LNS Research

RESEARCH SPOTLIGHT

Pivot to Value for Industrial Transformation Success

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Introduction and Executive Summary

Industrial Transformation (IX) is increasingly common across industrial organizations globally. LNS Research survey data shows that two-thirds of companies surveyed have implemented, are currently implementing, or plan to implement an Industrial Transformation program. That research also shows that 75% of companies are not yet seeing any value from their programs. This Research Spotlight drills into one of the core challenges in achieving business value from your transformation program: The Pivot to Value.

Evidence increasingly shows that IX programs – especially successful ones – must restructure their efforts mid-flight to achieve, sustain, and grow the return on investment (ROI) from their transformational investments. At LNS Research, we call that program restructuring the "Pivot to Value," as meaningful improvement in the financial performance of the company is dependent on these changes.

This Research Spotlight examines the need for, and the benefits in, a Pivot in the program staffing, processes, strategies, and methodologies as your IX program matures. We will specifically cover:

- The definition of, and benefits from, IX (as a hint, they are big)
- The Five Stages of Transformation maturity
- The Transformation Chasm and the required Pivot to Value to cross that chasm
- Why IX programs cannot just start with the best practices identified for the most mature IX programs initially
- The people, process and technology changes required to realize the Pivot to Value

We close with recommendations for manufacturers.

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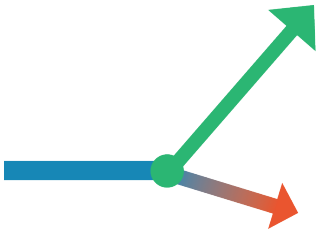
>
> **- Tom Comstock**
> *Research Fellow*



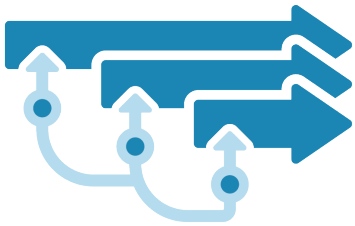
PIVOT TO VALUE
The changes to the IX Program strategies, processes technologies, and methodologies required as an IX Program matures in order to deliver meaningful and sustained business improvement.

Click to lean about the
INDUSTRIAL TRANSFORMATION FRAMEWORK

Defining Industrial Transformation and IX Leaders

Industrial Transformation (IX) is the proactive and coordinated approach in leveraging digital technologies to create step change improvement across the value chain. Industrial Transformation has become a very real phenomena across industrial operations with more than two-thirds of companies committed to an IX program. Neither the worldwide COVID pandemic nor its associated economic uncertainty/turmoil have slowed IX down. In fact, 83% of companies report that they have maintained or are increasing their transformation efforts in the face of all the current economic uncertainty.

Global survey data powerfully demonstrates clearly that early IX adopters have realized significant Return on Investments (ROI) from their IX program. As detailed in a **recent LNS Research eBook,** IX is delivering for manufacturers, and ROI is being realized widely, across IX Leaders. In fact, 80%+ of IX Leaders were able to reduce COGS and/or improve operating margins and/or grow revenues by at least 3% as a result of their IX program.



INDUSTRIAL TRANSFORMATION (IX) IS A PROACTIVE and coordinated approach to leverage digital technologies to create step-change improvement in industrial operations. Industrial Transformation is a critical and often the largest subset of a Digital Transformation program that includes initiatives outside of the industrial space, such as redefining customer relationships.

Click to lean about the **INDUSTRIAL TRANSFORMATION FRAMEWORK**

IX Leaders are	72%	**more likely to**	Increase	Revenue	**by**	10%	**as a result of their IX program**
	57%		Reduce	COGS		10%	
	43%		Increase	Operating Margin		5%	

[1] This Research Spotlight builds on more general reports on IX Readiness published in **April** and **August 2021.** All three reports derive findings from an LNS Research-conducted global survey in early 2021 and our experiences advising manufacturers. Demographics of the survey can be found in the Appendix.

How do we define IX Leaders and Followers? IX Leaders are the 20% of companies reporting real success or significant progress. Followers are everyone else. The data clearly shows that over 75% of companies are not yet realizing any value in their IX programs.

