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Operational
Intelligence

Why strategic technology management is emerging as a key operational discipline in healthcare

How to collaborate to create an innovative strategic technology management plan



Creating smarter hospitals: Towards the need for strategic technology management

Modern medical technology offers a way to empower patients and professionals alike, to have full healthy and active lives and rewarding careers. In fact, this arena of healthcare technology is defined by the World Health Organization as the “application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures, and systems developed to solve a health problem and improve quality of lives¹.”

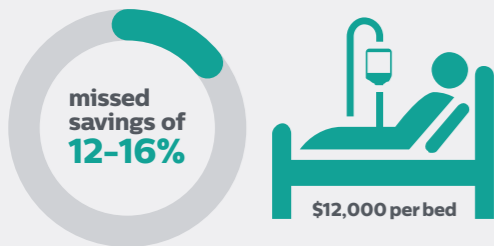
And yet the overwhelming challenge of 21st century healthcare is how to move from cost-increasing to cost-reducing technology. If the events of 2020 have been a global catalyst for circumventing the dynamics that have traditionally slowed adoption of technology-enabled approaches and innovation, they have dramatically highlighted the need for technology in healthcare to start to drive down budgets, rather than raise them.

The more medicine goes digital, the more productive and cost effective it stands to become.



Identifying the **current technology cost burden**

According to Becker's Hospital CFO Report, "Hospitals spend \$93 billion per year on medical equipment lifecycle costs – all the activities related to the purchase, support and disposal of medical equipment and technology. Due to a lack of accurate information, internal resources, bandwidth, and specialized expertise, even the most diligent hospitals are missing savings of as much as 12-16% of their entire medical equipment lifecycle costs – or \$12,000 per bed per year."²



For every healthcare institution, technology is a significant investment and an essential component in quality healthcare delivery. It has become a key differentiating factor in improving patient care, and establishing a competitive advantage. Yet successful management of a broad installed base of hardware and software is challenging.

Without a thoughtful proactive plan, a break/fix/replace routine becomes unavoidable, costly and overwhelming.

Ongoing concerns arise around product safety (for patients and users), efficiency, downtime, spare parts, financial feasibility, operational stability, cyber security, compliance, and more. This unpredictability, coupled with budgetary constraints and rapid technological innovation, leads healthcare providers to seek management partnerships in an effort to gain control over processes that are getting more complex.

The 'beyond the product' partnership opportunity

According to a survey of 157 hospital leaders and service line leaders in the United States and Europe by management consultancy, McKinsey & Co, creating 'beyond the product' partnerships between providers and medtech players offers an answer.

According to the study, "The opportunity lies in medtech companies working closely with healthcare providers to deliver not just equipment but also innovative services, often enabled with software, that meet specific provider needs"³; an opportunity to not simply deliver a product, but deliver a solution (i.e. combination of a product, software, and a service), that is estimated to have the potential to tap new revenue streams worth up to \$44 billion in the United States alone⁴.

Stephanie Holden, Philips Managed Technology Services Director, Solutions UK&I explains: "Sharing risk and reward is the new essential. Philips Transactional relationships are declining as they offer such limited value and expose the system to waste. The shift in focus has to be from buying the 'Rolls Royce' to putting the right technology investments in the right areas at the right time for the right reasons. This demands a knowledge of the clinical and technical elements but also a real commitment to understanding the current and future situation and context of the hospital achieved by spending the time to really appreciate the customer's operations. This is Technology as a Service (TaaS) not as a product - strategic technology management as a vendor neutral solution, delivered as part of a long-term strategic partnership."



Sharing risk and reward is the new essential.

Shift the burden by sharing the risks and rewards: **How to create an effective strategic technology management partnership**

Here Stephanie Holden offers her tips on what to consider when embarking on a strategic technology management partnership:

Step 1



Purpose over project: Identify a partner whose vision, values and operational strategy align with yours

When looking to partner with a health technology supplier to create a strategic technology management plan, ensure that your values and vision align above and beyond the project objectives. Partners with a shared bigger purpose and aligned ways of working will pull together to deliver more effectively.

Stephanie explains: "In addition to being a responsible business, propelled by our purpose to make life better, a compelling reason to partner with a company like Philips is the benefit of shared learnings in addition to shared values. We've spent the past 7 years transforming to be a solution-oriented, future-focused health technology organization, working to address many of the operational challenges that our hospital partners are also facing. They can learn from our successes and challenges and employ the fast fail principle. In addition to this, we can also help them adopt the disruptive innovation tools that have made change stick."

