



Efficiency Consulting
Unleashing the hidden potential
of CT and MR scanners

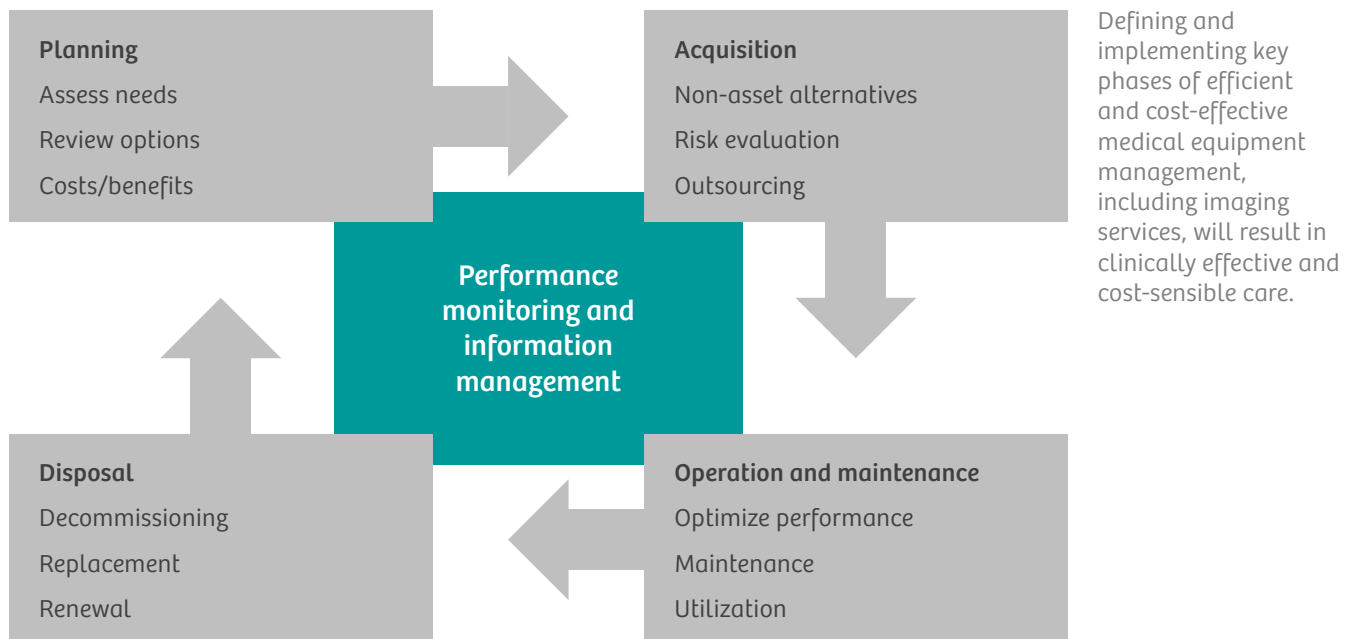
Focused on maximized CT and MR outcomes

Including detailed assessment of utilization

Computed Tomography (CT) and Magnetic Resonance (MR) scanners are two of the most expensive pieces of medical equipment in hospitals, with CT scanners costing roughly between \$0.5 and \$2 million and MR scanners costing between \$1.5 and \$3 million. For obvious reasons, machines with an investment of this magnitude are at the center of attention when it comes to maximizing Return on Investment (RoI) throughout the product lifecycle as well as meticulously planning upgrades, updates, possible replacements and maintenance costs. Planning security is of the essence when it comes to reaching defined RoI goals.¹

Supreme discipline: using costly imaging services in the most efficient way

Upon initial investment, many healthcare providers do not have the technicians or knowledge needed on-staff to realize necessary outcomes in medical imaging on CT or MR scanners. Thereby the cost-effectiveness of delivering CT and MR imaging services varies widely across the different healthcare institutions. While some CT and MR imaging services operate at a surplus others incur losses that can amount up to millions each year. Therefore, options to enable the provision of cost-effective imaging services should be considered.



