CONVERSATIONAL AI MEETS VIDEO

How Aivio™ is Changing Patient Engagement Forever

MESSAGE FROM THE AUTHOR

Vacit is known for pioneering leading-edge technologies in fields ranging from semiconductors and software to medical and defense. His extensive experience includes leadership roles in engineering, operations, and business management, including international experience with Japanese, European, Chinese, Korean, and Israeli corporations.

Vacit's tenure includes Samsung Semiconductor, LSI Logic, Honeywell, Silicon Value (CEO), Microfabrica (CEO), Crosspoint (Co-Founder, CEO), On-Chip Systems (Co-Founder, CEO), and Vantage Surgical (Co-Founder, CEO). He holds a BSEE from the University of Birmingham, U.K., and an MSEE from the University of Houston, TX. He has 26 issued patents.

"The Aivio is the next giant leap forward in how people share content and communicate with their audience."

Vacit Arat
Chief Executive Officer
HIA Technologies, Inc.

LEARNING OBJECTIVES

Recent advancements in artificial intelligence, digital character creation, and mixed reality, have led to patient education and engagement technologies that are changing how clinicians interact with their patients. These new technologies create opportunities for clinicians and patients to interact in new, meaningful ways. This article details the first of its kind environment where conversational AI and video intersect, the Aivio™ by HIA Technologies.

No. 01 — **Video is Limited**

Uncover the limitations of traditional patient engagement methods, including how and why traditional video has left patients wanting more.
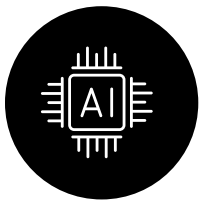
No. 02 — **New Technology Exists**

Understand the emerging technologies that combine to form the new Aivio approach to patient engagement.

No. 03 — **Apply What You Learned**

Gain insights necessary to optimize your current approach to patient engagement and education

Terms -

Aivio™

Pronounced "Aye-vee-oh": A secure virtual environment where content is presented to an audience through various interactive tools and author-controlled AI allows for live interaction with participants.

C-Me™

Pronounced "See Me": Simulated assistants based on advanced digital human technology capable of guiding participants through interactive content with proprietary Natural Body Language GUI (NBLG).

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STEPPING BEYOND TRADITIONAL VIDEO

Healthcare providers who have embraced video as a method of patient engagement may think the transition from paper handouts to video represents a leap forward. But is that enough?

Videos are everywhere. YouTube alone is the most visited site worldwide (2nd in the U.S. after Google itself) with 2 Billion "logged-in monthly users" and with 15 Million content creators keeping it buzzing. Videos are indispensable to entertainment and social media, and certainly to businesses as an educational, engagement, branding (and entertainment) tool that fills huge gaps in their customer outreach and saves them tons of money.

As valuable as the traditional video might seem, it is a one-sided approach that the audience experiences "passively". There is no way to tell if they watched the content, which parts of it they watched, if they paid attention, understood it,or if they had any questions. This is particularly worrisome when healthcare professionals seek to use videos as a form of patient education.

For meaningful learning to occur, patients need to be able to interact. Interaction is critical for demonstrating understanding, elaborating where necessary, and ensuring that all unanswered questions that could hinder learning - have been addressed. This simply isn't possible with traditional video.

With one-way video patients can't:
- Ask questions and get answers right away on what they just watched
- Dig deeper into topics of interest to expand their knowledge
- Validate their comprehension or newly learned skills

Traditional videos are incapable of:
- Responding to viewer questions
- Confirming the information was consumed and understood in its entirety
- Addressing the unique needs of an individual viewer
- Explaining complex topics in a way that unfolds based on user input & questions

In other words, traditional one-way video is too generic and cannot do anything more than present basic information. It cannot understand the viewer. It cannot report to the publisher what the audience learned. It cannot tailor its message to the needs or interests of the viewer. Traditional video is, therefore, a minimally effective tool, when it comes to true patient engagement.

