

SIEMENS HEALTHINEERS - Paving a Way for a Healthier Tomorrow

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ABSTRACT

Siemens Healthineers is a subsidiary of Siemens AG. Siemens Healthineers has been at the forefront of innovation and customer experience. The company is recognized as thought leaders in precision medicine and their efforts to improve patient outcomes are advancing healthcare. The Indian healthcare sector is valued at Rs 19.57 lakh crore (US \$280 billion) in the year 2020. Rising income level, greater health awareness, increased prevalence of lifestyle diseases and improved access to insurance are the key contributors to growth. Health insurance is gaining momentum in India. Gross direct premium income underwritten by health insurance grew 17.16% y-o-y to Rs 51,637.84 crore (US\$ 7.39 billion) in FY20. The hospital industry in India is estimated to touch US\$ 372 billion by 2022 ([Source: IBEF Report October 2020](#)). This case study discusses the new product launch of two new CT Scanners. SOMATOM go. Now and SOMATOM go. Up by Siemens Healthineers in September 2019. Consumers face issues such as high radiation dose due to scanning machines at medical centres. There was a need for a CT Scanner that would solve the problem of radiation dose, user-friendliness and efficiency. The new product is a major breakthrough in innovation and customer experience as the company aspires to become the trusted partner of healthcare providers world wide. This case study also discusses the opportunities in the healthcare market of emerging economies such as India.

KEYWORDS - B2B Marketing, Siemens Healthineers, New product, Consumer Experience, Innovation, CT Scanner

1.COMPANY BACKGROUND

1.1 About Siemens

Siemens AG is a German multinational conglomerate company headquartered in Munich. It is the largest industrial manufacturing company in Europe with branch offices abroad. The principal divisions of the company are Industry, Energy, Healthcare (Siemens Healthineers)([Source: Reuters May 2015](#)), and Infrastructure & Cities, which represent the main activities of the company. The company is ranked at the 70th position in the Fortune 500 list of 2019. It was also ranked at 21st position in BCG's World's Most Innovative Companies of 2020. In the last decade, Siemens has shown substantial growth from 65.06 Billion Euros in 2010 to 86.8 Billion Euros in 2019. Annual revenue surpassed 86.8 billion euros in the fiscal year 2020.

1.2 About Siemens Healthineers

Siemens Healthineers is a leading medical technology company with over 170 years of experience and 18,000 registered patents globally. They have more than 48,000 dedicated employees in over 70 countries. ([Source: dqindia.com](#)) In May 2016, it was rebranded from Healthcare to Healthineers

to emphasize its pioneering spirit. Siemens Healthineers is a prominent maker of medical diagnostics equipment. Generating about 17 per cent of the company's total revenue, Siemens Healthineers is the second-most profitable unit after the industrial automation division. They deliver services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics, molecular medicine. These innovative technologies are used by an estimated five million patients globally every day. Siemens Healthineers integrates the most advanced laboratory diagnostics, imaging systems, and healthcare information technology to render the best solutions to its customers. They have also partnered with the IoT & AI Centre of Nasscom to help nurture innovation in healthcare startups of India. The main aim of the collaboration being to make healthcare more accessible and affordable.

Siemens Healthineers is aspiring to make India a hub for digital imaging devices. This can be used to export to countries in Africa, Latin America and China. Siemens Healthineers India has invested Rs 20 crore at the manufacturing facility in Bengaluru along with the R&D centre. (Source Economic Times September 2019). The objective of Siemens Healthineers India is to enhance patient experience enabled by digitizing healthcare and expanding precision medicine. They intend to become the trusted partner of healthcare providers worldwide maintaining clinical excellence, operational efficiency and profitability.

2. HEALTHCARE INDUSTRY IN INDIA

The Indian healthcare sector is valued at Rs 19.57 lakh crore (US\$ 280 billion). (Source IBEF Report October 2020) Rising income level, greater health awareness, increased prevalence of lifestyle diseases and improved access to insurance would be the key contributors to the growth of the healthcare industry. The largest government-funded healthcare scheme, Ayushman Bharat was launched in 2018 which enabled a huge part of the population to have good healthcare services at affordable pricing. Health insurance is gaining momentum in India. This increases the market for healthcare-related services. Siemens has invested Rs 2,500 crore at its research and development (R&D) facilities in India during the past two decades. (Source Economic Times September 2019) GE Healthcare has its biggest R&D Centre in Bengaluru which is built at the cost of \$50 Million. One of the reasons for investors to set up a manufacturing hub in India is due to a strong software services industry. More than 50% of the software R&D centres are located in India. Over the years the R&D centre at Bengaluru has grown into a digital hub for the company.

