



Digitally Transforming The Design Review Process



THEOREM-XR

Who are NCR?

NCR are a global leader in the manufacturing of enterprise technology for restaurants, retailers and banks. They are a global POS (Point Of Sales) hardware and software provider for retail and hospitality, and the number one provider of multi-vendor ATM (Automatic Teller Machine) equipment. Headquartered in Atlanta, USA, NCR has over 34,000 employees in 160 countries. Their UK office in Dundee, Scotland, is where Theorem-XR is hosted.

NCR's Design Process Problem

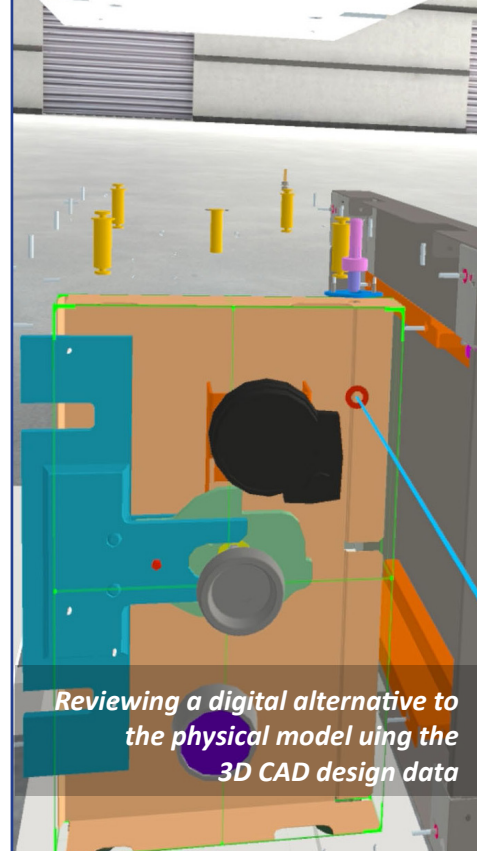
NCR came to Theorem with a problem of how to improve their design process, where they use PTC's Creo and Windchill products, to enable them to ramp up production in their plants. One of the roadblocks for them had always been that manufacturing and services didn't get involved during CAD design, due to lack of technical expertise.

The NCR Design Process Pre-THEOREM-XR

NCR wanted to find a way to get the manufacturing and service teams to give their feedback on designs prior to committing to buying prototype parts. Additionally, the head office in the USA asked them to show how they were trying to innovate in their design process.

VR was seen as a tool that they could utilise that would make CAD data a lot more accessible to non-design engineers.

Their process prior to using Theorem XR was to physically manufacture multiple versions of the product to conduct their design review, before sending the final design to production. NCR decided to replace the physical model of the first iteration in the design review process, Model A, with a digital alternative.



Reviewing a digital alternative to the physical model using the 3D CAD design data

Kenny Cruickshanks, Technical Manager at NCR explained ***"We chose VR as it ticked all the boxes for what we needed; It is relatively cheap, easy to install hardware, a user interface that didn't require great technical knowledge to operate, excellent visualisation of the products we were designing, as well as a wow factor when visitors come in."***

THEY SPECIFICALLY WANTED TO USE THE HTC VIVE

"Theorem already had a track record in this area and what they presented was very close to what we were looking for...it became clear that Theorem would be a very good fit for what we were looking to do."



Using Manikins to represent workers and how they will interact with the area

Why NCR Chose THEOREM-XR

NCR had first been made aware of Theorem-XR when they saw a video presentation online from a trade show where Theorem detailed what they were doing in the VR space.

"We had previously partnered with another firm but it became clear that they had never done this type of thing before and were looking for 'guinea pigs' " Kenny stated, "Theorem already had a track record in this area and what they presented was very close to what we were looking for. Once we set up our initial call it became clear that Theorem would be a very good fit for what we were looking to do."

Utilising THEOREM-XR's Design Review Experience

Enabled NCR to carry out digital design reviews

In XR, NCR are able to view and interrogate their products which have been designed using CAD without having to produce a physical model.

