Symptoms *to Sources*

Ready to uncover root causes?

Biggest software challenges for healthcare in 2026

testdouble

Introductory Letter

Healthcare organizations battle internal inefficiency, complex regulatory frameworks, and interoperability challenges. When systems can't talk to one another, product and engineering teams spend more time managing technology than improving care.

Your gut instinct is probably to blame the technical problems—slow software, confusing dashboards, siloed data, or manual workarounds—so you spin up your next software project, bug resolution, or product feature.

But, when foundational processes, communication, and data governance are fractured, even the best tools and busiest developers can't create consistent value. These same businesses often struggle to identify ways they can leverage advances in technology to achieve greater outcomes for their patients.

AI is further exacerbating the issues here. Data governance was bad before. Now it's limiting a team's ability to embrace changes with this technology. Companies have always struggled to focus on projects and features that truly generate business value. Now we're seeing AI raise the failure rate over 90%. Regulatory challenges were prevalent before. Now it's a nightmare of trying to suss out what data is flowing where. Untangle one thread and you hit another knot.

Know a leader in healthcare who cares a lot about these things?

Share the survey with them so we can expand our findings: link.testdouble.com/health-tech-survey

At Test Double, we see this cycle in healthcare organizations all the time, so we take a different approach. Instead of addressing symptoms, we uncover root causes across the entire software lifecycle, while solving hard business problems and enabling cultural change. We leave your healthcare IT, engineering, and product teams better than we found them.

Let's examine what happens when organizations treat surface-level symptoms, rather than tackling problems at their source. Along the way, we'll examine the current state of healthcare technology through published research, original data, and insights from interviews we conducted with industry leaders. We'll also present a holistic framework for addressing the root causes of technical, product, and business challenges.

Todd Kaufman
CEO & Co-founder
Test Double

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When solving IT symptoms keeps teams sick

You're back in the doctor's office for the third time this month. Pounding headache, endless nausea, and numbing fatigue persist, undeterred by three separate medications prescribed by your doctor to ease each symptom.

Looked at together, these symptoms could point to a variety of medical issues—COVID, diabetes, or mononucleosis—each one requiring a very different treatment plan.

But, by analyzing and treating each symptom separately from the whole, your physician misses the mark completely, and you continue to live in discomfort.

Healthcare tech teams fall into this same trap. Whether it's a formal product and software engineering team or a product-like function within marketing, strategy, clinical operations, or IT, teams often find themselves solving symptom after symptom: fixing bugs, filling gaps, and rolling out new features. They're spinning the wheel faster and faster, without moving outcomes or the business forward.

The same pattern plays out across the broader healthcare ecosystem. Healthcare technology, systems, and applications are long overdue for legacy modernization and innovation, but it needs to be strategic rather than tactical.

> **"Healthcare is very inefficient. There's a lot of manual calling and talking to people, pushing papers, and faxing things. It's unnecessarily challenging. But, there are lots of technical opportunities underlying everything we do. We sit on troves of data about our customers and patients. How can we take all of that amazing data to help our patients be well?**
>
> **Sara Saldoff**
> Head of Product Management and User Experience at OhioHealth

Methodology

In fall 2025, Test Double launched an online survey to benchmark healthcare product and engineering teams' real challenges. We surveyed engineering, IT, product, marketing, and strategy leaders from healthcare companies of all sizes.

We have shared our preliminary findings throughout this report, but the survey remains open through spring 2026. We will continue to update this report as new data is captured.

We also supplemented our findings with external industry benchmark data and interviews with both internal and external experts to understand how they approach solving client problems. (See Appendix B for our bibliography.)

Together, this report offers both quantitative and qualitative data and insights on the challenges and opportunities found in the health tech space.

Psst: we would love to add your insights to the report.

Please take five minutes to complete our survey.

→ The current state of healthcare software at a glance

Technology offers healthcare providers the promise of increased efficiency, cost savings, and additional resources to provide better patient care. Patients, meanwhile, receive greater access to health records, more holistic support, and convenient channels for collaborating with healthcare providers and offices.

Yet, this high-demand industry is rife with challenges. Healthcare systems are responsible for compliantly managing confidential patient data under the strictest of data privacy laws. Software must work seamlessly, with application availability and interoperability vital to success.

Digital transformation is advancing unevenly across regions, tools, and practices, creating inequity in care, inefficient data siloes, and clinician burnout. With patient care outcomes hanging in the balance, the stakes quite literally couldn't be higher.

The state of health IT: 3 macro trends

Three macro trends shape the next phase of health IT and how patients and providers understand, measure, and collaborate on healthcare outcomes.

Stagnated patient adoption

Health tech empowers patients with convenient, direct access to their health records and healthcare providers. Over the past decade, patients have embraced digitization of personal healthcare, but use cases have stagnated, revealing opportunities to expand digital care.

Between 2012 and 2024, patient adoption of health IT grew dramatically, with 90% of patients viewing results online and 79% using digital technology to message providers (among individuals who used online medical records).

Patient portals have become the norm for making appointments, downloading or transmitting information, reviewing clinical notes, and correcting changes in medical records. But, there remains a pressing need to move beyond basic access toward deeper online engagement.

Poor UI/UX design is frequently at the crux of lackluster engagement. When patient portals are buggy or difficult to navigate, users become frustrated. When patients are forced to re-enter identifying information, as required by HIPAA regulations, they feel inconvenienced and annoyed. As a result, patients only login to complete a pressing task, like viewing test results, but they don't explore the portal further. Adding to this, many product teams feel pressure to release feature after feature, but often fail to address patients' real needs. This combination—poor usability and fewer features focused on the end users' experience—gives patients little incentive to use health tech to its full potential.

Inequitable engagement and access

By 2024, only 56% of hospitals enabled patients to import their records from other organizations into their patient portal, and just 62% allowed patients to submit patient-generated data (PGD), such as tracking their weight or blood glucose levels.

These are prime use cases for patients to engage more directly in their health journey and build a more robust and useful personal health profile.

Further widening the gap, hospitals with less resources often lack the capabilities to enable app-based patient access to health information. Plus, hospitals that used electronic health record (EHR) developers other than the market leaders see lower adoption rates (70%) for app access, compared to 92% adoption for EHR market leaders.

Part of the challenge lies with the EHRs themselves. Many providers avoid upgrading or expanding their EHR platforms because they're expensive, inflexible, and complex—barriers that make it difficult for hospitals to innovate or connect seamlessly with external systems.

To reach higher levels of patient engagement capabilities, healthcare systems must achieve true interoperability and improve resource equity.

Fragmented Interoperability

Against this backdrop, interoperability sits at the center of health IT challenges. Healthcare vendors pursue a shared goal: building holistic data standardization and APIs to support interconnectedness. That way, anybody can walk into a physician's office and access a complete, 360-degree picture of their health.

But, building truly interoperable, scalable solutions brings both technical and strategic challenges, in an environment shaped by policy, diverse user needs, and the inequitable market power of dominant EHRs.

Despite these hurdles, adoption of interoperable standards is accelerating. Between 2018 and 2023, hospitals and clinicians steadily expanded their use of interoperable exchange methods. National networks saw the fastest growth, with 48% of hospitals using interoperable exchanges for sending data and 46% for receiving data in 2023, up from 20% and 18% , respectively, in 2018.

Even as exchange methods evolve, true interoperability is hugely influenced by the market power of a few major vendors. Clinicians are using more than 193 different certified developers in 2023, but Epic dominates the space, with 62% of clinicians reporting at least one certified health tech product from Epic. Cerner Corporation, Athena Health, eClinicalWorks, and NextGen Healthcare were comparatively minor competitive mentions, and 188 alternative developers fell into an Other category.

> **"When we think about interoperability and data standardization more broadly, it's not something we can solve privately by one organization–it's more significant. And, when we talk about access to data and what's required to be compliant with legislation, there's an outsized amount of power and impact that the larger players have. We've seen a lot of startups that either lose traction or fold entirely because they didn't anticipate the playing field or the power of some of those big players.**
>
> **Kiley Blake**
> Senior Vice President of Product and Information Technology at KODE Health

Because of this concentration of power, APIs and standards like the Fast Healthcare Interoperability Resources (FHIR) requirements act as essential guardrails to keep data flowing across healthcare systems, EHRs, and apps.

