Start-up meets Wakanda? Disney innovation hub aims to advance technology for filmmakers

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Inside Walt Disney Studios' original animation building, where artists once drew "Dumbo" and "Cinderella" by hand, a 15-person team of innovators is trying to create a moviemaking Tomorrowland.

The Burbank studio's 4-month-old, 3,500-square-foot innovation hub is a short walk from Walt Disney's old office and is furnished with Kem Weber chairs reminiscent of a bygone era. But instead of pencils and light tables, visitors find experimental virtual reality editing equipment, location-scouting drones and digital projections that wrap around walls.

The purpose of the space, dubbed StudioLab, is to use Silicon Valley-style experimentation to help studio executives and filmmakers stay ahead of rapid advances in technology by developing and showcasing new ideas for making and marketing movies.

Some of its ideas have already spilled into the real world. Initiatives have included promotional efforts for the big-budget animated film "Ralph Breaks the Internet," which opened this week; and helping filmmakers shoot scenes for the upcoming superhero movie "Captain Marvel."

"A start-up-meets-Wakanda vibe was pretty much what we were going for," said Ben Havey, vice president of Disney's Technology Innovation Group, during a tour. "To be able to sit with those teams of storytellers, and basically give them superpowers through technology, is really our

mission here."

Studio technology centers are hardly a new idea. 20th Century Fox, for example, founded its own Innovation Lab in 2014, and Sony Pictures earlier this year announced its Innovation Studios project in Culver City. Paramount Pictures last year hired entertainment "futurist" Ted Schilowitz from Fox.

Disney executives said their hub can succeed by combining the brainpower of its various studios, including Marvel, Pixar and Lucasfilm. The company has a storied history of technological invention through Disney Imagineering, its famed park design and research arm. Disney also develops long-term technological advances in entertainment through its Disney Research division.

The new lab is focused on helping filmmakers such as "Avengers: Infinity War" directors Joe and Anthony Russo address the nuts-and-bolts technological challenges that arise daily. Those difficulties include analyzing overseas film locations, finding faster ways to render animation and protecting sensitive data while working on scripts and effects.

"We needed to push our own industry forward," said Jamie Voris, Walt Disney Studios' chief technology officer. "By pulling together, we can solve these big and complex problems."

Executives declined to say how much money they are putting into the lab, which is funded by Disney and its partners: tech companies Hewlett Packard Enterprise Co. and Cisco Systems Inc. and consulting firm Accenture Interactive. But the unit appears to be moving aggressively, greenlighting about 25 projects to tackle in the next year.

"We don't want this to be a one-and-done project," said Dave Ward,

Cisco's CTO of engineering and chief architect. "We want to make it easy for the artists and creatives and allow them to use this technology seamlessly in their productions."

The debut of "Ralph Breaks the Internet," a sequel to the 2012 computer-animated hit "Wreck-It Ralph," was an ideal chance for the studio to test new uses for tech, including projection mapping, virtual reality and mobile gaming, executives said. In the film, the arcade game characters Wreck-It Ralph and Vanellope von Schweetz take a trip to cyberspace via their arcade's new Wi-Fi connection.

"'Ralph' is such a great property, and we wanted to put it in multiple dimensions," Havey said.

For screenings of "Ralph Breaks the Internet" at the El Capitan Theatre in Hollywood, the studio created a display of colorful, moving light images, representing internet traffic, to project onto the auditorium's intricate interior. StudioLab developed software to make the projection mapping process easier and more efficient for Disney employees. Using a device resembling a surveyor's pole, it took just an afternoon to scan the El Capitan, a task that once might have taken months to complete, Havey said.

Another of StudioLab's projects was to help quickly create a free mobile game called "Pancake Milkshake" based on a popular clip from the film's teaser trailer in which Ralph feeds copious stacks of pancakes to a bunny and milkshakes to a kitty. The game lets players easily share their scores with friends through their messaging apps.

StudioLab also shepherds Disney's relationship with virtual reality company the Void, which recently unveiled its "Ralph Breaks VR" experience, created by Industrial Light & Magic's ILMxLAB. The game lets four players, equipped with headsets and vests, travel the internet

with Ralph and Vanellope.

StudioLab oversees the slate of Disney's film tie-ins for the Void, which this week launched the 11-minute virtual experience at seven locations in the U.S. and Canada, including the Glendale Galleria and Downtown Disney. The Void charges $29.95 to $36.95 a ticket. The Void previously featured the popular "Star Wars: Secrets of the Empire" virtual reality project, and is expected to create a Marvel offering for next year.

"They saw (the Void), and rightly so, as a really innovative way to tell stories," said Vicki Dobbs Beck, executive in charge of ILMxLAB. "They're shepherding innovation on behalf of the studio, and we're bringing that to life."

"Ralph Breaks the Internet" is expected to collect more than $80 million in ticket sales Wednesday through Sunday in the U.S. and Canada, according to early studio estimates. The film cost at least $175 million to produce.

StudioLab also wants to improve the filmmaking process itself. It fashioned software called Scout-in-a-Box, an iPad app that uses drones to view and digitally re-create filming locations to help filmmakers assess feasibility, plan logistics and set up shots.

For "Captain Marvel," the studio used a drone to take images of an abandoned mall in the San Fernando Valley. Not only did the studio approve the location, it also used the data from the app to digitally re-create it as a Blockbuster Video store for the film itself. Danielle Costa, vice president of visual effects for Marvel Studios, said she plans to use Scout-in-a-Box for future films.

"It definitely makes for a much more well-oiled machine when you're

shooting," Costa said. "You can plan an entire move in advance and hand that template to a rigging crew, and it will be completely accurate."

StudioLab recently used videoconferencing technology to conduct a remote set visit to "Stargirl," a movie planned for its Disney+ streaming service. Studio Chairman Alan Horn and President Alan Bergman were able to see and interact with the actors and crew on the New Mexico set and get a detailed sense of the action on the soundstage.

Other ideas are in the works. One room in the lab showcases how a future production studio could work, by letting visitors use virtual reality controllers to change camera angles on "Tron" images. Instead of typical lightweight gaming controllers, the lab uses wheel cranks and dolly sliders that resemble the heavy equipment used on real sets.

Disney also wants the lab to address major long-term challenges. For example, the process of rendering computer animation remains expensive and time-intensive, and the lab is working on ways to make it more efficient. Improving data security during the filmmaking process is another priority.

Although some of the ideas remain in early stages, Havey is optimistic that more of the lab's experiments will find practical uses.

"I'm happy when innovations get out of the lab and into the real world," he said. "That's what I live for."

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