



RESEARCH SPOTLIGHT

Industrial Transformation is Becoming an IT Land Grab... and That MAY be Okay



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Introduction

Industrial Transformation (IX) was supposed to be something different. Instead of focusing on continuous improvement, industrial enterprises were looking to deploy digital technologies and new methodologies to achieve step change across their value chain. New teams were created. New leaders – often called Chief Digital Officers (CDOs) or something even more exotic – were hired. A new set of technologies (artificial intelligence, machine learning, digital twins, advanced analytics, etc.) were the focus. But a trend has emerged and it's déjà vu all over again: IT appears to be in a process of a land grab with increasing responsibility for Industrial Transformation. Is that good or is that bad? The answer depends. So, let's look at why industrials thought something different was needed, how that is evolving, and the tradeoffs across different organizational models.



FIGURE 1 - IT Land Grab

Industrial Transformation was Different

Industrial Transformation (IX) is the proactive and coordinated approach in leveraging digital technologies to create **step change** improvement across the value chain. IX is differentiated from Continuous Improvement programs, such as Lean or World Class Manufacturing (WCM), by its focus on step change.

Most manufacturers viewed Industrial Transformation as something different:

1. The technologies of Big Data, artificial intelligence, and machine learning really were new to most corporations, so new talent had to be brought into the company. Data Science was an emerging domain without a presence in most corporations.
2. Most organizations were exhausted from the big Enterprise Resource Planning (ERP) rollouts over the last couple of decades and were looking for ways to engage with smaller bites of technology.
3. The waterfall methodology being deployed by most IT organizations was rightly seen as antiquated.
4. The silos of IT and OT and their associated data prevented effective performance management/optimization.
5. Uber and Airbnb were disrupting whole industries and showing that new business models could lead to remarkably different valuations.
6. While Continuous Improvement and/or Operational Excellence programs like Lean or World Class Manufacturing are increasingly prevalent and impactful; these programs are focused on incremental steps rather than step change envisioned by IX.

Therefore, many companies kicked off transformation with the CEO in charge, established an IX program to marshal resources and develop detailed plans, implemented an Agile methodology for development/deployment, and hired a Chief Digital Officer – often from a technology company – to drive innovation. In fact, these became the characteristics of **the first two (of five) stages**, the Incubate and Prove Stages.

However, data across time from multiple global surveys show that change is afoot. Comparative information shows the increasing role of IT and the CIO – meaning a more traditional model of a technology-focused organization models – seems to be trending. Let's look at two indicators of this change.



CIOs are Increasingly in Charge

In 2019, we found that IX was a C-suite driven initiative with the CEO most likely to be managing the IX program and controlling the budget. We see that changing with more recent data. Industrial Transformation is still a C-suite-led program 89% of the time, but which “C” level executive is changing. CEOs are less likely, and CIOs are more likely to be the ultimate program head. In fact, IX Leaders are 36% more likely than Followers to have the CIO lead IX. LNS Research views this as a trend based upon our advisory interactions with manufacturers. CIOs are 55% more likely to have budget authority in 2022 than in 2019.