Many hospitals balance a mix of standards-based and proprietary APIs to meet different needs. About 80% of hospitals use APIs to enable apps to write to EHRs and read data, but only 33% of those connections use standards-based APIs. Roughly half of hospitals use APIs to access data outside the EHR, and just 17% rely on standards-based APIs for this purpose. This mix shows the tension between innovation and standardization, complicating reliability, security, and support.

Together, the data shows an advancing but fragmented interoperability landscape. For engineering and product teams, building and supporting interoperable products and systems means working across local HIEs, national networks, proprietary systems, and legal frameworks like TEFCA. Each of these comes with its own standards, policies, and data quality requirements to navigate.

While national policy pushes for a more unified exchange, product and engineering teams operate in gray areas. They're left to navigate competing standards, vendor dominance, and legacy system integration, while maintaining the highest levels of compliance, consent, security, and usability.

Key industry shifts in health IT

On top of these macro challenges, the healthcare industry is in a state of perpetual evolution in response to internal and external forces.

Let's examine three industry shifts that engineering and product teams, and their healthcare customers, must navigate.

HTI-4 Final Rule

The Assistant Secretary of Technology Policy/Office of the National Coordinator (ASTP/ONC) HTI-4 Final Rule formalized changes to medical prescription policies, effective October 2025.

These changes aim to make prescription costs more transparent, speed up access to care, advance interoperability, and reduce administrative headaches through upgraded APIs, revised standards, and enhanced EHR workflows.

The impacts of the HTI-4 ruling for engineering and product teams include:

- **Real-time prescription benefit checks** require integrating real-time formulary and cost data into EHR workflows and designing simple interfaces to compare prices and see lower-cost alternatives
- **Electronic prior authorization (FHIR-based)** requires building and maintaining HL7 FHIR-based APIs to query payer requirements, assemble necessary documentation, submit requests, and monitor their status
- **Updated e-prescribing standards** mean upgrading prescribing modules to align with the latest NCPDP SCRIPT standard and mandatory prior authorization integration, while ensuring compatibility with legacy systems

Racing to update systems to be in compliance with HTI-4? We can help!

Tariffs impact vendor logistics

Tariffs driven by the federal government's trade policy shift are disrupting medical supply chains, from consumer goods to manufacturing and pharmaceuticals.

These policies are evolving so quickly that we cannot reliably cite up-to-date figures in this report. For healthcare systems, navigating the resulting uncertainty and making sound strategic decisions is increasingly difficult.

Adding to the strain, recent cuts to grants and laid-off federal workers are slowing research, collaboration, and innovation across medical sectors.

One thing is certain: healthcare systems will feel the pain in increased costs and shortages for equipment, medicines, resources, and supplies. Worst yet, patients may put off preventative and non-emergency healthcare or forgo rising-cost prescriptions, which eventually leads to declining health outcomes and severe pressure on providers.

Many hospitals and medical offices will have to move funds to cover immediate needs and postpone critical technology modernization projects, sacrificing future efficiency and better patient care in the process.

Cybersecurity threats and high-profile incidents

Healthcare systems and vendors must safeguard against cybersecurity incidents to protect patient safety and data confidentiality.

The stakes could not be higher, as demonstrated by the 2024 cybersecurity incident impacting Change Healthcare, a subsidiary of UnitedHealth Group.

With Change Healthcare responsible for processing 15 billion healthcare transactions (touching one in three patient records), the consequences of the Russian ransomware attack were far-reaching. The American Hospital Association found that 74% of surveyed hospitals reported direct patient care impact, including delays in authorizations for medically necessary care, and 33% reported the attack disrupted more than half of their revenue.

Outdated systems often mean vulnerabilities and security flaws that are easily exploited. Preventative maintenance offers proactive protection against the growing cybersecurity risks facing healthcare systems. Regularly upgrading legacy systems maintains compatibility with evolving EHR platforms, APIs, and interoperability standards—reducing risks across the line. Planned upgrades should be a routine process, instead of a reactive crisis, to keep systems secure and minimize disruption.

Healthcare systems and third-party vendors must continuously:

- Keep legacy software applications current and upgraded
- Monitor systems and devices, patching vulnerabilities as they're found
- Protect and encrypt patient data
- Implement incident response and business continuity plans
- Ensure compliance with HIPAA regulations
- Invest in ongoing preventative maintenance programs

Recurring assessments and updates allows healthcare organizations to mitigate security risks, maintain compliance, and extend the life of critical systems. A strategic consultant can guide your team safely through the preventative maintenance process, lay out incremental milestones, and transfer knowledge to your team members to maintain continuity of care and patient privacy over time.

Where health tech and product leaders are focused

We asked healthcare executives to ballpark their investment priorities for 2025, compared to 2024. We expected significant increased investments in AI and survey results backed this up, with 84% of healthcare leaders increasing AI spending in 2025 and planning to do the same in 2026.

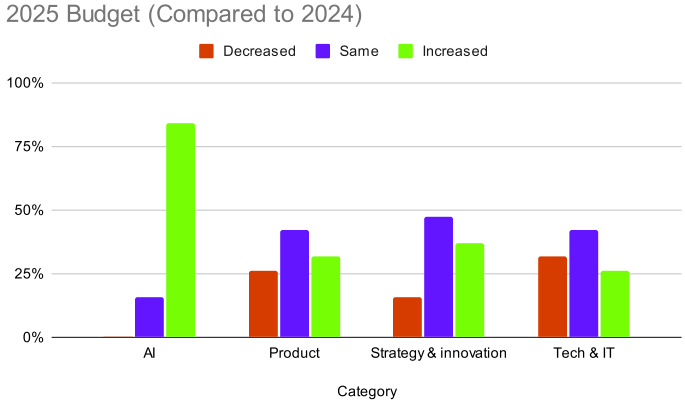
But, we also see a bump in strategy and innovation, particularly planned for 2026, with only 5% of healthcare teams decreasing this investment, 37% keeping the same level of investment, and 58% increasing the budget.

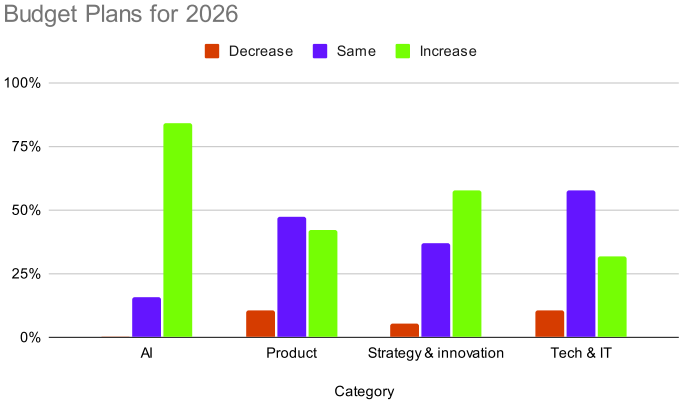
This data suggests that the hype for AI is very real, with healthcare teams feeling the pressure to invest in the biggest shift in health tech right now. But, they likely aren't seeing the fruits of their labor yet, with AI projects underperforming or failing to generate business value.

When we dug deeper to understand the individual technology projects health teams are investing in, we expected to crown cybersecurity infrastructure, AI and machine learning, and EHR integration and modernization as leaders.

Instead, 84% cited AI and ML as the tech projects they spent the most on in 2025, and 76% spent heavily on workflow and process automation. Cybersecurity landed in sixth place, with 11% making cybersecurity initiatives the key investment.

