

OBSERVABILITY BEYOND MONITORING: QUANTIFYING THE IMPACT OF IT ON ENTERPRISE VALUE

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Igor Grubišić

Harvard University, Faculty of Arts and Sciences, Cambridge, Massachusetts, USA

E-mail: igor.grubisic@dynatrace.com

Ivana Denčić

Tehnički fakultet „Mihajlo Pupin“, Zrenjanin, Republic of Serbia

ABSTRACT

This paper introduces Business Observability, a subset of observability, as a strategic tool for quantifying IT's impact on Enterprise Value. In today's digital economy, IT plays a pivotal role in driving revenue, innovations, operational efficiency, and risk management. However, quantifying this impact on business processes and enterprise outcomes is not straightforward. Business Intelligence and time sheets track historical performance, but do not correlate metrics with Enterprise Value. Drawing on practitioner experience across Fortune Global 500 companies, we introduce how companies can use observability to create a value lineage between the Digital Estate and the overarching Enterprise Value. The paper presents a four-level Enterprise Value Lineage framework that maps observability signals to four value drivers (efficiency, quality, productivity, and risk), which drive enterprise outcomes. We have validated this lineage through enterprise-scale implementations, enabling near-real-time insights into how the technology stack impacts Enterprise Value. As a result, we are seeing an increase in use cases in which companies experiment with positioning observability as an integral function of the business, protecting their competitive advantage rather than treating it as just an IT-confounded application and infrastructure performance monitoring tool.

Keywords: Observability, Enterprise Value, IT Performance, MTTR, Business Observability, Value Realization

INTRODUCTION

The rapid expansion of digital ecosystems has fundamentally altered how organizations create and sustain value. Technology is no longer a supporting function; it is the primary enabler that powers every process across the value chain (Porter & Millar, 1985; Brynjolfsson & Hitt, 2000). Yet, recognizing the full financial impact of technology investments remains one of the most persistent challenges in enterprise management. This paper is grounded in practitioner experience across global enterprise IT operations and value strategy at Dynatrace, the leading observability platform (Gartner, 2025). The two vantage points converge on an observation that this paper takes as a central claim: the gap is not an instrumentation problem, but the disjointed impact measurement approach with no common ownership and accountability structure. To close it, this paper introduces a framework that elevates observability from a tactical engineering practice to a strategic governance instrument. We argue that observability must be utilized to continuously correlate technical signals and business events with organizational Service Level Objectives (SLOs) jointly owned by technology and business leadership. By doing so, organizations can quantify how their digital estate impacts enterprise value drivers, thereby determining its contribution to Enterprise Value.

THEORETICAL BACKGROUND

Enterprise Value and the Role of IT as Enabling Infrastructure

Digital transformation is reshaping value creation by steering organizations toward an ecosystem of stakeholder co-creation, where Information Technology serves as the enabling layer powering every

activity in the value chain (Zhang et al., 2026). Porter and Millar (1985) were among the first to articulate IT's role as a source of competitive advantage embedded across the value chain. Brynjolfsson and Hitt (2000) later demonstrated empirically that the economic value of IT investment is captured in the organizational transformations it enables, which are often intangible and difficult to measure.

Billi and Bernardo (2025) show that the combination of digital transformation, IT innovation, and operational strategy produces measurable effects on Tobin's Q. Ran et al. (2024) confirm that digital technology impacts value by driving productivity and profitability, but the mechanism remains unclear. To understand it, organizations need a consistent value framing that links financial goals to the technological capabilities that drive them (Smith et al., 2024). The framework in this paper seeks to enable such linkage. Recent empirical evidence confirms that digital activities are associated with a market-to-book ratio 8–26 percent higher than industry peers, but only a fraction of this value is captured in financial reporting (Chen & Srinivasan, 2024).

