FROST & SULLIVAN

Carestream Health

2022 NEW PRODUCT INNOVATION

Global Digital Radiography Detector 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. Carestream Health excels in many of the criteria in the digital radiography detectors space.

Market Overview: Digital Radiography Detectors

Frost & Sullivan estimates that the global digital radiography (DR) market will reach $1.65 billion in 2024, with a compound annual growth rate of 1.2% from 2019 to 2024.[1] Frost & Sullivan's ongoing research maintains that DR detector industry challenges result from two distinct market trends. Premium customers seek improved image quality, advanced features, and usability, whereas value segment customers pursue relatively cost-effective solutions. Carestream Health (Carestream) uniquely leverages its expertise to meet both sets of customer needs. Frost & Sullivan feels that the company is well-positioned to capitalize on new growth opportunities, cementing its leadership in the DR detector market.

Founded in 2007 and headquartered in New York, Carestream is a high-value technology, products, and services provider. It employs around 4,000 personnel worldwide and boasts more than 1,000 patents for innovative technology. In 2020, the company earned an impressive $1.15 billion in revenues.[2]

Needs-based Approach Leads to Innovation

Carestream invests heavily in research and development and leverages market insights to ensure that its offerings properly align with customer needs. Persistently incorporating customer feedback advances its commitment to new product development.

[1] *Advanced Technologies that Enhance Integrated Workflow, Productivity, Patient Safety, and Detection Capabilities Drive the Global Digital Radiography Market,* (Frost & Sullivan, January 2021).
[2] Carestream Health, "Company Profile," Carestream Health, 2022, https://www.carestream.com/en/us/company#.

For example, this needs-based approach inspired the company to create the Lux 35 Detector, a robust, lightweight, and glass-free DR detector with a sleek new design in March 2021[3] after receiving the US Food and Drug Administration approval to market the product in December 2020.[4]

Building on the Voice of the Customer for its predecessors, DRX-1 Detector and DRX Plus Detector, Carestream designed the Lux 35 Detector for improved convenience and enhanced functionality. Customer feedback from the earlier products pinpointed the detectors' right-angled edges as uncomfortable for patients. The new ergonomically designed Lux 35 Detector has round corners that make it easier to position. It also has integrated finger grips to ensure a firmer hold. Carestream conducts multiple trade trials before introducing the final product, thus providing additional opportunities to optimize the features and panel concept. This company is the first innovator to launch a cassette size wireless DR detector and continues to modify and update existing designs for better results.

Heavyweight detectors are quite difficult and tiresome to carry continuously. The Lux 35 Detector is a lightweight panel weighing 2.1 kg (4.7 lbs.) without the battery and 2.4 kg (just over 5 lbs.) with a new, lighter battery. Carbon-fiber shells form the detector's exterior and contribute to its lightness while increasing stretch resistance. The lower weight provides a better experience for radiographers, especially during mobile examinations. As the first non-glass technology detector with a cesium iodide scintillator, it alleviates glass breakage concerns. Moreover, the Lux 35 Detector is Ingress Protection 57-coded, indicating that dust will not damage the product; and is protected against the effects of temporary immersion in water. Using ImageView Software powered by Eclipse for extraordinary image quality, the detector is International Standard for Organization 4090-compliant.

> *"Frost & Sullivan commends Carestream for its unique offering that combines all top-tier qualities in a single detector."*
>
> ***- Ojaswi Rana,***
> ***Best Practices Research Analyst***

Additionally, the Lux 35 Detector taps the power of X-Factor thinking. In other words, it is shareable and works seamlessly across the entire lineup of DRX products, and can be moved to where the detector is needed most. Wireless connectivity eliminates the hassles of cables, speeds the workflow, and reduces infection risks.

While different DR detectors have specific advantages, Lux 35 Detector offers all of the benefits in one product - thus clearly differentiating itself from competitor products. Frost & Sullivan commends Carestream for its unique offering that combines all top-tier qualities in a single detector.

Customer-centricity Drives an Unmatched Client Experience

With its customer-centric corporate philosophy, Carestream operates on the central tenet that its success depends on customer satisfaction. This philosophy permeates the company's daily practices.

[3] "Business Wire," Business Wire, March 9, 2021, https://www.businesswire.com/news/home/20210309005134/en/Carestream-Launches-Lux-35-Detector-Glass-Free-Cesium-Detector-For-Medical-Imaging.
[4] U.S. Food & Drug Administration, "K203159 - Gina Maiolo ," U.S. Food & Drug Administration, December 2, 2020, https://www.accessdata.fda.gov/cdrh_docs/pdf20/K203159.pdf.

