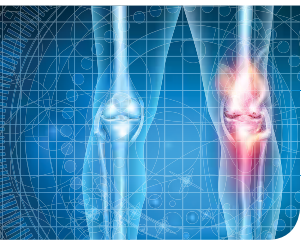
CASE STUDY

Innovative Design & End-to-End Capabilities Help Reduce Complexity & Boost Efficiency for Orthopedic Instrument System

CUSTOMER SITUATION



A large, market-leading orthopedics company turned to Viant for help in developing instruments for a high-profile, integrated joint replacement system. The goal for the instruments was to improve surgeon experience.

The customer chose to work with Viant because it offered end-to-end capabilities, from strong design and development experience to large-scale manufacturing. Viant also brought expertise in hybrid materials and the ability to lead across multiple suppliers on the customer side.

VIANT SOLUTION

representative image

A dedicated Viant team worked with the customer from concept through launch, coordinating with numerous global teams on the customer side. The team applied a Lean Product Development process to identify opportunities for improvement and understand and translate clinical needs into product characteristics that drive device performance.

Viant completed DFM on the full product line and handled manufacturing for the most complex flagship devices. The team also helped the customer define its approach to system-level measurement and functional testing, which was used throughout the project, including SKUs that Viant did not manufacture.

In an industry first, the Viant team leveraged its materials expertise to develop an innovative hybrid metal and polymer design that improved surgeon experience. The new instruments were lighter and easier to use. Fewer instruments in the kit also reduced complexity, saved time, and saved space on hospital shelves.

Key Viant contributions included:

- Reducing the number of devices in each kit: For example, one of the sizing devices combined 2 or 3 separate devices (and accessories) into one comprehensive device.
- Developing a patented 2-shot marking method that addressed a key surgeon complaint by making product markings easier to read and impervious to the cleaning and sterilizing procedures that previous products couldn't withstand.
- Devising novel solutions that reduced cost: For the tibial and femoral impactor instruments, for example, the Viant team molded an inner skeleton that was then overmolded with the same material to create a thick, solid part. This method was one-fourth the cost of fabricating the instruments by machining.

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Performance requirements at the system level drove some extremely tight tolerances at the component level, making some components difficult to validate. The team developed a system-level testing and measurement process that was integral to launching on time and on budget, saving a full year in development time. For example, the team designed and built a unique testing and production fixture that allowed a device to be validated as an assembly on 36 clinical settings.

RESULTS

This was the company's single largest joint arthroplasty launch. The instrument system Viant was responsible for was launched on time and on budget, including:

- 6 product lines
- 25 SKUs for the primary launch
- More than 100 components
- More than 300 critical-to-quality dimensions

In another first, the instruments themselves became a selling point with the surgeons, rather than taking a secondary role. The instruments were a big differentiator within the OR and drove sales along with the implants.

Novel design and manufacturing approaches reduced the number of devices and components needed per case, which reduced complexity and improved the experience for both surgeons and hospitals. Working with Viant saved more than a year in development time, as well as saving hundreds of thousands of dollars.

REDUCED
COMPLEXITY

IMPROVED
SURGEON EXPERIENCE

SAVED
> 1 YEAR
OF DEVELOPMENT TIME

SAVED
HUNDREDS OF
THOUSANDS OF DOLLARS

Results:

- Reduced complexity for greater efficiency
- Improved surgeon experience
- About one-third fewer cases needed per procedure
- Saved >1 year in development time
- Saved hundreds of thousands of dollars

This instrument system won a Medical Design Excellence Award. Viant is working with the customer on more than 70 new surgical instruments for revision surgery, as well as other projects.

VIANT™
WE'RE IN IT FOR LIFE.