The Evolution of Observability: From Monitoring to Strategic Instrument

In its original context, observability refers to the ability to infer a system's internal state from its external outputs (Majors et al., 2022). It leverages runtime telemetry to diagnose anomalies and accelerate remediation. Second generation emerged with the cloud, utilizing Application Performance Monitoring to correlate signals across microservices and containers to understand why failures occur and accelerate recovery. The third generation is qualitatively different; it is about understanding consequences. Introduced by Saha et al. (2024), Business Process Observability is a cross-layer topology that links processes to the underlying IT, making the business impact visible alongside the technical signal. Building on the authors' empirical experience (Grubisic, 2026), it is visible that most organizations still operate at generation two. They are using observability as an application monitoring tool. As the underlying reason, we see the limitations of existing platforms in establishing composite value metrics and in correlating business and technical observability signals with top-level business outcomes (Gartner, 2025).

METHODOLOGY AND MEASUREMENT APPROACH

The measurement approach proposed in this paper operationalizes the Enterprise Value Lineage by systematically correlating captured observability signals with customer business outcomes. To illustrate the approach, we will describe how eliminating tool sprawl protects revenue. The primary measurement chain runs as follows: Tools Consolidation to Faster Root Cause Analysis to lower MTTx to Improved Asset Efficiency to NPS to Revenue and Operational Efficiency. The practical application of this approach, linking MTTR and NPS to IT investment decisions, has been pivoted in complex operational environments, which we will present below.

CONCEPTUAL FRAMEWORK: BUSINESS OBSERVABILITY FOR ENTERPRISE VALUE

Observing a business process as the driving force of Enterprise Value, we characterize each process along four dimensions: efficiency, quality, productivity, and risk. The underlying Digital Estate, comprising hardware infrastructure, applications, data, and digital services, impacts each dimension. Business Observability allows us to measure the impact that the Digital Estate has on the characterizing dimensions, the business processes, and the affected value drivers along the Enterprise Value map.

Business Observability, as defined in this paper, is the real-time measurement of the impact of technology-driven value drivers on business and technology processes and overall Enterprise Value. This framework was developed through enterprise-scale practice, operationalized across selected Fortune 500 engagements, and is presented here as a formalized contribution to the engineering management literature (Grubisic, 2026). It requires three things to work in concert: the right observability signals from the Digital Estate, organizational SLOs that management has defined as

measures of success, and the Enterprise Value Lineage that maps them to one another, up to the top-level business objectives.

The Enterprise Value Lineage

The Enterprise Value Lineage describes a four-step process through which technical telemetry is transformed into strategic business insight (Figure 2).

- Step 1 — Ingestion. Observability solutions capture the signals produced by the Digital Estate: logs, metrics, traces, events, and other raw data points and composite metrics.
- Step 2 — Real-Time Correlation. Signals are mapped to operational dimensions (Efficiency, Quality, Productivity, and Risk), adding business and technical interpretations. An increase in MTTR for payment processing is not a reliability statistic in isolation; it is a quality degradation event with a calculable effect on transaction completeness, customer satisfaction, and revenue. This is where the framework diverges from conventional observability, which presents technical metrics without business context.
- Step 3 — Outcome Quantification. Operational performance is translated into financial impact: the captured signals are correlated with Outcome Levers, and the impact is compared against the baseline. MTTR is one of the most consistent predictors of organizational performance (Forsgren et al., 2018; DORA, 2024). Rapid resolution preserves service value and customer satisfaction (Najjar et al., 2022). Net Promoter Score (NPS) captures that perception as a predictor of future sales (Baehre et al., 2022).
- Step 4 — Strategic Value Alignment. The result is a shared view for executives and technology teams: a direct line from what is happening in the technology stack to its implications for the business.