3. COMPETITORS

The global computed tomography (CT) market is a consolidated market owing to the presence of a few major players in the market. The major market players are Canon Medical Systems Corporation, Koninklijke Philips NV, GE Healthcare, and Siemens Healthineers. Most of the market players are focusing on bringing advanced products in the market to acquire the largest market share. Healthcare is emerging as a crucial topic for patients. To be a market leader and stay relevant in the competitive market, it is important to optimize the customer experience. The main aim of competitors in the healthcare industry is emphasising on achieving deals from hospitals and clinics for delivering superior quality CT Scanners. They also keep an eye on constantly introducing innovations in their devices.

4. CT SCANNER MARKET IN INDIA

MRI & CT scanners amount to approximately 50 % of the imaging market in India. The CT scan segment is growing at 19% CAGR whereas MRI is growing at 10% CAGR. (Source RedSeer Report 2012) The market of CT Scanners in 2017 was estimated to be around Rs.1150 crores (Source Medical Buyer Report December 2018) estimated at 944 units. (Source Medical Buyer Report December 2018) The 11 per cent increase in share for 64–128 slice machines came from the two categories less than 64 slices. The market is dominated by Siemens and GE, with Philips in the second position. Siemens is the market leader of medical imaging in India. The company is trying to capture major market share in laboratory diagnostics and point-of-care testing. The affordability of an MRI remains a barrier due to which the market for refurbished scanners is growing. The portable CT scanners segment is gaining popularity at a rapid rate. This is a reflection of the increasing number of device installations, lower switching costs provided by these portable products, and growing application horizons.

The National Health Policy, 2017 has envisioned health and wellness centres as the foundation of India's health system. Under this, 1.5 lakh centres will bring the healthcare system closer to the homes of people. These centres will provide comprehensive healthcare including diagnostic services, including the installation of CT scan facilities. An allocation of Rs 1200 crore has been made for this flagship program.

Indian Imaging equipment market is growing at 14% CAGR. The key drivers for this growth are

1. Increase of private healthcare chains
2. Growth in lifestyle-related diseases
3. Growth in healthcare spend

5. THE WIDE RANGE OF CT SCANNERS

Siemens Healthineers has always been at the forefront of introducing the latest in CT Scanners. Being the innovation leaders in the healthcare industry, Siemens Healthineers offers its customers with a broad range of CT Scanners. Their unique technologies and design parameters provide a platform for higher efficiency, unprecedented image quality with consistent results. The main highlight of the scanners is minimum exposure to radiation during a patient's treatment.

Types of CT Scanners :

1. Dual Source: Two X-ray sources and Two detectors
2. Multislice: Configurations from 2-slice to 128-slice
3. Single Source: Complete package for the treatment. Configuration from 16-slice to 128-slice.
4. Mobile Head: Excellent imaging

Each type mentioned above has various models. Mobile Head CT scanner is an exception. Various models are required for different situations/ setups along with financial considerations. Presenting a wide portfolio to customers (hospitals or diagnostic centres) helps them choose CT Scanners based on their requirement and comfort.

Dual Source	Multislice	Single Source	Mobile Head
SOMATOM Force	SOMATOM X.cite	SOMATOM X.cite	SOMATOM On.site
SOMATOM Drive	SOMATOM Edge Plus	SOMATOM Edge Plus	
SOMATOM Definition Flash	SOMATOM Definition Edge	SOMATOM Definition Edge	
	SOMATOM go.top	SOMATOM go.top	
	SOMATOM go. All	SOMATOM go. All	
	SOMATOM go.Up	SOMATOM go.Up	
	SOMATOM go. Now	SOMATOM go. per centNow	

TABLE 1 - VARIOUS MODELS FOR CT SCANNERS

6. THE NEW PRODUCT: SOMATOM GO. NOW AND SOMATOM GO.UP

Siemens Healthineers launched two new CT Scanners in September 2019. These CT Scanners are designed for radiation therapy planning. The SOMATOM go. NOW and SOMATOM go. Up are 32-slice and 64-slice devices manufactured in India.

