



IT Guide to Reducing Smart Hospital Costs & Boosting Patient Satisfaction

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Introduction

In today's rapidly evolving healthcare landscape, the costs of running a hospital are escalating at an unprecedented rate. Between 2019 and 2022, the U.S. saw a **17.5% increase in overall hospital expenses**. These rising costs are not just numbers on a balance sheet. They directly impact the quality of patient care and the financial sustainability of our healthcare institutions.

Amidst this challenging backdrop, healthcare IT departments have the opportunity to use technology in innovative ways to improve how healthcare facilities operate. IT is no longer a mere support function. It is a critical enabler in delivering exceptional patient experiences while reducing operational costs. One of the most promising avenues for achieving this hyper-efficiency is through **edge computing**. By processing data closer to its source, edge computing minimizes latency, enhances data security, and enables real-time decision-making—crucial factors in a healthcare setting where, in certain situations, every second counts.

We are now in the era of smart hospitals: facilities that use cutting-edge technologies to create an ecosystem for secure data sharing and analysis. In these advanced healthcare environments, the IT department plays a pivotal role in orchestrating a seamless flow of information, ensuring the right data reaches the right people at the right time. With the advent of IoT devices that can monitor patient vitals in real-time and 5G networks that can transmit large volumes of data instantaneously, smart hospitals are well-positioned to achieve unprecedented levels of efficiency and patient care.

In this eBook, we will explore how IT professionals in healthcare environments can harness the power of edge computing and other advanced technologies to further evolve their smart hospitals into models of efficiency and patient-centric care.

The Evolution from Hospital to Smart Hospital

The transformation from a traditional hospital to a smart hospital represents a paradigm shift in healthcare delivery fueled by technological advancements and a commitment to hyper-efficiency. Traditional hospitals have long been the cornerstone of healthcare but are often plagued by inefficiencies, from administrative bottlenecks to data sharing and analysis limitations. Smart hospitals, on the other hand, have the advantage of cutting-edge technologies to create an agile, interconnected ecosystem. In this new model, data flows seamlessly, enabling real-time decision-making and personalized patient care.

One of the most critical technologies driving this transformation is edge computing. In a traditional hospital setting, data is often processed in centralized data centers, leading to latency issues and potential bottlenecks. Edge computing turns this model on its head by processing data closer to where it is generated, whether from patient monitoring devices in the ICU or diagnostic equipment in radiology. This proximity allows for faster, more efficient data processing, thereby reducing latency and enhancing the speed and quality of medical services.



There are many benefits of edge computing in a smart hospital:

- Provides greater resilience by decentralizing data processing, reducing the risk of system-wide failures.
- Enables hyper-efficiency by allowing real-time data analysis crucial in life-or-death medical scenarios.
- Enhances security and safety by enabling quicker response times and more robust data protection measures.



While edge computing contributes to various aspects of operational excellence, this eBook will primarily focus on hyper-efficiency, exploring how IT professionals in healthcare can maximize the benefits of this transformative technology.

How Edge Computing Can Unlock Smart Hospital Hyper-Efficiency

The backbone of a smart hospital is its IT infrastructure. From electronic patient records to pharmaceutical distribution, the entire operational framework of a hospital is IT-based. A decade ago, a nurse's station might have been a clipboard. Today, it's a hub of digital activity. This transformation underscores the criticality of power resilience and network stability in maintaining a hospital's core functionality and efficiency.

The Role of Edge Computing

Edge computing is pivotal for achieving hyper-efficiency, where smart capital spending meets smart operational procedures and technology deployment. By processing data closer to its source—in admissions, the pharmacy, or the emergency room—edge computing minimizes latency and maximizes operational efficiency. This efficiency is crucial when immediate data processing can impact patient safety. There are many scenarios demonstrating the importance of hyper-efficiency in a smart hospital:

- **Admissions:** A fully digitized process ensures quick and accurate patient intake. If the system fails, reverting to paper-based methods slows information exchange and compromises efficiency, safety, and accuracy.
- **Pharmaceuticals:** Digital systems control medication access through secure logins. A system failure could make critical medications inaccessible, jeopardizing patient safety.
- **Emergency Room:** Every item used in patient care is scanned for accurate billing. Inefficiencies here could lead to over-billing or incorrect billing, affecting both the hospital and the patient.





