

Pharmaceuticals & Medical Products Practice

# Solutions and services in medical devices: White space or white elephants?

Medical-device players are venturing into adjacent value pools through solutions and services. What do they require to capitalize on the opportunity and deliver on their profitable growth aspirations?

*by Siddhartha Chadha and Chris Llewellyn*



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**Recent trends in healthcare and technology** are creating an inflection point for the medical-device industry. Manufacturers are shifting away from being product focused to assessing opportunity and impact in device-adjacent value pools. We posit that while solutions and services (referred to as “solutions”) are attractive growth vectors to pursue, there are certain imperatives that manufacturers must consider in order to build attractive and scalable business opportunities.

## The opportunity in adjacent value pools

Disruptive trends are reshaping the healthcare landscape: an increasing consumerization or involvement of consumers in their health decisions; redistribution of risk from payers to patients, providers, and manufacturers; maturation of several breakthrough technologies that span digital health; and an evolving regulatory landscape are some examples. One implication of these trends is the shift of value pools from fee-for-service reimbursement to outcome-based models. This shift, in turn, is pivoting manufacturers toward device-adjacent value pools.

Device-adjacent value pools can present a significant opportunity for manufacturers. For example, an analysis of major joint-replacement (orthopedic) and pacemaker-insertion (cardiovascular) surgeries indicates that implant costs make up 5 to 25 percent of overall episode-of-care costs, with the bulk of costs and variance coming from facility services and lengths of stays. Consumable use in knee-replacement surgeries can vary by more than 230 percent across surgeons in large US hospitals, and standardized personnel costs can vary by 190 percent.<sup>1</sup> This has resulted in variation in total episode costs. In major joint-replacement surgeries, episode costs can vary from approximately \$12,000 (90th percentile) to around \$40,000 (10th percentile)—or a variation of more than three times. In pacemaker-

implant procedures, episode costs can vary from approximately \$16,000 (90th percentile) to around \$70,000 (10th percentile)—or a variation of more than four times (Exhibit 1).

Providers, which are facing margin and growth pressures of their own, are increasingly seeking solutions that deliver better and more consistent outcomes at reduced total costs. Some manufacturers can play important roles in collaborating with hospitals to deliver on this need for better patient care. Examples include solutions that maximize operational efficiencies (for example, clinical decision-support tools), improve efficiency and quality of services (for instance, improving recovery time after surgery), enable access to new patient volumes (such as improving physician referrals), and increase financial and capital efficiency (for example, outsourcing the cath-lab function).

This opportunity also requires the manufacturers take a balanced and deliberate approach, as not all manufacturers will be natural owners for these solutions. The solutions will often need to go beyond a specific product or portfolio and will require different competencies (for example, digital and analytics) and business models (as adjacencies, on average, offer lower margins than products, especially for manufacturers that are further along the surgeon-preference spectrum). Offering solutions at scale will require building or acquiring new capabilities and infrastructure as well as embracing a different business approach and mind-set.

## Early examples of manufacturer moves

Medical-device players have taken meaningful strides into adjacent value pools by creating new solutions. The move into adjacencies has been embraced differently by various players, depending on their beliefs in the potential of the solutions and fit within the broader company

