



# Managing the Risk of Cost Inflation

*How X-Act Platform Helps Organizations Execute Transformation Programs to Avoid Skyrocketing Operational Costs*

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# OVERVIEW

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Transformation programs change how organizations use people, processes, technology and physical infrastructure to meet their mission. Cost avoidance is often a key driver for transformations, but achieving enduring results is a challenge unless the right decisions are made from the onset and organizations employ strict processes to manage the outcomes.

To create more resilient businesses and ultimately more value, it is necessary to build and maintain operational environments that deliver the best performance with the best economy. However, long-term cost avoidance can only be achieved with architectures that enable businesses to agilely adapt to constantly changing requirements.

In this capacity, advanced predictive analytics and mathematical emulation techniques can help guide and test strategic transformation decisions throughout project execution to ensure an optimal outcome.

This paper explains how X-Act platform can be used to clearly identify when and which transformation actions should be taken to support the continuous cost effectiveness of business operations.



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## (1) COST INFLATION

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# The Problematic Outcome of ‘Do More for Less’ Initiatives

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Over the last 20 years, as IT teams automated human intensive processes to do more for less, they were praised for providing the essence upon which competitive advantage was forged. But due to the business dynamics and the continuous demands for lower costs and increasing agility, today’s IT systems have achieved a level of sophistication and complexity that now burden the business.

Rapid change cycles driven by exponential growth in technological innovations and shifting market expectations have led to escalating operational costs and system instability. Unless these dynamics—and their associated risks—are managed, the privileged role of IT departments as business enablers will be lost.





## RISK GROWS IN THE GAP BETWEEN BUSINESS & IT

In most organizations, there is a gradually growing, but costly disconnect between business and IT. As digital transformation efforts expand, this gap becomes more difficult to bridge. At the beginning of any transformation project, requirements are set by business stakeholders. IT then translates business requirements into technical requirements based on a static view of the business' needs.

However, in truth, business requirements are always changing. So, IT must continuously make systemic changes that stretch the implementation to match the reality of business dynamics. This causes rapid generation of complexity and even implementation obsolescence, cost inflation and imposes implementation boundaries and uncertainties.

As systems age and/or are stretched to cover new business requirements, we often see that resources become absorbed in non-productive activities that cause cost inflation. When a set of constituents become stressed enough to exert an effect on a dependent constituent—such as a limit at some stage in a process—the diversion from the expected behavior is caused by dynamic complexity.

While complexity refers to a state or quality of being intricate or complicated. *Dynamic complexity* is defined as a detrimental property of a complex system in which the behaviorally determinant influences between its constituents change over time.



# DYNAMIC COMPLEXITY: THE HIDDEN CAUSE OF COST INFLATION

We typically expect the cost of production to decrease as volumes increase. But this isn't always the case because dynamic complexity can absorb useful resources in activities with unproductive outcomes.

The graph below illustrates the impact of dynamic complexity and the corresponding cost inflation. In this case, the business was facing competitive pressures. In order to maintain their current market position, their trading and settlement system needed to handle *increasing transaction volumes at faster speeds and with a lower cost per transaction*. But decades of ongoing enhancements and modifications had led to decreased system efficiency and skyrocketing operational costs.