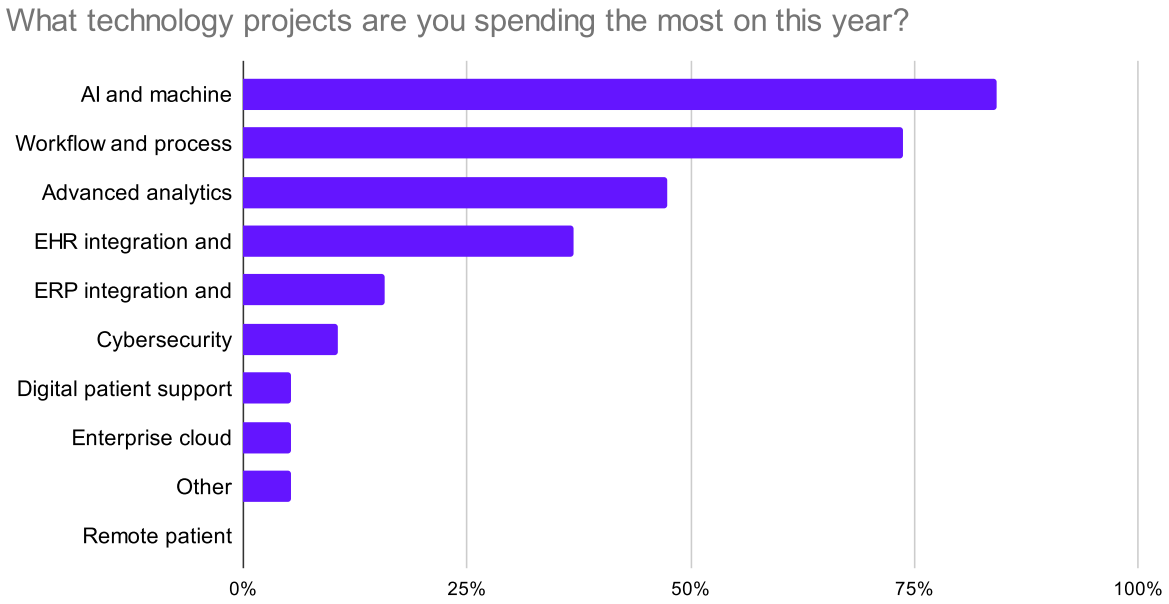
We see a combination of factors driving these investments, while creating hurdles for success. Clearly, investments in AI and machine learning investments are direct responses to the larger market and hype cycle, with everyone from healthcare board leaders to technical practitioners eager to see how organizations can use AI to become more efficient and innovative.





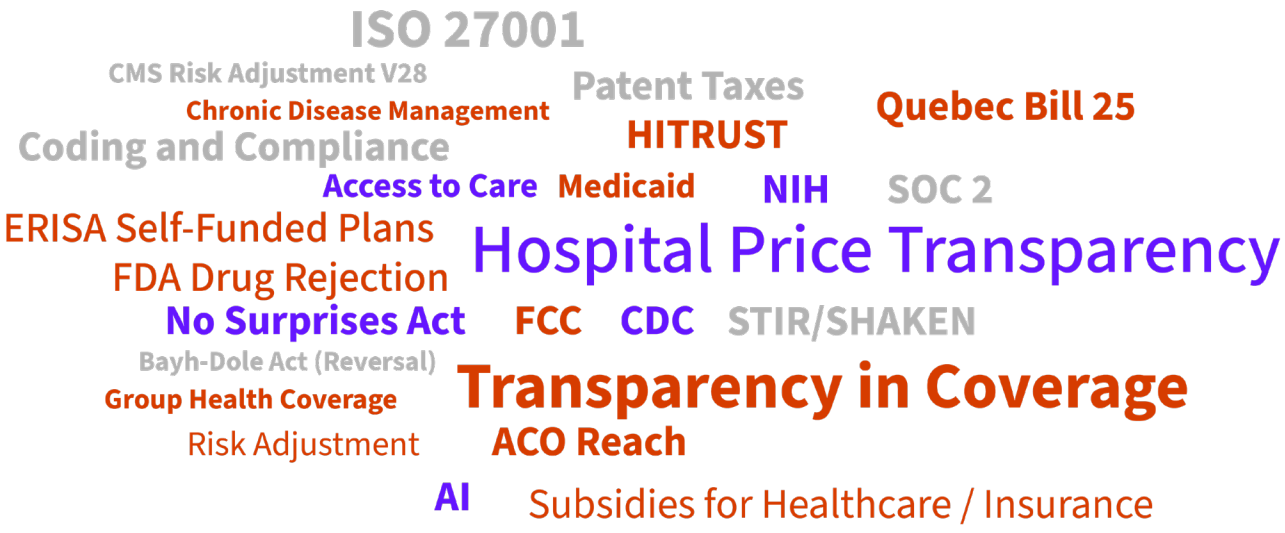
On top of these pressures, healthcare organizations grapple with an enormous volume of data captured during HIPPA compliant collection or within patient portals and digital patient records. They also face a seemingly unmanageable volume of codes for accurate insurance filing and billing. These teams need robust analytics and automation tools to help them make sense of the data and manage smarter workflows to reduce risk and human error.

Under financial pressures to innovate, while being as lean and efficient as possible, healthcare systems are grappling with tradeoffs. Ultimately, pouring money into AI and automation without a hearty research and development budget or a team with hands-on experience in these projects is a recipe for disaster.



A consultant experienced in both sides of the coin–strategy and technology–makes all the difference here. A consultant can help healthcare organizations prioritize initiatives against defined business objectives. This holistic approach helps clients launch more successful AI and automation projects and optimize spend, freeing up budget to invest in these other crucial categories, like cybersecurity.

Compliance with government regulations is, of course, key within the healthcare sector. The complexity of aligning with legislation has increased in 2025, as the new administration has been making sweeping changes to the guidance that affects healthcare technology. Our survey respondents have named multiple specific agencies and pieces of legislation that they pay attention to within their work:



→ The problem: symptoms instead of root causes

We've all been there: Saldoff's product team set out to improve the online scheduling system for OhioHealth. "In 2016, we built an amazing front-end scheduling experience. It was beautiful. Our testing showed customers loved it. It was super easy to use–5 out of 5 stars. Then, we turned it on, and there were only a few appointments to schedule–the availability wasn't there."

Like so many in their shoes, the product team focused on the technical solution–improving the UI–but provider access was a broader systemic capacity issue.

Without the operations team in the conversation, the product team didn't understand the underlying process for generating appointments. They solved the technical problem, but didn't dig deeper into the business problem. The beautiful new UI still couldn't help patients more easily schedule appointments.

Today, Saldoff and her team work in-lock step with their operations counterparts solving problems together. As a result, the most recent redesign earlier this year saw a 63% YOY increase in conversation, due to increased access and solutions that considered the customer and the business.

"We always want to improve the experience for our customers, but we can't do it alone, we have to have our operations and IT partners at the table throughout the journey."

The OhioHealth product team's learning experience is very common in the software development space. It's human nature to solve the frictions in front of you and to take action in your sphere of influence.

But, failing to collaborate across teams to unearth and resolve larger issues gets in the way of achieving business goals. The result? Everyone stays busy building another new feature or working through another legacy rewrite, but never improves the customer experience as a whole.

In fact, Pendo, which tracks how people use software products, analyzed anonymized usage data and found that 80% of features in the average software product are rarely or never used–reflecting up to $29.5 billion in investments by publicly-traded cloud companies to build these features. Here are some of the common "symptoms" that healthcare technical teams address, even while deeper issues are at play.

Technology debt: Pileup with no plan

Technical debt is often the result of good intentions. In the race to deliver new features or meet deadlines, technical teams:

- Solve bugs or issues through quick workarounds
- Delay refactoring, creating muddier and messier code
- Omit or rush through automated test suites as timelines near
- Skip documentation to "just get the work done"

Over time, the result isn't just messy code or slow performance; it's a hidden tax on productivity, innovation, and team morale. Engineers spend more time troubleshooting old issues than building new functionality. Defects become visible to the customer, and the company wastes budget on maintenance to pay down tech debt.

For healthcare product and business teams, this means slower releases, higher costs, and less capacity to respond to market or regulatory changes. These are massive risks in a space where compliance and interoperability rules shift often and security stakes couldn't be higher.

Paying down tech debt isn't a quick technical fix or one-off project; it's a transformation in thinking and approach. It needs to be rooted in deeper process change, better communication, and reformed company culture. Otherwise, unclear ownership, unrealistic timelines, and prioritizing delivery speed over sustainability continue and cost the organization and customers significantly.