Step 2



Positive governance drives success from the get-go: Consider building an innovative governance framework from the start.

Framing the governance process and adopting an innovative model from the start can make or break relationships, priming for success rather than failure. Rather than closing down dialogue and setting procedures in stone, a progressive governance structure can lock in trust, flexibility and collaboration by embedding the principles of shared risk and reward. It becomes a win: win from the get-go.





Step 3

Prioritize the plan: Create a future-thinking strategic technology plan

With a wealth of complexity and fragmentation, hospitals can struggle to have a comprehensive overview of their complete technology enterprise, why they have it and how it fits into their long term plan and goals. An effective strategic management plan depends on the strategic start point and encompasses a full audit. This demands the removal of assumptions, an assessment of the existing landscape and situation as well as the ability to align on what the objective is.

It's an approach that sounds simple and obvious but yet, according to a report by the Project Management Institute⁵, 70% of projects fail with just 40% meeting the key goals of schedule, budget and quality. In fact, only 2.5 percent of companies successfully complete 100 percent of their projects⁶ and 17 percent of IT projects go so badly, they threaten the existence of the organization⁷. A progressive strategic management plan provides the foundations for success. To devise an effective plan:

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A

Start broad to build a holistic overview: First, the team needs to gain a holistic perspective of the technology (and services) necessary to support positive clinical outcomes and identify equipment performance needs and existing issues. All aspects have to be considered – patient volume, staff/clinical requirements, facility layout, equipment age, lifecycle progression, funding, etc. With clinical input and financial considerations, a multi-year plan for technology operations is developed. The intent is to provide a guide for manageable, sustainable growth. “One of the key benefits I find with a Managed Services partnership,” notes Stephanie Holden, “is the ability to really work hand-in-glove with the customer to get a deep understanding of their operation. There’s a sense of security in knowing that there is a partner working right alongside you, providing a strong infrastructure that will allow you to do your job really well.”

B

Build patience into the planning. The journey to an actionable plan may take a significant period of time. It is imperative for the internal and external partner team to sit down with hospital stakeholders in ‘co-create sessions’ and work as a single cross-department/cross-functional multi-disciplinary team. As David Pickering, Senior Strategic Business Architect, Philips UK&I, explains, “When everything is aligned and interoperability has been factored in from the start, the hospital can confidently install new equipment, knowing that more will come and the infrastructure will be ready. It is critical to design today for what’s installed in the future.”

C

Adopt a multidisciplinary team approach to construct a comprehensive plan. Multidisciplinary teams remove the likelihood of blind spots by viewing the world – and the project – from a 360 degree perspective. In fact, the Centre for Workforce Intelligence⁸ has cited the value of teams working across a range of different professional groups, delivering higher quality patient care and implementing more innovations in patient care⁹.

D

Build tangible value into the plan. Predictability, from a financial perspective, is central to a strong technology plan. There should not be any unexpected costs in the managed technology services business model as it should be shaped exactly and solely to fit a hospital’s particular needs. Instead, there is predictability. Addressing necessary changes in the current environment and adopting a carefully articulated plan for the future years, leads to a consistent budgetary line item. The inclusion of a thoughtful equipment replacement plan, strategic departmental design, opportunities for inorganic growth, service realignment, alternative technology investments and performance analytics brings tangible value to a partnership as well as fulfilling set objectives.

E

Build in scope for the plan to encompass an opportunity for change management. When good planning leads to technology management stability, it opens up the possibility to add other transformational services. Hospitals can integrate education around Lean methodologies and service improvement science into their organization. Learnings from these efforts may even help refine the direction of the partnership. “This concept of planning for growth and change is where our customers see the most value. We balance the need to make immediate impact with ongoing optimization by structuring in the ability to evolve,” adds Stephanie Holden.