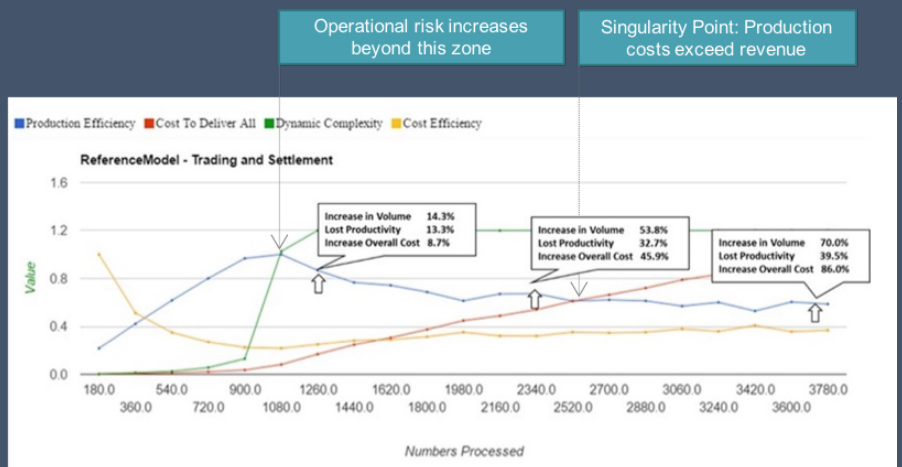
Despite employing the most respected IT consultancies as well as the top business intelligence and performance management technologies, nobody could explain with confidence why it was costing the business more to do less. Conflicting data and opinions made it difficult for IT and business leaders to agree upon a solution, much less convince the boards to undertake any costly transformation projects.

## EXAMPLE

Using X-Act platform, we were able to show with certainty that system dynamics were causing the decline in system performance and increase in costs. With an end-to-end emulation of the entire ecosystem, it became easy to pinpoint the bottlenecks that fragmented approaches and statistical methods missed.

Further, X-Act predictions showed that unless a large-scale re-engineering or modernization project was undertaken, the production efficiency of the trading and settlement system would continue to decline, while costs would rapidly increase as resources became increasingly absorbed in non-productive activities.

Armed with this knowledge, business and IT leaders were able to show the board that a singularity would occur when the blue line that represents productivity and red line that represents cost intersect. From this point forward, production costs would be higher than revenues, and the future of the company would be at risk due to a loss in margin, cost inflation and overall system instability. Unfortunately, in this case, these insights came too late to save the business from competitive disadvantage.







## (2) BALANCING COST VS.

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# Operational Risks

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To use cost as a reliable mechanism to justify and guide business decisions—including where to invest, when to transform or disrupt business processes, and how to survive competitive pressures—cost analysis must expand to cover a wider definition. Calculating only the projected cost of a project is not sufficient. The chronic cost associated with lost opportunity is equally important to consider as a potential catalyst for adopting a disruptive strategy. In other cases, fixed costs may justify a corporate re-engineering project.

Cost is a non-linear function. A portion of infrastructure and operational costs are fixed, and management will strive to keep these costs low. Other costs are driven by business activities and are therefore variable. The third, and most often overlooked, category of costs are associated with dynamic complexity, which left unchecked can become so intrusive that it may become impossible to deliver the desired quantity with acceptable quality for the right cost.

Therefore, achieving sustainable cost reduction is dependent on an organization's ability to identify strategic opportunities for improved efficiency and better understand the future implications of their cost cutting decisions.



Cost is more than just an accounting metric. It is a complex and multi-dimensional estimation that should cover a vector of dependencies:

- Competitive position
- Organizational goals
- Economic arguments
- Service characteristics
- Product complexity
- System stability
- Maturity of skills and management



### [3] IMPROVE COST MANAGEMENT PROGRAMS

## Using X-Act Platform

“New technologies and approaches are merging the physical, digital, and biological worlds in ways that will fundamentally transform humankind. The extent to which that transformation is positive will depend on how we navigate the risks and opportunities that arise along the way.”

—Klaus Schwab, Executive Chairman of the World Economic Forum

X-Act<sup>®</sup> platform models entire business ecosystems and supports the level of sophistication necessary to diagnosis the dynamic factors that lead to cost inflation.

To effectively manage operational costs, it is important to consider all of the vector of dependencies that cause cost variability. These factors include the millions of interactions that make up a modern business system, which have expanded beyond human comprehension.

X-Act<sup>®</sup> platform models entire business ecosystems and supports the level of sophistication necessary to diagnosis the dynamic factors that lead to cost inflation. A full range of cost rationalization or cost avoidance options can be evaluated to realistically understand the associated benefits, complexity and execution costs of any proposed solution. Further, once a path has been chosen, the advanced analytics and mathematical emulation capabilities of X-Act can help guide the project execution to ensure the best possible outcome.

