

sagentia



Defined by science
Inspired by technology
Delivering innovation

Solving complex
challenges in
medical R&D

a **science group** company

Multi-disciplinary,
cross sector teams
solve the most
intractable problems

Advisory & leading-edge
product development
services focused on science
& technology



150 scientists,
engineers,
mathematicians
& market experts

Accreditation
to ISO 13485

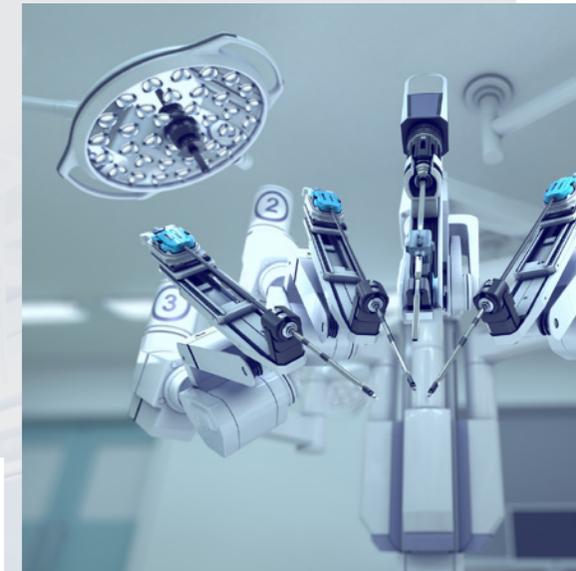


Solving complex challenges in medical R&D

At Sagentia we work across the entire patient care continuum, developing innovative surgical, diagnostic, patient care and digital health devices and systems.

With long-standing relationships with clinicians, hospitals and academia, we're curious and creative in our approach but we also understand the stringent needs of this highly regulated environment.

100,000 sq ft of
dedicated R&D
laboratories and
facilities



Client-friendly
approach to IP

7 global offices in
the US and Europe



Sagentia in Surgical ↵

Sagentia works with surgical device companies to develop technically-challenging and innovative solutions. We help our clients develop minimally-invasive, smart procedures which enhance surgical safety and improve patient outcomes. Our solutions provide innovative cost savings in the operating room and reduce the risk of complication.



↵ surgical robotics ↵ smart surgery ↵ surgical lighting ↵ visualization & image fusion ↵ intelligent devices ↵ energy-based therapies ↵

Surgical 'cut and seal' innovation

Challenge ↵

Our client believed there was a market opportunity to provide surgeons with a novel surgical 'cut and seal' technology platform

Approach ↵

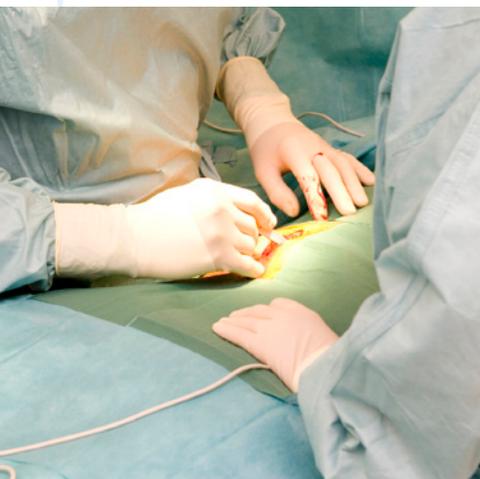
We combined primary research with technical development:

- 20 ethnographic observations and interviews across 4 main surgical market procedures
- Opportunity analysis based on stakeholder needs, clinical benefit and procedural constraints for each of the markets
- Development of 5 innovative concepts from creative brainstorming workshops
- Design and technical feasibility testing on the selected lead concepts

Benefit ↵

- Our voice of customer research revealed an unexpected trade-off that shifted the emphasis of subsequent design work
- With this and other key insights, we were able to generate a range of novel, relevant concepts

We delivered to our client a comprehensive package of work that helped them define future strategy for this important part of their portfolio



Sagentia in Patient Care ↵

Sagentia helps develop transformational medical technology to help shape a new age of patient care. We work with companies to develop products that treat acute and chronic conditions. Our work revolves around the application of science and technology to help address fundamental health issues.



