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# **THE COST OF NON-READINESS: A PRACTICAL FRAMEWORK FOR IDENTIFYING HIDDEN OPERATIONAL RISKS**

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In our previous article *“From Cost Control to Value Realization: The Strategic Integration of Cost Engineering with Operational Readiness as a Second-Order Capability”* <sup>[Note 1]</sup>, we intended to extend traditional cost engineering beyond technical completion by incorporating the financial exposure associated with operational performance gaps during startup and early operations. In these lines, we introduced the concept of Readiness Adjusted Cost (RAC) to incorporate the value leakage associated to deficiencies in operational readiness.

The RAC is simply defined as:

$$\text{RAC} = \text{CapEx} + \text{Cost of Non-Readiness}$$

In this article, we extend our discussion around the intersection of Operational Readiness and Cost Control by answering the question: “How can we translate the Cost of non-Readiness into practical, operationally meaningful terms that organizations can recognize, assess, and act upon in real project environments?”

## **Ready to Start versus Ready to Operate: The Critical Capability Gap**

In major capital projects and operational transitions, organizations traditionally focus their attention on scope completion, schedule adherence, budget control, and technical startup. Mechanical completion dates become critical milestones, startup plans are refined in detail, and teams mobilize enormous effort to achieve the moment when the facility officially “goes live.” However, the real struggle only begins after startup: Production remains below target, operations continue relying heavily on vendors and commissioning teams, supervisors become overloaded trying to stabilize day-to-day performance, maintenance becomes reactive, safety exposure increases, and leadership meetings turn into continuous firefighting sessions.

All this bring us to the critical realization that although an asset may be technically completed and ready to start, the organization, the systems and the processes may still not be operationally ready. It is precisely this gap what “hatches” the sources of Costs of Non-Readiness in an organization.

The Cost of non-Readiness is, in simple terms, the hidden cost of being “ready to start” but not truly “ready to operate.” The biggest challenge with CoNR, though, lies in its latent nature, thus organizations rarely see it as a single problem. Instead, these costs propagate quietly by creeping across all layers of the project and the organization, silently eroding the ability to create value. Even worse, these impacts tend to emerge across multiple divisions and lifecycle stages, thus organizations often “normalize” them instead of recognizing them as symptoms of insufficient operational readiness.

## The Cost of Non-Readiness (CoNR): Sources and Key Indicators

Given the increasing complexity of projects and evolution of the execution ecosystems across different geographies, it would be presumptuous to set an all encompassing/exhausting list of sources for value leakage associated with deficiencies in Operational Readiness. Nevertheless, evidence from projects across the world allow to distill **six common sources** of Cost of non-Readiness that are likely to impact the transition of projects to live operations.

The first and most visible source of CoNR is **Production Delay Losses**. This occurs when a facility starts operating but struggles to achieve planned production levels within the expected timeframe. Instead of a stable production ramp-up, organizations experience recurring shutdowns, unstable throughput, bottlenecks, and an inability to consistently operate at design capacity. In many situations, the issue is not the technology itself, but the organizational capability surrounding it. Operators may not yet be fully prepared to manage abnormal conditions, interfaces between operations, maintenance, and engineering may still be immature, and critical operational decisions may remain dependent on vendors or commissioning specialists.

The result is delayed value realization. Organizations can practically assess exposure to this risk by asking whether operations can independently manage the facility, whether stable operations have been demonstrated under realistic conditions, and whether startup assumptions rely excessively on temporary support structures. Repeated startup resets, constant troubleshooting, and continuous escalation to management are usually strong indicators that the organization is already absorbing the cost of non-readiness.

A second major source of CoNR is **Unstable Operations Costs**. Some facilities continue operating after startup, but only through excessive organizational effort. Engineering teams remain permanently embedded in operations, vendors continue receiving urgent calls months after handover, supervisors work unsustainable hours, and maintenance activities become reactive instead of planned. Externally, the facility appears operational, but internally the organization is absorbing significant hidden instability costs. One of the most dangerous aspects of this condition is that organizations frequently normalize it, referring to instability as “part of the startup phase,” even when operational dysfunction continues long after startup.