#### + IDENTIFY

Predict the conditions that cause cost inflation

#### + ACT

Determine which changes or remedial actions are needed

#### + MONITOR

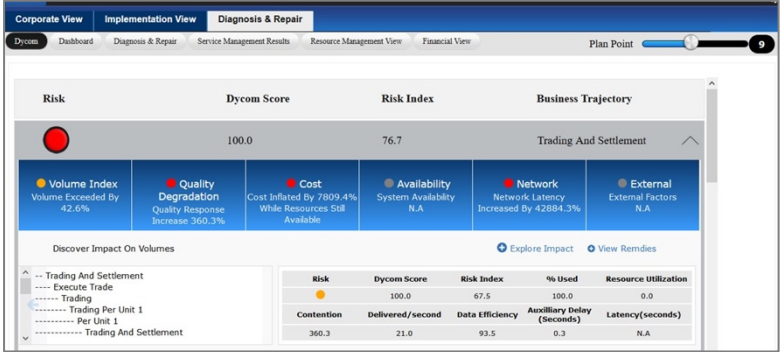
Identify problems and apply proactively preventive actions



# STEP 1 X-Act Platform Identify and Diagnose Root Causes of Cost Inflation

X-Act® platform interface shows which business processes are impacted by a dynamic complexity related risk through dashboard indicators and scoring metrics.

Users can drilldown to discover the cause of the risk and anticipated impacts.



## Dycom and Risk Index Metrics Explained

Dycom	RI	Interpretation
High (above 50)	Low	Predominance of dynamic complexity due to interdependencies, conflicts, and contentions generated by the architecture and business dynamics.
Low (up to 20)	High	Shortage in physical resources.
High	High	Both dynamic complexity and operational risk are of concern. Upgrades of physical resources should be investigated.

A high Dycom score indicates that dynamic complexity is exerting a significant strain on the system being examined. A high Risk Index (RI) score indicates that there are insufficient resources to meet system demands. When both Dycom and RI are high, a risk may be imminent.

# STEP 2 X-Act Platform Determine the Best Fit Cost Management Actions

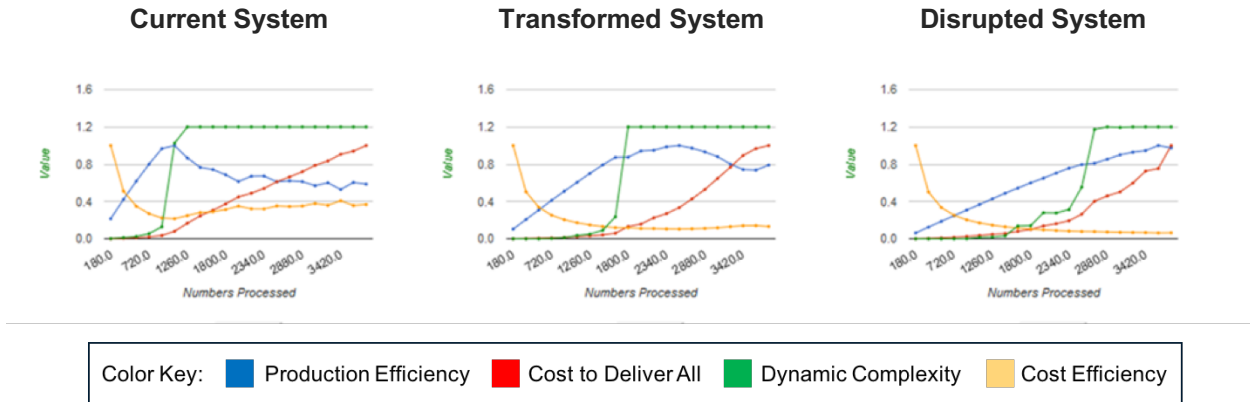
Once a risk has been identified, X-Act helps decision makers evaluate the sustainability of proposed remediation solutions as well as the optimal use of assets and how to limit any unnecessary exposure to risk.

Additionally, economic, service quality and cost advantages of any proposed solution can be evaluated.