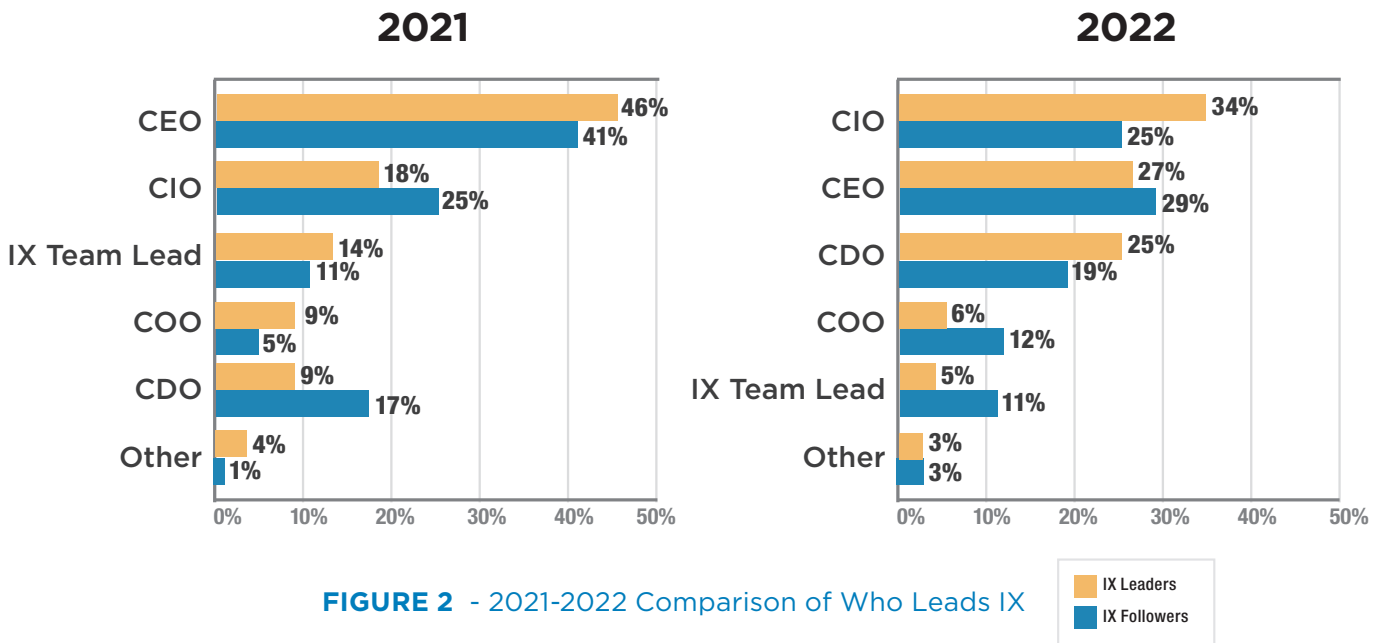


FIGURE 2 - 2021-2022 Comparison of Who Leads IX



¹ To derive our findings LNS Research conducted a global survey in the winter of 2021. This study builds on and looks for insights across a similar survey executed in December 2018/January 2019 and leverages results from more focused surveys through that time span (for example, our [Analytics that Matter Survey](#)). Demographics for all the surveys were similar, making comparisons across time and surveys meaningful.

IT-OT Convergence is Increasingly Under the CIO

Pundits are regularly talking about the convergence of IT and OT. The talk usually centers around technology; the fact that standard IT products increasingly will displace specialized Operational Technology (OT) installed in manufacturing. Organizational convergence is often overlooked relative to those technology evolutions. The organizational implications can be just as critical.

In our [Research Spotlight on the People dimension of IX](#), we noted that while there are advantages and challenges to every organizational structure, the data is clearly showing that there is a best practice to emulate here. IX Leaders are 177% more likely to have organized IT-OT into a single team than Laggards. This best practice is also growing rapidly as more Leaders (+2%) and Followers (+10%) have integrated their teams than in 2019. The kicker is that these converged teams report into the CIO in the vast majority of times.



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- **Tom Comstock**
Research Fellow



Centralizing Operational Technology (OT) and IT under the CIO should not be seen as surprising:

- This makes sense in that the CIO is the leading technology executive in most organizations. OT is typically not centralized nor represented by a single executive.
- IT groups are typically significantly larger than OT organizations.
- IT commands a significantly larger software budget than OT.
- IT has an enterprise-wide focus, whereas OT has a plant-by-plant perspective.

How would you describe the convergence of IT and OT organizations with your company?