Beyond Equipment Efficiency

Hyper-efficiency is not just about investing in the most efficient equipment. It's about understanding how these technologies integrate into your specific environment to create a more efficient, sustainable ecosystem. Look for a provider that offers solutions that help you understand and achieve true operational efficiency in myriad ways. For example, not all hospital functions require the same level of speed. For instance, robotic surgery demands lower latency than medical history analysis. Therefore, a one-size-fits-all approach to data processing is inefficient. To achieve the efficiency their technology investment enables, smart hospitals should tailor their edge computing capabilities to specific needs, avoiding over-provisioning.

By focusing on hyper-efficiency, smart hospitals can reduce operational costs and also improve patient experiences and safety. In a world where healthcare facilities are often short-staffed, achieving hyper-efficiency can significantly bridge the gap, ensuring the hospital can operate at its best, even under constraints.

How IT Hyper-Efficiency Enables Better Patient Experiences

In today's healthcare landscape, patient experience is not just a qualitative measure; it's a critical metric that directly impacts a hospital's bottom line. With the advent of value-based care models, hospitals are increasingly compensated based on patient satisfaction scores. This shift underscores the importance of delivering an exceptional patient experience, and hyper-efficiency plays a pivotal role in achieving this goal.

The Link Between Efficiency and Satisfaction

At its core, hyper-efficiency is about optimizing processes and technology to deliver the best possible outcomes. In a healthcare setting, this means reducing wait times, ensuring accurate and timely diagnosis, and providing seamless care transitions—all factors significantly influencing patient satisfaction. When a hospital operates efficiently, it creates a ripple effect that enhances every touchpoint of a patient's journey, from admission to discharge and even post-care follow-up.

Real-Time Data for Personalized Care

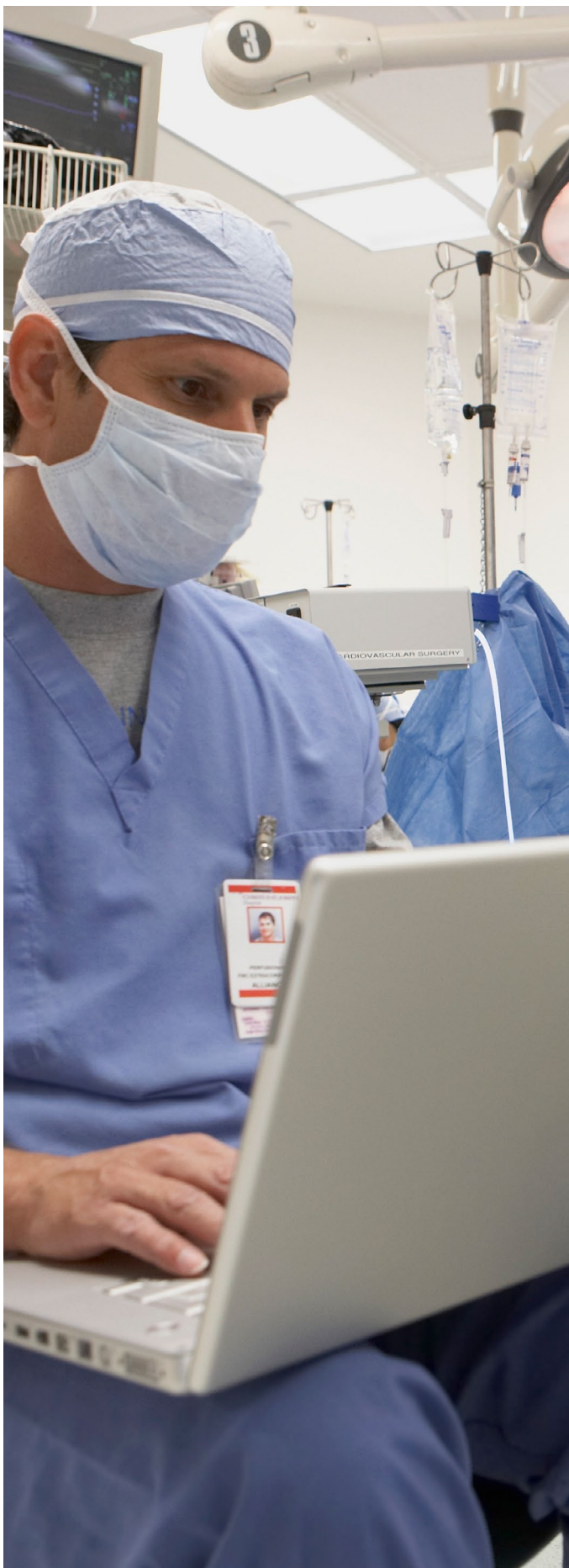
Edge computing, a cornerstone of hyper-efficiency, enables real-time data processing, critical for personalized patient care. Imagine a scenario where a patient's vitals are monitored in real-time, allowing

