Z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True

#selection at the end -add to
mirror_ob.select= 1
modifier_ob.select=1
bpy.context.scene.objects.active = (
print("Selected" + str(modifier_ob)
#mirror_ob.select = (
time = bpy.context.scene.frame_current
bpy.data.objects["Mirror"].modifiers["Mirror"].modifier_properties["Mirror"].properties["Mirror"].value = 1
```



Adopting an on-premise appliance can help you overcome technical and business challenges for employing AI.

AI is all the rage. While not all AI technologies are ready for prime time, there are AI engines available today that can help you significantly improve your ability to find, remonetize, and enhance the value of your stored video content.

Some of these engines run as cloud-based services. Using cloud services might be appealing to some organizations, since those services can often help speed deployment, control costs, and enhance flexibility compared with complicated in-house solutions.

For video production teams, however, cloud-based services present challenges. You might have thousands of hours of content residing in tape libraries, object storage systems, and disk arrays, and that content could equal tens or hundreds of terabytes of data. It would likely be too time-consuming and costly to upload that content to the cloud. Even if you have an extremely fast Internet connection, transferring data to the cloud to use a cloud-based AI engine could take hours, days, or even weeks. If you're unable

to keep your content in the cloud, you might need to upload it again each time you want to run an AI service.

Security is another consideration. The ability to keep your content on-premise is one of the advantages of using an in-house video production team—you retain full control of your intellectual property. With a cloud service, you lose some of that control.

Running AI engines on an on-premise appliance might be the answer. By keeping your content local, there is no long-distance data transfer. You can run AI engines on your content wherever it currently resides within your environment.

Keeping content in-house also helps you maintain control over that content. And like a cloud service, an appliance simplifies deployment and accelerates time to value—there's no need for extensive installation, configuration, and testing. Of course, the right appliance solution would also enable you to easily access the cloud if you choose to capitalize on additional services or AI engines.

SECTION 4



DELIVERING POWERFUL AI ENGINES

IN AN ON-PREMISE APPLIANCE

Apply AI engines to video content on-premise with Quantum and Veritone.

One of the vendors leading the AI revolution is Veritone. Founded in 2014, Veritone has developed a best-in-class, cloud-based platform called aiWARE that unlocks the power of cognitive computing to allow unstructured audio and video data to be processed, transformed, correlated, and analyzed in a seamless, automated manner.

Quantum has forged a strategic relationship with Veritone to bring powerful AI engines to an integrated, on-premise appliance. The aiWARE for Xcellis™ solution provides a version of the Veritone aiWARE AI platform for Quantum StorNext® shared storage environments that feature Xcellis workflow storage architectures. With this appliance solution, you can capitalize on AI engines quickly and easily without migrating data to the cloud or relinquishing control over your content.

RAPID DEPLOYMENT

The appliance design eliminates the need for complicated software installation, configuration, or testing. Most organizations can get up and running as quickly and easily as they would with a cloud service. Because the appliance runs the AI engines on-premise, you can start analyzing video immediately.

There's no need to transfer huge volumes of data to the cloud.

POWERFUL COGNITIVE ENGINES

Quantum and Veritone are initially offering three AI engines that deliver some of the greatest benefits for analyzing video content.

- **Transcription:** Convert spoken content into readable text. The AI engine can recognize multiple languages, dialects, and topics.
- **Object recognition:** Spot multiple types of objects, from buildings to logos, within videos or still images. Use OCR to convert images that include words into searchable text.
- **Face recognition:** Identify and index the presence of individuals in video or still images. Recognize specific individuals based on a library of known faces.

Run these AI engines on stored content within your production environment or archives. Or run them on content as it is being ingested. The engines dynamically generate the metadata tags you need to streamline searches.

INTEGRATION

aiWARE for Xcellis integrates easily with your existing Quantum StorNext storage environment. The aiWARE software uses StorNext file IDs to tag its metadata results. That relationship between the file and the metadata can be used by most leading media asset management (MAM) systems. If you're not using a MAM or other media asset tool, you can use the aiWARE interface to search for files with particular characteristics in your StorNext file system.



MOVE FORWARD WITH QUANTUM AND VERITONE

Demand for compelling, high-quality video will continue to rise. As your in-house video production team captures more video and produces a greater amount of high-resolution content, you'll need efficient ways to find and extract what you need from growing storage volumes. The ability to quickly find people, objects, words, and other elements in your videos will enable you to more easily reuse and remonetize content.

aiWARE for Xcellis provides powerful cognitive engines in an on-premise appliance to help you rapidly analyze your video content and automatically create metadata tags that will make it easier to find what you need. By not having to migrate data to the cloud, the appliance lets you rapidly capitalize on the benefits of AI while maintaining full control over your content.

Ready to Learn More?

For more information, visit www.quantum.com/corporate-video.

ABOUT QUANTUM

Quantum is a leading expert in scale-out tiered storage, archive and data protection. The company's data management platform and tiered storage approach provide a unique combination of high performance, transparent access, and strong collaboration that enables media production professionals to address the challenges created by the demand to produce more video content at higher resolutions, easily archive content, distribute content in new formats, and globalize content. Learn more at www.quantum.com/corporate-video.

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800-677-6268

ST02111A-v01 Aug 2017