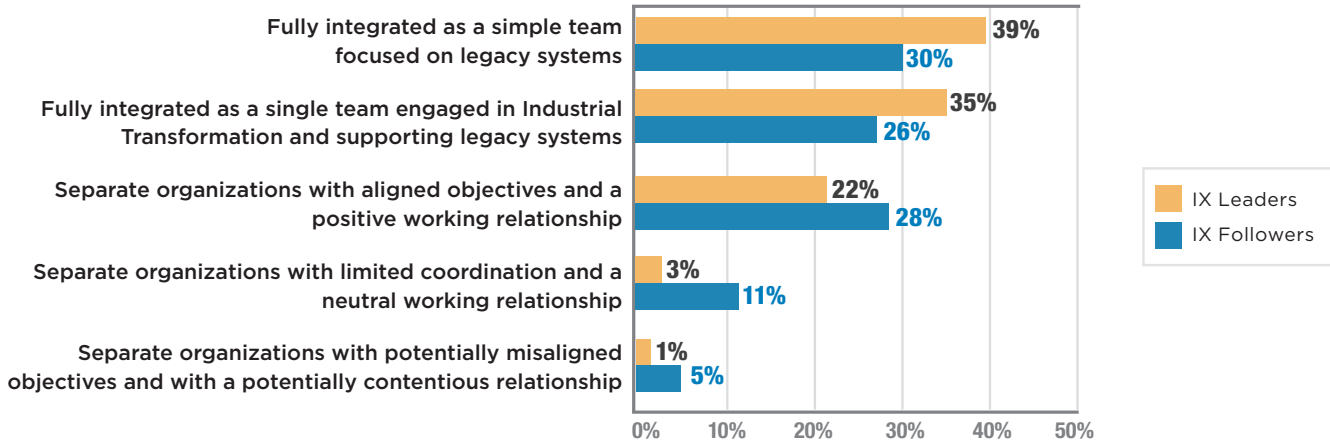


FIGURE 3 - Convergence of IT-OT Organizations

So, the role of IT in Industrial Transformation (IX) is growing and very likely to continue to grow well into the future. Let's drill into when that is good and when that is bad.

Which Functional Leaders are Included in your IX Program Team?