F

Ensure that integrated information management is central
One of the great ironies of healthcare technology management is that despite being data rich in quantity, many hospitals are data quality poor. All too often hospitals don’t know what types of data are available to them to properly inform their technology decision-making. In fact reports confirm that healthcare typically lags behind other sectors by a decade in adopting business technology and scores low in digital maturity¹⁰, and this lag is largely driven by unique regulatory requirements placed on healthcare firms as it applies to patient data. As part of its strategic approach to technology management, Philips provides real-time metrics through its integrated information management system. PerformanceBridge is a web-based, real-time data platform that aggregates data from multiple sources like RIS and PACS to provide the actionable insights that help drive continuous improvement in areas such as asset optimization, workflow and planning.

G

Define output-based KPIs and complement with OKRs
A progressive technology management plan also demands an innovative approach to Key Performance Indicators (KPIs). Hospitals typically start with their own baseline set of KPIs which the technology plan uses to targeted, stretch KPIs and Objectives and Key Results (OKRs). OKRs help establish high-level, ambitious goals and outcomes that can be tracked over the quarter. The framework is designed to help organizations establish far-reaching goals in days instead of months.
OKR has been around since the 1970s. The concept was created by Andy Grove, but popularized by John Doerr, who was one of the earliest investors in Google. OKR quickly became an important focus for Google, and companies such as LinkedIn, Twitter, Dropbox, Spotify, Airbnb and Uber have since followed suit.
OKRs and KPIs seem similar on the surface, but KPIs are more reporting focused while OKRs support a goal or vision. They should also be measurable, flexible, transparent and aspirational.
David Pickering explains why it is important to include both KPIs and OKRs: “We use both KPIs and OKRs as performance indicators, but in healthcare, we find it particularly useful to track OKRs as they are more specific with quantifiable results. Utilizing the two, offers the opportunity for macro and micro operational visibility. OKRs are tied to business goals and objectives, rather than employees’ work. KPIs on the other hand can be tied directly to an employee’s day-to-day work – they’re designed for achieving success in the workplace.”



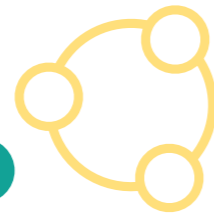
Step 4

Technology is just part of the process: Appreciate that success and efficiency gains are ultimately dependent on change management, not technology

While technology is a key part, successful outcomes are ultimately dependent on the ability to embed change.

“If the change management process is not managed effectively, the technology management won’t be successful no matter how advanced the technology is. This is because the people behind the machines are key. It’s really important that change management begins from the start but also remains a constant. Our teams partner closely with the hospital to roll out education and awareness programmes to take everyone through all aspects of the new relationship and ways of working. It is crucial that everyone hospital-side understands that we’re working together for a win: win,” explains Stephanie Holden.

The technology management partner is, of course, not doing anything ‘to’ the hospital, but instead is partnering with the hospital to help drive transformation. The dedicated Philips team on site regularly meet all staff in person and nurture a close rapport, recognizing that this is a significant adjustment for many, new processes are delivered in small, relevant chunks – one at a time.



Step 5

Learn from doing – Practice makes partnership

In Step 1, we identified that shared values and sense of purpose is vital in forging an effective strategic technology management partnership. The ability to learn from experience is also vital. Over the years, Philips has enabled measurable, sustainable technology service improvement for dozens of clients, including these two examples in the UK which encompass the elements of strategic technology management as detailed above.

The partnerships achieved with County Durham & Darlington NHS Foundation Trust and Leeds Teaching Hospitals NHS Trust demonstrate the essential nature of the strategic management plan. After all, as the British military saying goes, “fail to plan, plan to fail.”

**Fail to plan,
plan to fail**

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Partnering to deliver excellence in diagnostic imaging, County Durham & Darlington NHS Foundation Trust

County Durham & Darlington NHS Foundation Trust is one of the largest integrated care providers in England.

In 2018, the Trust agreed a multi-year Managed Service partnership with Philips, primarily focusing on delivering service improvement and the latest cutting edge medical equipment, fully managed to provide consistent availability of the clinical service, improved patient and staff experience whilst improving patient outcomes and clinical efficiencies.

The partnership includes delivery of a service improvement programme, with a series of focused projects aimed at ensuring the Trust optimises systems in terms of new techniques, services, quality, throughput and most importantly improved patient care and satisfaction.

The equipment replacement programme incorporates the latest Radiological technology including the delivery of a Philips Azurion Cardiac Cath lab and MRI suite featuring a low helium, Philips Ambition system.

