

Intuitive Surgical - Who Gets the First da Vinci 5 Systems?

Internal ID: S&F-STR-315

Topic: Customer Strategy, Competitive Strategy, Operations Strategy

Industry: Health Care Equipment

Source: Strategy & Finance

Publication date: 5 October 2026

License: Not specified

Decision date and information cutoff: 31 January 2024, 11:59 p.m. ET

Decision scope: Hypothetical segmentation of da Vinci 5's conditional phased rollout

Case convention: This is an author-created strategy exercise. The decision is hypothetical; company and competitor statements are historical. It does not describe a private management discussion or a decision announced by Intuitive.

A new generation, before clearance

Intuitive Surgical ended 2023 with a da Vinci installed base of approximately 8,606 systems across hospitals worldwide. Those systems supported approximately 2.286 million procedures during the year, up 22% from 2022. The company placed 1,370 da Vinci systems in 2023: 666 in the United States and 704 outside it. [S1]

Now the company was preparing its fifth-generation multi-port system, da Vinci 5. In its 2023 Form 10-K, filed on 31 January 2024, Intuitive said it had submitted regulatory filings in the United States, Japan and South Korea. If it obtained the required clearances, the company planned a phased launch over several quarters to mature supply and manufacturing. The system was not yet cleared at the information cutoff. [S1]

The 10-K made one part of the commercial strategy more concrete: Intuitive generally did not provide specified-price trade-in or upgrade rights when a hospital purchased a system, but expected more arrangements to include these rights when da Vinci 5 launched. The filing did not provide the proposed terms, eligible systems, trade-in values, prices, available units or customer commitments. [S1]

That left a consequential sequencing question. Should the first available systems go to existing customers that might replace older systems, to current customers that need additional capacity, or to new hospitals seeking to establish a robotic-surgery program? The supply ramp itself could take several quarters. Early sites would also shape training needs, service demands, customer evidence and how hospitals understood the new platform.

What the business measures

Intuitive reported 2023 revenue of \$7.124 billion. Instruments and accessories generated \$4.277 billion; systems generated \$1.680 billion; and services generated \$1.168 billion. Operating-lease revenue was \$501 million. The company also reported “recurring revenue” of \$5.945 billion, or 83% of total revenue, by summing instruments and accessories, services and operating-lease revenue. This is a company-defined category, not a contracted subscription or a guarantee of future revenue. [S1]

Systems revenue was flat in 2023 even as placements increased from 1,264 to 1,370 systems. Intuitive attributed that pattern primarily to higher operating-lease revenue, lower sales-type lease revenue and average selling prices, and a larger share of operating-lease placements. Of the 1,370 placements in 2023, 659 were under operating leases, including 355 usage-based leases. For usage-based arrangements, revenue is recognized as the system is used; the company said these arrangements generally contain no minimum payment and allow customers to exit without a financial penalty. [S1]

Placements are therefore not the same as system sales revenue. A placement can use a purchase or lease arrangement, and revenue recognition varies by contract. Nor does a trade-in automatically identify a new customer or a first-time hospital. In 2023, 240 da Vinci placements involved trade-ins and 1,130 did not. The filing did not distinguish first-time hospitals from existing customers adding capacity, or report upgrade conversion, contract-level economics or customer-level utilization. [S1]

Intuitive's description of placement drivers pointed in more than one direction. The company said placements are generally driven by procedure growth, while systems may be placed before procedure growth in markets where robotic adoption is early or regulation constrains placements. It attributed increased 2023 placements mainly to demand for additional capacity as procedures grew, partially offset by fewer third-generation systems available for trade-in, macroeconomic challenges affecting U.S. customers and China's anti-corruption campaign. Those are management's explanations of aggregate results, not evidence of why any specific hospital purchases, leases, replaces or adds a system. [S1]

Adoption is a hospital decision

For an existing customer, a new generation could provide a pathway to refresh technology while preserving surgeons' familiarity with the company's platform, training and service relationships. A high-use hospital might want an upgrade if new features improve its operating-room workflow or allow it to serve more cases. But replacing a functioning system can impose transition, training and capital costs and may not be the best use of an initial limited supply. Some hospitals could prefer to add capacity rather than replace existing systems.

For a new hospital, the system could support a new robotic-surgery program and potentially attract surgeons or patients. The hospital would also need suitable surgical demand, trained teams, operating-room capacity, clinical evidence, reimbursement and a financing path. New sites can take time to build enough cases for efficient utilization. Intuitive's existing sales and service network supports placement, training, installation and maintenance, but the filing provided no da Vinci 5 launch capacity or staffing plan. [S1]

Hospitals also choose among alternative ways of treating patients. Intuitive's 10-K listed open surgery, conventional minimally invasive surgery, drug therapies, radiation, and emerging diagnostic and interventional approaches as competition. It identified Johnson & Johnson and Medtronic among companies with substantial experience in surgical instruments and named multiple companies that had introduced or were developing robotic or computer-assisted systems. [S1]