Thankfully, significant opportunities are emerging to tackle these issues head-on with conversational AI coming into the mainstream, coupled with the new modes of digital interactions based on digital assistant technology and voice. Aivio™ is the confluence of the traditional rich media formats like video with these new advancements to bring you highly visual and conversational experiences on all screens including mobile, desktop, AR, and VR.

WHAT IS AN AIVIO?

And how is it changing the way providers and patients interact?

100%

Internal surveys show participants choose an Aivio over traditional outreach, every time.

24/7

Accessibility for patients and their caregivers

Aivio is the next-generation content delivery vehicle that allows your audience to engage and interact with your content in a highly visual and conversational fashion. These interactions include the ability for bi-directional inquiry. Meaning both the patient-viewer and the application itself, have the power to ask questions and provide answers in real-time.

This conversational approach to content forms an entirely new way to get and give information. And, to ensure audiences remain engaged - a digital representative hosts the conversation the same way you would in person. Through life-like gestures and natural body language, your simulated assistant or C-Me™ is the perfect interactive guide for the Aivio experience. The Aivio is an entirely new, virtual, and interactive safe-space, for patient conversations to take place- one that, by design, encourages more interaction and entices patients to give it their full attention.

With an Aivio - you design a unique experience by combining these features and allowing patients to be guided through the interaction. Larger or more complex concepts are easily understood with rich media, and when the Aivio detects a lack of understanding it reinforces the correct information. As patients interact and ask questions, each Aivio becomes a unique user experience.

An Aivio can consist of any combination of:

- Visual aids to display the content such as presentation slides that may contain rich media of any kind (videos, photos, diagrams, graphs, etc.)
- The script, or narration, which accompanies the visual aids
- Questionnaires of all kinds, presented in multiple formats including:
  - Touch interaction (for use on mobile devices)
  - Voice recognition for verbal ask/answer approach
  - Dynamic forms with familiar input types; checkmarks, fill-in-the-blanks, etc.
- Answers to viewer questions that can be purely verbal, or at the other extreme, standalone presentations all by themselves which dive into details not covered in the main flow of the original presentation
- Your C-Me which delivers the presentation and conducts the 2-way Q&As with its voice, gestures, facial expressions, and body language

Just as important to the Aivio's success is the virtual environment itself. Because these interactions are hosted in a secure environment without the presence of live in-person clinicians, patients feel comfortable in asking medical questions. The phrase "there's no such thing as a stupid question" - is one we begin to hear in early childhood. The phrase is used to encourage participation that may be stunted by shyness or someone's feeling that their questions are irrelevant. This prompting is not necessary within an Aivio. Patients are put at ease by the C-Me and encouraged to interrupt with questions throughout the experience. Purposefully timed pauses encourage patients to speak up, and physician-controlled AI works behind the scenes to ensure patients receive relevant answers.

This engaging, unbiased, and reliable space becomes the trusted environment for augmenting the provider's clinical interactions and filling in the gaps before and after in-person visits.

HOW IS AN AIVIO MADE?

Mix and match components to create unique user experiences.

