The Integration Estimation Paradox: Why Healthcare Integration Projects Exceed Their Estimates

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James DeBiase

Healthcare Interoperability Leader | Integration Strategist | Healthcare IT Expert Witness

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Executive Summary: The Integration Estimation Paradox

Key Findings

- ✓ Most estimate overruns originate from unrealistic expectations rather than poor estimating.
- ✓ Healthcare organizations underestimate organizational and operational complexity.
- ✓ Build and testing phases reveal unknown dependencies that cannot be fully identified during planning.
- ✓ Successful organizations continuously revise estimates rather than treating them as fixed commitments.

Healthcare organizations continue to invest heavily in interoperability and integration. Despite experienced teams and mature methodologies, integration projects frequently exceed estimates. The issue is often not poor estimating, but the inherent complexity of healthcare ecosystems.

Since the Affordable Care Act (ACA) was enacted in 2010, healthcare organizations have increasingly shifted toward value-based reimbursement models that emphasize quality measures alongside traditional fee-for-service payment structures. While this paper will not explore the politics of reimbursement, the result is that healthcare facilities must control costs while remaining competitive and delivering quality patient care. As a result, healthcare organizations face ongoing pressure to improve outcomes while operating within increasingly constrained resources.

Most overruns can be traced to organizational, technical, and operational realities that are underestimated at project inception. This paper explores the underlying causes of project overruns in healthcare integration initiatives. The key takeaway is that estimates are often not inherently wrong. The estimates simply did not keep pace with the changing environment. Organizations invest heavily in Project Management Offices (PMOs), governance structures, and estimation methodologies. However, regardless of organizational size or experience, it is impossible to account for every contingency during project planning. Improving estimate accuracy requires continuous reassessment of assumptions, risks, and project scope throughout the integration lifecycle.

1. Unrealistic Expectations: The Root Cause

The root cause of most projects that exceed their timelines is unrealistic expectations. What are unrealistic expectations? Unrealistic expectations are assumptions about cost, effort, timelines, resources, or outcomes that are not substantiated by historical performance data, known project constraints, technical complexity, organizational capacity, or foreseeable risks. These expectations often reflect desired outcomes rather than the conditions required to achieve them, creating estimates that are vulnerable to overruns before the project even begins.

The challenge of unrealistic expectations is not unique to healthcare. Software development practitioners often reference a quote attributed to Theodore von Kármán:

"Everyone knows it takes a woman nine months to have a baby. But you Americans think if you get nine women pregnant, you can have a baby in a month." (https://dzone.com/articles/the-bearing-of-a-child-takes-nine-months-no-matter-1).

Leadership often expects integration projects to behave like technology deployments, when they are more accurately organizational transformation initiatives involving workflows, data, governance, and change management. These unrealistic expectations typically fall into three categories:

- Assumption that interfaces are repeatable and standardized.
- Belief that timelines can be compressed without consequence.
- Pressure to commit to dates before sufficient discovery is completed.

These expectations create schedules that appear achievable on paper but fail to account for real-world variables. During major initiatives, the time between replacing a legacy system and realizing the full impact of the new solution is often too long for organizations to rely solely on lessons learned from prior implementations. Therefore, it is imperative to bring to the table all available experts to establish expectations that are operationally and technically achievable.

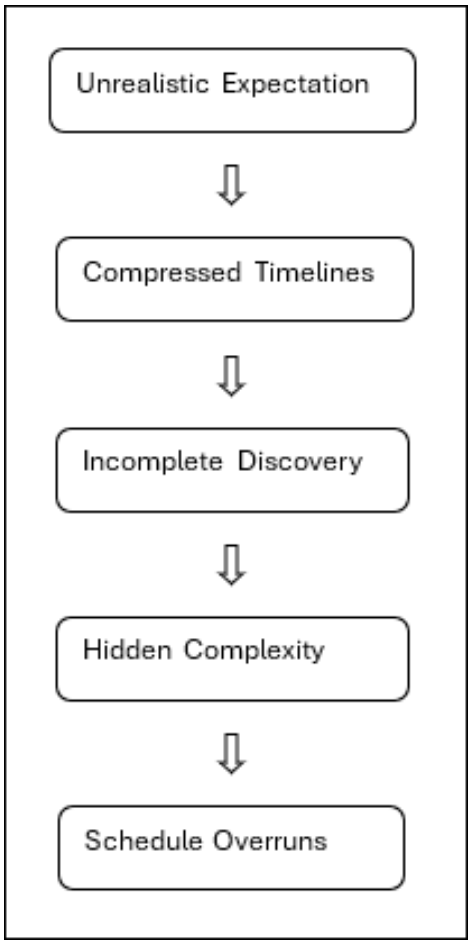

Figure 1- Sources of Estimation Error

2. The Myth of "One Size Fits All"

Almost every major healthcare vendor will promise you that they have successfully implemented their applications at multiple organizations of your size and that you will be live in “X” months. However, one fundamental reality remains: Every healthcare environment and organization is unique.