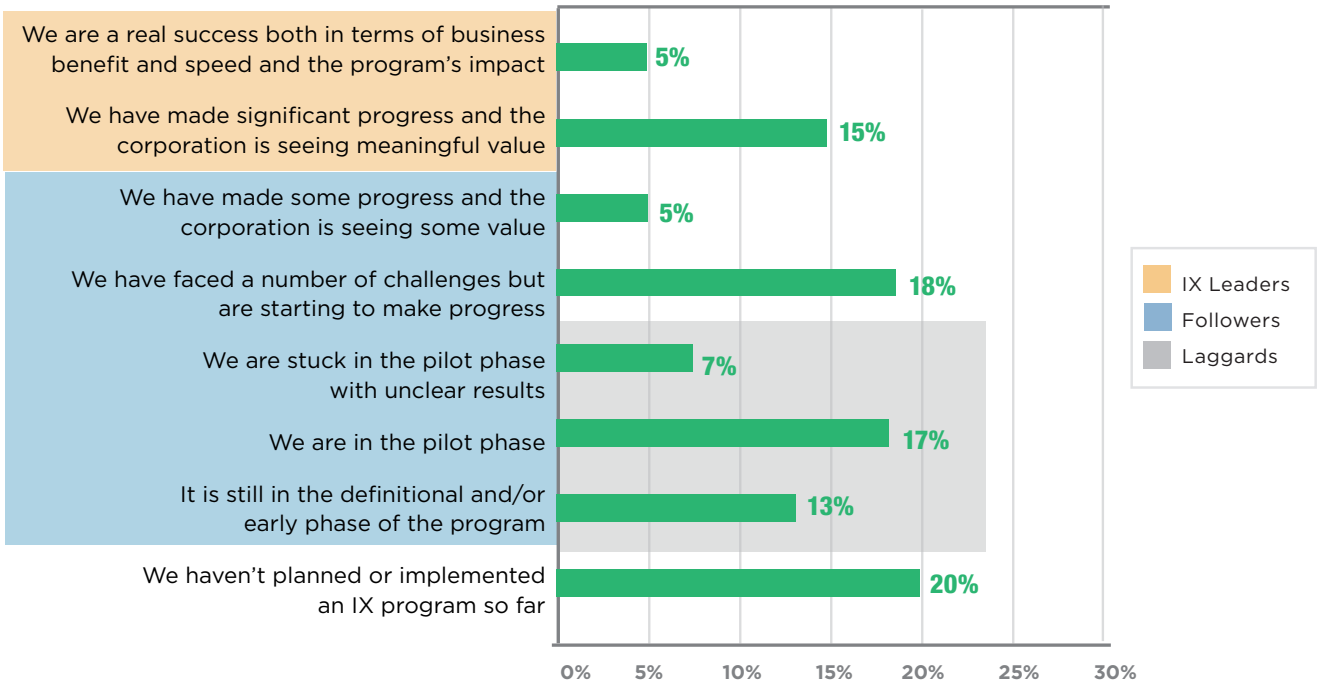


FIGURE 1 - IX Program Success

The 5 Stages of IX Maturity and the Transformation Chasm

LNS Research has identified and defined the 5 Stages of IX maturity. Our findings indicate that IX Leaders typically are in the later stages—Scale or Embed—reflecting their greater maturity. Let's look at each stage of IX and the core goals and methodologies of each stage.

1. Ad Hoc/Absent

Everyone must start somewhere. The beginning stage is all about getting to a decision and a commitment. The executive leadership of the company must decide IF they want to seek out step change improvements in operations. Getting to that decision usually involves a lot of discussion, evaluation of competitors, technology sampling, financial modeling, and updates to corporate strategy. Two core deliverables come out of this stage: 1) a commitment by executives to the success of transformation (the value of that commitment is critical) typically realized in 2) the formation of an IX program with goals, metrics, budget, resources, and marching orders.

2. Incubate

Virtually every industrial enterprise that is initiating transformation is doing so by forming an Industrial Transformation (IX) program. LNS Research has found that 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 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 this initial stage on testing technology. Conference room demonstrations and/or pilots abound as these small initial teams seek to learn and leverage technologies.

3. Prove

Quickly, IX programs need to progress from PowerPoints and a communications focus to actual implementation success (even if small). Therefore, IX programs look for quick wins. At LNS Research, we are regularly asked about which use cases are the "low-hanging fruit" and offer the "best bang for the buck" **(we have published the definitive answer to this question previously).** These quick-win technologies are generally deployed at the most technically advanced, "lighthouse" plants because of their willingness and capability to deploy advanced digital technologies. Focusing on these easy opportunities and low-hanging fruit kick-starts the program and builds support across the company.

These early stages are all about building momentum for the program and the vision that is underlying it.

4. Scale

This is the first stage where industrial organizations are "getting real" about their transformation. Deep and wide engagement with operations personnel becomes central to the program. A focus on the tough stuff — key "infrastructure" work associated with transformation that has neither quick returns nor direct payoff – begins in earnest. IX Leaders are 83% more likely than Followers to be investing in "infrastructure (data acquisition, cleansing, contextualization, etc.) without direct and immediate payback." The program goes beyond a focus on digital technologies to pursue upgrading/rearchitecting OT, IT, and design systems.

5. Embed

This final phase outgrows 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 IX "culture." The goal and the key to long-term success for transformation is to institutionalize transformation into the way the business operates.

Types of Change

Figure 2 shows how people, process, and technology changes as IX programs mature from Ad Hoc/Absent to Embed. LNS Research has found that the capabilities and tasks associated with transformation can be divided into three types of change:

- **Foundational:** capabilities that once required/acquired do not change. The formation of the IX program itself is an example as is building a data-centric culture.
- **Incremental:** capabilities that grow as IX programs mature. Budget is the most obvious example: companies typically increase the budget for the program as it matures and delivers successes. Focus is another example as programs should grow in scope as successes are delivered.
- **Pivotal:** these are the capabilities that must change as the program matures and the focus of this Research Spotlight.

IX JOURNEY: FIVE STAGES OF TRANSFORMATION MATURITY

The requirements to successfully launch an IX initiative become a hinderance to long-term success.

		VISION-FOCUSED			VALUE-FOCUSED	
		Ad Hoc/Absent	Incubate	Prove	Scale	Embed
PEOPLE	Program Head	No program head	High profile ("Celebrity") CDO	CIO	Team under CIO + COO	Business*-led under CIO/COO sponsorship
	Operations Role**	None	Minimal	Targeted engagement	Business-led initiatives	Leading, engaged, and incentive
	Organization	No formal organization	Status Quo	IX Team formation (overlapping but separate from Digital Team)	Convergence of IT and OT into Mfg T Establishment of IX CoE	Merging of IX and OpEx teams
	IX's Role In The Organization	Not yet established	Isolated	IX Program Team	IX Organization	IX Ingrained in the culture
	Staffing	Whoever is personally motivated	Corporate IT and Engineering	Corporate with additional data scientists	Adding significant operational input	Corporate-wide engagement
PROCESS	Management System	Ad Hoc	Technology prototyping	Agile	Agile infused with Operational Excellence	Corporate OpEx specific methodology
	Budget	Estimation	Quite limited	Limited	Sufficient for some corporate funding of plant rollouts	Majority of spend funded by business budget
	Funding Source	Off budget diversions	Corporate	Corporate	Corporate and business shared	Business units
	Scope	Investigations	Conference Room Pilots	Lighthouse Plant rollout	IX Center of Excellence (CoE)	Institutionalized across the company with a CoE
	Priority	Running business day-to-day	To generate internal news	Quick wins	Scaled, prioritized use cases	Integrated in corporate and BU strategy and planning
TECHNOLOGY	Technical Scope	Internet and vendor meetings	Exploring variety of cool new digital technologies	Focused pilots and proof of concepts of new technologies	Focusing on upgrading IT, OT, and design systems, too	Whatever is needed to solve big business challenges (OT, IT, IX)
	Focus	Exploration and business justification	IIoT	IIoT and assets	Manufacturing and Supply Chain	Entire value chain
	Data Policy Control	Unnecessary	IT	IT with data scientists	IX Program governance	Corporate and business governance
	Data Access	Unexplored	IX Program	IX Program and select managers	Data democratization across company	Open value chain to customers and suppliers