HIA's web-based Aivio™ Studio platform allows content creators to put together and publish an Aivio session relatively quickly. Either on their own or with the HIA team - the content creator will work on three basic building blocks:
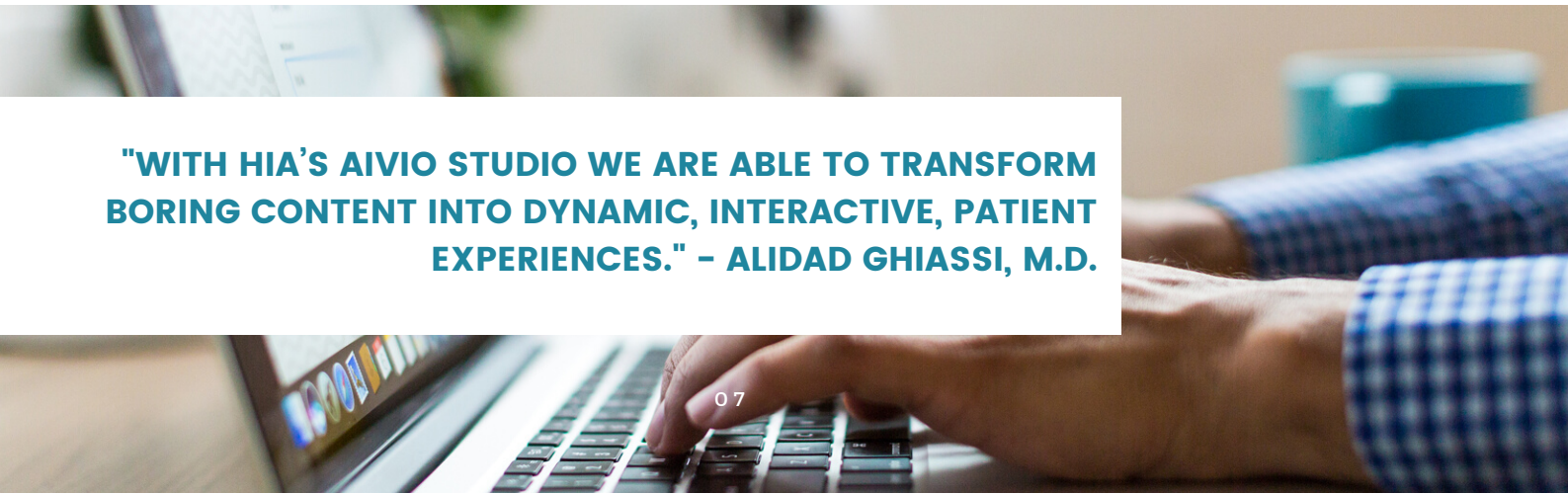
- The presentation content
- The frequently asked questions which form the backbone of HIA's physician-controlled artificial intelligence, and
- The questions they would like to ask their patients in a form-to-fill or quiz format.

Presentations can be imported directly from Google or PowerPoint and can contain all manner of rich media. Speaker notes automatically become the C-Me script. Content creators then use HIA's no-code tools to ensure text-to-speech is flawless, and the presentation flows at a natural pace with pauses and chapters that can be navigated with the touch-based table of contents.

Frequently asked questions pair physician-authored answers with some of the most frequently asked patient questions, ensuring the content creator has complete control over the authenticity and accuracy of answers provided within the Aivio.

And thanks to the ability to use questionnaires, content creators can get data back from patients that can be used to influence practice patterns, shape business decisions, craft supporting documentation, perform intake or enrollment, and much more.

Aivio Studio is not only the place where Aivios are created, it's also the runway from which Aivio's can be launched into production. With a single click unique distribution codes create patient access points. As easy as it is to share a Youtube link, you can begin sharing and dispersing your new, interactive, content.

"WITH HIA'S AIVIO STUDIO WE ARE ABLE TO TRANSFORM BORING CONTENT INTO DYNAMIC, INTERACTIVE, PATIENT EXPERIENCES." – ALIDAD GHIASSI, M.D.

WHY IS THE C-ME IMPORTANT?

C-Me™| The proprietary simulated assistant used to embody author-controlled artificial intelligence in a familiar and responsive UI.

A very significant part of human communication (studies claim that it is more than 50%) has to do with facial expressions, gestures, body language and appearance. If the goal is to make sure the content is well understood and retained as in the case of most educational material, the presence of a C-Me makes sense to present the information, react to questions, and physically point to relevant items on the content to draw your attention.
It is also more intuitive to direct your questions to an entity that is obviously listening to you and talking back to you, instead of doing that to a "voice in the background".

Your C-Me also fosters "brand continuity." For example, if a patient is educated on a condition by their physician's C-Me, that same C-Me can be sent to the patient to check up on them later – a familiar face with which the patient already established trust.

Of course, the C-Me can also be tucked away when it's not needed - or designed to be toggled on/off by the viewer leaving their voice behind for interaction, and the presentation material covering the entire screen.