6.1 What is NEW in this product?

SOMATOM go. Now and SOMATOM go. Up are the products which address the issue of radiation and dosage. The new products incorporate improved X-Ray tubes and detectors. The dosage can also be reduced by means of optimum patient positioning and appropriate medical staff training. The dose required can be reduced if the scan parameters are adjusted to the patient's anatomy.

The new products have undergone numerous software-led innovations. The company's technologies are used for greater workflow efficiency, increase in clinical applicability, improved patient experience, and meeting the financial requirements of healthcare providers. Benefit from AI-powered automation in scanning and other additional features makes advanced CT scan procedures like preventive care available for daily practice.

6.2 Benefits: Design, Performance and Patient Experience

The new design of the scanner is accompanied with movable lasers and can also be controlled wirelessly using a tablet computer. This device offers clear images on a touchscreen monitor, which is simple to use and has fewer moving parts for higher reliability. Thus, there is no extra

need for staff training or a separate control room. It is an all-in-one solution that comes with the same tools, looks, and feels as the scanner interface. Equipped with premium technologies, SOMATOM go. Up & go. Now deliver excellent image quality. Due to an increased channel density and a new geometry, the new detector provides excellent and homogenous image quality even in complex areas. The addition of Chronon X-ray tubes helps in achieving sharper images with reduced contrast media. Thus, scanning more patients becomes possible while delivering better care at reduced costs. The Tin Filter technology enables ultra-low-dose levels by cutting out lower energies and optimizes image quality at the interface between soft tissue and air. This unique technology from Siemens Healthineers has direct benefits in lung and colon imaging. Through the new CT Imaging Mobile workflow in both SOMATOM go. Now & SOMATOM go. Up; the attendants can stay longer with patients. Therapists can remain in the scanning room for the entire preparation process with the help of guidance of the app on the tablet. This gives the patient a lot of comfort since they are accompanied with someone and helps reduce their anxiety.

7. CONFERENCES AND EVENTS

Siemens Healthineers is associated with some prominent conferences and events for the education, training and promotion of their products.

SOMATOM India Summit 2019

This summit was conducted in New Delhi, India on May 25-26. The SOMATOM India Summit 2019 showcased their latest designs of CT Scanners to explore new waves in the field of Computed Tomography.

Multicity Roadshow 2019

The theme of the summit is to deliver high-value care. A multi-city roadshow was organized covering 13 Tier-II, Tier-III cities across five regions and touched over 1,000 customers, prospects, and influencers. The Multi-city Roadshow 2019 campaign began on April 06, 2019, at Varanasi and was wrapped up with the last event on July 06, 2019, at Bhubaneswar. The presence of invited external keynote speakers; enabling their customers in understanding patient-centric challenges and key to transforming the way healthcare is delivered each day. The sessions helped Siemens evolve this initiative further and make it an excellent networking and knowledge-sharing platform for everyone.

Siemens Healthineers at IRIA 2019 & 2020

The annual conference is organized by the Indian Radiological & Imaging Association(IRIA). Every year Siemens introduces new products and technologies in the field of radiology. Intelligent imaging technologies and solutions are designed to enable fast and accurate diagnosis, informed decision making along the patient journey and next-generation treatment delivery to deliver better outcomes while increasing efficiency. With increasing digitalization and use of Artificial Intelligence in Healthcare, their futuristic products and solutions enable high-value care.

International Cardiac CT Course

Siemens Healthineers in collaboration with Fortis Escorts Heart Institute (FEHI, Delhi) and Society of Cardiovascular Computed Tomography (SCCT, USA) organizes a training program on Coronary CT Angiography Interpretation. The SCCT certified training course includes a new set of 50 Coronary CT Angiography cases with various difficulty levels. The two-day training course provides participants with a dedicated workstation with immediate feedback through Invasive Coronary Angiography for each case. An in-depth understanding of cardiac CT guidelines, image acquisition, post-processing, and interpretation of the data set of cases with Coronary artery stenosis is provided. This course also included artefact detection, limitations with cardiac CT, and radiation dose in cardiac CT.

