3shape
Case Study

Production is 3-times faster with digital solutions

Nottingham University Hospitals NHS
NHS Trust

ABOUT
Nottingham Audiology Services

Nottingham Audiology Services is a part of Nottingham University Hospitals NHS Trust (NUH) based in Nottingham, UK. The Trust providesservices to over 5,5-6 million people and is one of the largest employers in the region.

Nottingham Audiology Services sought ways to reduce the time and resources for earmould production without compromising their high quality standards.

By employing a 3Shape scanner, 3Shape EarMouldDesigner modeling software, and the EnvisionTEC 3D printer, NUH immediately moved from traditional manual earmould production methods and into the digital era.

www.nuh.nhs.uk

Key selection criteria

- Cost reduction capability
- High accuracy
- Reduces occurrences of errors
- Long-term/sustainable solution
- Easy to use
- Low learning curve
- Become more competitive as service providers
- Increases turn-around time and productivity

By substituting their manual methods with digital scanning and modeling solutions from 3Shape together with the EnvisionTEC 3D printer, Nottingham Audiology Services have improved quality and efficiency in their Earmould laboratory.

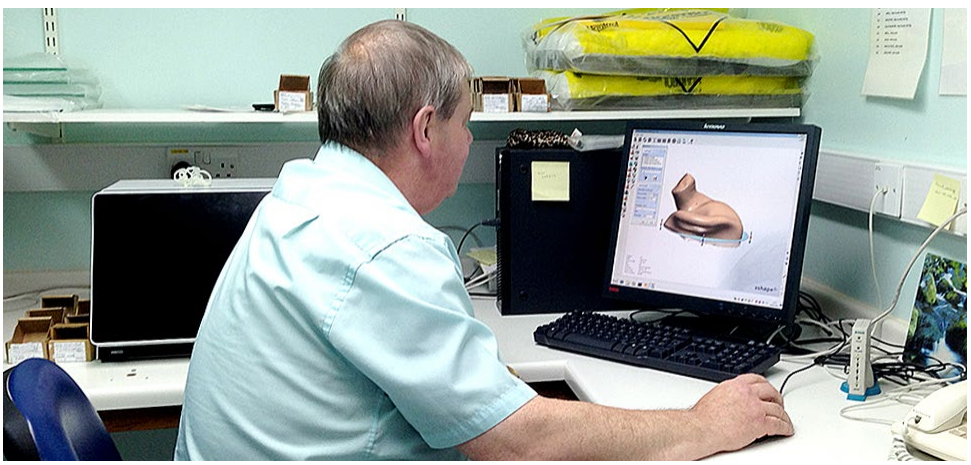
The Challenge

Nottingham University Hospitals Trust was looking for ways to improve quality in their in-house earmoud laboratory and keep up with modern technology whilst meeting the ever increasing challenge of reducing costs. Following retirement of one of the members of the production team the Audiology department took the opportunity to undertake a service redesign and bring the lab into the 21st Century. With the advent of new scanning and 3D printing technology the department recognised that the general quality and productivity of the laboratory using traditional manual methods, were not comparable to those provided by digital solutions. Manual production of an earmould required approximately 15 minutes by a highly skilled and experienced technician and despite this the conventional manufacturing process was prone to flaws and errors. In identifying a solution it was recognised the lab's staff were not computer aided design experts and hence were seeking an intuitive system that would be easy to learn and adapt.

The Solution

The 3Shape H600 scanner fulfilled NUH demands for excellent quality results. The scanner provides high levels of accuracy, ensuring that every detail in ear impressions is captured. NUH chose 3Shape's EarMouldDesigner as their digital modeling solution. The software mimicked their traditional manual workflow and allowed them to produce digital models efficiently, ready for manufacturing from the scanned 3D ear impressions. For manufacturing, NUH selected the EnvisionTEC 3D printer. The printer easily integrated with the 3Shape software and allowed NUH to quickly produce quality earmoulds.

It took only 6 weeks for the lab to become fully operational with their new digital workflows and initial staff-training took just one day.



ROI at a glance

- Cut production time by factor 3
- Increased daily production capacity
- Costs cut in half over 3-year projection
- Increased quality ensures customer satisfaction and loyalty
- Faster production of remakes
- Improved fit reduces remake orders

About 3Shape A/S

3Shape creates 3D scanning and CAD/CAM software solutions. Award-winning technology that enables dental and hearing professionals to treat more people, more effectively and with improved care. A privately-owned company, 3Shape has over 780 employees with a product-development force of more than 275 professionals. Offices and service centers located in the Americas, Asia and Europe serve customers in more than 100 countries. Company headquarters are in Copenhagen, Denmark.

www.3shape.com

The Results

With the accuracy of the 3Shape 3D scanner, NUH could smoothly create true-to-customer digital ear impressions. The 3Shape EarMouldDesigner software facilitated easy and intuitive modeling workflows allowing staff to rapidly become fully productive.

Before they had their digital solution, Nottingham Audiology Services produced on average less than 100 moulds per week. Now, only six weeks after acquiring the digital system, NUH increased their production-per-week volume to around 150 moulds and the production rate continues to grow as NUH staff become more experienced with the new equipment.

”On an average, it now takes 4-5 minutes to model a single mould using the 3Shape software,” says Richard Nicholson, Clinical Lead - Adult Audiologist at NUH. “This is a third of the time it took us using our previous manual methods.”

> “Our customers are impressed when we tell them how we produce our moulds.”
>
> *Richard Nicholson,*
> *Clinical Lead-Audiologist*

> “This is a great system with high quality intuitive software that most importantly is easy to operate.”
>
> *William Brassington,*
> *NUH Consultant Audiologist*

Specifications at a glance

H600 scanner, ScanEar SW version 2.11.2.1
EarMouldDesigner™ Standalone, version 2.11.2.3
3Shape CAMbridge™ automatic manufacturing software
EnvisionTEC Perfactory® DDSP