The Evolution of Engagement Interfaces

Step 1
Traditional Methods
In-person, print material, video, text, email and web

Step 2
AI-Driven Tools
Chatbots and Voice search Apple's Siri and Amazon's Alexa AI-assistants

Step 3
Embodied-AI
Decades worth of scientific research culminates into a new UI comprised of:
- Voice
- Text
- AR/VR
- Rich Media
- Custom appearance
- Natural body language
- Touch-navigation
- Digital intake
- +More

DOES THE AIVIO'S AI EVER GO ROGUE?

Why physician-controlled AI is more reliable than traditional AI.

A repeating theme here is trust. Unlike tools like ChatGPT, Alexa, and Siri, the conversational AI that is built into Aivio's is deliberately limited to how the content creator programmed it. When the user asks a question, it doesn't shop for random answers from the internet; it can provide only the answers explicitly approved by the author, exactly as scripted. This allows the author to build trust with the user who knows that the material, as well as the answers, are in the author's own words.

Other types of AI designed to answer questions lacks not only direct medical expertise, but also situational awareness, empathy, and many other human characteristics - which is how real clinicians limit and constrain their conveyed responses to their patients in real life as well as personalize the information.

By it's very nature, Physician-controlled AI cannot go rogue and generate it's own new answer. It can only provide the end-user with the answer it's author prepared.

"I thought having AI that is specifically created and trained by me was out of reach, but HIA made it easy, and now I know my patients are getting MY answers."

Mark Farber, M.D.
Hospitalist

LEVERAGING THE TEACH-BACK METHOD

Replicating proven methods of patient education, virtually.

In healthcare, the teach-back model is a core concept of in-person education. Patients are taught something and then asked to explain the same thing back to the teacher in their own words. Correct answers are acknowledged and incorrect answers are explained so that the right answer is reinforced. This is proven effective, particularly when family or caregivers can be involved in the process. Good education, leveraging the teach-back method, has the power to improve care plan adherence and thus, good patient outcomes.

This same "teach, ask, reinforce," model is used in the Aivio. Interactive questionnaires ask relevant questions, score responses, and then deliver the appropriate follow-up that closes the loop. But the Aivio doesn't stop there. This learning record is important to both patients and providers. Patients demonstrate their knowledge and receive appropriate reinforcements while providers gain insights into how well their content is being understood, and where they may want to focus additional efforts.

Learning From These User Experiences

HIA makes available to publishers a wealth of information on the Aivio sessions – statistical results as well as individualized information on each Aivio as it was experienced. These include:

Statistical Information	Individualized Information
• History of Aivio sessions on each Aivio (by date - number of sessions, durations, time of day, etc.) • Lists of questions asked (by popularity, topic, etc.) • If any - test score distributions	• The identity of the viewer (only if this information is deliberately extracted during the Aivio as part of the questions asked; otherwise listed as "anonymous") • The time and duration of each Aivio session, including which parts of the session the viewer actually spent the time. • The specific questions asked that the viewer asked during the session, and the answers given • The specific answers of the viewer to the questions asked.

WHEN IS AN AIVIO THE BEST OPTION?

The short answer is: whenever you would like your educate your audience on a specific topic in your own way, and allow them to ask questions to you and vice versa. The most common application of Aivio's so far is educational sessions where it makes sense to emulate a meeting room or a classroom where a presenter presents the material with some visual aids (e.g. a projection screen), answers occasional questions, and also asks the audience occasional questions.

The advantage here, of course, is that this is a 1-on-1 meeting with all of its extra benefits: you have the full attention of the presenter, and there is no such thing as an embarrassing or repetitive question; the C-Me never runs out of time, and never gets angry.

Another benefit of an Aivio is "brand continuity" as mentioned above. In cases where brands follow up on previous engagements with the same user, the same familiar face shows up with which the user has already established credibility.

In summary -
Aivio allows content creators, authors, distributors, and the professionals who rely on that content, to reach further and more effectively through highly interactive, thoughtful, and engaging technology that rivals the in-person experience.