8. TRENDS IN THE INDUSTRY

Global computed tomography (CT) market is primarily driven by the rising geriatric population. There is a surge in incidences of chronic diseases. The access to technology and the relative cost of CT procedures, as compared to other modalities, make it a preferred choice of imaging. Companies are developing new AI algorithms to reconstruct CT images better than conventional iterative or model-based reconstruction methods. In deep learning, the system is fed with the answers (in the case of CT, what ideal clinical images and resolution should look like) and the machine figures out what needs to be done with input image data to make it look like the ideal reference image. Spectral CT has gained a lot of interest in the past few years because of its potential to offer additional information from CT images. Spectral imaging helps in better visibility by using enhanced mapping techniques based on various X-ray energies which makes it easier to understand the status of the stent-graft. Due to new technology, fewer data points are needed to provide the radiologist with images of diagnostic quality. Using iterative reconstruction high-resolution and high-quality images can be reconstructed with no image information loss in the process. Additionally, the efficient inline reconstruction algorithm allows for high clinical throughput. The acquired data is calculated directly at the scanner requiring no export or external processing of the acquired data. Vendors will continue to develop solutions for a lower dose, improved resolution, and improved workflow that will remain important in busy environments in which CT systems are typically found. Additionally, using big data and artificial intelligence, CT exams will continue to grow. The market will see improvements in how big data is used to change clinical pathways and improve care.

Some key customers for Siemens Healthineers are Thyrocare Technologies (Mumbai), PSG Hospitals (Coimbatore), SKS Hospital (Salem), KGS Scans (Madurai) ([Source: Economic Times April 2017](#))

9. ROAD AHEAD

There was constant turbulence in the consumer's decision-making process for healthcare products. This was due to high radiation exposure from CT machines. The computed tomography angiogram (CTA) can give not only a calcium score but also uses dye to look at the inside of blood vessels. It gives information very nearly as good as an angiogram from cardiac catheterization yet the

radiation dose is much higher — as much as 1,200 mSv: about 200 times as much radiation. (Source: [Times Colonist 2020](#)) This has been a key point of concern for manufacturers.

Rising caseloads and growing patient expectations are putting pressure on physicians and clinical staff around the world including India. At the same time, shrinking healthcare budgets and declining reimbursements make it hard to invest in the technology needed to give more patients access. In many places, one of the challenges is finding qualified staff. For example, to optimize organ dose and image quality of CT examinations, special attention must be paid to correct patient positioning. An issue with 64-slice scanners was that it usually took two rotations to image the heart. With two images being stitched together it can lead to stitching artefacts. Scanners with wider anatomical coverage are capable of imaging the heart on one rotation.

Only 30 per cent of the cancer centres in India have advanced imaging technologies such as PET-CT. PET-CT scanners are essential for accurate diagnosis, staging, and response monitoring of cancer and are, thus, critical to providing comprehensive cancer care. There is also a greater need for error-free imaging, leading to better patient-specific treatment as CT scans are converted to 3D images. While fan-beam multi-slice CTs (MSCT) is used and may offer better resolution in terms of low contrast, the cone-beam CT (CBCT) system offers various benefits like good image quality and shorter scanning time along with better affordability with reduced radiation dose. (Source: [3Dprint.com May 2020](#)) By blending holograms with the real medical world improves communication with referrers and patients. Holograms also offer opportunities to enhance presurgical planning. With the visualization of Cinematic Mixed Reality holograms – the benefit for care providers is the interaction that they didn't have before. For example, while studying parts of patient anatomy, they can zoom in, zoom out, enlarge regions of interest, rotate around it, and also slice through. So, they can see the pathology.

Today, when there is more competition than ever in the B2B world, it's important for companies to think innovatively rather than traditionally in order to get ahead. It's absolutely critical to start thinking creatively, put customers first, and get experimental with all parts of your business. High satisfaction if integrated with experience can increase the business value of the company. (Source: [B2B International](#))

The Innovation Think Tank Approach has been developed by Siemens Healthineers with unique experience of executing innovation programs and infrastructure worldwide. The approach is adaptable to changing business and research environments. (Source: www.siemens-healthineers.com). The ITT approach includes the following as essentials for accelerating innovation life cycles:

- Problem identification in an observation
- Root cause analysis
- Identifying interdependencies
- Stakeholders engagement

- Big picture creation
- Conception via trans-disciplinary expertise
- Decision proposition creation
- Implementation cycles optimization