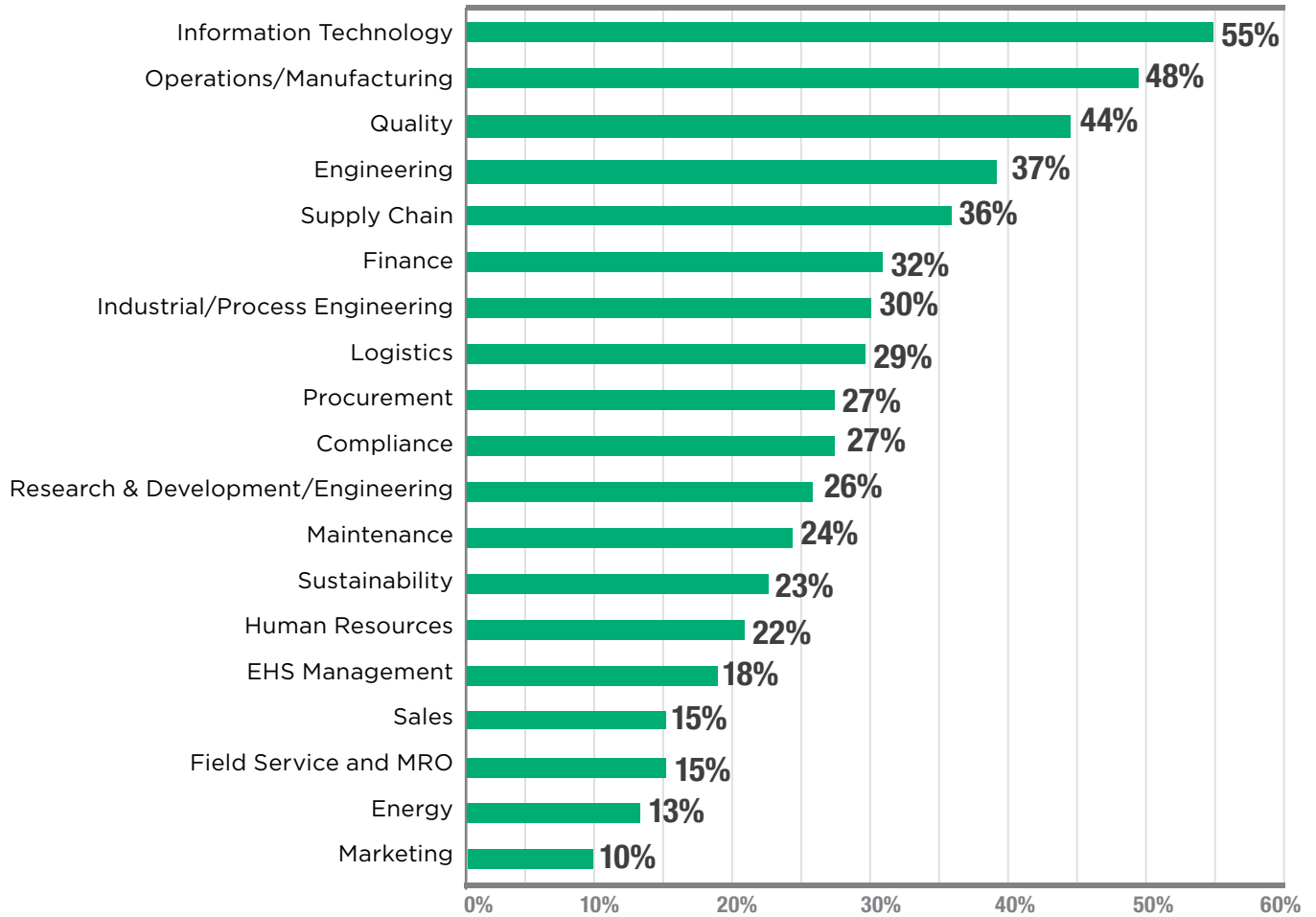


FIGURE 4 - IT Most Likely to be on the IX Team

When an IT Land Grab May be Okay

When it Reflects a Mature Stage of Transformation...

It is common to hear about the IX Journey. Our recent research defined the **Five Stages of IX**. Those five stages are reflected in the following diagram. LNS Research has found that IX Leaders are those companies that have reached the higher levels of maturity, Scale and Embed, having crossed the **Transformation Chasm**. Fundamental to these later stages of transformation is the institutionalization of transformation into the fabric of the company. The final phase rejects the program structure overall. Instead, the company seeks to work transformation into its standard operating procedures and across the company. Companies at this stage stop talking about the IX “journey” and focus on building the Industrial Transformation (IX) culture. The goal and the key to long-term success for transformation is for IX to become part of the standard way the business operates.