Legacy modernization: Tech for tech's sake

When release cadence slows, defects climb, or delivery targets slip, it's tempting to blame the tech stack: "Our legacy systems are slowing us down." And, yes, they probably are. Modernization can help, but only when it's tied to a specific outcome (e.g., shorter claim cycles, fewer prior-auth denials, improved schedule availability, or higher patient/member adoption), and augmented with improvements on the human side of the equation on things like processes and organizational systems.

Updating tech for tech's sake is a band-aid, and defaulting to a full rewrite is often a costly trap—solving symptoms, not the root causes.

Instead, we recommend choosing the smallest viable change that moves your target metric: refactor, replatform, harden integrations, or (occasionally) rebuild.

The blockers we see most often live where people, process, data, and systems meet: unclear outcomes and success measures, fragmented ownership, brittle integrations and data quality, and delivery or process constraints.

If you want to enable larger business outcomes, such as speeding insurance claim turnaround times or reducing denied authorizations, but legacy applications are the blocker to doing so, you can't afford to ignore them.

In this case, prioritizing investments in technical systems that enable business impact can provide enormous ROI.

By improving both technical systems and process-based systems, you'll improve:

- Internal expertise and resources
- Capacity and bandwidth
- Trust and confidence
- Appropriate and clear expectations
- Autonomy to make decisions and experiment

Ultimately, to keep remediation or modernization efforts from recurring every few years, teams, organizations, and processes must also shift.

Delivery pressure: speed for speed's sake

The team isn't moving fast enough. We're not producing enough in each sprint. Sound familiar? Accelerating team velocity is a common goal for healthcare dev teams aiming to prove business contributions through productivity metrics.

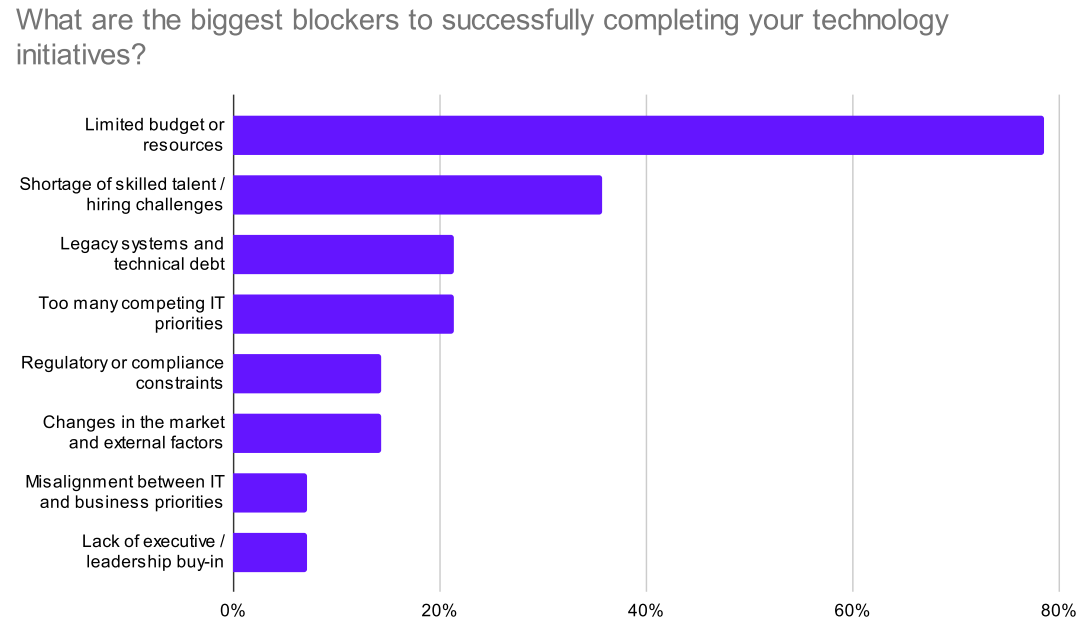
"The incessant focus on delivery pace and just getting more things done is often a result of unrealistic expectations or unclear priorities. It leads to a bunch of technical debt and garbage from cutting corners, and that cycle continues to repeat–with another rewrite every two years," said Todd Kaufman, Test Double President and CEO.

This high-pressure, unsustainable pace of delivery gets in the way of long-term progress. You want to build systems to scale with the company, that don't also later become operational nightmares. Speed for speed's sake is never the right metric. How do we accelerate time-to-value, getting vital capabilities into customers' hands faster, without forfeiting quality?

Ironically, focusing on value, utility, and clarity over speed leads to shorter release cycles, faster delivery of working features, and measurable improvements to the customer experience. "Speed" is not a proxy for progress.

The biggest blockers that we've seen healthcare executives describe so far have been: limited budget and resources for 79% of respondents or shortage of skilled talent and hiring challenges for 36% of respondents, followed by technical debt and too many competing IT priorities both selected by 21% of respondents.

All of these problems require an examination not just of the immediate problem at hand, but investing in solutions that help make teams more efficient and effective for years to come.



→ Moving from symptoms to solving problems at the source

Operational issues don't stem from the symptoms we've just discussed, although the effects are problematic, painful, and costly. Instead, they trace back to deeper system and process gaps. And lasting improvement comes from identifying and addressing these root issues: Healthcare organizations need to tackle the cause rather than the consequence.

In our experience, the root cause of so many technical and product problems falls into three main categories.

1. Siloed data

Across the healthcare industry and entire software space, interoperability and data standardization are near-universal struggles.

Patient information often lives in separate systems–like EHRs, lab databases, insurance portals, and specialty care platforms–that don't communicate with each other. Without a single, straightforward way to share data between systems and products *and* the providers, clinicians, and patients they support, access to a complete picture of care stays out of reach.

Service providers and healthcare SaaS companies contend with standards from facility to facility, supported by government entities. But the protocols and frameworks used to implement those standards vary widely. Plus, the data under the hood is inconsistent at best, and messy and unreliable at worst.

Everyone involved feels the negative effects of these data siloes:

For healthcare providers, this means spending time reconciling records and manually transferring information, increasing the risk of error and pulling valuable time away from patient care.

For engineering and product teams, data siloes mean time spent normalizing data, building complex integrations, and maintaining compliance–time that could be devoted to higher-value initiatives.

For patients, siloes are more than just an inconvenience. Patients find themselves constantly repeating their medical history, retaking tests, and fighting for conclusive answers. Over time, these frustrations lead patients to lose faith in the medical system's support for their holistic health and wellness.

Data siloes are complex, multifaceted root issues that require a deeper solution, from new tech infrastructure to new engineering processes and methodologies.

> **"Structured data and integration between other health entities, even getting data out to other vendors are some of the most consistent problems we've dealt with. There are structured systems out there that nobody actually utilizes in the correct way. It's a systemic problem with no true governing authority of how data should be transferred back and forth.**
>
> **Andrew Warner**
> VP of Product at Genome Medical

2. Wrong metrics

Many product and engineering teams are incentivized to deliver new features or complete tasks quickly, emphasizing speed over value. A culture that prizes task completion loses sight of the problems it aims to solve and the value it brings to customers.

The easily accessible metrics rarely reflect the bigger picture.

> **"The available data can influence what we measure and therefore, drive the objectives we focus on. But, if our KPIs don't accurately reflect business value, then how do you know if you're driving to the wrong objective?**
>
> **Kiley Blake**
> KODE Health

When product teams are applauded for simply delivering a feature, there's less accountability for whether the system or product is successfully solving a root cause and generating value, as well as who is accountable for its maintenance and long-term success. This leads to greater tech debt, product underperformance, inefficiency, and reduced profitability.

Product and engineering teams' measurement strategies must be grounded in both business goals and the voice of the customer. In healthcare, "revenue" might be the desired business outcome, but the target metric must always be bigger than that. To address wider issues, tech teams need to measure incremental improvements in customers' well-being, such as access to health information or more convenient and collaborative care.

> **"I've seen product leaders get too hyper-focused on a KPI or an outcome to the point where it becomes all-consuming. You must be clear on what the business is driving toward, but remain flexible enough to adapt with shifts in the business and competitive market. You need to empower your team to put the right measurements in place to make good decisions and bring some pragmatism to the table.**
>
> **Kiley Blake**
> KODE Health

3. Strategic misalignment

The right prioritization generates business impact; misalignment derails progress.

In health IT, outcomes depend on coordination across departments, vendors, and regulatory frameworks.