** Business or function (Manufacturing, Quality, EHS…)*
*** Operations not just OT*

FIGURE 2 - The IX Journey Across People, Process, and Technology

The Transformation Chasm

The challenge for manufacturers is that going through these stages is not an evolutionary stair-step with only foundational and incremental capabilities. To achieve the type of business benefit realized by early IX Leaders, companies must change how they are executing their program in mid-flight across the Pivotal capabilities. **LNS Research believes there is a "Transformation Chasm" for manufacturers to cross while executing their strategies.** The staffing, processes, strategies, and methodologies that are needed to get an IX program going become a burden to long-term success. Manufacturers cannot just refine the structure of the IX program as it matures. In a number of instances, manufacturers must rearchitect that structure. The gap between what is required to initiate a program and what is required to sustain transformation is the Transformation Chasm.

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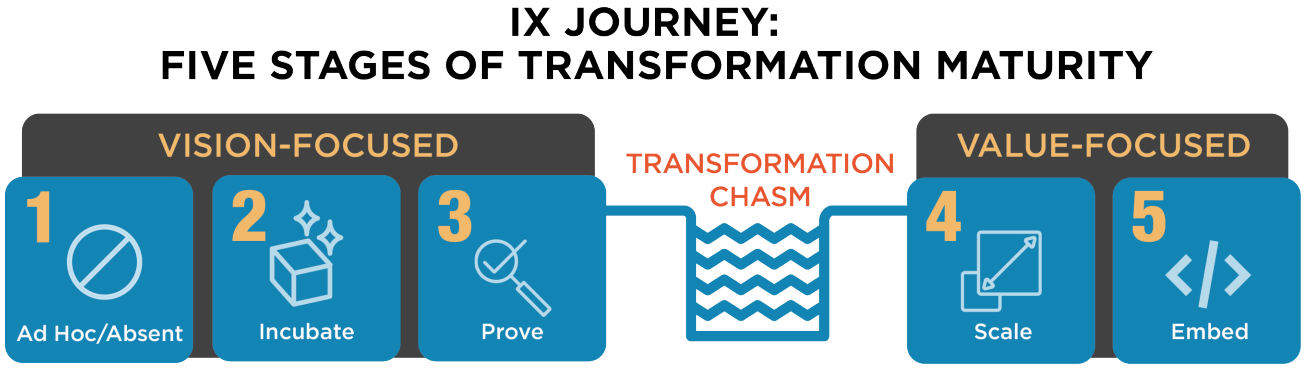

FIGURE 4 - The IX Journey: Five Stages of Transformation Maturity

The importance of the Transformation Chasm is that it is the fundamental barrier to meaningful long-term business impact. LNS Research has found that the benefits of transformation begin to accrue quickly as the IX programs ramp up in the Vision Stages, but unless the organization pivots dramatically, those benefits will not grow or even be sustained over time. Businesses tend to revert to the mean unless the program is restructured.

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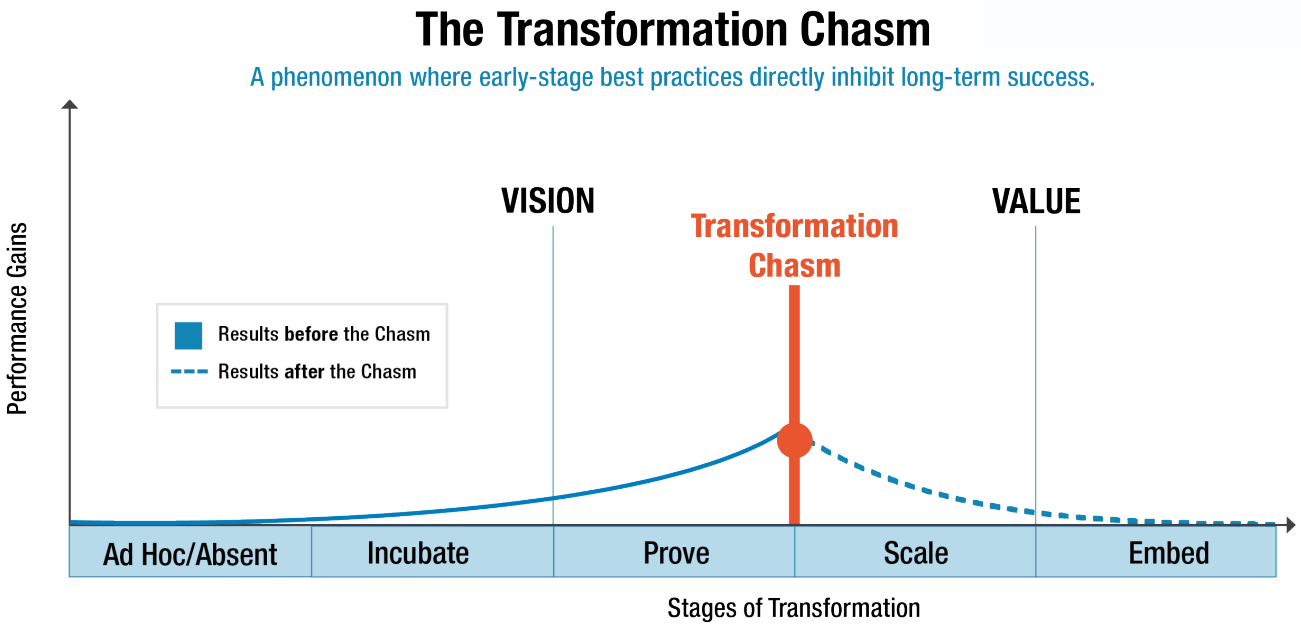

FIGURE 5 - The Transformation Chasm

The Pivot to Value

For manufacturers to succeed in Industrial Transformation (IX), they need to initiate their program with one set of processes, structures, and teams and then readjust many of those factors to succeed in the long run. IX programs must execute discontinuous change across several dimensions as they move through the stages of Transformation. This discontinuous change is what LNS Research calls the "Pivot to Value."

