

The Huntsville

R&D REPORT

MORE THAN JUST A PRETTY FACE

Explore Intellitar's
sticky new artificial
intelligence technology
Page 18

INNOVATION EXPLOSION

Lighting the fuse of
technology transfer
Page 22

DIALYSIS DISCOVERY

CFD Research improves life for patients
Page 12

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Let's get cloned

Virtual technology melds artificial intelligence with an approachable face

By Anna Claire Vollers

Imagine leaving behind a virtual form of yourself that can converse with your great-grandchildren on a multitude of topics about you, and all they need do is ask. Or imagine taking a class or hearing a seminar provided, not by a human professor or instructor, but by a virtual teacher with human characteristics and the ability to answer questions and converse with students or attendees.

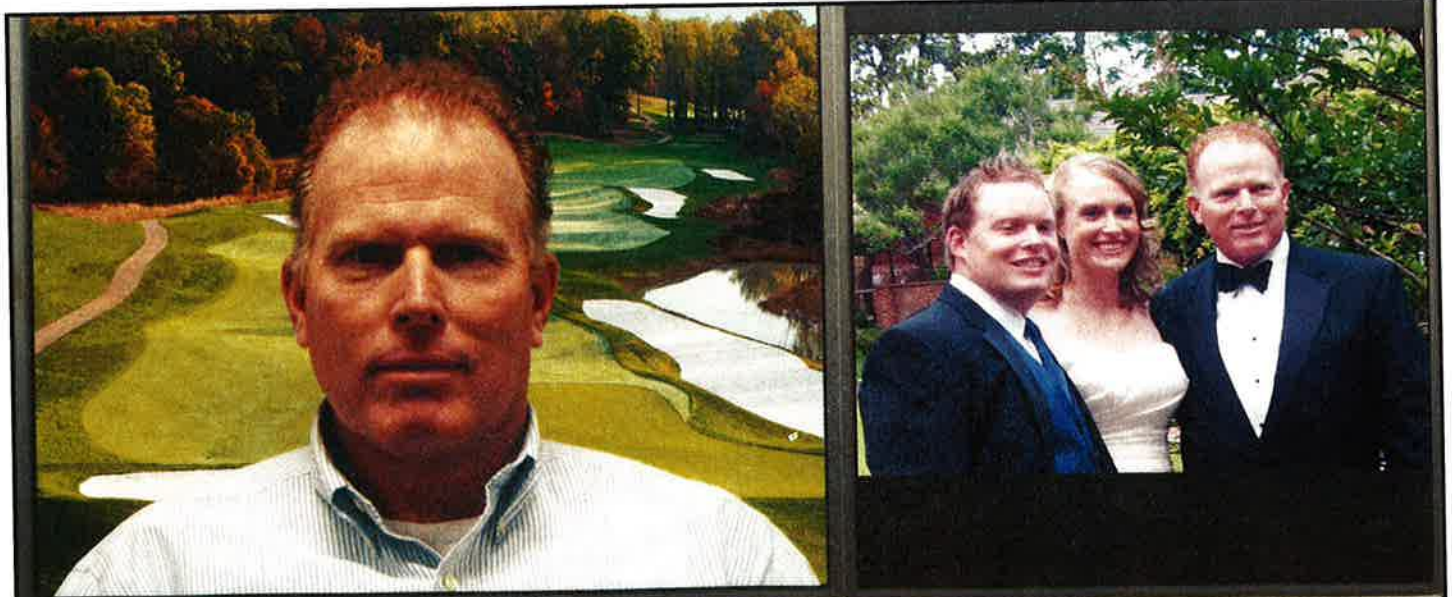
When class is over, your iPhone chirps and onscreen is the image of your virtual assistant, reminding you that you have a dinner date that evening. You've forgotten if red wine or white goes with fish, so you ask her, and she cheerfully delivers the correct answer in a conversational tone.

All this – and much, much more – is possible in the world of digital cloning, and Huntsville entrepreneurs Mike Remus and Don Davidson are at ground level of what could be an

explosive technological market over the next decade. They are the founders of Intellitar, a company creating an integration of technologies that can craft a virtual clone of a person.

“It requires a number of things,” Davidson explains. “It’s an artificially intelligent brain; an image that represents the individual; a voice/audio capability that sounds like a person; and a way to control and manage and manipulate all of that. Our focus has really been in the ability to create a conversational agent, where I could carry on what would effectively be a normal conversation with a virtual person or representative. That’s really what Intellitar is all about.”