For example, Carestream's eXceed Program ensures commitment from every employee to provide the best customer experience. As part of this program, the company conducts post-installation and service visit surveys to solicit client feedback and the system's functionalities, thus conveying to customers that it cares about the partnership and is committed to helping clients perform at high efficiency. Carestream meets clients to assess their specific needs and develop tailored solutions with roadmaps for seamless execution. This foundational approach establishes ongoing trust with customers for long-lasting relationships extending throughout the product lifecycle.

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> ***Best Practices Research Analyst***

The company's Customer Success Network directs customers to the right team of experts with a single point of contact for simple and customized access. Carestream also offers Accident Protection Plans so that customers can receive a replacement in as little as a day if an accident resulting in detector failure occurs. Furthermore, the company has a remote management product called SmartLink that allows it to attend to the issue in real-time. This fast turnaround helps maximize equipment uptime and the clients' ability to care for patients. The Lux 35 Detector is also available as part of an upgrade solution. Carestream's retrofit systems, the DRX-1, the DRX-Transportable System/Lite, and Transportable System /Universal Mobile allow facilities to upgrade their current analog or computed radiography systems to full wireless DR technology.

While collating feedback, the company surveyed 31 radiographers and radiologists from five trade trials in different countries. The results are quite remarkable, depicting an average score of 6.5 out of 7 in terms of quality, reliability, user experience, and radiologist score, with 4.81 out of 5 for users recommending others to purchase the Lux 35 Detector.

"Carestream…can't say enough. The amount of injuries you have prevented from techs is overwhelming. I'm so impressed with your technology."

-Demetria Thomas, Founder, Product Developer, Radiologic Technologist, DST Innovations LLC

Frost & Sullivan applauds Carestream's commitment to customer prioritization that has successfully culminated in efficient product delivery.

A Foot in the Present and an Eye on the Future

Since its inception, Carestream's sterling reputation and customer-centric framework led to its coveted preferred partner status. Over the years, it has added a range of new customers to its established base. Carestream is a global company with over $1.1 billion in revenue, employs almost 4,000 people worldwide, and holds over 1,000 patents for innovative technology. Frost & Sullivan analysts monitor and appreciate how Carestream continues to grow both inorganically and organically by aggressively capturing every opportunity.

The company prides itself on bringing new product innovation to the market, with each new product strengthening its position as a worldwide leader in digital X-ray imaging. Its experience in X-ray technology and imaging helps position it as a top-tier provider with global awareness of Carestream's imaging expertise and innovation, bolstering both customer value and company growth.

Frost & Sullivan firmly believes that Carestream is well-positioned to drive the DR detector space into its next growth phase, capturing market share and sustaining its leadership in the coming years.

Conclusion

To create a leading new product, a company must clearly understand the market's needs and deliver a solid solution designed and embedded with high quality and reliable performance.

Frost & Sullivan finds that Carestream Health (Carestream) truly embodies and consistently demonstrates this concept. The Lux 35 Detector is ergonomic, lightweight, glass-free, and Ingress Protection 57-coded. It encompasses all of the attractive features of different digital radiography (DR) detectors in a single solution, making it the industry's best DR detector. Furthermore, Carestream integrates a customer-centric approach to ensure that its offerings properly address the wants and needs of users.

With its strong overall performance, Carestream Health earns the 2022 Frost & Sullivan Global New Product Innovation Award in the digital radiography detector industry.

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What You Need to Know about the New Product Innovation Recognition

Frost & Sullivan's New Product Innovation Award recognizes the company that offers a new product or solution that uniquely addresses key customer challenges.

Best Practices Award Analysis

For the New Product Innovation Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

New Product Attributes

Match to Needs: Customer needs directly influence and inspire product design and positioning

Reliability: Product consistently meets or exceeds customer performance expectations

Quality: Product offers best-in-class quality with a full complement of features and functionality

Positioning: Product serves a unique, unmet need that competitors cannot easily replicate

Design: Product features an innovative design that enhances both visual appeal and ease of use

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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The Growth Pipeline Engine™

Frost & Sullivan's proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fuelled by the Innovation Generator™.
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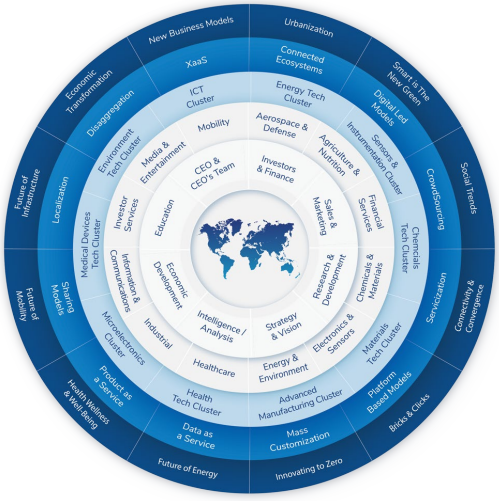
Key Impacts:

- **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)

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