FIGURE 4 - The IX Journey: Five Stages of Transformation Maturity

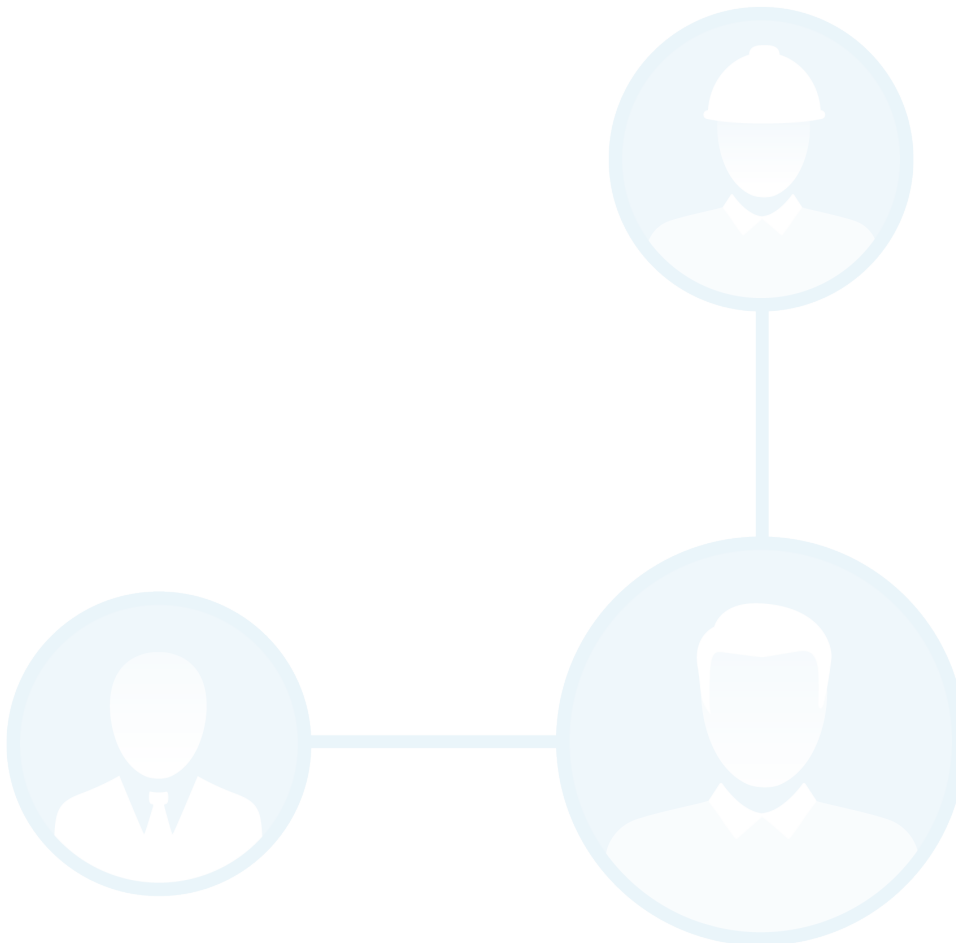
Moreover, our research shows that 80% of IX Leaders explicitly say they “embed IX” into their “business model and corporate culture.” And, 91% of IX Leaders report “most of the company’s personnel” were “engaged” in IX. IT-OT organizational convergence is a key indicator of IX maturity.

LNS Research views the IT “Land Grab” positively when it correlates to the maturation of the programs in IX Leaders’ companies. Eventually, IX must transition from a program to a core part of a company’s operating fabric. The CIO is responsible for all other enterprise-wide computing technologies, so it makes sense that **eventually** Industrial Transformation (IX) will transition into another component of the CIO’s responsibility.



Industrial Transformation Leaders simply refuse to let the limitations of legacy systems dictate their “to be” processes.

- Tom Comstock
Research Fellow



Especially When IX Focuses on Legacy IT, OT, and Design Systems...

LNS Research has also found that moving beyond an exclusive focus on new digital technologies to upgrading/rearchitecting IT, OT, and/or design systems is also characteristic of more advanced IX maturity. LNS Research has found two important insights about “legacy” systems:

1. IX Leaders are starting from a notably stronger position with their IT, OT, and design systems.
2. Yet, IX Leaders are 74% more likely to be upgrading/rearchitecting those systems.

IX Leaders are looking at transformation as more than deploying new technologies, but rather are focused on process reengineering. Industrial Transformation Leaders simply refuse to let the limitations of legacy systems dictate their “to be” processes.



Independent of the official reporting structures between IT and OT, we see that **Leaders are significantly more focused on IT-OT, organizational integration than Followers.** It is not about the “Land Grab” — it is about building alignment between these organizations and corporate strategy.

- **Tom Comstock**
Research Fellow

IX Leaders have created strategies to link changes in their legacy systems and new digital technologies. LNS Research has found that IX Leaders are THREE TIMES more likely to have formally developed an Operational Architecture for how IT, OT, and IX technologies will work together. Leaders are 60% more likely to have created their Operational Architecture than in 2019. And if they don't have it already, they are working on it as only 3% of IX Leaders put this out of scope of their IX Program.