> *"My Aivio allows me to send out interactive patient education <u>and</u> train my new staff members on all the nuances of our treatment methods."*
>
> Amir Mostofi M.D.
> Hand Surgery
> Risser Orthopaedic Group
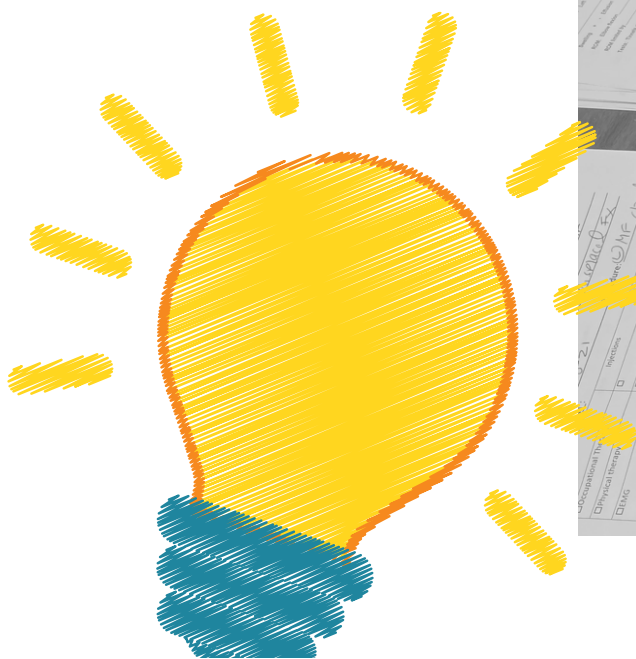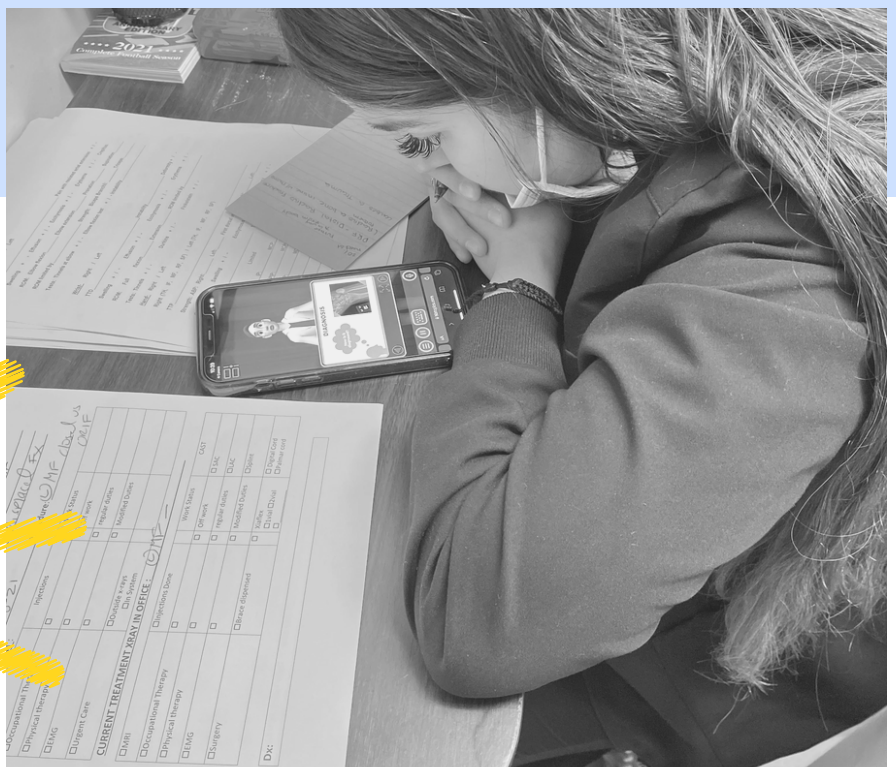
About HIA Technologies

HIA technologies is a Los Angeles based company, building the next generation of tools for communication between businesses and their constituents. Its Aivio technology is built on 20+ years of research into human-computer interactions, AI, VR/AR, and digital humans. If you're interested in what HIA and Aivio technology can do for your business, we would like to hear from you.

HIA TECHNOLOGIES, INC.

To learn more about HIA Technologies
Please visit www.Hia.Ai

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