

DAIMLER: WOLFGANG BERNHARD, HEAD OF DAIMLER TRUCKS & BUSES, ON THE EXPANSIONIST STRATEGY OF THE LARGEST CV MAKER

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GOING VIRTUAL

PMV Middle East catches up with Raj Raheja, CEO of Heartwood, to discuss the growing realm of 3D interactive software for heavy equipment training

Hearthwood, a US-based company that develops 3D interactive training technologies is currently making some waves in the market — recently being contracted by Komatsu America, in addition to existing deals with prominent equipment producers like the Oshkosh Corporation.

Leveraging the latest interactive and gaming technologies, a primary aim of the company is to develop software that gives “hands-on” training to operation and maintenance personnel. By providing realistic simulations of inspection and maintenance processes, the software theoretically accelerates learning and can reduce training costs by decreasing the need for costly live training.

Q&A WITH RAJ RAHEJA When did you set up Heartwood, and how did it all begin?

Heartwood was founded in 2003 by myself and Neil Wadhawan. My background is in architecture, which acquainted me with 3D modelling and visualisation software. Heartwood was initially an animation company, as simulation was still a nascent technology and too intensive for practical use. However, in 2007 we re-tooled and re-invented Heartwood to focus on ‘3D interactive training’.

Which countries/markets are you providing the software to?

North America was where we were founded and thus, started out as being the foundation for our customer base — but in the last three

years, we have started engaging with South America, Europe and most recently with the UAE.

Today, we support a strong base of customers and partners including big names like Apple, Komatsu, Pratt & Whitney, Audi, Sikorsky, Oshkosh and Raytheon.

Is virtual training honestly suitable to replace live training?

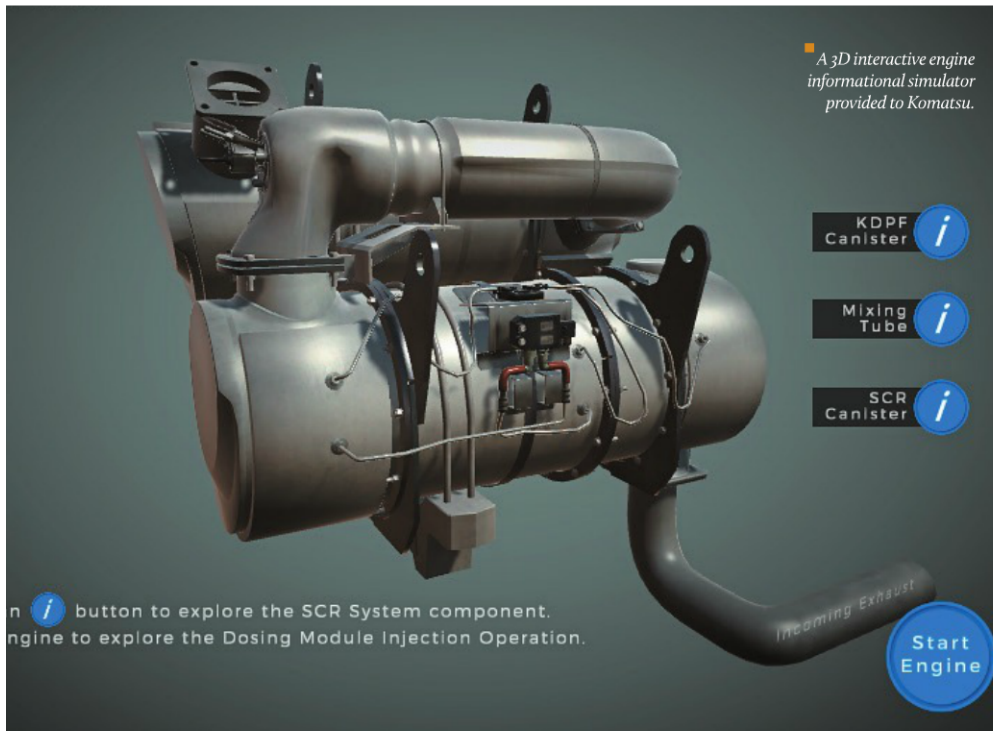
3D interactive virtual training is changing existing norms:

First, while live training on equipment is critical, it is also not a good starting point. By the time a student walks into a facility with dedicated training equipment, they need to be pre-familiarised with the product in order to be more productive at this session. Our customers understand this



“3D interactive training allows [users] to practice virtually and continue to ‘learn-by-doing’ — the most effective form of retention.”

Raj Raheja, Heartwood



FOUR-SPOKED INTERACTION

Heartwood's operations and maintenance courses fall into four categories:

1. Familiarisation/ System overview

Identifying components, part; displaying data.

2. Procedural

Guiding students through a procedure step by step, e.g. assembly & dis-assembly, remove & replace.

3. Troubleshooting

Diagnosing and isolating the problem, leading to remedial action.

4. Informational

Explaining concepts (e.g. how a jet engine or diesel engine works).

and have their trainees go through familiarisation and procedural courses so that they can use crucial instructor interfacing time for genuine interaction and learning.

Secondly, once students finish courses they go back to their routines and lose retention of that knowledge over time. While most refresher courses are cost prohibitive, 3D interactive training allows them to practice virtually and continue to 'learn-by-doing' — the most effective form of retention.

Is there a proven case study of the cost reductions involved?

The retention uptick has been quoted back to us by customers as being between 50% and 70%, and the time to teach the same course went down by 40% in some cases.

We produced a training course for Komatsu for a diesel engine to replace what has been a 15-minute presentation. Impressed, Komatsu's training director commented that the amount of information we built into the course would al-

low someone who knows nothing about it to walk through the app and understand it in 30 seconds.

Even if we quadruple that, we are looking at a 70% reduction in learning and training time.

For Oshkosh, the company found that annual refresher trainings were very costly with their large user base. However, virtual stations can accommodate 20-30 students in a class, allowing them to operate a truck and experience the interface simultaneously."

Does your 3D virtual software work with wearable gear?

Heartwood's vision is to be platform agnostic, so we advocate for web and mobile platforms that are accessible anytime and anywhere, but we are also 'plug and play' for most external hardware, whether it is virtual reality headsets like Oculus, augmented reality like Microsoft HoloLens or wearables like Myo gesture band, Leap motion. Rather than plan for any one gear, we are instead extensible.



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