# Explore Options with What-if Analysis

Using what-if analysis, X-Act provides system owners and business leaders with the information they need to fully understand the impact of any suggested optimization, transformation or disruption programs (before any actions are taken).



## X-ACT REMEDIATION DASHBOARD

To support the best possible solution, X-Act provides users with the algorithmic intelligence they need to define the right optimization action and to understand the expected ROI, time to deliver and complexity of each remedial action.

Risk	Dycom Score	Risk Index	Business Trajectory
	100.0	66.6	Balance Accounts <span>⌵</span>
	99.5	45.5	Trading And Settlement <span>⌶</span>

<b>Volume Index</b> Volume Exceeded By 7.7%	<b>Quality Degradation</b> Quality Response Increase 42.8%	<b>Cost</b> Cost Inflated By 10909.2% While Resources Still Available	<b>Availability</b> System Availability N.A	<b>Network</b> Network Latency Increased By 84.0%	<b>External</b> External Factors N.A
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Discover Impact On Volumes + Explore Impact + View Remedies

Action	Diagnosis	ROI	Delay	Complexity
More Processors	Resource Near Or At Saturation	Medium	Short	Simple
Virtualization (Load Distribution)		Fast	Medium	Complex
Change Processor Technology		Slow	Medium	Medium
Change Component	Resource Reliability Problem	Medium	Medium	Medium
Virtualize		Fast	Medium	Complex
Create Failover Component		Medium	Medium	Medium
Re-Architecture / Infrastructure		Fast	Long	Complex
More Processors	Unacceptable Response Time	Medium	Short	Medium



## Example Outcomes Achieved Using X-Act

Knowing that the proposed improvements will lead to the desired results allows business leaders to make decision with confidence. With this approach, we have helped clients in many highly critical industries achieve higher volumes and quality of service at a lower overall cost to the business.



**\$30 million gain** in cost avoidance and controlled ROI for a car manufacturer seeking market expansion



Cancelling an ineffective investment in supply chain management saved a large retail food chain **\$170 million in cost avoidance**



Optimizing maintenance windows for a large, European airline by more than **25% improved service quality and minimized costs**



Creating a strategy for sorting center consolidation for a large postal organization **saved \$120 million**

X-Act helps to bridge the business-IT gap by providing IT teams with the communication, planning and monitoring capabilities they need to proactively ensure that cost management programs meet business requirements and optimize the use of systems and resources without any unintended impacts on the volume and quality of production.

X-Act can be used throughout a transformation program to quickly, cost-effectively and exhaustively test any system changes against business requirements, discover performance issues and develop the appropriate remedial strategy during any phase of the lifecycle.

Using X-Act OBC Platform throughout the transformation project allows system stakeholders to:

- Verify that the business goals will be met
- Ensure changes will not lead to a high level of dynamic complexity
- Keep volume, cost and quality constraints aligned

## X-Act Engineering Dashboard

The X-Act engineering dashboard displays computed metrics and deeper technical insights that are used by IT teams to translate the business diagnosis into an execution plan that covers the necessary optimization or transformation actions at both the logical (architecture) and physical (system infrastructure) levels.





