

FUNDAMENTALVR RECEIVES THE 2023 COMPANY OF THE YEAR AWARD

*Identified as best in class in the global VR surgical
simulation and training industry*

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. FundamentalVR excels in many of the criteria in the surgical simulation and training space.

AWARD CRITERIA	
<i>Visionary Innovation & Performance</i>	<i>Customer Impact</i>
Addressing Unmet Needs	Price/Performance Value
Visionary Scenarios Through Mega Trends	Customer Purchase Experience
Implementation of Best Practices	Customer Ownership Experience
Leadership Focus	Customer Service Experience
Financial Performance	Brand Equity

Improving Surgical Competence with Effective Simulation Training

The complexity of achieving surgical competence lies in ensuring that the surgeon can attain knowledge, make accurate judgments, and develop precise surgical skills. Learning curves in medicine, particularly in surgery, are lengthy, often expensive, and inaccurate regarding trainees acquiring knowledge and skills.

The traditional approach to surgical training has changed significantly as surgical skills are no longer solely acquired through an apprenticeship model. Surgical training is presently undergoing a paradigm shift, with the training phase of many basic surgical skills moving away from the operating room. With the impact of COVID-19 on in-house training, simulation training is now becoming essential for technical and nontechnical skills as well as surgical skills for the operating room. Despite there being platforms for the learning and assessment of surgical skills, the importance of fidelity or realism in terms of visual representation and tissue texture is a challenge for providing optimal training and for keen adoption at training centers, which is why the ultimate goal of surgical simulation is to teach skills and ensure that the skill training is ultimately transferred to the live operation.

FundamentalVR (FVR) works with immersive technology, haptics, and machine learning (ML) to deliver a virtual reality (VR) and mixed reality (MR) platform called Fundamental Surgery in healthcare for medical training, simulation, and education. The platform focuses on FundamentalVR’s surgery applications: it accelerates skill learning and helps promote the adoption of medical products. The latter is aimed mainly at FVR’s core customer base: life science and pharmaceutical companies.

Cost-effectively Accelerating Human Capability via Precision Simulation

Fundamental Surgery was designed to be deployable anywhere in the world at any time, and it is in line with the Mega Trend that Frost & Sullivan has identified as Digital Realities. It is currently operative in more than 30 countries. It is installed mainly by direct customers—life sciences and pharmaceutical companies—who take it to their end users, i.e., surgeons and nurses, for delivering care through drugs, precision surgical devices, or any other devices. FundamentalVR accelerates skill acquisition and medical

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Traditional skill-teaching techniques for surgery involve intense logistics and high expenses, moving people around the country and even internationally into cadaveric laboratories—both students for learning and experts for teaching—and the consumables tend to be quite expensive as well. FVR helps virtualize all these factors as they digitize the required scenarios. As a result, it can accelerate skills and

knowledge acquisition and the adoption of medical products related to said skills. Use cases have expanded to cover all surgical disciplines. FVR’s expansion is driven by its customers into the sectors where they operate, such as robotic surgery, urology, ophthalmology, and orthopedics, as Fundamental Surgery applies to all.

Fundamental Surgery is a hardware-agnostic platform, meaning the customer doesn't need to acquire any specific equipment to use it. FundamentalVR encourages its customers to operate this way as it is cheaper and more resilient.

The software is available within the platform and is designed for instant scalability so that everything expected of the backend, including infrastructure, security protocols, language, and localization, are accessible through the platform. Scalability is defined by how customers want to use FundamentalVR’s solution. For example, in healthcare, scalability relates to application in cross-procedural disciplines, now actively participating in orthopedic and ophthalmology, robotic surgery, gene therapy, urology, endovascular and thoracic surgery segments.

Enhanced Interactivity Driving Large-scale Training

Five years ago, the surgical training market was unfamiliar with VR and its functioning. Today, the market demands VR as a core product for medical education and skills transference. Though adoption is yet to pick up the pace for VR skill training, most in the market have begun to realize that they need to do this at the earliest. FVR’s platform has become the company’s foundation stone, as the COVID-19 pandemic highlighted its necessity. Indeed, FVR became critical, so its engagement level increased dramatically.

All of FVR’s sales are in-house, and this, Frost & Sullivan believes, is critical for the company’s success as an extensive sales and marketing team ensures that FundamentalVR talks to the right people at the right time. In many hospitals and surgical centers, large and cumbersome surgical simulation devices often see

little use, no more than once a month or even once a year, which makes more portable, lightweight, and cost-effective devices an attractive alternative. FVR sees a path to developing its solution by leading its customers away from investing in large equipment, specialized technicians, and dedicated rooms.

This is why Frost & Sullivan believes FundamentalVR has experienced a very high growth rate over the last few years. Moreover, by offering its platform on a SaaS basis, FundamentalVR develops long-term relationships with its customers through contracts lasting three to four years, which entails a significant recurring revenue.

Improving Patient Outcomes Globally

As a business, FundamentalVR has a mission: to improve human performance via precision simulation. By using immersive technology, the company focuses on VR at present, though they aren't exclusively VR, and as the technology curve changes and adapts, the company will follow. FVR uses VR and kinesthetic haptics—relating to touch, resistance, weight, and force feedback—to deliver a precise simulation. FVR's main drivers are its customers, who fund FVR, the key opinion leaders (KOL) within those regions, and the professional bodies that set the framework for best practices. As a result, the company works closely with all of them and has effectively gained their accreditation as a trusted service provider.

Additionally, FundamentalVR works with leading hospitals to understand their educational and surgical needs, essentially generating feedback that will enhance FVR's platform. Fundamental Surgery is the only global platform in the VR space accredited by the Royal College of Surgeons and the American Academy

of Orthopedic Surgeons (AAOS). This is evidence of FundamentalVR's quality in the healthcare training marketplace.