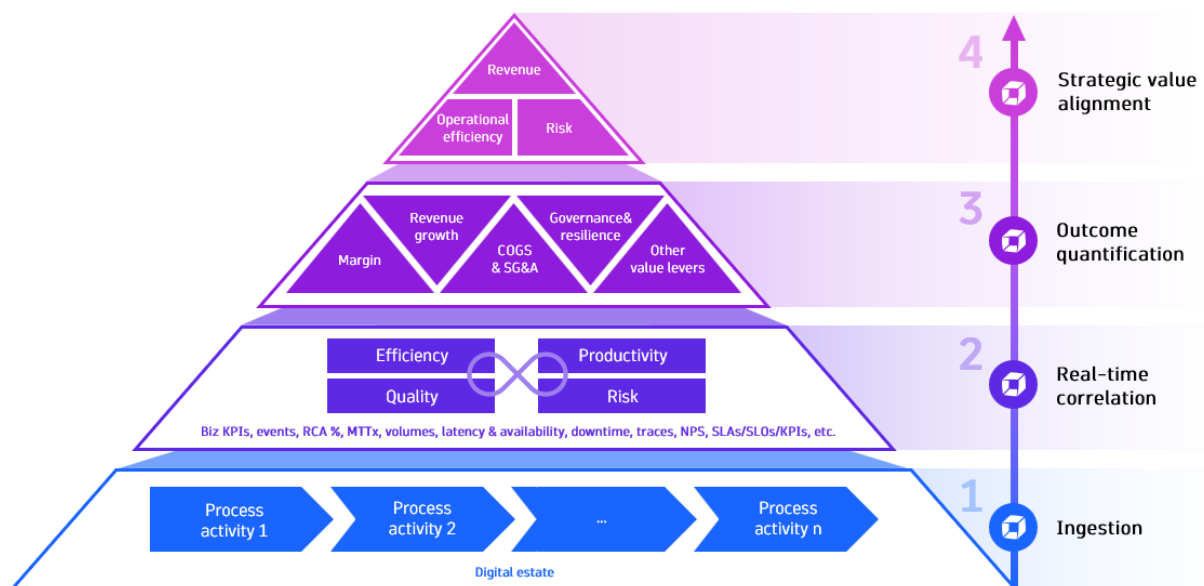


Figure 2: Enterprise Value Lineage: Digital Estate to Strategic Value Alignment
Source: Grubisic (2026)

The Enterprise Observability Value Map

To operationalize the Value Lineage across the entire value chain, the framework leverages an Enterprise Observability Value Map (Figure 3), a structured taxonomy that connects IT signals to strategic business outcomes through a hierarchy of outcome levers and value drivers (Grubisic, 2026). The map is organized around three strategic pillars of the Enterprise Value, where each value driver builds on the lower ones. For example, accelerating technology-related M&A expedites new customer integration and acquisition, increases revenue volume, and drives overall revenue and innovation.

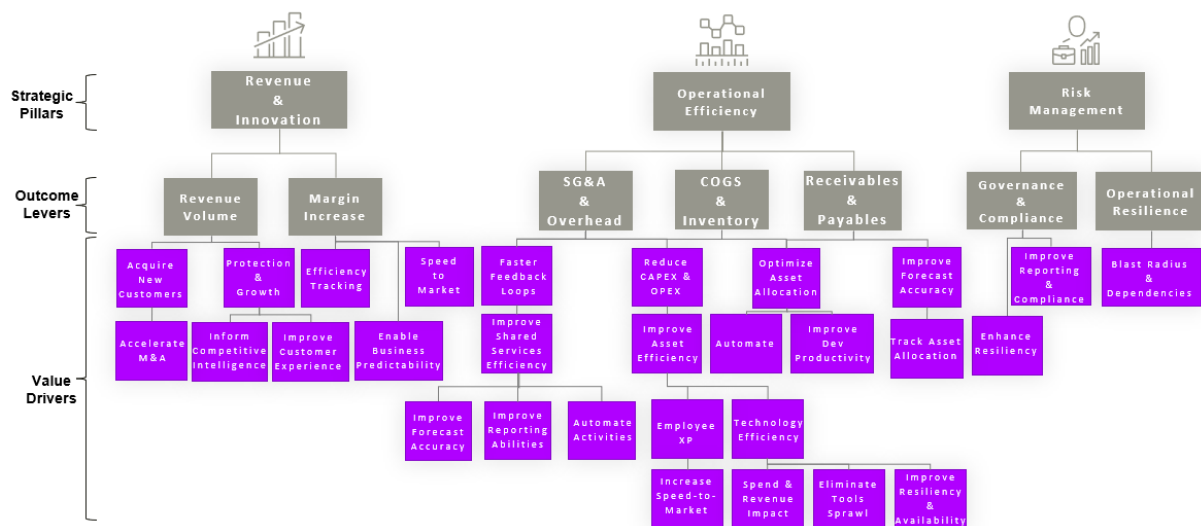


Figure 3: Enterprise Observability Value Map: Strategic Pillars, Outcome Levers, and Value Drivers
Source: Grubisic (2026)

The Value Map provides organizations with a structured starting point for prioritizing observability investments based on the value levers most material to their strategic context.