# STEP 4 X-Act Platform Maintain an Optimal Position

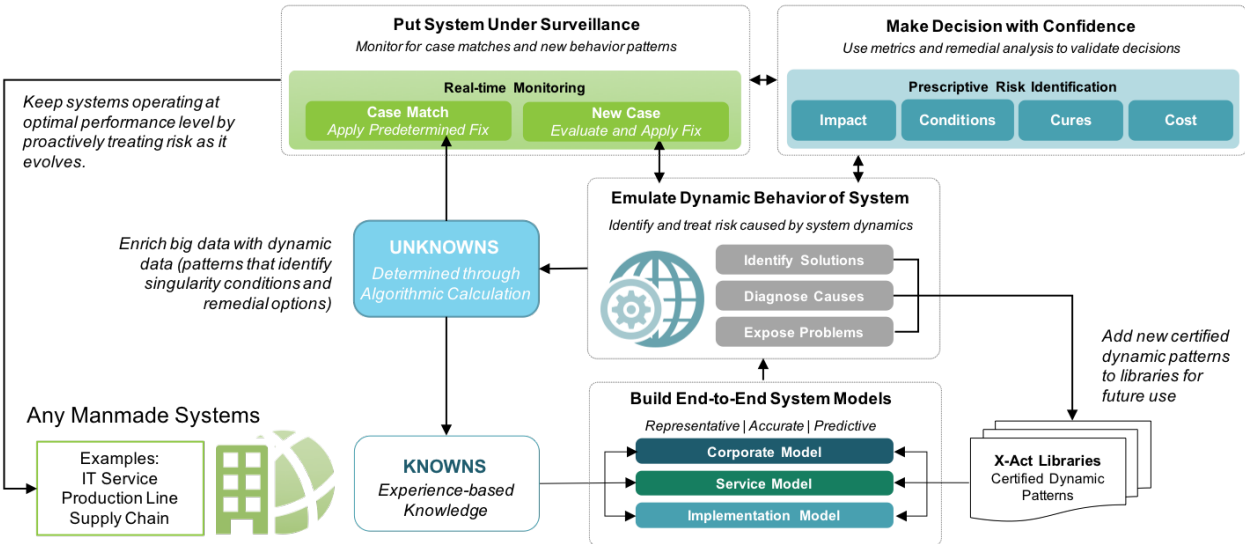
Optimal productivity equates to the delivery of business goods or services at a minimum cost, while maintaining acceptable service quality. Through our research and use of X-Act, we know that once we move beyond the point of optimal productivity, any additional increase in volume will cause a deterioration in productivity and an escalation in cost. Additionally, the enterprise is running inefficiently before the optimal productivity point is reached.

If business leaders wish to proactively manage costs, they must be able to predictively examine the evolution of their business. If the maximum productivity is about to be reached, the business should be prepared to take immediate action before cost inflation occurs or adjust business goals until re-engineering is possible. In all cases, X-Act can help companies evaluate their remediation options and choose the optimal cost management solution.

The situational data revealed by X-Act makes it possible to create a new class of artificial intelligence, called **generative intelligence**. The goal of generative intelligence is to identify new cases before they occur and determine the appropriate response. These cases are *unknowns* in statistical methods, which are limited to prediction based on data collected through experience.

## X-Act Capabilities

X-Act allows for the rapid identification of a potential risk that may cause cost inflation—with immediate analysis of root causes and proposed remedial actions. A continuous enrichment of case-based knowledge will provide rational and unbiased mechanisms to maintain the best long-term cost management position.



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# Conclusion

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A great opportunity exists for businesses that are able to significantly raise their cost efficiency—by gaining visibility into the dynamically complex factors that drive cost base and exposing more strategic and sustainable options for long-term cost management.

Users of X-Act can reliably discover the conditions which will cause dynamic complexity to absorb resources and takeover the planned yield, thereby deteriorating the expected quality and quantity while inflating costs. These foresights are necessary not only to improve the maturity of cost management practices but also ensure an optimal outcome that weighs both short and long-term cost benefits in alignment with performance and scalability goals.

Stripping out cost is undoubtedly hard work, fraught with many challenges. And while those that lack transparency into the root causes of cost inefficiencies may well still achieve growth, it may be unprofitable growth. Businesses that approach cost management as a Board-level strategic concern and use the most advanced decision support tools will create space within which to grow their profit margins and secure a real competitive advantage.



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URM GROUP is committed to helping organizations mature their risk management practices to more effectively and agilely respond to risks that are growing in frequency and severity due to the dynamic complexity of our modern world. Through our research and applied use of proven emulation technologies, we teach people how to proactively discover and control risks at the right time to avoid future surprises and unwanted outcomes. Our universal risk management methods arm business and government leaders with the foresights they need to confidently respond to changing dynamics and clearly understand which (and when) preventive and opportunistic actions should be taken to ensure the continuous efficiency and cost effectiveness of operations.