When leadership, product, and technical teams operate from different interpretations of priorities, goals compete with one another, and *everyone* wastes time.

Goals that aren't explicit from leadership become *implied*, and misalignment tends to hide behind busy roadmaps. Well-intentioned teams chase conflicting priorities, missing opportunities to improve patient outcomes and product returns. Legacy systems don't move as fast as the business needs.

Clearly defined outcomes, transparent communication, and shared accountability get teams unstuck.

"So much of business is human. Product leaders need to build relationships, have candid conversations, back claims up with data, and keep driving toward the bigger goal," said Blake.

By rallying teams to achieve clear outcomes, everyone remains focused and accountable. They share the same definition of success, move faster, make smarter tradeoffs, share learnings, and deliver better results for patients and the business.

> **"It's a constant balancing act of understanding the needs of the business, customer, and your IT partners. We have worked very diligently to be better partners, sit at the table with our operational teams, and bring that voice of the customer to the problems we're collectively working on, all within the context of the organization's most important goals.**
>
> **Sara Saldoff**
> OhioHealth

A holistic approach to solving software problems

When we asked how healthcare technology executives measure the success of their investments, we saw that operational efficiency was most common, selected by 77% of respondents and financial ROI selected by 62% of respondents.

Originally, we were expecting to see user adoption and satisfaction or improvement in patient outcomes as more prevalent. We can see that in the answers to another question about which business outcomes technology teams are being asked to impact, where customer experience was the second most common answer at 16.7%, behind efficiency at 22.2%.

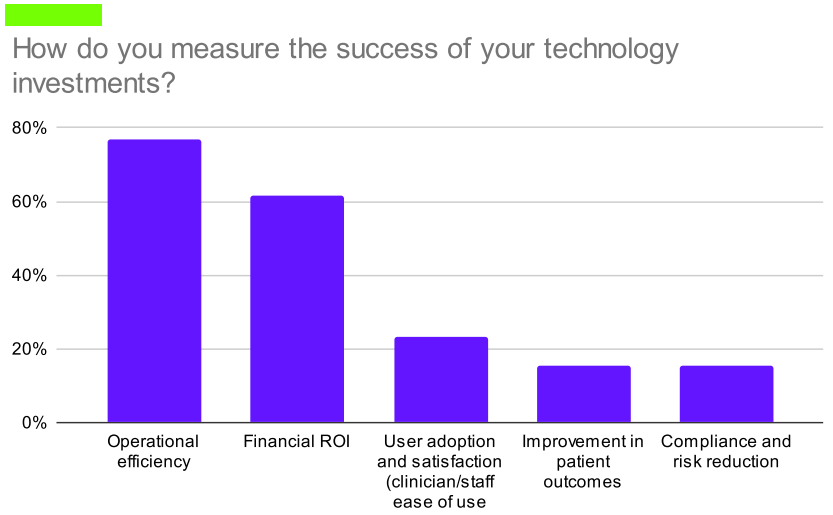
Perhaps the reason for this prioritization is that technology teams struggle to draw a direct line between making improvements within their function with end result patient outcomes. In interviews, we heard that efficiency was important as long as it did not deteriorate the quality of customer experience. This was frequently motivated by the desire for an organization to provide care to more patients with the same available staffing and resources. However, we may also be seeing some selection bias in our results that could change as we collect more data.

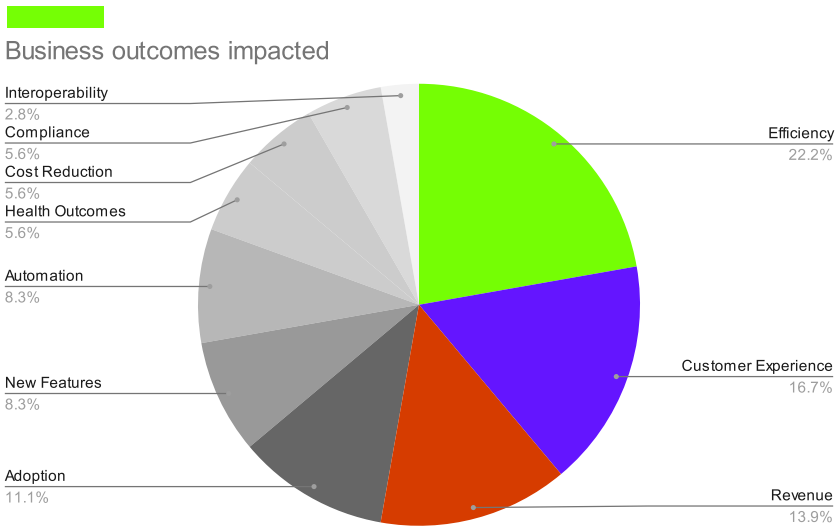
Nevertheless, this focus on efficiency and ROI can trap teams in a cycle of solving technical problems without addressing underlying issues. This surface-level approach yields only short-term resolution, burying longer-term problems under the rug.

A rewrite for legacy modernization or a product launch to satisfy urgent requests from the board might rally the team in the interim. But, when the dust settles and the challenges remain, your organization finds itself in the same position once again–facing the painful symptoms of their software problems and needing better processes and the right priorities. So, how do you tackle the root of technical and product problems, rather than just treating the symptoms?

Test Double's team takes an objective, holistic approach–solving immediate needs and quick wins, while reshaping the systems, culture, and alignment that sustain long-term organizational health.

These guiding principles offer a framework for product and engineering teams to move beyond short-term fixes and strengthen their organization as a whole.





Know the problem you want to solve

Before you can uncover a lasting resolution, you need to identify the right problem to solve—you need a clear goal.

Too often, the promise of technology and a focus on tools, platforms, or technical choices over larger strategy and outcomes create a myopic view. This challenge is even more pronounced in a healthcare technology context due to the "relative complexity of the problem space," says Mike Berkman, CTO at ScriptDrop.

> **"You can find yourself advocating for something that's going to miss the mark. It's really hard to get one person or a group of people to fully wrap their heads around the entire problem. There's so much nuance, there's so much complexity. It's really difficult.**
>
> **Mike Berkman**
> CTO at ScriptDrop

Without clarity and hypothesis validation, you don't know the problem that needs to be solved or where to direct your efforts long-term. You make a lot of assumptions, leading to wasted effort, overspent budget, or added complexity and risk. You miss the market for what customers actually need.

Let's say your team decides to replatform to modernize the digital front door. If your goal is to make it easier for patients to schedule appointments and access care, you might invest in a streamlined portal, self-service workflows, and an improved mobile experience. But, if you're trying to reduce clinician burden, you'd focus on integrating workflows, automating data entry, and improving EHR integration.

Each of these paths is a different investment with its own set of tactics and strategies to solve specific problems. "You can go on a journey, and you'll get somewhere eventually, right? But, is it the right place in the end?" says Jen Tedrow, Director of Product Management at Test Double. "If you know where you're going, you can align your product strategy, execution, and tactics accordingly. Once you put that clarity and focus in place, then you can execute much more effectively."

Avoid the wrong path by focusing your team on solving a problem, rather than just implementing a solution.

Set aside the feature priority list and hone in on business needs, specific personas, their problems, and the value you need to deliver.

This requires a consulting approach that doesn't take technical problems at face value, but first assesses systems, processes, and culture. Then you can move quickly to tackle the holistic problem.

The team at Test Double leads from a value-based discovery perspective, combining exercises such as experimentation, data analysis, and customer research to validate assumptions and outcomes, before committing to one path or writing a line of code.

This approach requires more upfront thinking and thoroughness, but it mitigates risks, prioritizes cost savings, and increases confidence that time and resources spent will yield a meaningful outcome.

It's not output-based—it's outcome-based thinking, which requires clear strategy and accountability as a team. That's why Test Double also focuses on building not only great software to produce clear outcomes, but also great teams.

It's a mental shift from believing that "execution has inherent value" to "execution is only valuable if the outcome is valuable and addresses core problems."

Examine the system within its environment

Shifting our mentality to embrace cures over treatments (e.g, real value over hyper-delivery schedules) requires taking the time to examine the system within its environment.