¹ <http://www.audit.vic.gov.au/publications/20150225-Hospital-Equipment/20150225-Hospital-Equipment.pdf>

Taking advantage of new opportunities to generate additional revenue

In today's pressure-driven healthcare world, the efficiency and effectiveness of high-value equipment like CT and MR scanners play a decisive role as both imaging systems are increasingly utilized to diagnose, manage, and treat medical conditions: They are the first choice when it comes to high-quality images of internal organs and tissues, they are critical to clinical decisions at key points in a patient's treatment, and they can significantly influence patient outcomes – depending on the efficacy of methods healthcare institutions are deploying in their usage.

Siemens Healthineers therefore pursues the premise of long-term sustainability and cost-effectiveness: Utilizing imaging equipment in the best possible way, optimizing operating costs, and managing high patient throughput. And this is where Efficiency Consulting becomes applicable – by providing expert analysis of given processes and taking a closer look at structures, reproducibility, and patient experience.



Developed as a 5-step analysis, Efficiency Consulting from Siemens Healthineers Customer Services is based on a combination of quantitative utilization data and observation of day-to-day workflows directly on-site at the customers' institution.



Valuable measures in times of transition

In the transition to value-based care, all healthcare industry stakeholders are facing various challenges to staying financially viable, including those presented by healthcare reform and consumerism. Many healthcare providers have realized that valuable measures to overcome those challenges and create a sustainable revenue stream often lie within the realms of operational optimization and within strict clinical imperatives. Siemens believes there is great potential to be achieved with Efficiency Consulting in all three areas of clinical imperatives, operational optimization and financial performance.

Clinical imperatives

- Enable faster and better diagnosis using streamlined protocol and data management with reproducible results.
- Minimize the risk of incorrect diagnosis through missed findings by relying on structured and standardized post-processing.
- Improve patient safety by utilizing better standardized operational procedures (SOP) for patient examinations.
- Strengthen the patient friendliness of your institution by optimizing the application of radiation dose to a sensible minimum.
- Avoid workflow-impairing incidents with a structured retrieval of all important parameters.

Operational optimization

- Speed up your processes and examinations and increase throughput with more efficient workflows.
- Improve trainability of new employees and staff with structured processes and optimized protocols.
- Improve patient satisfaction and increase your referral rate by offering better services with less waiting time.
- Optimize the usage of your personnel's time and working space.
- Improve quality of the examination from setup to post-processing and reporting.
- Increase operational efficiency and improve patient satisfaction with decreased waiting time between arrival and examination.

Financial performance

- Save money and avoid system downtime with an optimized utilization of your systems.
- Minimize the risk of litigation due to incorrect diagnosis.
- Strengthen your reputation as a hospital that offers best image quality and ensures optimal patient care.
- Expect more revenue due to referral increase.
- Strengthen your institution's reputation as an attractive workplace.

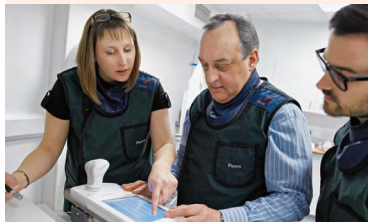
Efficiency Consulting

Advancing and optimizing staff knowledge, performance and confidence help to achieve clinical and economical goals of highly-valued equipment

Targeted to unleash the hidden potential of CT and MR scanners, Efficiency Consulting is a consultancy & optimization Education Service that offers a detailed assessment of the utilization of a CT or MR system, its protocols and workflows. Possible improvements can easily be identified and configured into long-term measures to support customers in optimizing outcomes and efficiency.

The objectives and methodology are explained in a dedicated **(1) kick-off meeting**. Structure and scope of the upcoming project phases will be defined. As next step, in the **(2) data source** phase, Utilization Management (UM) data of the systems will be analyzed as well as further information about the department that are used to understand the situation on-site to date. Afterwards, **(3) in the observe phase** on-site observations as well as interaction with the staff follow, and all gathered information and data will be analyzed. As next step, **(4) a customer presentation** is prepared in which the key findings and highlights of interest and opportunity will be shared. During the final presentation on-site, these findings are shared and discussed with the customer. In the last step, **(5) the action phase**, the customer gets direct help in regards to the implementation of the agreed actions.