Operational readiness is not simply about systems functioning; it is about organizations functioning sustainably. Practical assessment questions include whether operations can independently run the facility without continuous project support, whether abnormal situations are managed systematically or reactively, and whether the workforce is operating sustainably or through overload. Statements such as “we are still stabilizing,” “engineering is still running the plant,” or “operations cannot yet take full ownership” are clear indicators that readiness capability remains insufficient.

The third source of CoNR is **Rework and Intervention Costs**. In many projects, organizations defer operational issues into startup phases under the assumption that they can be “fixed later.” Over time, temporary workarounds become normalized, punch-list items continue growing after handover, procedures are constantly rewritten, and field modifications multiply. Many organizations classify these activities as startup optimization or operational tuning, but in reality they often represent unresolved readiness gaps transferred directly into operations.

Operational readiness exists precisely to reduce this transfer of instability. One of the most practical questions organizations can ask is whether operational gaps are being resolved before transfer or simply pushed into operations. Additional warning signs include repeated commissioning activities, continuous procedural changes, temporary bypasses, and excessive operational workarounds. When unresolved deficiencies are carried into operations, the organization eventually pays for them through operational instability, inefficiency, and increased risk exposure.

**Human Capability Costs** represent another major, and often underestimated, source of non-readiness. Many organizations assume that once personnel complete training programs, operational competence has been achieved. However, true readiness extends far beyond classroom training. Operational environments are dynamic, stressful, and unpredictable. Personnel must make decisions under pressure, coordinate across interfaces, respond effectively to abnormal situations, and maintain situational awareness in complex environments. This requires far more than procedural knowledge; it requires operational confidence, judgment, communication, leadership, and practical experience.

Organizations with weak readiness capability often become heavily dependent on a small number of experienced individuals who carry critical operational knowledge. Decision-making becomes personality-dependent rather than system-based, and operational escalations increase because teams lack confidence operating independently. Practical assessment questions include whether teams have demonstrated competence under realistic scenarios, whether operational knowledge is institutionalized or concentrated in individuals, and whether supervisors are prepared to lead under operational pressure. Frequent escalation for routine decisions, inconsistent operational responses, and dependency on informal knowledge networks are all indicators of growing organizational fragility.

One of the most serious consequences of non-readiness, identified as our fifth source, is increased **Safety and Environmental Exposure** during startup and early operations. Historically, many major industrial incidents occurred not because systems were absent, but because organizations were not operationally prepared to manage complexity during transitional phases. Non-readiness increases procedural deviations, communication failures, weak shift handovers, degraded operational discipline, and the probability of human error. Startup and early operations are inherently high-risk periods because uncertainty, pressure, and variability are elevated simultaneously.

Safety is one of the key reasons why operational readiness must extend beyond technical systems and include organizational preparedness as a whole. Organizations can assess exposure by asking whether startup-specific risks have been evaluated, whether emergency response interfaces are fully integrated, whether procedures remain practical under real operating conditions, and whether operators can safely manage degraded operational states. Increasing near misses, confusion during operational upsets, and inconsistent responses during abnormal conditions are usually strong indicators that the organization possesses technically complete systems but lacks the operational capability required to manage them safely.

Finally, **Reduced Value Realization** is the sixth source of CoNR, which is often the most strategic and long-lasting consequence of non-readiness. Some organizations eventually stabilize operations but still fail to achieve the business outcomes originally expected from the asset. Reliability remains below target, operational efficiency underperforms, workforce fatigue increases, and the organization struggles to scale sustainably. In these situations, the problem is no longer startup execution: it is organizational capability.