It's not seeking bandage fixes through isolated treatments, but holistic problem-solving to cure root cause deficiencies within the organization. "Solutions have more to do with decision-making, organizational structure, and protocols than with tech prowess," said Doc Norton, Vice President of Delivery at Test Double. "Process improvements lead to software improvements and better business outcomes."

The cure begins by aligning your organization around shared outcomes: your North Star. The North Star becomes the "why" for your teams to connect their actions and priorities to these higher business goals.

When product, engineering, and design teams all work with the same North Star in mind, it prevents competing priorities or "feature-for-feature's-sake" development to derail progress.

By starting with the desired outcome, the North Star framework enables teams to drive customer value and commercial results. It requires understanding the goals, tactics, and inputs that drive the North Star metric, leading and lagging indicators of commercial success.

> **The North Star framework is a very valuable and effective technique to remind large numbers of people not just what they are doing, but why they are doing it. It's hugely beneficial for prioritizing tasks and options, and getting everyone on the same page.**
>
> **Mike Doel**
> Engagement Partner at Test Double

This clarity makes it easier to tie feature delivery and roadmap priorities directly to business impact—adoption, retention, or efficiency gains—rather than output alone.

Invest in ongoing outcomes, not predetermined projects

Healthcare organizations typically have a set budget to solve for symptoms–like a budget line item for a legacy rewrite–rather than creating a cure.

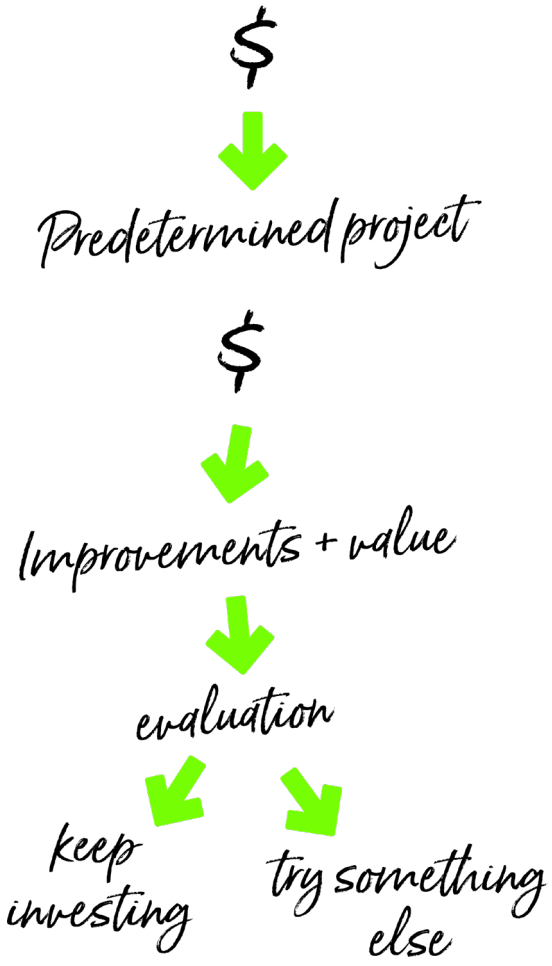
Pressure around budget frequently creates a lasting commitment to the technology project and prioritizes delivery as a goal. *Specify everything up front, build it, inspect it, and call the project done*.

Instead, healthcare teams should take a phased approach to deployments and migrations to limit negative impact, iterate on customer feedback, and build more strategic development roadmaps.

This value-based approach invests in specific improvements to deliver value and returns. Then, constantly evaluate the return to either continue investing down this path or pivot down a higher-value path.

This changes the entire system, incentivizing your team to vet initiatives and craft code more flexibly, shifting the focus to incremental delivery of value, learning, and adjustment. Even "failed discoveries" become wins, because they quickly reveal dead-end paths or lower-impact initiatives.

With this data in hand, your engineering or product team doesn't have to wait to complete a large-scale project to find out it's the wrong path months down the road. Instead, they can reinvest their time and budget where it counts.



At Test Double, we recommend prioritization methods like:

- Weighted Shortest Job First
- Desirability, Viability & Feasibility framework
- Assumption Mapping
- Value Proposition Canvas

These processes help teams and leadership identify the most valuable priorities and achieve internal alignment.

From there, we champion continuous discovery and ongoing customer input. Rather than executing a pre-suggested solution or forcing product teams to work as a feature factory, these approaches validate that initiatives are truly solving problems for end users and customers, which can only benefit the business.

It ensures you are not only building the thing right, but also *building the right thing*.

The way forward: how healthcare product and tech leaders can solved problems at the source

The behavioral shift from solving symptoms to rigorously pursuing outcomes isn't easy. Most teams find themselves building the plane as they fly it, balancing immediate demands with long-term modernization goals.

When your engineering or product team feels the pressure of these deeply rooted issues, how do you break the cycle of solving symptoms? How do you stop investing time in quick fixes and surface-level symptoms rather than solving root problems?

You have a few options:

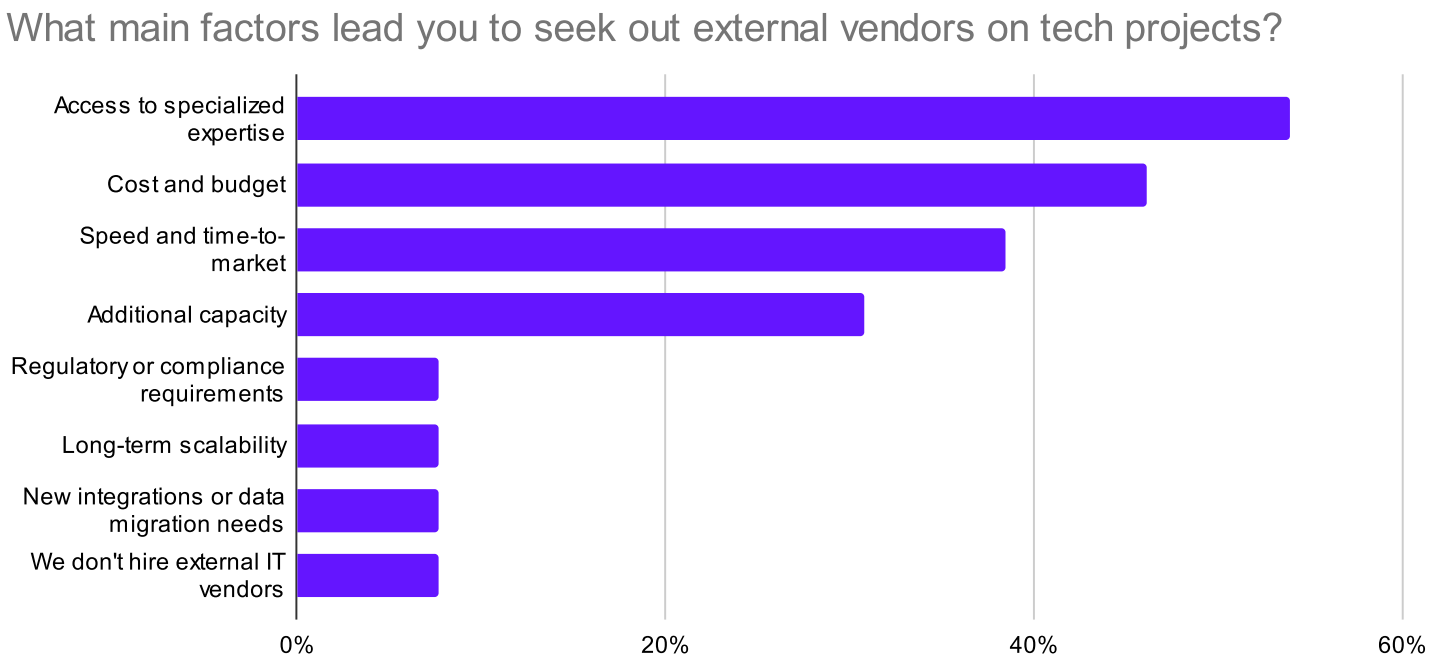
Continue to suffer through the status quo. Keep launching another product or features or executing another rewrite until the same problems rear their heads again.

Attempt to address deeper, internal change management on your own–a massive undertaking, if you don't have an experienced partner to guide the process.