A Pivot to Value is required because certain practices that are effective in building momentum hinder the realization of meaningful business benefit over the long term. IX programs must change the way they execute to realize the full benefits of transformation. Let's look at why manufacturers cannot just embrace the practices of IX Leaders initially and then drill into the people, process, and technology dimensions of the Pivot to Value.

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Can't I Just Start With the Practices of the Elevate and Embed Stages?

While LNS Research may advocate "Leaning in Early," the fundamental truth is that momentum-building tasks of the Incubate and Prove Stages are not well served by the practices that are required for the Prove and Embed Stages. Let's look at some examples in detail.

Business Case

LNS Research has been following the Industrial Internet of Things (IIOT) market since 2014. In fact, we were the first analyst firm to define the requirements of an IIoT Platform in 2015. Our research shows that most early implementations of IIoT were complete failures. Further, we found one of the root causes of that failure to be the focus/goal of those early programs. Enamored by the vision of Industrie 4.0, media hype, and vendor overreach, manufacturers created programs seeking dramatic business model changes often built on "servitization" strategies (instead of selling a capital asset, such as a jet engine; they sold the service, such as flight hours). The market, technology, and the enterprise were simply not ready for these fundamental changes.

Instead, LNS Research has found that companies in the Incubate and Prove stages of transformation are better served by seeking solutions to departmental level challenges and to focus on cost reduction. Keeping the program more focused and less invasive dramatically increases the probability of success in these early stages. The rewards are not as great, but the probability of success is significantly greater as the span of control is so much smaller and the benefits more tangible (cost reductions are more readily measured). These early, focused successes build momentum around the IX Transformation Vision.

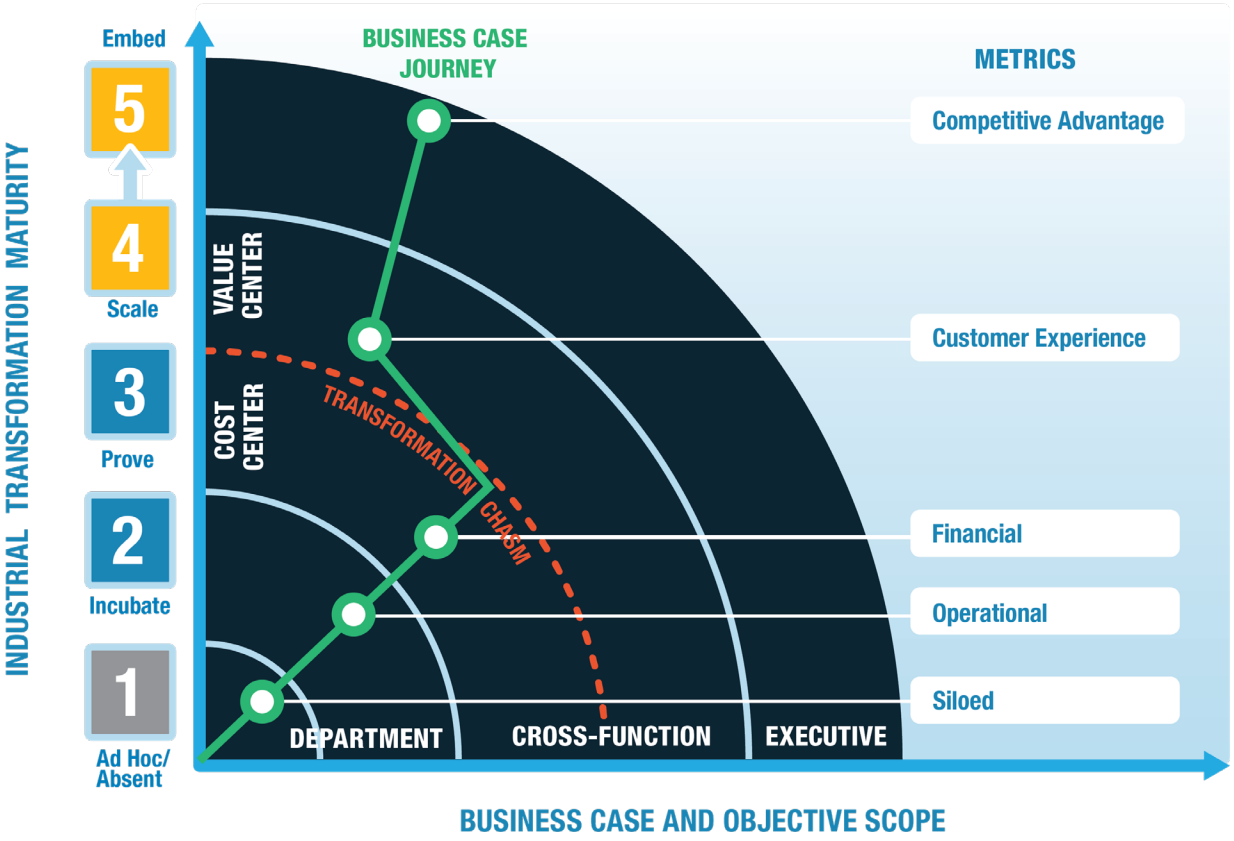

FIGURE 6 - IX Maturity to Business Case and Scope

Over time and to cross the Transformation Chasm, the IX program must change to focus on the larger organization, the value chain, and the top line as reflected in Figure 6. This is critical and is reflected as a discontinuous line in that diagram because it requires a Pivot: the strategies that work in the early stages of transformation maturity become a barrier to long-term, meaningful success. Focusing exclusively on departmental problems eventually faces diminishing returns. Focusing exclusively on cost reduction not only faces diminishing returns, but can also demotivate employees as "cost cutting" threatens jobs. Personnel, processes, and technologies will need to change as you focus on value chain issues.