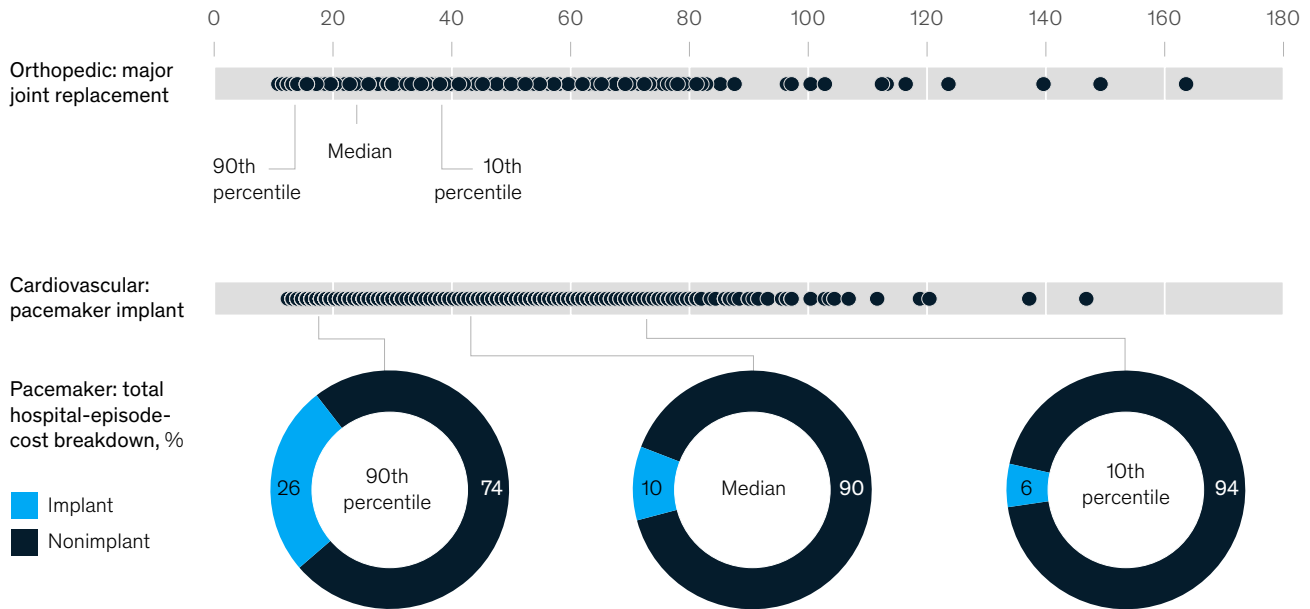
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<sup>1</sup> Derek A. Haas and Robert S. Kaplan, “Variation in the cost of care for primary total knee arthroplasties,” *Arthroplasty Today*, March 2017, Volume 3, Issue 1, pp. 33–37, sciencedirect.com.

Exhibit 1

## Episode costs can vary widely for a medical procedure.

Average US hospital charge, by select procedure, \$ thousand



Source: Centers for Medicare & Medicaid Services

strategies. We identify two primary dimensions along which we see solutions being created:

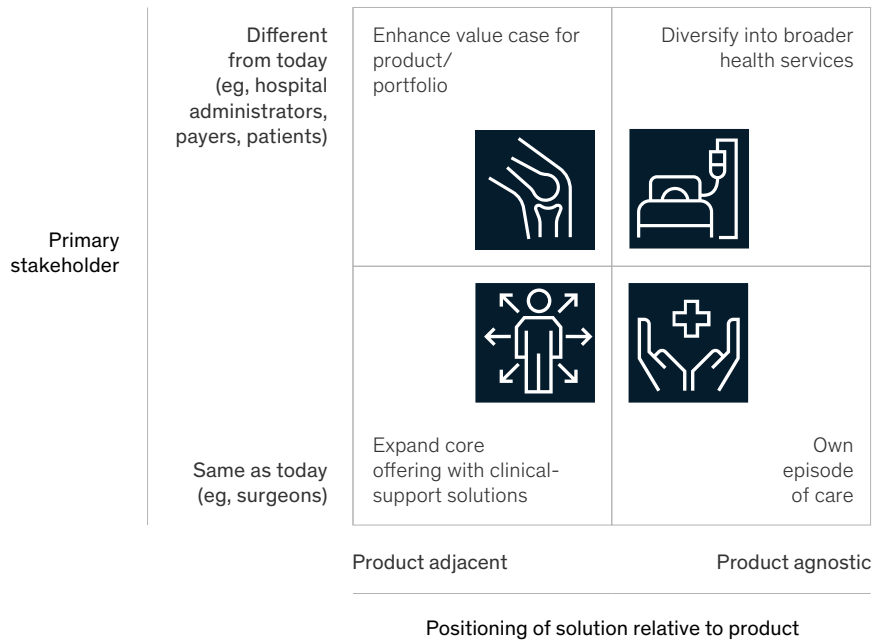
- **Positioning relative to core product or portfolio offering.** Some solutions are linked or adjacent to core product or portfolio offerings (for example, clinical-support tools). Others are agnostic to the core offer and have the potential to be stand-alone solutions (for instance, management and consulting services).
- **Primary stakeholder for solutions.** Some solutions (for example, treatment-planning tools) are primarily targeted toward existing stakeholders, such as surgeons and other providers. Others (for instance, disease-management programs and work-flow

solutions) are primarily targeted toward new stakeholders, such as payers, patients, and broader health-system executives.