The single greatest determinant of implementation timelines is a well-documented current-state workflow. Many organizations wait until they decide to migrate to a different EHR version or change vendors to document current workflows. This is done concurrently with the implementation of the upgrade or new product. In many cases, organizations sacrifice the reconciliation of existing workflows with required customizations to adopt standard functionality and accelerate go-live.

A change in EMR vendor requires migrating historical data. Regardless of how many similar integrations have been completed, every organization's data presents unique quality challenges. While estimates include time for resolving these issues, what is overlooked is the contingency for when those estimates are exceeded. Historical data migrations become even more challenging when data formats, content requirements, and source-system specifications are not clearly defined.

Previous integrations guide estimates but offer no certainty. Reusable components reduce effort but rarely eliminate customization. The critical question becomes: Does the timeline account for all required customizations?

3. The Resource Constraint Problem

Circling back to costs, resource constraints are directly related to the money available for the project. Even when project and operational teams are separated, organizations still face fundamental limits of time and money.

A common challenge is that the same subject matter experts support both project initiatives and day-to-day operations. Many teams are already operating at capacity while maintaining daily operations. They are now responsible for integrations for new applications. This impact is felt in multiple ways:

- Operational incidents interrupt project work.
- Subject matter experts become bottlenecks.
- Staff burnout reduces productivity and quality.

4. Scheduling Challenges: Starting with the End Date

In section 2, we discussed how an implementation is promised to be live in “X” months. Unfortunately, organizations often need to establish a firm go-live date to satisfy business, contractual, or regulatory objectives. Thus, costs only go up the longer an integration takes. However, this creates a potential trap if the target date is set prior to the completion of discovery.

Several external factors often drive aggressive implementation timelines:

- Regulatory deadlines
- Contract obligations
- Organizational initiatives

This creates several challenges:

- Teams are forced to work backward from a fixed endpoint.
- The "happy path" receives extensive attention, while contingency planning often occurs only after problems emerge.

5. Hidden Complexity During Build and Testing

Build and testing phases provide the first meaningful validation of integration assumptions. Early estimates are often developed using limited information and high-level assumptions. Build and testing frequently expose technical and operational complexities that were not visible during initial estimation. Several factors can impact your estimates:

- New software releases may occur during development or testing.
- Vendor updates introduce unexpected changes.
- Data quality issues emerge only after integration begins.
- Testing environments rarely mirror production.
- Poorly defined requirements create uncertainty.
- Scope creep often begins before formal project kickoff.
- Stakeholders frequently discover new needs during testing.
- Regulatory and operational requirements evolve during the project.

It is during this time that you need to evaluate scope creep vs. scope clarification. Are these new requirements just late discoveries, or did they develop due to unforeseen circumstances? Each of these factors needs to be treated as an opportunity to solidify the project plan or to quantify the risk to the go-live. The project plan must be scrutinized continuously during this period, as this is the phase where projects often diverge from the anticipated "happy path" and begin moving toward the "sad path."

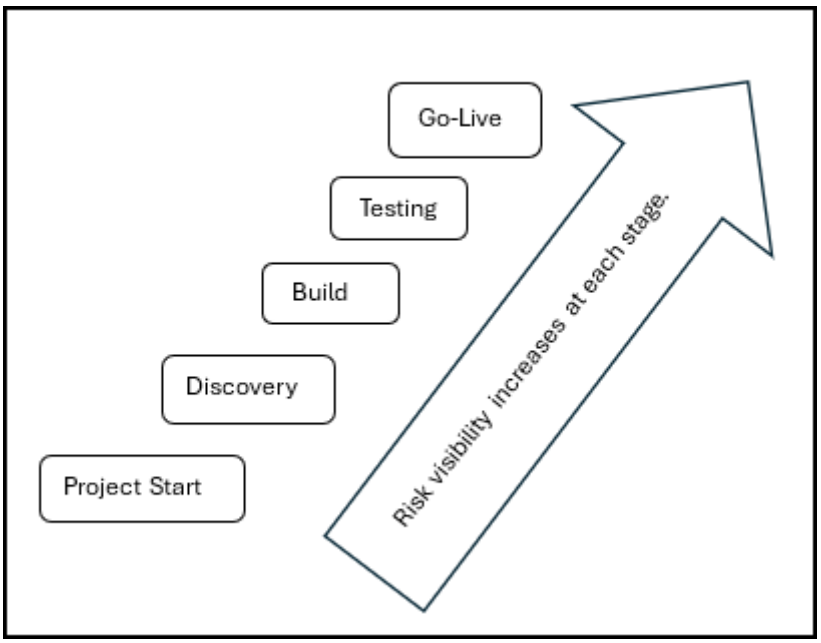

Figure 2- The Integration Risk Funnel

6. The Physics of Healthcare Projects: Organizational Inertia

All organizations, but especially healthcare organizations, exhibit a form of organizational inertia. Drawing from Newton's First Law:

> *An object at rest tends to remain at rest, and an object in motion tends to remain in motion unless acted upon by an external force.*

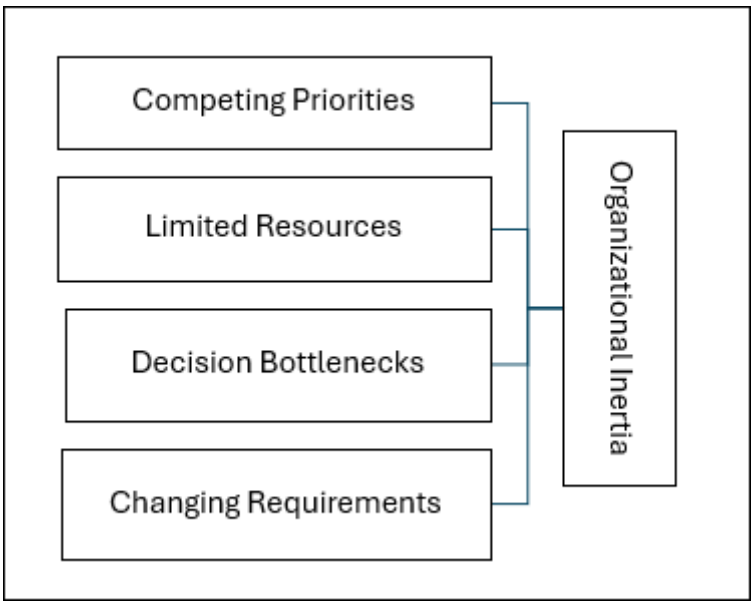

Figure 3- Organization Inertia Model

Once a project is in motion, that motion only seems to increase. The factors discussed throughout this paper create momentum that becomes increasingly difficult to redirect once a project is underway. Projects do not fail because change is difficult; they exceed estimates because the effort required to overcome organizational inertia is consistently underestimated. Project governance must be able to overcome these forces and make quick decisions to ensure that the project remains on track. Common manifestations of organizational inertia include:

- Multiple stakeholders with competing priorities.
- Clinical, operational, technical, vendor, and executive perspectives.
- Assumptions become project risks when not communicated.
- Delays that stem from decision-making bottlenecks rather than technical issues.

7. The Go-Live Prioritization Framework

One sure way to ensure your integration estimates go off track is to insist that everything be perfect on day one. During project planning, the typical categories for functionality are:

- Critical to Go-Live
- Best for Go-Live
- Should Have
- Future Enhancement

Factoring in the above, the discussion turns to what functionality can wait and what workarounds are available. What is often missing from the discussion is a reassessment of what is genuinely critical for go-live. Establishing contingency options should be viewed as a risk management strategy rather than a project compromise. If the functionality is essential for go-live, then it must adhere to the principle that not going live with that functionality would cause operational harm or revenue loss if deferred.

Key Takeaways

1. Estimates are snapshots, not guarantees.
2. Discovery quality drives estimate quality.
3. Every healthcare environment is unique.
4. Resource constraints create hidden schedule risk.
5. Testing reveals complexity that planning cannot fully predict.
6. Organizational inertia is often a larger risk than technology.

Successful organizations continuously re-estimate throughout the project lifecycle

Conclusion: Why Estimates Fail—and How to Improve Them

Healthcare integration projects do not exceed estimates because organizations lack experience. They exceed estimates because estimates are created at a specific point in time, while healthcare environments continuously evolve. The organizations that achieve the greatest estimation accuracy are not necessarily those that estimate better at the outset, but those that continuously reassess assumptions, risks, priorities, and scope throughout the project lifecycle.

Communication is central to that process. The earlier a risk, dependency, requirement, or constraint is identified, the sooner the project plan can be adjusted to reflect reality. Successful organizations recognize that estimation is not a one-time activity; it is an ongoing discipline that must evolve alongside the project itself.

The most accurate healthcare integration estimates are not those that assume everything will proceed according to plan. They are the estimates that explicitly account for uncertainty, organizational complexity, competing priorities, and the operational realities of healthcare delivery. While projects may still encounter overruns, organizations that continuously reassess and adapt are far more likely to realize the clinical, operational, and financial benefits that integration initiatives are intended to deliver.