Important note: As an elective service, Efficiency Consulting can be implemented any time after the healthcare providers and system users have acquired an initial base of experience in working on a CT or an MR system. We recommend at least six months of system operation before starting the Efficiency Consulting, so that healthcare providers have had enough time to become acquainted with most routine processes. Efficiency Consulting can be performed with any Siemens CT and MR system irrespective of model and software versions. It can be offered either as a stand-alone Education Service or included in an Education Plan.



- Comprehensive consultancy & optimization Education Service advances and optimizes CT and MR scanners utilization
- Customers get an individual report with key findings and areas of interest and opportunity that pinpoint room for improvement at a glance
- Imaging services become highly cost-effectively and secure replacement and maintenance costs as well as defined RoI goals
- CT and MR imaging equipment is used to its full potential, while customers' knowledge, performance, and confidence are maximized at the same time

Monetizing care value

The following example shows results that were achieved after looking at specific CT scanner key performance indicators (KPI) when measuring effective usage of the systems. Three Siemens CT scanners were compared in terms of average values on 4 KPIs. Based on these measurements, key derivations were set up and recommendations were created to increase the efficacy of system usage in areas where room for improvement was identified.

Effectiveness of operation in comparison

SOMATOM Definition AS in CT Hub

Year	Average system usage per day in hours	Average patient throughput per day	Average exam duration in minutes	Average meantime between exams in minutes
2013	8.7	33.0	6.0	13.6
2014	9.1	34.6	5.7	12.8
2015	8.8	32.8	5.3	13.3
Results	+ 0.1	- 0.2	- 0.7	- 0.3

SOMATOM Definition Flash in CT Hub

Year	Average system usage per day in hours	Average patient throughput per day	Average exam duration in minutes	Average meantime between exams in minutes
2013	9.5	34.1	6.1	14.4
2014	9.5	34.9	6.1	14.1
2015	7.4	28.5	5.6	14.0
Results	- 2.1	- 5.6	- 0.5	- 0.4

SOMATOM Definition AS in A&E Department

Year	Average system usage per day in hours	Average patient throughput per day	Average exam duration in minutes	Average meantime between exams in minutes
2013	21.2	51.6	4.6	23.0
2014	21.6	58.5	4.3	17.8
2015	22.5	63.3	3.7	19.7
Results	+ 1.3	+ 11.7	- 0.9	- 3.3

Transformation through partnership knowing when and where things need to change

“It has been really useful to have experts from Siemens give our processes and the way we do things a fresh pair of eyes. As with any organization, norms become established and it can become difficult to know when and where things need to change. The observation stage of the Efficient CT Service has brought things into focus and provided valuable knowledge and insight for our development, with specialists asking challenging questions based on how other clinical sites are operating.”



Alice Turner, Principal Radiographer
Royal Stoke University Hospital, Stoke-on-Trent, UK



Royal Stoke University Hospital

The Royal Stoke University Hospital is a teaching and research hospital at Hartshill in the English county of Staffordshire. It serves as an integral part of the University Hospitals of North Midlands NHS Trust. The goal of the institution is to be a world-class center of clinical and academic achievement, where staff work together to ensure patients receive the highest standards of care and the best people want to come learn, work and research.