This is where Operational Readiness becomes directly connected to long-term business performance. Organizations that integrate readiness effectively are not simply trying to start facilities successfully: they are building the capability to sustain predictable performance under real-world variability and complexity. Practical assessment requires organizations to evaluate whether operational KPIs are aligned with business outcomes, whether readiness has been integrated into long-term asset management, and whether leadership measures operational outcomes instead of focusing solely on project completion. Chronic underperformance, continuous recovery initiatives, declining resilience, and persistent dependence on external support are all indicators that the organization is struggling not with startup, but with operational capability itself.

The following table summarizes the six sources of CoNR and some of their key attributes:

Source of Cost of Non-Readiness	Examples of value leakage (CoNR materialization)	How does Operational Readiness stops value-leakage	Examples of diagnostic questions	Early Warning Signs
Production Delay Losses	Slow ramp-up, unstable throughput, inability to reach design capacity.	By ensuring operational capability exists to sustain production after startup.	Can operators manage abnormal conditions? Has stable operation been demonstrated?	Repeated startup resets, excessive troubleshooting, management escalation.
Unstable Operations Costs	Firefighting, excessive overtime, vendor dependency, reactive maintenance.	By enabling operational ownership and sustainable operational control.	Can operations independently run the facility? Are abnormal conditions systematically managed?	"We are still stabilizing", "Engineering is still involved in running the plant."
Rework & Intervention Costs	Late modifications, recurring punch lists, work-to-go added to operations, temporary bypasses.	By identifying and resolving operational gaps before transfer to operations.	Are unresolved issues being deferred into startup?	Continuous procedural changes and growing operational workarounds.
Human Capability Costs	Knowledge silos, inconsistent responses, dependency on SMEs.	By enabling mechanisms to ensure operational competence, confidence, and decision-making capability.	Have teams demonstrated competence under realistic scenarios?	Frequent escalation for routine decisions and low operator confidence.
Safety & Environmental Exposure	Procedural deviations, weak shift handovers, startup incidents.	By integrating operational discipline, risk management, and emergency preparedness.	Can operators safely manage degraded conditions?	Increasing near misses and confusion during operational upsets.
Reduced Value Realization	Low reliability, reduced OEE, delayed ROI, workforce burnout.	By connecting startup capability to long-term operational performance and business value.	Are operational KPIs aligned with strategic business outcomes?	Persistent underperformance and continuous recovery initiatives.

The Cost of Non-Readiness challenges one of the most common assumptions in capital projects: that technical completion automatically leads to operational success. Although technical completion may enable startup, Operational Readiness is what enables stable, resilient, and sustainable value realization. Organizations that focus exclusively on delivering assets frequently underestimate the organizational capability required to operate those assets effectively under real operating conditions.

As projects become increasingly complex, this gap becomes even more significant, emphasizing the criticality of Operational Readiness as a strategic organizational capability that determines whether organizations can reliably achieve intended operational outcomes under uncertainty, operational variability, and complexity.

The true measure of readiness is not whether the asset can start. It is whether the organization can perform predictably, sustainably, and resiliently after startup.

That is ultimately the transition: **From What If... to Even If...**

Notes:

[1] detailed article can be accessed at:

[https://icxa.net/technical-article/3-technical-article-from-cost-control-to-value-realization.pdf?  
\\_gl=1\\*jm30iy\\*\\_ga\\*MTg0NDU2NDgwNS4xNzQ5ODM3NDE3\\*\\_ga\\_CKX0FXW6  
44\\*czE3Nzk3MzE5MTUkbzE5NiRnMSR0MTc3OTczMTkxNSRqNjAkbDAkaDA](https://icxa.net/technical-article/3-technical-article-from-cost-control-to-value-realization.pdf?_gl=1*jm30iy*_ga*MTg0NDU2NDgwNS4xNzQ5ODM3NDE3*_ga_CKX0FXW644*czE3Nzk3MzE5MTUkbzE5NiRnMSR0MTc3OTczMTkxNSRqNjAkbDAkaDA)