Involving the rest of the organization and reaching out to suppliers and customers is not simply scaling (despite the stage name), but is changing the way you are executing. IX Leaders pivot and are TWICE as likely to focus on the business model and supply change restructuring that is too problematic in earlier stages of transformation.

Earn the Right to ask for the Big Investments

IX Leaders are focused on the big problems and are willing to invest in solving those big problems even without a direct, immediate payback. IX Leaders are more than TWICE as likely to focus on "big problems that have challenged us for years." And unsurprisingly, IX Leaders have significantly larger IX budgets (32% more likely to set IX budget between $50-100MM; 450% more likely to have a $100MM+ budget).

But few organizations are willing to place big bets on transformation, initially. "Big Bang" implementation strategies are completely out of favor given the pain and effort of the big ERP rollouts over the last two decades. Skepticism is rampant. Therefore, IX programs early in their journey are well-served by the thought that they must earn the right to ask for bigger budgets and the freedom to invest in infrastructure that does not have an immediate payback.

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Culture Change is Hard - Initiate Only as the Program is Delivering

Evidence is mounting that long term benefit realization from an IX program comes as it institutionalizes: as IX moves from a program to a culture. 80% of IX Leaders "embed IX" into their "business model and corporate culture". We have used the analogy of Lean before: sustained business improvement is realized only when it becomes part of the operating model for the corporation. But culture change is particularly difficult. Few corporations are going to be able to change their culture speculatively. Until the IX program has proven the value in transformation, few will see any reason to embed transformation into the corporate culture.

Just as importantly, few enterprises would know how they would want to change their culture until they have dug into IX. Data-driven, Change-ready, Customer-centric, Agile, Resilient are all cultural elements that IX Leaders have deliberately fostered in their corporate culture. Few companies can appreciate which cultural elements are important until they are deep into their transformation journey.

Technology Experimentation is Typically Required

LNS Research has found that IX Leaders are 31% more likely to focus on process changes and 60% less likely to use "evaluating/testing IIoT and other technologies" as a core strategy to their IX program. For IX Leaders, it is about applying technology to reorchestrate business processes, breakdown organizational silos, and innovate agility and resiliency. This is a sign of the maturity of IX Leaders. They have already gone through the technology experimentation and testing phases and are putting big bets down on the few technologies that offer the most business value to their specific organization.

IX Leaders are **60% LESS LIKELY** to use "evaluating/testing IIOT and other techniques" as a core strategy in the IX program, and **31% MORE LIKELY** to use business process improvement strategies to organize the program.

Few companies that are just beginning their IX journey know yet which technologies will have the biggest, most positive impact on their organization. Multiple artificial intelligence/machine learning (AI/ML) vendors report that most prospects they work with do not know where, how, or why to apply the technology. Sometimes you have to walk before you run and sometimes sitting up in the bassinet is the next milestone. There is no reason to build an operational data infrastructure across the company until the IX program has confirmed that there is a return in applying advanced analytics to that kind of data.

Similarly, it is impossible for companies in the Incubate stage to "double down," yet, on the one or two technologies that will deliver for them. Experimenting, piloting, and building proofs of concept are valid activities while in the Incubate and Prove stages. But as the IX Team learns and matures, playing with technology becomes a barrier to success. There is always another product to try, another version to wait for, another vendor with a great sales pitch. Rather, the IX program needs to pivot its focus away from trying technologies to reorchestrating business processes by deploying that technology.

The Changes Required in the Pivot to Value

For manufacturers to succeed in IX, they need to initiate their program with one set of processes, structures, and teams, and then readjust those factors to succeed in the long run. Jumping the Transformation Chasm is hard, but it is fundamental to IX success. Let's look at the People, Process, and Technology changes that must be made.

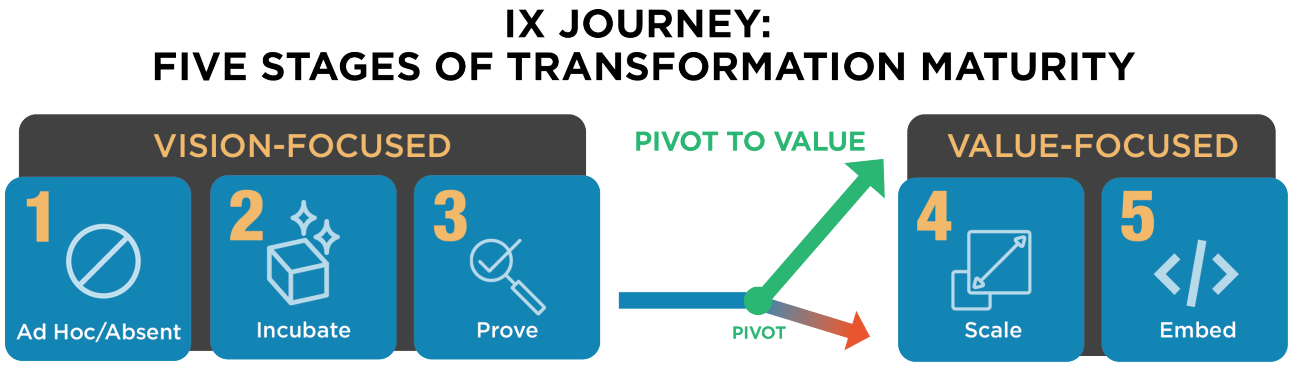

FIGURE 7 - Pivot to Value

People

A shift in leadership, organization, staffing, and personnel programs is required to execute the Pivot. Companies must retool staffing from change-agents and technologists to pragmatic operators, Subject Matter Experts (SMEs), and aligned reporting structures. Three major discontinuous changes must occur across the organization.

First, as previously noted, the program must morph from a program to a culture. IX Leaders are significantly more likely to incorporate IX into personnel programs across the enterprise. IX Leaders are:

- **TWICE** as likely to include digital competencies in performance appraisals
- **TWICE** as likely to have robust training program around IX
- **35% more likely** to see IX as a "key driver to career advancement"

It goes beyond personnel programs. In our survey, 91% of IX Leader respondents reported, "most of the company's personnel" were "engaged" in IX as transformation becomes a standard way of doing business. Cultural change is hard and not something that can be driven by technologists. Maybe **this is why** IX Leaders are twice as likely to include Human Resources on their program teams.