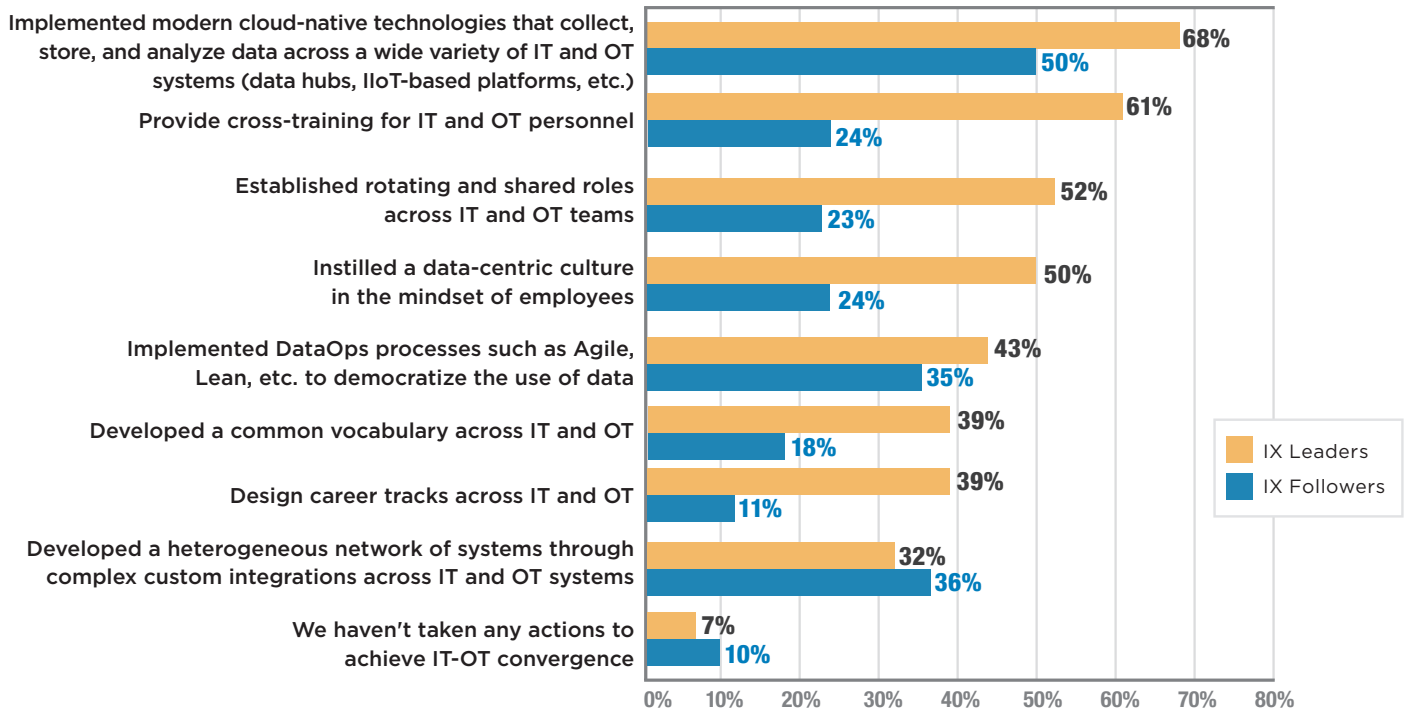


FIGURE 6 - IT-OT Organizational Integration

IT's role becomes more formal and more vital as the IX Program engages in traditional IT and OT, in addition to their earlier focus on new digital/IX technologies.

When the Line Between IT and the Business is Blurry...

LNS Research has worked with **a few** manufacturers that have deliberately built deep domain expertise into their IT organization with **years** of focus. Teams within IT are dedicated to specific functions – quality, manufacturing, EHS. These dedicated teams build enough understanding of the functions' existing systems, business pressures, and strategic goals to operate as if they were part of that specific function. In those cases, it would be unfair to call it a "Land Grab"; "Earned Right" might be a fairer description.

Two caveats: this is quite unusual and requires a long-term investment of resources by function in IT.