Two competitor announcements illustrate the state of the field at the cutoff. Johnson & Johnson said in November 2023 that it anticipated submitting an investigational device exemption application for its OTTAVA system in the second half of 2024 to begin U.S. clinical trials. Medtronic announced the first patient enrolled in a U.S. clinical trial of its Hugo system in December 2022. These were development announcements, not proof of marketing clearance, availability or clinical and economic performance. [S2, S3]

Evidence on adoption and utilization

Horn, Sacarny and Zhou examined how robotic-surgery adoption affected prostate-cancer patient allocation among U.S. hospitals. Their difference-in-differences study used Original Medicare claims from 1998-2015, covering 2,404 hospitals in 306 hospital-referral markets. Hospital-level adoption was associated with increases of 0.60 log points in prostate-cancer admissions and 0.70 log points in prostatectomies; the authors estimated about 7.4 additional patients per year at the average adopting hospital for each measure. Market-level effects were smaller, at 0.29 and 0.35 log points, consistent with both expansion of treatment and some patients shifting among hospitals. The results describe first-time adoption of an earlier robotic platform in Medicare and prostate cancer; they do not estimate da Vinci 5 upgrades, customer returns or clinical benefit. [A1]

Maynou, Pearson, McGuire and Serra-Sastre studied use of robotic, laparoscopic and open prostatectomy in the English National Health Service from 2000/01 through 2018/19. Their provider-level analyses found substitution between surgical approaches and examined adoption, volume thresholds and use in other specialties. In Table 1, column 5, a 1-per-1,000-residents increase in robotic procedures was associated with 0.09 fewer laparoscopic procedures per 1,000 residents (coefficient -0.089 , $p < .10$). The study was observational, centered on prostatectomy in a single-payer system and did not study upgrades or da Vinci 5. [A2]

These studies suggest that a placement can affect a hospital's patient volume, the total market and the mix of surgical approaches. They also point to staffing, local demand and use across specialties as possible adoption considerations. They do not tell Intuitive which first-wave customer will use da Vinci 5, whether an upgrade creates more total procedures, or what commercial return an upgrade produces.

The choice

Assume Intuitive's leadership asks you, on 31 January 2024, how to segment the first da Vinci 5 placements if the required regulatory clearances are obtained. This is a teaching hypothetical. The company did not disclose a specific choice, a first-wave allocation, a da Vinci 5 price or the number of systems that could be produced.

Choose one direction:

1. **Prioritize installed-base upgrades.** Focus first on selected hospitals with mature robotic programs and potential trade-in or upgrade needs. Use those sites to learn about transition, training and system performance while retaining existing customer relationships.
2. **Prioritize new sites and added capacity.** Direct initial supply toward hospitals seeking to establish or expand robotic-surgery programs, especially where procedure growth or constrained capacity provides a clear rationale.
3. **Segment a measured first wave.** Allocate a limited initial group across existing and new/capacity customers using explicit readiness and learning criteria. Review utilization, training, support load and case mix before expanding the program.

None is a company-announced alternative. Your recommendation should state which hospitals should qualify, what evidence Intuitive should collect and what would change the allocation. Do not assume da Vinci 5 clearance, a particular upgrade price, guaranteed trade-in value, production volume, backlog, customer return or clinical outcome.

Your assignment

Prepare a two-page memo to Intuitive's hypothetical leadership team. Recommend one rollout approach and address:

- Which customer cohort should receive the initial systems, and by what criteria?
- How should Intuitive balance replacement demand, additional-capacity needs and first-time adoption?
- What should it learn about clinical use, procedure volume, training, service and hospital economics before scaling?
- How should the company account for purchase versus lease arrangements and for possible patient shifting between hospitals?
- What evidence would cause you to change the rollout mix?

Use only information available by 31 January 2024, 11:59 p.m. ET. Distinguish system placements from revenue, leases from sales, trade-ins from first-time customers, and company-wide metrics from hospital-level economics. State your assumptions.

Sources

[S1] Intuitive Surgical, Inc., Form 10-K for year ended 31 December 2023, filed 31 January 2024, SEC accession 0001035267-24-000021. [Filing](#). Product/business, rollout, placement, revenue, lease and competition locators are cited in text.

[S2] Johnson & Johnson MedTech, “Johnson & Johnson MedTech Provides Details and Timeline for General Surgery Robot,” 7 November 2023. [Official release](#).

[S3] Medtronic, “Medtronic announces first patient enrolled in U.S. clinical trial for Hugo robotic-assisted surgery system,” 15 December 2022. [Official release](#).

[A1] Horn, D., Sacarny, A., & Zhou, R. A. (2022). “Technology adoption and market allocation: The case of robotic surgery.” *Journal of Health Economics*, 86, 102672. <https://doi.org/10.1016/j.jhealeco.2022.102672>. [Complete author manuscript](#).

[A2] Maynou, L., Pearson, G., McGuire, A., & Serra-Sastre, V. (2022). “The diffusion of robotic surgery: Examining technology use in the English NHS.” *Health Policy*, 126(4), 325-336. <https://doi.org/10.1016/j.healthpol.2022.02.007>. [Complete article](#).