Second, **IX program teams must proactively plan their engagement with Continuous Improvement (CI) program** (such as, Lean, Six Sigma or World Class Manufacturing) teams in the plant. Over time, manufacturers should consider following IX Leaders: 70% of IX Leaders have converted, or plan to convert within one-year, Continuous Improvement/Operational Excellence teams into IX teams. They are 140% more likely to have already converted than Followers. As the IX program matures and delivers results, organizational convergence becomes possible (and not before).

Third, IX Leaders are 177% more likely to have organized IT-OT into a single team than Followers. This best practice is also growing rapidly as more Leaders (+2%) than Followers (+10%) have integrated their teams than had in 2019. Independent of organizational integration, IX Leaders are actively looking to bridge the IT-OT organizational gap. Followers are focused on cross-training, whereas IX Leaders are deploying a wider array of tools to bridge the organizational gaps. In addition, IX Leaders are using their written "To Be Operational Architecture" as a "vision story" for organizational integration ("vision stories" are explained below).

Which of the following IT-OT capabilities have you implemented?

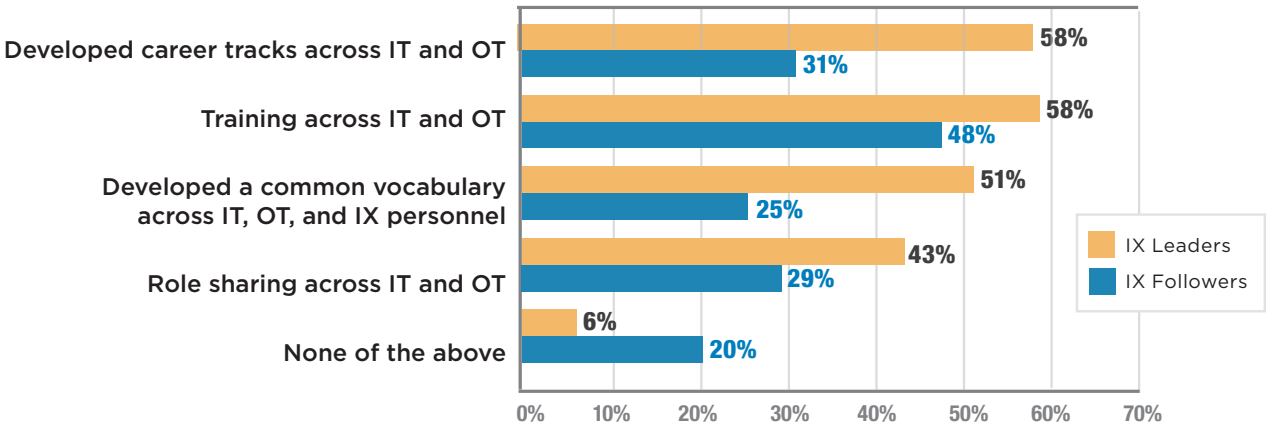

FIGURE 8 - IT-OT Capabilities Implemented

Process

A Pivot is equally required in IX processes, specifically a shift in systems and scope is required.

IX programs must earn the right to ask for more so few programs can start immediately focused on enterprise rollouts and multi-plant initiatives. IX programs typically should focus on conference room pilots and early deployments in lighthouse plants to build momentum and prove the vision. Leveraging the more advanced infrastructure and internal resources typically available in a lighthouse plant accelerates innovation.

In the LNS Research Spotlight, "The Chasm in Front of Industrial Transformation Programs," we noted that IX programs needed to morph in-flight from a focus on Lighthouse strategies to virtual Centers of Excellence (CoE). The need to pivot from playing with technologies to widely deploying the few technologies that will matter is closely aligned to this strategy change. Eventually, the IX program team needs to become the virtual Center of Excellence around a few digital technologies that have the most impact in the organization.

Budgets often scale linearly as the IX maturity increases. But funding sources pivot as the IX program matures. Corporate typically funds the IX program in its earliest stages. The IX program then funds the technology evaluations in the form of demos, proofs of concept, and pilots. LNS Research has found that as the programs mature, it is up to the businesses to fund the deployment of the most impactful technologies. As IX matures from a program to the way of doing business, technology deployment should become the responsibility of the business units/departments.

Technology

A Pivot in technology and data is also required to sustain business improvement.

The initial focus of most newly formed IX programs is exclusively on new digital technologies and emerging technologies. AI/ML, advanced analytics, Industrial Internet of Things (IIoT) Platforms, Connected Frontline Worker systems, block chain and Low Code/No Code tools dominate the attention of IX teams early from a software perspective. Emerging technologies like vision systems, cobots, Artificial Reality/Virtual Reality (AR/VR) wearables, and AGVs get focus from a hardware/

automation perspective. All good and appropriate. As transformation maturity grows, companies move into the pilot/POC stage of these innovative technologies to "Prove" them out and determine their impact to/for their organization.

Eventually, manufacturers must pivot from technology to solutions and from an exclusive focus on these new emerging technologies to rearchitecting/upgrading/enhancing existing systems. IX Leaders are more than TWICE as likely to be updating/rearchitecting both Information Technology like ERP systems and Operational Technology like automation and MES/MOM. Leaders were 40% more likely to be upgrading/rearchitecting design systems. Why? We said it above: IX Leaders are focused on process reengineering and refuse to let legacy systems dictate their processes. It may be counterintuitive but long-term IX success is just as dependent on legacy as digital technologies.