The best option (and the only one that leads to lasting change and a stronger business) is to solve the surface-level problem through addressing the root cause. This often means bringing in an external partner with the experience and objectivity to uncover issues internal teams may overlook.

The survey findings echoed this suggestion: access to specialized expertise is the main factor for seeking out external vendors on tech projects (54%), followed by cost and budget (46%) and speed and time-to-market (38%).

Adding to the complexity (and spoiler alert), cost and budget was also cited by 46% of respondents as the top reason for bringing a project in-house. This suggests that external investments are all about finding the right partner, who takes a holistic approach to driving meaningful change and outcomes.



The right partner doesn't just fix surface-level tech problems; a transformational software consultant goes deeper to align people, processes, and strategy. It enables your team to lean on experts, who have solved these same challenges for different types of customers and contexts and can apply a wider array of learnings and experiences to help your team get to the root cause.

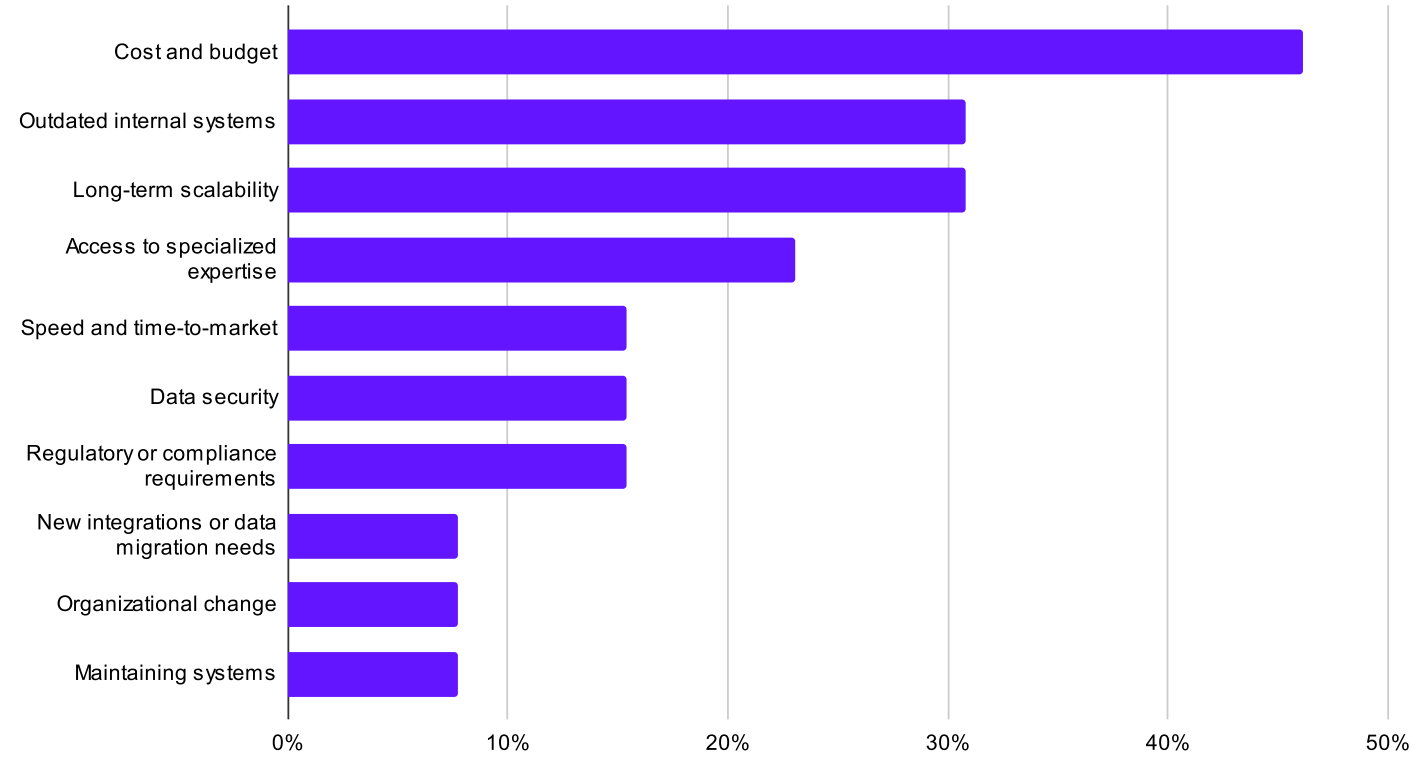
It's only in solving the root cause that teams prevent the same problems from resurfacing and building a more secure foundation for innovation and growth.

Many healthcare teams are too close to the existing technical environment, historical decisions, daily pressures, and politics to step back and lead transformative change.

With the best intentions, stakeholders and teams assume that upgrades, integrations or data migrations will be easy and straightforward to manage in-house, and then are unpleasantly surprised to find out that is not the case, after time and budget is spent with little to show for it.

When budget approval is hard to come by, healthcare decision makers simply endure the pain or opt to manage the project in-house, so they can prioritize budget elsewhere. Updating outdated internal systems becomes a future project for a rainy day and is only prioritized after it's caused major problems.

What would make you opt to cover projects in-house instead?



Though common, these mistakes come back to bite the organization. Updating systems, ensuring long-term scalability, maintaining data security or meeting compliance requirements are too important to long-term success to bring in-house, if you don't have the expertise, bandwidth, and resources to successfully solve them.

Too often, they take a backseat to competing priorities and the cost-savings cannot materialize, as they turn into bigger, more expensive priorities.

The experience critical to ensuring success on modernization efforts, AI investment, and strategic prioritization cannot be shortchanged if you want your organization to achieve meaningful outcomes and not revisit the same issues every year.

An external partner can help you get unstuck by bringing significant experience and focus, revealing blind spots, challenging assumptions, and accelerating technology, process, and cultural shifts.

Field report: legacy modernization diagnosis to holistic treatment

Client	Challenge	Our Approach	Results
Migration (Client 1)	• Migration attempts repeatedly failed • Previous vendor unable to complete work • Risk of data loss/corruption during transition • Stakeholder confidence eroded by false starts	• Replace old system piece-by-piece without “big bang” cutover • Automated data synchronization with conflict handling • Frequent stakeholder validation and course correction	• Successfully migrated customers to production, meeting compliance deadlines • Enabled end users to continue accessing platform services without disruption • De-risked full migration rollout through proven, incremental approach • Maintained customer confidence and avoided churn during platform transition
Modernization (Client 2)	• Database performance at breaking point • Report generation slowing core operations • Changes to one system broke others • Platform couldn’t scale with business needs	• Protected legacy system while building new platform • Ran both systems in parallel during transition • Standardized how systems talk to each other	• Improved customer transaction experience and completion rates • Removed performance ceiling blocking business growth • Reduced system downtime affecting customer-facing operations • Positioned platform for future scale while maintaining business continuity during transition

Solve for outcomes to achieve meaningful improvement

If you're not sure what your next steps are to begin addressing root causes instead of solving for symptoms, consider these four steps your roadmap on the journey to meaningful improvement.

1. Audit past experiences

Take the time to think through previous technology initiatives, particularly those that needed multiple attempts to get right.

Look for deeper issues: persistent problems, internal misalignment, scope or budget creep. Think about:

- Should you have brought more voices to the table?
- Was the voice of the customer overlooked?
- Was discovery skipped or sped through?
- Was speed prioritized over quality?
- Was the team more focused on outputs or outcomes?
- Did bottlenecks strangle decision-making?
- Was autonomy or accountability lacking?
- Were timelines realistic and resources available?
- Were goals born out of vague trend chasing versus grounded in business need?

Reviewing why past efforts succeeded or failed prevents wasted cycles and avoids repeating history. If you decide to work with an external partner, it also prepares you to give them critical historical information and align teams on a better path forward.

2. Map current capabilities

Next, map out the current delivery environment, including legacy systems, integration points, security and compliance requirements, and any vendor or partner dependencies.

You're solving multifaceted technology problems and removing foundational roadblocks, not just addressing symptoms. Start by understanding the technical ecosystem and dependencies and map bottlenecks and limitations to not just technical specs, but processes, priorities, metrics, and misalignment. Then, you can approach the solution within the context of wider organizational needs.