When the Business is Not Stepping Up...

Sadly, LNS Research often encounters IT personnel that understand what we like to call the "Power of Prepositions":

- IX is not something you should be doing **TO** Operations.
- IX is not something you should be doing **FOR** Operations.
- IX is something you should be doing **WITH** Operations.

But they are forced to go it alone. These IT organizations are often looking for a business partner to step up and drive the program, but Operational Leaders simply don't.



When an IT Land Grab is Dead Wrong

When it is Simply Rebranding of a Department...

More and more, IT departments are simply renaming themselves to Digital Transformation (DT) departments. We suspect this may be why three-quarters of companies say they have an active transformation project—because IT simply said that was what they were now doing.

This is more than an internal marketing issue. In [our analysis of the five stages](#), we have noted that the practices of IX Leaders cannot simply be adopted by early-stage programs. While we have teased about “celebrity CDOs,” our research has also found that hiring an outsider from a technology company does indeed send a strong message to the company that something is different, and that transformation matters to the executive team of the corporation. Rebranding simply muddles the message internally.

In the Early Stages of IX...

LNS Research has found that the industrials are organizing their efforts in three to five-year programs with 12 different initiatives on average. There is no effective alternative than to kick off Industrial Transformation (IX) with a special program initially. Resources need to be marshalled, specialized skills recruited, and strategies adopted. A program team is the easiest and most effective way to get going.

Virtually every manufacturer focuses its initial stages on testing digital technology. Conference room demonstrations and/or pilots abound as these small initial teams seek to learn and leverage technologies. Agile methodologies and data science are seldom strong suits for IT organizations, so some experimentation is required.

Traditional IT involvement can be a burden to the IX Program in these early stages. Bureaucracy inherent in most large enterprise IT organizations slows innovation.



Keys to Success in Whatever Organizational Structure

As outlined in [our People in IX Research Spotlight](#), LNS Research would argue strongly that operations/manufacturing must have a focal point, a “lead” on the IX team, even if the program head is the CIO. We would also suggest an inclusive team becomes even more important when IT leads IX. All in all, when IT is taking on a larger role, they need to have (or quickly build):

- Credibility with the business (i.e., people that have expertise and even worked in the business and Operations specifically).
- A healthy respect and understanding of OT.
- A strong business leader (not OT but Operations) that is actually in charge and leading the project/program/initiative.
- A management system that puts the business in charge and incorporates agile methodologies.

And, whoever leads the Industrial Transformation program initially, the focus should not be on building and growing the IX team, especially in an ivory tower or fiefdom; rather focus on improving the business as the strategy may be, and probably should be, to ultimately embed IX into the business over time.

Best practices are emerging, so stay tuned to LNS Research for more thought leadership information and reports on Industrial Transformation (IX).



RELATED RESEARCH ON INDUSTRIAL TRANSFORMATION (IX)

RESEARCH | [Pivot to Value for Industrial Transformation Success →](#)

RESEARCH | [Advanced Industrial Analytics: Four Proven Strategies to Scale Transformation During Uncertain Times →](#)

RESEARCH | [People in Industrial Transformation \(IX\): Leadership, Culture, and Organizational Best Practices →](#)

RESEARCH | [Taking Control of Quality Transformation: Strategic & Cultural Imperatives for the Quality Executive →](#)

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EBOOK | [Enable Operational Agility with a Digitally Connected Workforce →](#)

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RESEARCH | [Industrial Transformation: Architecture and Analytics Just the Beginning →](#)

RESEARCH | [IX Architectural Paths 1 of 3: Three Paths & Understanding IX Infrastructure →](#)

RESEARCH | [IX Architectural Paths 2 of 3: Evaluating IX Platforms and IX Applications & Analytics →](#)

RESEARCH | [IX Architectural Paths 3 of 3: Looking at IX Strategic Partners →](#)

RESEARCH | [Industrial Transformation Success: How to Secure Operations' Buy in to Create Effective Leadership →](#)


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