As part of the long-term collaboration, Philips assigned a dedicated Customer Delivery Manager to support programme delivery, alongside an on-site Engineer providing first line support, as well as an integrated Helpdesk solution to ensure immediate access for fault reporting, resolution and scheduling preventative maintenance.

Twenty four months into the partnership, access to cutting-edge medical technology without the need for significant upfront capital cost, has enabled the Trust to enjoy improved scan cycle times along with >98% system availability.

Key achievements to date include:

- Analysing radiology workflow data (CRIS) to highlight areas of criticality and patient flow improvement opportunities.
- Training for over 80 members of staff in service and quality improvement.
- Conducting a staff experience survey focusing on improvement, identifying areas for reinforcement and development.
- Service Improvement to include analysis and optimization of systems as well as training programmes.
- Procurement, installation and system integration (managing over 100+ systems).
- PerformanceBridge solution to better integrate data, providing near real-time visibility of departmental workflow metrics for driving continuous improvement.
- Clinical training, asset management, parts logistics, backup equipment, maintenance and technology updates.
- Higher predictability and strategic decision-making to ensure the right technology is available to provide quality care, delivered through an equipment replacement plan.
- Uptime guarantee on system availability to enable patient throughput.
- Commitment to elevated key performance indicators around maintenance of technology and software upgrades.
- Enabling clinicians to stay up to date with the latest techniques and deliver excellent care through ongoing clinical education programmes.

Multi-year Managed Service partnership with Philips



Partnering to deliver excellence in cardiac care, Leeds Teaching Hospitals NHS Trust

Leeds Cardiac Clinical Services Unit sees over 25,000 patients a year and offers specialist cardiology services to a regional UK population of over 5.4 million across West Yorkshire. As both a local care provider and international specialism centre, the Trust operates an aspirational international innovation programme that not only benefits the local population but also the global cardiology community by developing cutting-edge techniques to meet challenging patient presentations.

With both local and international objectives, Leeds decided to work in partnership with Philips on a long-term basis to ensure it could continue to meet and exceed its aspirations and pioneer excellence in cardiac care.

The strategic partnership combines the latest innovations in technology for integrated cardiovascular solutions to deliver on the quadruple aim: better outcomes, increased efficiency, and improved patient and staff experience. Service improvement programmes will support the co-design of new patient pathways and workflows, all with the aim of delivering the best care experience for patients.

The partnership agreement includes six fully featured interventional cardiac suites based on the Philips Azurion platform, including two specialised electrophysiology suites and a structural heart suite, as well as advanced patient monitoring and ultrasound systems.

The Azurion platform provides an intuitive, seamless approach for minimally invasive procedures that will support Leeds' clinicians to focus on treating the patient, and its administrators as they strive to improve productivity and efficiency through intelligent resource management.

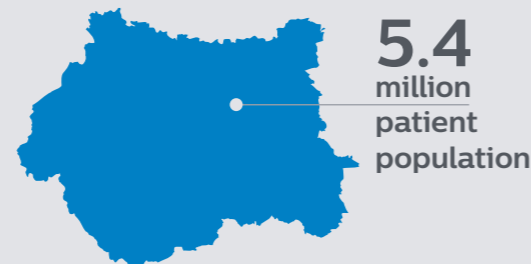
Following the commencement of the partnership, one of the cath labs was not functioning due to ageing, unreliable equipment and superceded replacement parts. Philips proposed and installed an interim solution to enable the Trust to use the lab whilst a full replacement programme was being undertaken, incorporating a Philips Zenith C-Arm system.

In addition, the solution provided a storage area to help facilitate building works required for the new department layout.

Technology is constantly changing, but by strategically managing it along an iterative cycle of creation, monitoring, assessment, transfer, acceptance, utilization, maturity, decline, reassessment and innovation, healthcare systems can reduce costs and improve professional and patient satisfaction while finding new ways to create value and advance their field.

Stephanie Holden concludes, "the key to arriving at a successful ongoing plan and embedding it effectively, is to work with a partner who shares your vision and values, will engage in a continuous dialogue and feedback loop of people, process and technology to help you translate technological innovations into tangible impact."

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Interested to learn more?

Let's talk. Even better, let's collaborate

We'd love to help you apply Operational Intelligence to help solve your key people, process and technology challenges. For more information, please visit

<https://www.philips.com/operational-intelligence>



<https://www.philips.com.au/healthcare/clinical-solutions/managed-technology-services>



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