Empirical Validation

Customer-serving business processes rely on a multitude of connected digital systems that are often monitored separately. Unifying observability by eliminating tool sprawl significantly lowers MTTx. Per our empirical findings across over 5000 deployments, consolidated observability reduces MTTx by as much 99% (Dynatrace, 2026). Reduced detection and resolution times enable a near-frictionless customer experience, improving NPS and driving revenue protection and growth. Figure 4 shows a real-life example of how tool consolidation at one of the largest US airlines increased asset efficiency (coverage of monitored hosts), resulting in an 88% reduction in MTTR and, consequently, a 3-point improvement in NPS.



Figure 4: Correlation Between Tools Consolidation, MTTR, and NPS.
Source: Dynatrace Perform, 2026

This empirical evidence demonstrates that the measurement chain proposed in this paper has been validated in practice, producing measurable improvements in both operational efficiency and customer outcomes.

DISCUSSION

What this framework changes most is a power dynamic, not a process. Leveraging our framework through observability, concretely Business Observability, we can establish a near-real-time quantification of how changes across the Digital Estate impact Enterprise Value. A Chief Information Officer (CIO) who operates with Business Observability does not arrive at a board meeting with retrospective business impact that the Chief Financial Officer (CFO) will discount. They arrive with real-time correlations between the IT investments, performance of enterprise-wide SLOs, and enterprise value drivers. This is a shift in who holds informational power in the room, and that shift changes the nature of technology investment decisions in ways that improved tooling and IT processes alone cannot achieve.

This realization points to the single critical prerequisite for the framework to function: joint SLO ownership between technology and business stakeholders. Without it, the value lineage has no anchor. Only 52% of companies currently have a technology investment decision-making process that is jointly owned by IT and the business (Smith et al., 2024). The other 48% are failing because the organizational structure does not create the conditions for the correlation to be acted upon. Implementing observability without resolving this gap produces dashboards without business context and value lineage.

Technology and business leaders need to co-author SLOs that carry financial consequences for both sides and review them at the same cadence as financial reporting. The specific governance structure that makes this durable across organizational contexts is beyond the scope of this paper.

Two limitations of the framework as presented deserve explicit acknowledgment. First, correlation is not causation. An MTTR reduction that coincides with an NPS improvement does not, by itself, establish a causal relationship. The measurement chain given in Section 3 is a well-evidenced directional model, not a deterministic formula. Correlations stemming from this framework are decision-support signals that need to be put into a valid business context. Second, the accuracy of the framework depends on the completeness of the instrumentation across the Digital Estate.

CONCLUSIONS

This paper contributes to the engineering management literature at the intersection of IT governance, Enterprise Value creation, and observability practice. We have argued that observability, when elevated beyond its traditional operational role and governed as a shared accountability structure, functions as a real-time strategic instrument for quantifying the impact of technology on Enterprise Value. The Business Observability framework, grounded in practitioner experience and supported by evidence from academic research and large-scale industry studies, provides a structured approach to this quantification through a four-step Enterprise Value Lineage and a comprehensive Observability Value Map.

The framework has been piloted through Proof of Concept implementations in two global enterprise organizations, demonstrating a measurable impact of IT performance on Enterprise value. Broader empirical validation across industries and organizational contexts remains a direction for future research, along with further refinement of the standardized value measurement protocols for the Digital Estate-to-Outcomes correlation chains and governance models that drive joint SLO ownership at enterprise scale. The challenge for enterprises is no longer whether observability can quantify technology's business value, but whether the organizations are structured to leverage observability as a function of Enterprise Value and act on insights in real time.

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