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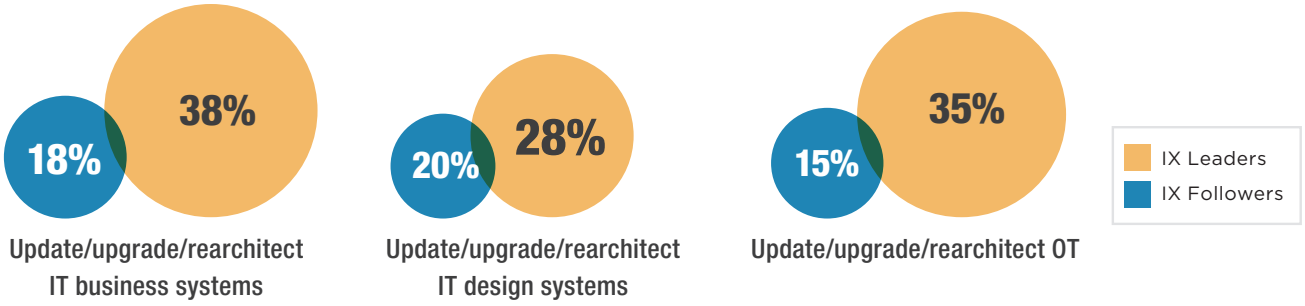

FIGURE 9 - Updating/Upgrading or Rearchitecting - Leaders vs. Followers

In addition, 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.

Another example of the required Pivot can be found in the data strategies associated with Transformation. IT and data scientists oversee data governance in the Incubate and Prove stages of transformation. They are focused on piloting the technology and determining its value. Typically, the deployment is in those Lighthouse plants discussed previously, which are already comfortable with data operations and have established governance processes. To cross the Transformation Chasm, manufacturers must pivot to formal, structured data governance strategies to effectively scale the program across the manufacturing network. IT teams are generally comfortable with data ops but now OT teams must embrace them as well. The real challenge, though, is that the business owners of these programs need to become the owners of the data strategy. IX must pivot away from technology led to business-led data strategies.

In fact, IX programs may also need to revisit their earlier technology selections to cross the Transformation Chasm. Often, the IX team consciously selects technologies and vendors because they are easy to implement and deliver some benefit quickly. But those technologies and vendors may eventually hit diminishing returns and scalability challenges. Those early technologies can become barriers to solving larger business problems later. Similarly, IX teams often shy away from MES/MOM as implementations are slow and difficult. As the program matures, the "requirements" for the technologies and vendors change as the size of the improvement (usually correlated to the size of the effort) and scalability across the enterprise become paramount. The programs must pivot to these more difficult technologies to really drive improvement on the scale needed to achieve "step change."

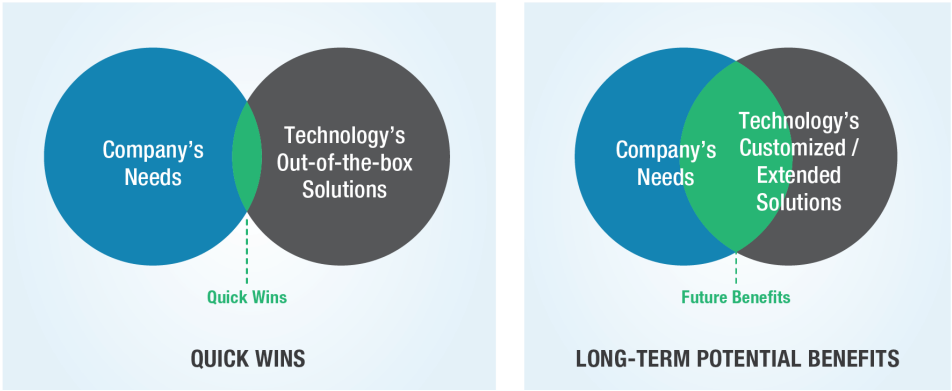

FIGURE 10 - Quick Wins vs. Future Benefits

IX JOURNEY: FIVE STAGES OF TRANSFORMATION MATURITY

The requirements to successfully launch an IX initiative become a hinderance to long-term success.

		VISION-FOCUSED			PIVOT TO VALUE	VALUE-FOCUSED	
		Ad Hoc/Absent	Incubate	Prove		Scale	Embed
PEOPLE	Program Head	No program head	High profile ("Celebrity") CDO	CIO	A shift in **Leadership and Organization** is required. Move from change agents, technologists, and programs to pragmatic operators, subject matter experts, and aligned reporting structures.	Team under CIO + COO	Business*-led under CIO/COO sponsorship
	Operations Role**	None	Minimal	Targeted engagement		Business-led initiatives	Leading, engaged, and incentive
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	IX's Role In The Organization	Not yet established	Isolated	IX Program Team		IX Organization	IX Ingrained in the culture
	Staffing	Whoever is personally motivated	Corporate IT and Engineering	Corporate with additional data scientists		Adding significant operational input	Corporate-wide engagement
PROCESS	Management System	Ad Hoc	Technology prototyping	Agile	A shift in **Systems and Scope** is required. Move from prototyping, development, and small corporate initiatives to CoE roll-outs, broad-based funding, converged systems, and strategic alignment.	Agile infused with Operational Excellence	Corporate OpEx specific methodology
	Budget	Estimation	Quite limited	Limited		Sufficient for some corporate funding of plant rollouts	Majority of spend funded by business budget
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	Priority	Running business day-to-day	To generate internal news	Quick wins		Scaled, prioritized use cases	Integrated in corporate and BU strategy and planning
TECHNOLOGY	Technical Scope	Internet and vendor meetings	Exploring variety of cool new digital technologies	Focused pilots and proof of concepts of new technologies	A shift in **Technology and Data** is required. Move from a tools, use cases, and solving problems to scalable solutions, deploying infrastructure, and governance.	Focusing on upgrading IT, OT, and design systems, too	Whatever is needed to solve big business challenges (OT, IT, IX)
	Focus	Exploration and business justification	IIoT	IIoT and assets		Manufacturing and Supply Chain	Entire value chain
	Data Policy Control	Unnecessary	IT	IT with data scientists		IX Program governance	Corporate and business governance
	Data Access	Unexplored	IX Program	IX Program and select managers		Data democratization across company	Open value chain to customers and suppliers

** Business or function (Manufacturing, Quality, EHS…)*
*** Operations not just OT*

FIGURE 11 - The Five Stages of Transformation Maturity

Payback

It is difficult to change especially when things are working. Yet, that is specifically what is required and represented in the Pivot to Value. LNS Research has found that if companies can change their IX efforts in mid-flight – across People, Process, and Technology – they become IX Leaders and achieve the meaningful business improvements highlighted above. This Pivot to Value ensures that benefits continue to grow over time.