for immediate intervention if an issue arises. This level of attentiveness improves patient safety and contributes to a more positive patient experience. Whether adjusting a medication dosage or intervening in an emergency, real-time data processing can be a life-saving feature, significantly enhancing patient safety and satisfaction.

Data Security and Compliance

Patient data is sensitive and subject to stringent regulations. Edge computing enhances data security by processing information locally, reducing the need for data to travel over networks where it might be susceptible to breaches. This ensures compliance with data protection laws and builds patient trust, an important component of patient satisfaction.





Operational Resilience

Edge computing contributes to the overall resilience of a smart hospital's operations. Decentralizing data processing reduces the risk of system-wide failures, ensuring that essential services remain uninterrupted. This resilience is vital in critical care settings, where even a minor disruption can have severe consequences, affecting both patient outcomes and satisfaction levels.

Personalized Patient Engagement

The real-time analytics provided by edge computing can also be used for personalized patient engagement. For example, patient information can be used to customize care plans or to provide real-time updates to family members via secure portals. This level of personalized engagement can significantly improve the patient experience, making them feel valued and well cared for.

Efficient Resource Allocation

Edge computing allows for smart resource allocation, ensuring that medical staff and equipment are allocated most effectively. This efficiency reduces wait times and ensures patients receive the care they need when they need it, which is particularly important in high-stress environments like emergency rooms.

Edge computing is not just a technological upgrade; it's a strategic enabler of hyper-efficiency in smart hospitals. As healthcare continues to evolve, technologies like edge computing will be instrumental in shaping a future where patient satisfaction is as much a measure of a hospital's success as its clinical outcomes. By integrating edge computing into your healthcare IT strategy, you're not just adopting a technology; you're embracing a comprehensive solution that enhances both operational efficiency and patient satisfaction.



Smart Hospitals Gain Value by Partnering with Industry Experts

The journey to hyper-efficiency is not without its challenges. It requires not just advanced technology, but also the right tools and strategic partners who can guide the transformation. At Schneider Electric, we empower IT professionals in healthcare with **edge computing solutions** and more to navigate this complex landscape with confidence. Our solutions are designed to integrate seamlessly with your existing infrastructure, providing a strong foundation for future innovations.

APC NetBotz, an integrated security and environmental solution, offers unparalleled visibility into your network-connected spaces from remote network closets to high-density **server rooms**. Seamlessly integrated with

EcoStruxure IT Expert, our cloud-based monitoring and management platform, APC NetBotz centralizes the oversight of your distributed IT assets, ensuring you're always in control, no matter where your operations are located.