↵ advanced drug delivery ↵ patient monitoring ↵ regenerative medicine ↵ dental ↵ energy-based therapies ↵ neuromodulation ↵

Augmented reality app

Challenge ↵

Hill-Rom were interested in using augmented reality to view spatial pressure and moisture data from mattress sensors

They wanted to demonstrate how visualization could be used to make sense of complex data sets in a clinical environment

Approach ↵

- Sagentia developed an augmented reality application to run on an iPad
- By presenting the information in an app, nurses can quickly and easily check patients for signs of pressure sores
- We used image processing to superimpose 2D contour map data onto a 3D image of a patient
- Augmented reality helped us to maintain the link between the 2D data and the patient regardless of the viewing perspective

Benefit ↵

Hill-Rom is now trialling the app with healthcare professionals



Sagentia in Diagnostics ↗

Sagentia works with its clients to develop highly sensitive, high-throughput diagnostic systems, instruments and consumables from intuitive point of care devices through to clinical laboratory systems. Our expertise covers molecular diagnostics, hematology, immunochemistry, genomics and clinical chemistry.



- ↗ image processing ↗ module development ↗ thermal & fluid flow modeling
- ↗ assay formulation ↗ sequencing technologies ↗ companion diagnostics ↗

Real-time PCR instrument

Challenge ↗

Our client wanted a clinical instrument and consumable that would enable their prototype technology to be commercially exploited in the growing Point of Care market

Approach ↗

Working closely with the client Sagentia undertook:

- Extensive technical development of core IP components including a novel optics module
- Extensive effort to develop agreed specifications with up to 6 processing modules able to be run in parallel
- Concept generation of system architectures taking into account both assay and algorithm requirements
- Successful integration of industrial and technical design requirements

Benefit ↗

True "Sample In Results Out" capability using on-board sample preparation

- Real-time PCR instrument built around a novel system architecture
- Universally accepted industrial design using DFMA principles and minimal part count for a robust design and simple production
- Expandable system to meet all customers' needs
- Competitive costs for the system consumable



Sagentia in Digital Health ↗

Digital health involves connected health care and moving patient care closer to the home. Our extensive client work includes IEC 62304-compliant medical software, multi-device medical systems, smart sensors, algorithms and low-power connectivity. These core skills make us the perfect partner for developing novel health solutions.



- ↗ digital health ↗ smart sensors ↗ algorithms ↗ cloud integration
- ↗ wireless connectivity ↗

Adherence & drug use

Challenge ↗

Lack of adherence and non-compliance to the prescribed regimen is a healthcare problem. Our client wanted to improve adherence to inhaled drug therapies



Approach ↗

- An iPhone App communicates with the inhaler via a Bluetooth® Low Energy connection
- A proprietary algorithm removes unwanted background noise from the acoustic signal and extracts key information about the use of the device
- The iPhone user interface has been designed to ensure that the user is presented with clear, actionable information on the level of their compliance
- A secure web portal enables the patient and the clinician to review the data during a consultation

Benefit ↗

- VeriHaler uses wireless acoustic monitoring to provide valuable feedback to the user, clinician or healthcare provider
- It promotes correct inhaler usage and rapidly detects any deterioration in a patient's condition
- It can be retrofitted to an existing inhaler platform and works with both metered dose (pMDI) and dry powder (DPI) inhalers
- A secure web portal enables the patient and the clinician to review the data during a consultation

Sagentia in Cell Therapy Automation ↗

Cell and gene therapies have huge potential for the treatment of a range of human diseases. If their benefits are to be fully realized, however, their production must scale for commercial manufacture. At the heart of this challenge is the need to design automated, repeatable and compliant processes for generating therapeutic quantities of cells.