Number of inpatient beds in all NHS Trust Hospitals:
> 1,500



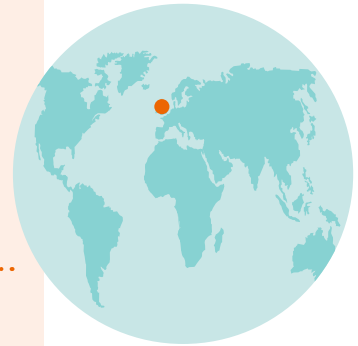
Amount NHS Trust staff members:
10,384



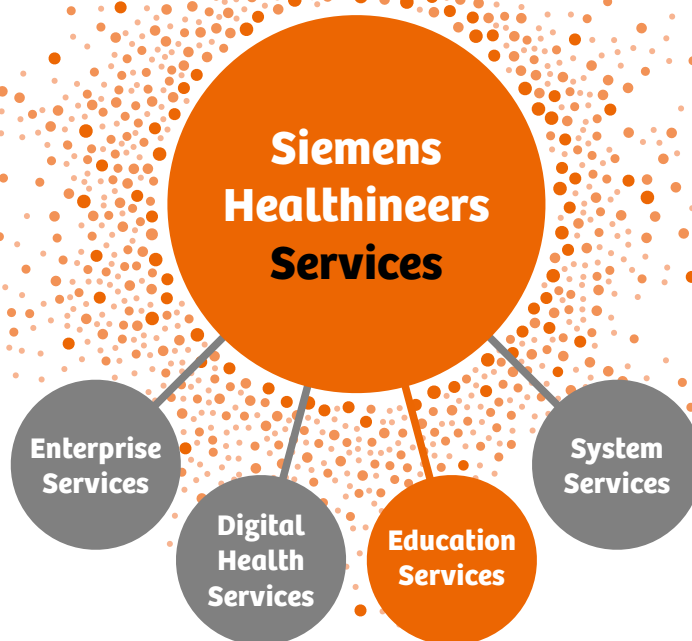
Siemens imaging systems:
SOMATOM CT Scanners



Specialties:
Accident and Emergency (A&E), Bariatrics, Cancer Services, Cardiology, Chemotherapy, Elderly Care, Fetal Medicine, Haematology, Neurosurgery, Nuclear Medicine, Paediatric Intensive Care, Surgery, Vascular Surgery



Related offerings



Education Plans

Maintain or improve your staff's expertise as well as your systems' efficiency at a predictable cost with Education Plans that bundle single elements into a complete package. By bundling various portfolio elements into one contract, you can meet changing knowledge needs and provide comprehensive training that targets individual users, systems, and even entire departments.

Education Management Check

With Education Management Check (EMC), you benefit from a consultancy approach to assess your training processes in imaging departments. EMC scrutinizes all of your current training processes and provides valuable information for ongoing staff development, a benchmark for your workflows, and clear recommendations to improve your education management and strategy.

Optimize CARE

Optimize CARE is a dose optimization program that provides expert insights, methods, and tools that help you develop a customized roadmap for improving your dose performance.

Delta FIT

Go for optimized use of your system and keep your experts deeply knowledgeable of recent software updates with Delta FIT, a valuable option in your Siemens IT Care Plan service contract. Based on content and coverage, you are offered a tailored training opportunity to make the best use of technology and your staff's time. From on-site training at your institution or remote trainer sessions to Webinars and even classroom training at any of our Academy centers – the format follows the content and the trainees' needs.



Why Siemens Healthineers?

At Siemens Healthineers, our focus is to help healthcare providers succeed in today's dynamic environment.

Healthcare providers around the world have long relied upon our engineering excellence – leading-edge, high-quality medical technologies across a broad portfolio. Our technologies touch an estimated 5 million patients globally every day.² At the same time, they help hospital departments to continuously improve their clinical, operational, and financial outcomes.

We now consolidate this unprecedented volume of data and insights and turn them into pioneering enterprise and digital health services. With those, we maximize opportunities and share risk for the success of your entire health system.

Partnerships are built on people. With Siemens Healthineers there is no team more committed and more connected than we are to realize your success together.

Engineering success. Pioneering healthcare. Together.

The products/features and/or service offerings (here mentioned) are not commercially available in all countries and/or for all modalities. If the services are not marketed in countries due to regulatory or other reasons, the service offering cannot be guaranteed.

Please contact your local Siemens organization for further details.

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