As illustrated in Exhibit 2, the combination of these two dimensions creates four distinct potential positions for solutions (see sidebar, “Spotlight on solutions provided by manufacturers,” for manufacturers’ offerings that serve as examples for each solution type; note that these are examples, not assertions of the solution types the offerings belong in, as most manufacturers have solutions that span several quadrants.)

The bottom-left quadrant comprises solutions that are closest to the core product or portfolio offering and are intended to enhance it. The objective here is to develop the minimum required capabilities to help

Medical-device manufacturers are providing distinct solutions based on the primary stakeholder and the positioning of a solution relative to the product.



differentiate the product, not necessarily to create new, sizable revenue streams.

play a much more engaged role across the episode of care.

In contrast, solutions in the top-right quadrant are product agnostic and targeted toward new stakeholders. These solutions have fewer links to the core product offerings and are intended to be independent revenue streams that help expand and diversify the manufacturer’s offerings into health-service categories and strengthen its overall healthcare-value proposition.

The solutions in the top-left and bottom-right quadrants are hybrids, expanding from the core by either targeting new stakeholders or building new solutions for existing stakeholders. The former may be intended to secure market access for high-value products through a compelling economic-value proposition. The latter may be intended to create encompassing care-pathway solutions to

Findings on how to start and scale solutions

Medical-device manufacturers are still in the process of defining the right business models and go-to-market strategies for new solutions. Executives are grappling with several key questions:

- How do solutions in adjacent value pools fit into the company’s overall strategy and aspirations? Are offers intended to help deliver stand-alone growth or support the growth trajectory of the core products or portfolio?
- In which geographies and market segments should a company consider building solutions?

- How does the solution drive value creation for customers and the manufacturer? What are the appropriate business-case expectations for the desired solution?
- Which solutions should be built internally? Which should be pursued inorganically, through either acquisitions or partnerships?
- How should the organization invest in, test, and, eventually, scale and commercialize solutions?

Indeed, many manufacturers now have a suite of solutions addressing a range of customer needs. Yet only a few have reached meaningful scale, despite considerable investment. Some solutions have increased total cost to serve without achieving a proportionate increase in the value delivered or the elusive goal of growth. While hospital executives are excited by the promise, they maintain a measured stance to embrace manufacturer-driven solutions.

Adjacent value pools can offer a significant opportunity for manufacturers if executed in the

## Spotlight on solutions provided by manufacturers

**Solution type:** Expand the core offering with clinical-support solutions

**Solution spotlight:** Koninklijke Philips's (Philips's) Pinnacle<sup>3</sup> system

To support its vision of building an integrated suite of connected devices and solutions, Philips created the Pinnacle<sup>3</sup> system, which is a solution of work-flow-planning software connected to Philips's radiation-therapy equipment (for example, CT Big Bore and Ingenia MR-RT). The solution automates an otherwise labor-intensive process, increases throughput, and creates consistent delivery in scans. Philips partnered with Lake Constance Radiation Oncology Centre to study the effectiveness of the planning software on case throughput.

**Solution type:** Enhance the value case for the product or portfolio

**Solution spotlight:** Smith & Nephew's Leaf Patient Monitoring System

Smith & Nephew added the Leaf Patient Monitoring System to its portfolio to enhance the value case for its wound-management products. The wireless, single-use, disposable device adheres to a patient's chest and seamlessly tracks movement throughout the mobility continuum (from bedridden to fully ambulatory), with the goal of improving patient care. The solution simplifies and automates protocols for pressure-ulcer- and -injury prevention to alleviate traditional nurse burden. It also improves provider efficiency by reducing the number of hospital-acquired pressure ulcers and injuries.

**Solution type:** Own the episode of care

**Solution spotlight:** Medtronic's cath-lab and electrophysiology (EP) managed services

Medtronic developed its business line for cath-lab and EP managed services as an integrated solution for the entire episode of care, allowing both Medtronic and the customer to measure and manage costs

and risks better. Specifically, the solution provides services for cath and EP labs, focusing on lab management, scheduling, and room turnover. It also implements models to improve work flows and find operational efficiencies. Medtronic partnered with University Hospitals in 2016 to bring its global expertise and learnings to the US market.