- ↗ production scale-up ↗ process control ↗ integration ↗ bioreactors
- ↗ automated manufacturing systems ↗ robustness and reliability ↗



T2 Biosystems

Challenge ↗

Develop a flexible platform suitable for the analysis of pathogens, genomics, proteins and small molecule immunochemistry



Approach ↗

Sagentia's multi-disciplinary team started with system architecture and concept generation built around the client's proprietary technology

- We continued with Proof of Principle to de-risk and develop key system modules before then completing the detailed design of the entire system
- Finally, parallel activities were used to investigate the user interface, consumable design and ID

Benefit ↗

We delivered a fully integrated system and consumable within the required timescales

- We provided the required functionality within the required footprint and BoM cost
- 510(k) clearance granted in September 2014



Innovations in Medical R&D



From novel drug delivery devices to neuromodulation, advanced surgery to low-cost bioreactors and much more

Over 1200 medical projects with over 250 medical clients

An uncompromising commitment to quality and safety



Our services

We work in partnership with our clients to add value at every stage of the innovation and product development process. We understand and help our clients to solve some of the most complex medical R&D challenges around and go on to develop and deliver breakthrough products and systems better and faster



Understand

Medical advisory services

We offer a suite of advisory services which help our medtech clients stay ahead of changing needs and find new opportunities for growth

- voice of customer → market landscaping
- technology road-mapping



Solve

Multi-disciplined brainstorming

We identify and solve upfront science and technology challenges, inventing novel approaches and determining whether or not the product or technology can be developed as intended

- concept generation → feasibility studies
- scientific analysis



Develop

Full design-controlled development

We will work alongside your in-house R&D team or act as a complete outsource partner. We provide end-to-end turnkey solutions for developing truly innovative products to take to market

- proof-of-principle → detailed design
- systems architecture

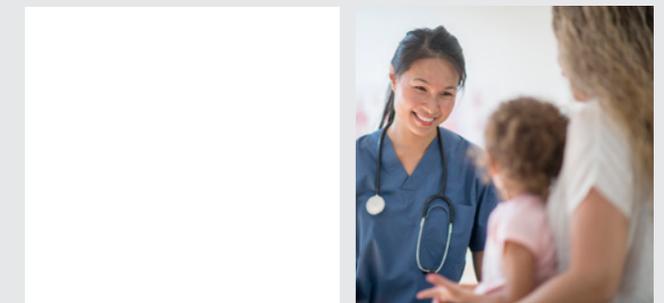
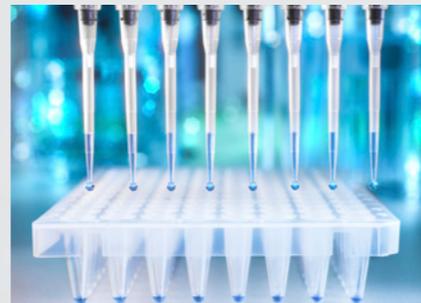


Deliver

Right-first-time product success

We deliver robust, reliable solutions using validated processes suited to volume manufacture. Robust end-to-end processes pave the way to regulatory approval and commercial success

- knowledge transfer → faster time-to-market
- transfer-to-manufacture



About us ▾

Sagentia is a global science, product and technology development company. Our mission is to help companies maximize the value of their investments in R&D. We partner with clients in the consumer, industrial, medical and oil & gas sectors to help them understand the technology and market landscape, decide their future strategy, solve complex science and technology challenges and deliver commercially-successful products.

Sagentia employs over 150 scientists, mathematicians, engineers and market experts and is a Science Group company. Science Group provides independent advisory and leading-edge product development services focused on science and technology initiatives. It has seven offices globally, two UK-based dedicated R&D innovation centres and more than 350 employees. Other Science Group companies include OTM Consulting, Oakland Innovation and Leatherhead Food Research.



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