The name Intellitar is a mash-up of “intelligent avatar.” Think about it for a moment, and you can see how this thing could go app crazy. That’s what keeps Remus and Davidson charged up. The universe of applications for these virtual clones seems infinite, and the pair say that every time they present the



User: Tell me about your daughter's wedding.

Don: My daughter's wedding took place in Williamsburg, Virginia on May 30, 2009 at the Williamsburg Winery. Here is a picture of my daughter on her wedding day, my son Ben, and me as the proud father.

Intellitar co-founder Don Davidson's Virtual Eternity demonstration screen shot.

technology, someone reels off a whole new list of potential apps about which they hadn't even thought.

HERE TO ETERNITY

Intellitar's first product is Virtual Eternity, a Web-based social network that allows users to create virtual clones of themselves. Want your great-grandkids to be able to ask you what it was like founding your own company, or how you felt when your children – their grandparents – were born? You can do that, and more.

"A year or two or four from now," says Davidson, "if I want to go back and talk to someone who has unfortunately passed away or isn't available anymore, I could actually go on (Intellitar's Web site) and have a conversation with that person about an experience they had. I could ask them a question about a particular life-changing event, ask for a picture or just a fact about their background, something I may have an interest in."

A user creating his virtual clone populates the electronic brain of the clone with anything and everything about his life that he wants to add. To begin, he might spend a few minutes taking a personality test. The results of that test determine one of three or four core brains on which the user will build his avatar. The core brain's responses are tweaked for a specific personality type – extroverted, for example – from the start, and the user personalizes the brain as he feeds it more information. His avatar will take him through a conversational dialogue to add memories through text, images, video and other media.

The user also chooses a digital still image of himself that will be animated by Virtual Eternity software, a background for that image, and he'll be able to select a digital voice from a library of available voices. This will comprise the visual and aural representation of the person.

"The one technology that we are really working on but will not be in the initial release (of Virtual Eternity) is the ability to recreate your voice," Davidson says. "It's a very complicated process. We are licensing that technology and as it matures...we'll integrate it to what we're doing."

You can go to a specialist company to create a digital version of your voice, he says, though the process right now is lengthy and expensive – well into the range of several thousand dollars.

In a demo version of Virtual Eternity, Davidson's virtual clone is an animated head-and-shoulders image of himself

with a golf course in the background to reflect one of his favorite hobbies. The intellitar appears in a large window on the left side of the screen. Below it is a smaller transcript window for typing in questions. Virtual Eternity will eventually offer a speech-to-text function, where a user can literally talk to the avatar and the software will convert the speech to text.

"That will not be an initial feature," Davidson says. "It could be, but we're expecting that we'll launch it with keyboard only. Then (several) months later,

it will be an update or a release with the next version."

To the right of the main avatar window is a support window for images, digital video and other media. For example, if you'd populated your avatar's brain with information and media about your childhood growing up on a farm, and your grandchildren asked your avatar about your farm experiences, photos of you with your family in a field could pop up in the support window as your avatar described what your childhood was like. You can tag photos and other

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“We want to capture the personality,” says Intellitar co-founder Mike Remus. “Our ultimate goal is that it’s got to look like you, it’s got to sound like you, it’s going to have your personality and answer questions in the way you would have, if you were living.”

media – videos, Power Point presentations and even spreadsheets – with certain keywords so that they’ll pop up in the support window when a conversation veers in that direction.

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The avatars are also dynamic. If you’re talking to your grandfather’s avatar and you mention your favorite movie is “The Terminator,” his avatar will remember that and may bring it up in a future conversation. During a demo, Davidson asked his avatar to give him the day’s news, and it automatically opened a new online window to the CNN homepage. He told it he preferred CNBC, and the new window changed to CNBC’s homepage.

“The interesting thing about the technology is that we have the ability to point the brain to an unlimited number of alternate knowledge bases,” says Davidson. “It’s got its own brain, but I can point to a whole range of other information bases.”

VIRTUAL EXPERT

Davidson and Remus are already working on interactive advertising platforms. One of their prospective clients is a media company with a large amount of print content generated in the past few decades.