**Solution type:** Diversify into broader health services

**Solution spotlight:** General Electric's GE Healthcare Partners

GE Healthcare Partners has developed a suite of services around healthcare-management analytics, technology, and consulting. For example, it has partnered with several hospitals and health systems to form Command Centers to improve care delivery and costs via real-time performance analytics, capacity management (from intake to emergency room and operating room to discharge), and process simplification or reengineering.

right circumstances. In order to create at-scale solutions, we believe that there are five imperatives for medical-device companies to follow:

1. Define how solutions fit into the overall company vision:
  - **Clarify strategic focus.** Agree on how solutions fit into the company's overall strategy and ambition. Consider whether solutions are intended to be scalable new revenue streams (potentially managed as separate entities with their own general managers) or to support existing businesses and products.
  - **Sharpen scope.** Agree on the type of solutions that will enable growth and scale. As previously discussed, solutions range from product-adjacent wraparound services to product-agnostic broader health-system plays that are farther away from the core business and competencies.
2. Prioritize the right markets:
  - **Segment markets.** Identify markets with incentive structures that lend themselves to successful solution commercialization. These are markets with the following characteristics:
    - Reimbursement for providers creates an incentive for enhanced efficiency and quality going beyond the episode of care (for example, readmission penalties for clinical interventions and productivity imperatives for diagnostics).
    - Incentives are aligned either between payers and providers along the care pathway or among a population of patients (for instance, integrated-care models).
    - There is high risk associated with a product (for example, game-changing technology that comes at a high cost for which payers and/or providers need to share risk).
  - **Prioritize markets.** Conduct value-pool analysis for identified markets and size the opportunity at stake. Prioritize markets based on potential financial impact and scalability of solutions.
3. Invest in the right solutions and develop a compelling business case:
  - **Understand critical value-creation assumptions.** Consider how the solution creates value for customers—whether through improving outcomes, reducing costs, or improving care delivery. It is important to consider the willingness of customers to share in the value creation with manufacturers. Carefully craft how the intended solution delivers value to the organization and aligns with the defined strategy (for example, via pull-through product revenue and as a stand-alone opportunity).
  - **Challenge assumptions and create scenarios.** Challenge assumptions on how solutions will truly create value for customers. For example, if a solution does not meaningfully create value as previously described, it is likely that the solution will simply increase the manufacturer's cost to serve. Define scenarios for how the solution will evolve over time. How will competitors react? What are the implications of additional entrants providing similar solutions? How might pricing evolve over time?
4. Complement internal capabilities with an external partner network:
  - **Take stock of internal capabilities and be rigorous on build versus buy versus partner.** Identify areas of strength (such as surgeon education and commercial relationships) and capability gaps (for instance, digital and analytics). Consider how these capabilities might influence whether a solution is developed internally, acquired, or pursued through a partnership.
  - **Allocate investments appropriately.** Prioritize the internal capabilities that can be sources of



competitive advantage and the areas required to remain competitive more broadly (for example, building a data backbone). In other instances, invest as needed to remain relevant (“good enough” solutions) and tap the right external partners that have sufficient agility to scale (for example, in creating digital solutions that intersect products and technology).

5. Develop solutions using an agile approach:

- ***Test and learn with your customers.*** Partner with a small and trusted set of customers to cocreate the solution. Codeveloping and conceptualizing solutions with customers creates proven relevance and credibility when a manufacturer is ready to scale more broadly. Test whether the solution creates the desired value and whether customers are willing to pay for the value created.
- ***Prioritize investments.*** Scale solutions that have the highest value-creation potential, based on early experience. Equally, deprioritize and sunset solutions that have failed to deliver value.

A focused set of at-scale solutions is likely to deliver greater value than letting a thousand solutions bloom.

- ***Create the go-to-market model and governance.*** Develop contracting models and selling structures for the solution that link with broader commercial strategies. Creative contracting structures, such as risk- and gain-share contracts, may be appropriate when there is a direct and measurable link between solutions and outcomes. Define the appropriate governance: aligned with core business, stand-alone business, or a mix.

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These are undoubtedly exciting times for the evolution of the medical-device industry. There are considerable opportunities for medical-device players to play a larger role in care delivery and enter valuable white spaces with solutions. Successfully executing and scaling solutions will be challenging. Without a clearly articulated strategy and a vigorous approach, solutions risk being white elephants.

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The authors wish to thank Abhay Nayak for his contributions to this article.

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