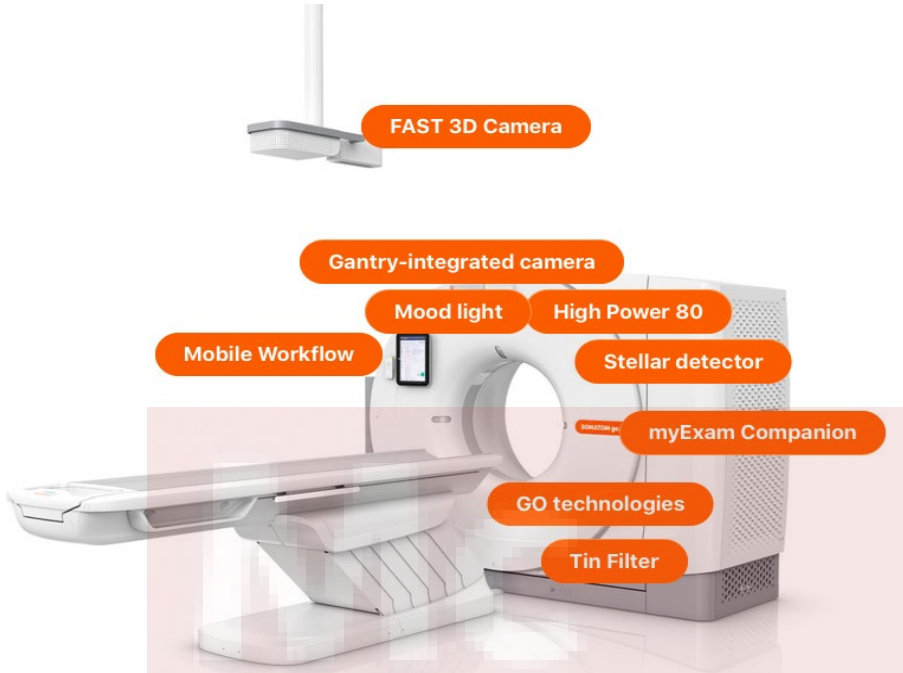
The ITT approach has been used in the companies' various labs and programs for project implementations accelerating innovation cycles and bringing significant cost savings. Over 250 product definition, R&D and open innovation projects are worked on annually in ITT's global infrastructure.

Siemens Healthineers has been at the forefront of innovation and customer experience. Siemens Healthineers have been honored with the *Frost & Sullivan Award for Visionary Innovation Leadership*. The company received this Award for their leading efforts in establishing imaging as an active contributor to precision medicine. Siemens Healthineers are recognized as thought leaders in precision medicine and their efforts to provide high-value care and to improve patient outcomes are advancing healthcare.

Questions

1. What are the key drivers for growth in the CT-Scanner market in India? What are the challenges you foresee for the team at Siemens Healthineers on their journey of innovating on scanners in the future?
2. How important is innovation in the scanner industry? How can B2B brands become customer-centric so that it gets ingrained in the company culture?
3. Prepare a marketing plan for Somatom go.now and Somatom go.up

Exhibit 1 - Feature Representation of Somatom go.UP



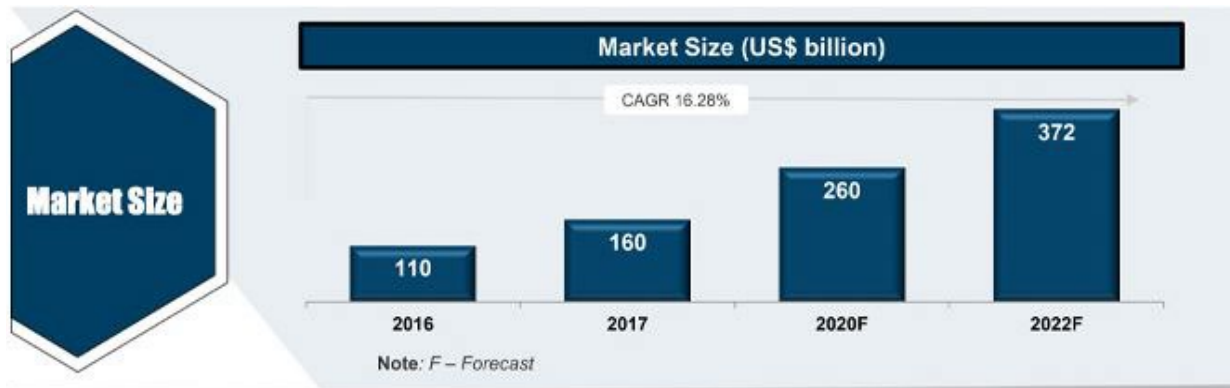
www.siemens-healthineers.com

Exhibit 2 - Feature Representation of Somatom go.NOW



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Exhibit 3 - Indian Healthcare Market



(Source IBEF Report October 2020)

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