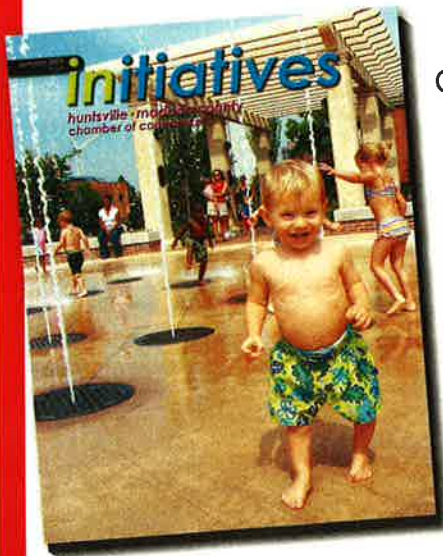
“I populate (the avatar) with all of the content that’s been generated over 20 or 30 years and now the content is available as an expert,” says Davidson. “All the content created about home improvement projects or whatever it may be is available to anyone logging in. I use the information in the database, but I do it in a totally interactive way.

“The key to this, though, is now I find an advertiser who might be willing to sponsor something like this so that their brand is the example shown by the avatar.”

In one demo version, Remus and Davidson have created a handyman avatar. Davidson asks it how to lay tile. The handyman gives a few pointers on how long the process takes, and brings up a video in the support window from Home Depot – the example sponsor – on how to lay tile. The handyman also opens up the specific Home Depot Web page where its tile and stone products are available for purchase.

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"It's giving me all the information I need to do this particular project," Davidson explains, "without me having to Google this and that, or read through to the ninth page of Google. As a consumer, this is much more interesting to me because I get the answer to my question and I don't have to spend a great deal of time."

Another business application Intellitar is pursuing is a customer support platform. If a customer has a question about a company's product, rather than reading through a long list of Frequently Asked Questions or being put on hold with a phone operator, the customer can go to the Web site and talk to an intelligent, digital representative to get the question answered. One digital agent could handle many instances and inquiries. Plus, says Davidson, if he were creating the avatar he could populate the brain with enough basic information to handle most inquiries, but also point it to any number of long, detailed technical documents and manuals.

"Or it could be pointed to an internal, secure database that only it has access to," Davidson explains. "I could point it to anything I want."

Remus and Davidson also have a Ben Franklin avatar to demonstrate the technology's use in a museum application. Avatar Ben is dynamic and can answer questions about his life and history because his brain is populated with the real Ben Franklin's biography.

"When I'm going to a museum," says Davidson, "maybe I don't want to listen to a 10- or 20-minute audio tape about Ben Franklin. I want to find out one or two things. Why did you go to France? Did you get electrocuted when you flew your kite? The core technology here is the same, but it's a different way to use the technology."

ABLE ASSISTANTS

Intellitar is also developing its technology for personal applications.

"We've got a concept we're working on called e-Mom," says Remus, "which will be kind of a personal assistant to a mom. When she gets up in the morning, the avatar is already up on the computer."

For example, the mom may have already told her avatar that she likes a certain kind of shoe, or likes shopping at certain stores.

"Then the mom avatar would (say), 'Overnight, Target's got a new sale on those shoes you've been interested in,'" says Remus. "Grab your credit card, they're 30 percent off."

The avatar could remind the mom of an upcoming event at her child's school, find a piece of information online, or help her plan the week's grocery list. Intellitar plans to eventually have the technology imbedded on multiple platforms, such as mobile phones or LCD photo frames.

For the kids, the technology has entertainment potential. If it was imbedded on, say, an LCD photo frame, says Remus, "if we license characters from Disney or wherever, (kids) will be able to get up in the morning and actually talk with Cinderella, or Mickey Mouse, and have a conversation. Harry Potter could say, 'Before you leave, be sure to make your bed, get your lunch money and I'll talk to you when you get home.'"

Virtual Eternity will be the first Intellitar product to launch, likely in early 2010. It's the culmination of several years of work, though the company was incorporated less than two years ago. Remus, founder and chief technical officer, has a background in software engineering and the defense/aerospace contracting business. He's been in Huntsville 20

years. Davidson, founder and CEO, has been in Huntsville 15 years. He began his career at IBM managing a large software organization and is now a serial entrepreneur. Intellitar currently has a handful of employees.


As the R&D continues, more products will roll out in a variety of applications. The company tests all of its new features on Arwen, its development platform. The futuristic-looking female avatar has the speech-to-text function and is capable of carrying on witty banter, joking about her lack of hair and explaining her cognitive processes.

"As we develop more and more capabilities," says Remus, "we test it out on her first."

The genius of Intellitar is its integration of a number of cutting edge technologies – from animation to artificial intelligence – in a new, dynamic way.

"Taking and combining all of (these elements) so they all work interactively and dynamically based on inquiries, based on input or just based on regular conversation, that's the key," says Davidson. "It's that full integration capability of truly recreating a person." ■

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