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As an essential element of its commitment to best practices implementation, FundamentalVR has a 25-member global medical advisory board designed to interact with its three influence groups as they listen to and prompt them to collaborate with FVR in mapping its products' future and fitting them to what, when and how they need them. A fine example of this practice took place during the 2020 pandemic

lockdowns, which shut down skills training. FVR was quick to react to the market's needs and implemented its unlimited multiuser capability: it had already built the platform infrastructure for this, so the company was able to help carry out virtual meetings, presentations, and training sessions thanks to its careful analysis of the market's needs.

Partnering and Pre-human Competence to Revolutionize Medical Training

The company's long-term vision is embodied in pre-human competence, wherein FVR has a vision of an industry where surgeons, nurses, and surg-techs can enter the operating room with a high level of competence and confidence thanks to virtual training, where precise learning enabled by haptics and immersive VR technology grants them true competence. In that sense, pre-human refers to skills being achieved before they are applied "in person," i.e., virtually.

Case in point: FundamentalVR partnered with Novartis to serve the latter's first ocular gene therapy product to be licensed in the United States, which stops blindness in children with ocular degenerative disease. FVR's platform delivers effective training for ocular surgery experts to ensure that they can carry out a sub-retinal injection, a very sensitive procedure. It should be noted that this is a very expensive gene therapy costing an average of \$850,000 per patient, as it cures blindness and is a life changer. However, Novartis prices on outcome based models and only receives payment for a successful treatment, so it is critical to ensure that the surgeon carrying out the operation does it correctly. Novartis can only train surgeons for this procedure through FVR's Fundamental Surgery instead of the more conventional training with human or animal specimens. This is meant specifically for highly trained experts in the field to learn the new technique. To date, no issues have arisen from surgeons taught using FVR's platform.

HapticVR™'s Environments and Experiences Deliver the Gold Standard for Skills Transfer

FundamentalVR has invested heavily in terms of its simulation technology and platform capabilities, both visual and haptic, to what Frost & Sullivan believes to be the world's leading haptic and visual simulation platform. Simulating soft tissue under dynamic surgical conditions is technologically challenging, particularly when using low-fidelity headsets with a relatively low powered GPU processor. FVR has considered the dynamics of technology adoption to future-proof its platform and avoid becoming stuck to particular hardware: their solution is entirely hardware agnostic— FVR's platform supports any mainstream headsets and most mainstream haptic devices. As a result, the customer can focus on their

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business rather than worry about the limitations of their available technology. While not every device is compatible, FVR supports those it believes are the most effective and valuable for all its platform's use cases.

FVR's platform possesses a robust educational framework and enables many ways to ensure adequate skill training besides accreditation. By supporting third-party content, customers can bring their own assets to the platform and publish in it, granting it higher usability, primarily through its CollaborationVR capability that can remove distance and time differences and physical differences from the learning

experience: various surgeons or surgery teams could be sitting or standing in the same virtual operating room conducting the same procedure together without leaving their offices or hospitals. The platform allows up to 50 people in one virtual location.

The platform has two other main functions besides CollaborationVR: StandaloneVR and HapticVR. StandaloneVR is the standard headset, which allows the user to experience a situation and have full awareness of the process thanks to its 3D effect, audio effect, and spatial stance while holding the controllers, helping teach the procedure. However, it will not necessarily teach the skill. This is where the next function, HapticVR, takes the user from its standalone capability into the full procedural skill transfer. HapticVR helps the user feel the procedure and thus learn to carry it out. Both use cases are beneficial but have different audiences: StandaloneVR is better for sales and marketing purposes, as it lets the user understand the process. In the surgeon's case, HapticVR is required to understand new techniques better.

FundamentalVR brings both techniques and provides a unique service as the only VR company as of date to have both platforms with a collaboration feature. Both drive immense amounts of data regarding performance, usage, telemetry, outcomes, eye movement, and hand movement, thanks to a complex learning algorithm that can instruct users on a real-time basis with predictive modeling capabilities. Frost & Sullivan believes that FVR's customers stand to gain much from it, as its competitors lack the advantages that FVR offers, especially regarding their hardware-agnostic features and high-quality haptic feedback.

Conclusion

In a global context where in-house training becomes ever more difficult, FundamentalVR's skill-transference platform proves vital for training surgeons to attain the degree of expertise necessary to carry out operations. Through its superior visual and haptic simulation technology, FVR serves its customers' needs and provides vast value for its price, particularly as its platform allows for collaboration between users regardless of hardware quality and distance between collaborators.

For its strong overall performance, FundamentalVR is recognized with Frost & Sullivan's 2023 Global Company of the Year Award in the VR surgical simulation and training industry.

What You Need to Know about the Company of the Year Recognition

Frost & Sullivan's Company of the Year Award is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

Best Practices Award Analysis

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Visionary Innovation & Performance

Addressing Unmet Needs: Customers' unmet or under-served needs are unearthed and addressed by a robust solution development process

Visionary Scenarios Through Mega Trends: Long-range, macro-level scenarios are incorporated into the innovation strategy through the use of Mega Trends, thereby enabling first-to-market solutions and new growth opportunities

Leadership Focus: Company focuses on building a leadership position in core markets and on creating stiff barriers to entry for new competitors

Best Practices Implementation: Best-in-class implementation is characterized by processes, tools, or activities that generate a consistent and repeatable level of success

Financial Performance: Strong overall business performance is achieved in terms of revenue, revenue growth, operating margin, and other key financial metrics

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

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Key Impacts:

- **Growth Pipeline:** Continuous Flow of Growth Opportunities
- **Growth Strategies:** Proven Best Practices
- **Innovation Culture:** Optimized Customer Experience
- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**