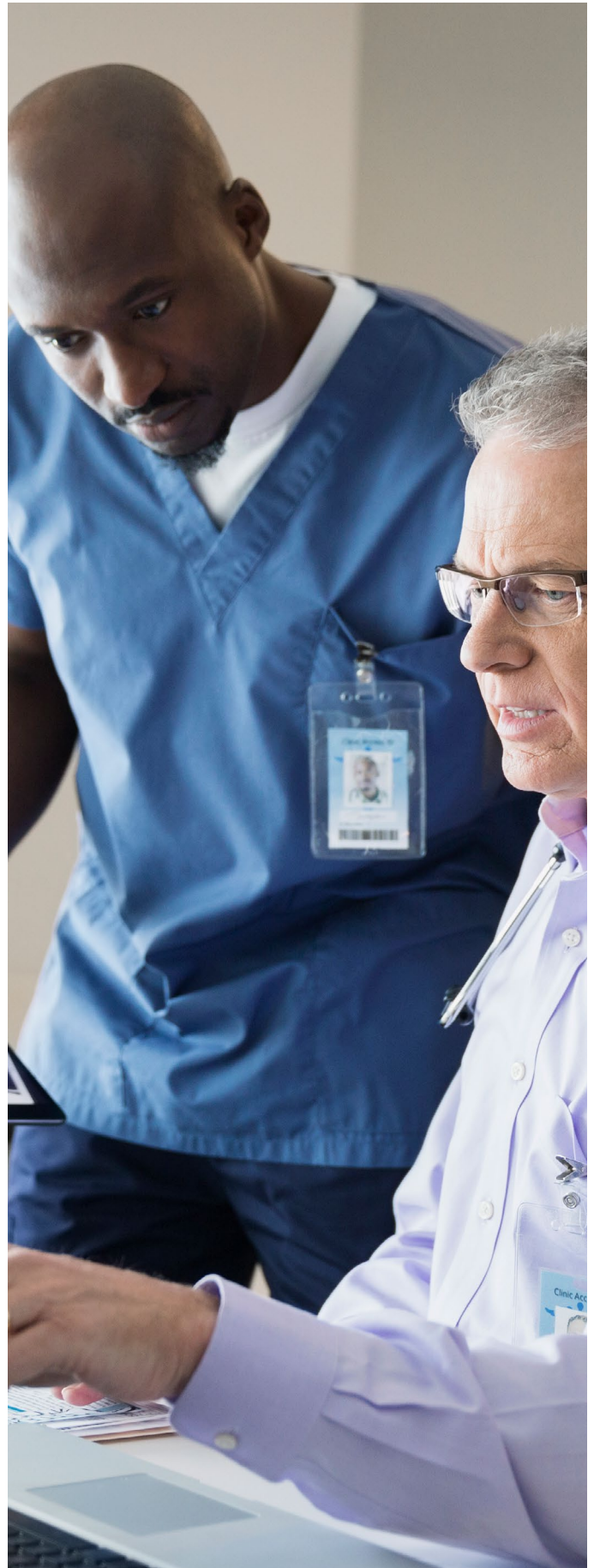
Designed for scalability, APC NetBotz adapts to your specific needs, whether you're safeguarding a single **rack enclosure** or managing a multi-rack server environment. Our advanced sensors collect a comprehensive range of data, including temperature, humidity, fluid leaks, and more, issuing real-time alerts when any parameter crosses the set threshold. This proactive monitoring not only minimizes system

downtime but also extends the lifespan of your critical equipment, optimizing your total cost of ownership across a hybrid IT landscape.

In addition to monitoring, our **Uninterruptible Power Supplies** (UPS) are engineered for resilience. With built-in physical security, strategically placed power distribution, and **data center cooling** systems, these UPS solutions are complemented by intuitive software and services, enhancing both monitoring and maintenance capabilities. Committed to sustainability, we design our UPS systems to be resource-efficient, ensuring that as edge data centers expand, their environmental impact remains minimal. The **Smart-UPS™ Modular Ultra** is the most sustainable UPS of its kind, with less plastic, certified recycled materials, improved energy efficiency and best-in-class carbon reduction. It features 80% less plastic and 75% certified recycled materials, improved energy efficiency to save on energy and cooling costs, and best-in-class carbon reduction with 35% less embodied carbon and 40% lower emissions.

In collaboration with industry-leading partners like Stratis, HP, Lenovo, and Cisco, we're at the forefront of smart healthcare solutions. Our partnerships amplify the role of IT in modern manufacturing, positioning us to deliver comprehensive, end-to-end solutions tailored to your needs.

Ready to take the next step towards a smarter, more secure, and hyper-efficient IT infrastructure? **Contact Schneider Electric** at 1 (877) 800-4272 or [click here](#) to start the conversation today.



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We can help you tackle anything, from basic preventive services all the way to redesigning your permanent IT backbone.

Call us at 1 (877) 800-4272 to get started, or check out our partner selector tool to find a partner ready to support you.

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Schneider Electric

Boston One Campus
800 Federal Street
Andover, MA. 01810 USA
Phone: + 1 976 794 0600

www.apc.com