Using Theorem's collaboration license allows colleagues located all over the world to take part in the same design review session from their different locations. So, although Theorem-XR is installed at the site in Scotland, designers at NCR sites in the US, Philippines, Hungary and India are able to join their colleagues remotely for the design reviews of the digital prototype.

Theorem Consultants went on site for a day for the installation and the software was implemented straight away, which enabled NCR to quickly start to achieve the cost and process benefits, in-line with their specified timescales.

As the XR suite has the mechanism to integrate to NCR's existing IT systems, they are able to put additional, non-CAD data and metadata into their experiences in order to give the user a richer augmented view of the CAD data that they are looking at.

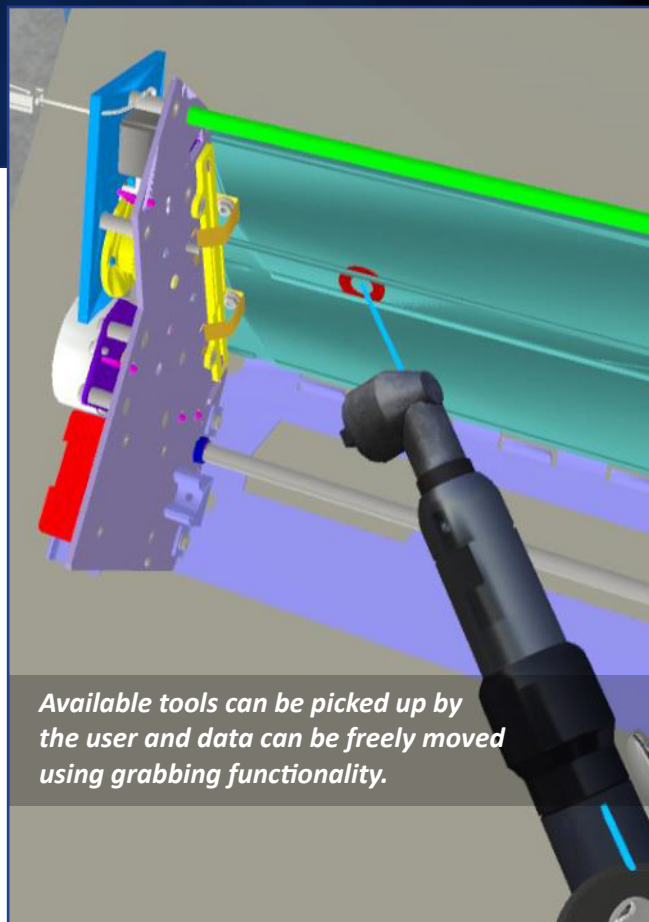
THE PRIMARY BENEFIT TO NCR THROUGH USING THEOREM-XR HAS BEEN COST SAVINGS

*By taking away the costs of having to build a physical mock-up for the first design review cycle, and the materials and people time associated with this, NCR are expecting to have saved up to **£390,000 in their first year**. This will have given them a ROI of under 2 months.*

NCR's Non-Monetary Benefits

Additional benefits identified from using THEOREM-XR include

- Process Improvements (time saving in the building and test stages)
- Reduction in errors
- Greener; no scrappage from the physical production of Model A and reduction in travel costs



Available tools can be picked up by the user and data can be freely moved using grabbing functionality.

Further Collaboration for NCR

With the THEOREM-XR suite being device neutral, therefore allowing a range of devices to be used for the same experiences, and even at the same time during a collaboration session, it is able to accommodate NCR's future requirements as they develop their use of Augmented, Mixed and Virtual Reality technologies. It will future-proof NCR against being locked into specific devices in a dynamic technology marketplace.



THE OVERALL PROCESS

From proof of concept to working with the devices in the different experiences within their everyday processes, NCR summarise their experience of using THEOREM-XR

"Theorem have been a good partner to work with. Their communication is good and they generally meet any deadline that is set. I would definitely recommend Theorem as a partner."



Talk to our team today about your XR requirements and learn how we can help you start your journey.

UK: sales@theorem.com

US: sales-usa@theorem.com

Web: www.theorem.com