Additionally, assess organizational receptivity to ensure internal stakeholders are prepared to collaborate on new approaches. Set the ground rules for honest conversations and reorient from outputs to outcomes, unearthing operational improvements along the way.

3. Ask the right questions to find the right partner

A third-party partner helps you objectively identify and solve more meaningful problems than a single technical issue.

But, it takes some due diligence to find a partner that fits within your team, asks the right questions, and brings both a technical and consultative background.

Partner assessment: Questions to ask

- How do you identify features and process changes that actually move business metrics, particularly when everything feels urgent?
- Describe your experience working with EHR systems.
- Do you understand how to manage PII, HIPAA, and PCI data?
- Are you capable of building high-availability systems to support mission-critical services?
- What is your experience blending medical data with AI to create smarter recommendation engines and optimized workflows to lower costs?
- How does the partnership operate, who's involved, and how do you integrate into our team?
- How do you measure and report on success (e.g., outcomes or outputs)?
- How will you transfer knowledge and make us self-sufficient?

Choose a partner who fits well within your organization and prizes big-picture thinking, not quick fixes. Behind every surface-level challenge lies a broader opportunity to align people, processes, and technology around meaningful outcomes.

→ Solve for outcomes and build stronger health tech teams

Real progress in healthcare IT, product, and software engineering depends on solving root causes, not treating symptoms.

The landscape is shaped by uneven interoperability, slow patient engagement, and rising external pressures that demand smarter, more resilient, and secure systems.

For healthcare engineering and product teams, this means rethinking "surface-level problems" as the immediate fix.

Instead, healthcare organizations need to dig deeper into business and human opportunities to clarify outcomes, break down silos, and build solutions that improve patient care.

If you're navigating complex IT, software engineering, or product challenges, we'd love to help. At Test Double, we combine deep legacy modernization experience with product thinking and AI adoption. We help organizations solve the deeper process and cultural issues that lead to recurring problems, while solving your toughest software challenges along the way.

Take action

Join us for a **no-strings-attached office hour** to talk through your situation. Or, if you're ready to go deeper, our **diagnostic assessment** offering helps uncover the root causes limiting progress and builds a roadmap for sustainable improvement.

Have a friend in healthcare tech who could share their experience? We're still collecting more input for our survey - please share this link with them:

link.testdouble.com/health-tech-survey

→ Appendix A: Survey questions and answer options

These are the questions that we've asked in our survey alongside any options that were provided for multiple-choice and matrix questions.

Section 1: Tell us a bit about yourself

What's your title?

What's the size of your organization?
Multiple choice (select 1).

- ☐ 1 - 50 employees
- ☐ 50 - 200 employees
- ☐ 200 - 500 employees
- ☐ 500 - 1,000 employees
- ☐ 1,000 - 5,000 employees
- ☐ 5,000+ employees

What sector of the healthcare industry do you work in?
Multiple choice (select 1).

- ☐ Hospitals and medical services
- ☐ Medical equipment and supplies
- ☐ Health care technology (IT & Software)
- ☐ Medical devices
- ☐ Biotechnology
- ☐ Pharmaceuticals
- ☐ Life sciences tools and services
- ☐ Healthcare logistics & supply chain
- ☐ Other.
    - If other: "If you selected "Other" sector, please describe it"

What is the funding type for your organization?
Multiple choice (select 1).

- ☐ Public
- ☐ Non-profit
- ☐ Government agency
- ☐ Venture capital
- ☐ Angel investors
- ☐ Bootstrapped / self-funded
- ☐ Other
    - If other: "If you selected "Other" funding type, please describe it"

Section 2: Your technology priorities and spending

How has your budget for these areas changed compared to 2024?

	Decreased	Same	Increased
Tech & IT			
Product			
Strategy & Innovation			
AI			

Is your organization planning to change its budget in 2026?

	Decreased	Same	Increased
Tech & IT			
Product			
Strategy & Innovation			
AI			

What technology projects are you spending the most on this year?
Multiple choice (select 1-3).

- ☐ Cybersecurity infrastructure
- ☐ EHR integration and modernization
- ☐ Digital patient support and virtual care
- ☐ Advanced analytics
- ☐ AI and machine learning
- ☐ ERP integration and modernization
- ☐ Workflow and process automation
- ☐ Remote patient monitoring
- ☐ Enterprise cloud adoption
- ☐ Other
    - If other: “If you selected “other” technology projects, please describe them”

Section 3: Focus areas: Free-form answers

What government regulations or compliance changes are you closely tracking or focused on right now?

What business outcomes are you being asked to impact?

What problems in your industry are uniquely challenging, to the point where you need outside help?

Section 4: Your technology operations and bottlenecks

What are the biggest blockers to successfully completing your technology initiatives?
Multiple choice (select 1-2).

- ☐ Limited budget or resources
- ☐ Shortage of skilled talent / hiring challenges
- ☐ Legacy systems and technical debt
- ☐ Lack of executive / leadership buy-in
- ☐ Regulatory or compliance constraints
- ☐ Misalignment between IT and business priorities
- ☐ Too many competing IT priorities
- ☐ Changes in the market and external factors
- ☐ Other
    - If other: “If you selected “other” blockers, please describe them.”

How do you measure the success of your technology investments?
Multiple choice (select 1-2).

- ☐ Improvement in patient outcomes
- ☐ Operational efficiency
- ☐ User adoption and satisfaction (clinician/staff ease of use)
- ☐ Financial ROI
- ☐ Compliance and risk reduction
- ☐ Other
    - If other: “If you selected “other” for measuring success, please describe how.”

What main factors lead you to seek out external vendors on tech projects?
Multiple choice (select 1-2).

- ☐ Cost and budget
- ☐ Access to specialized expertise
- ☐ Speed and time-to-market
- ☐ Data security
- ☐ Outdated internal systems
- ☐ New integrations or data migration needs
- ☐ Regulatory or compliance requirements
- ☐ Long-term scalability
- ☐ Additional capacity
- ☐ Organizational change
- ☐ We don’t hire external IT vendors
- ☐ Other
    - If other: “If you selected “other” factors, please describe them.”

What would make you opt to cover projects in-house instead?
Multiple choice (select 1-2).

- ☐ Cost and budget
- ☐ Access to specialized expertise
- ☐ Speed and time-to-market
- ☐ Data security
- ☐ Outdated internal systems
- ☐ New integrations or data migration needs
- ☐ Regulatory or compliance requirements
- ☐ Long-term scalability
- ☐ Additional capacity
- ☐ Organizational change
- ☐ Other
    - If other: “If you selected “other” factors, please describe them.”

→ Appendix B: Bibliography and data sources

Internal Test Double Data

1. **Original Survey Responses.** See questions and options in Appendix A.

2. **Internal Customer Journey Workshop.** Attended by representatives from Test Double's leadership team.

3. **Internal expert insights from:**
    a. VP of Delivery Doc Norton
    b. VP of Operations & CX, Ed Frank
    c. Chief Product Officer, Brett Buchanan

4. **Internal expert interviews with:**
    a. Jen Tedrow, Director Product Management
    b. Mike Doel, Engagement Partner

5. **Previous client engagement artifacts.**
    a. Case studies
    b. Client engagement summaries
    c. Previous customer interviews

6. **External expert interviews.**
    a. **Kiley Blake**, SVP of Product and Information Technology at KODE Health
    b. **Sara Saldoff**, Head of Product Management and User Experience at OhioHealth
    c. **Mike Berkman**, CTO at ScriptDrop
    d. **Andrew Warner**, VP of Product at Genome Medical

External Data

- **HealthIT website** of Assistant Secretary for Technology Policy (ASTP)
    - Individuals' use of Health IT
    - Methods for interoperable exchange
    - Certified developers of health IT products used by clinicians
    - Mix of methods to support data sharing, with largely standards-based API
    - Patient engagement capability progress
    - HTI-4 (new FHIR certification criteria)

- **U.S. Department of Health and Human Services (HHS)**
    - Change Healthcare breach Frequently Asked Questions.

- **Journal of the American Medical Informatics Association (JAMIA)**
    "A national survey of digital health company experiences with electronic health record application programming interfaces".

- **Contexture**
    "National Networks and HIEs: The Various Crossroads of Data Exchange".