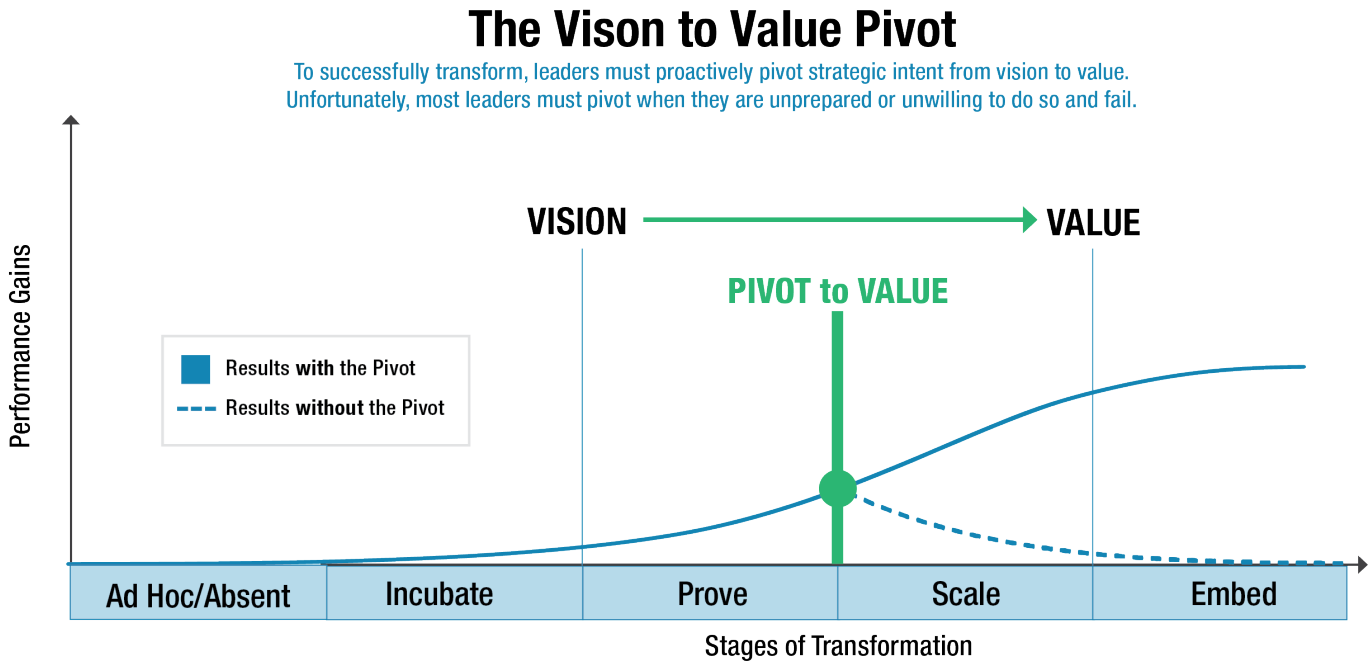

FIGURE 12 - The Pivot

Recommendations

1. The Time is Now

IX may be hard, but those companies that are successfully executing IX are realizing dramatic results: tangible improvements in the financial performance of the company.

The ability to execute transformation effectively is becoming a meaningful competitive advantage. Manufacturers must engage and engage correctly.

2. Especially now

Economic uncertainty abounds. Supply chains are disrupted. Labor shortages are drastic. Recession is in the air and the in the prescriptions of several central banks. War has broken out in Europe and tensions are rising in Asia. Flexibility, agility, and resiliency are becoming even more important. Most manufacturers are bullish on the future of Industrial Transformation in the face of the potential for economic uncertainty. Eighty-three percent have increased focus or stayed the course on their respective transformation efforts with a small portion (12%) dramatically accelerating their efforts. It seems that manufacturers are viewing this uncertainty as an opportunity to improve their competitive position even more.

3. Adapt your execution to your IX maturity

Competitive advantage only comes from successfully executing transformation. For manufacturers to succeed in IX, they need to initiate their program with one set of processes, structures, and teams, and then readjust all those factors to succeed in the long run. Manufacturers must align their IX programs to their maturity and execute accordingly. Industrials must be ready to jump the Transformation

Chasm as it is fundamental to IX success. **In our Research Spotlight introducing the Transformation Chasm,** LNS Research identified the five things manufacturers in the Incubate or Prove Stages of Transformation can do to prepare to cross the Transformation Chasm:

- Recognition of and expectation building around the Pivot to Value is critical
- "Lean in early"
- Think Big
- Build the team with the long term in mind
- Focus on building the appropriate Best Practices into each stage of your IX program

Executing the Pivot to Value is key to becoming an IX Leader and reaping the real, and sustained business improvements a select few companies are realizing today.

4. Stay abreast of developments

Clearly the ability to monitor markets, readjust IX program initiatives and otherwise be adaptive to change is critical to achieving step change improvements in operations. LNS Research will continue to research the activity of Industrial enterprises globally. Stay tuned.

Appendix: Demographics

The 2021 edition of the IX Readiness survey was taken by more than 300 business and IT decision-makers, including managers, directors, VPs, and C-suite executives across several functions in manufacturing companies. We sought responses from across the discrete, batch, process, and infrastructure industries. Half of the companies were from Europe and the other half were from North America and the Asia/Pacific regions. We translated the survey to French, German, and Simplified Chinese to accommodate survey takers from Europe and Asia. The survey includes more than a hundred questions on a company's IX program's objectives and challenges, budget, scope, key metrics, organizational culture, and technology resources.

Other surveys (2018/2019 IX Readiness, 2020 Analytics that Matter etc.) used for comparison purposes had generally similar demographics with some having slightly higher North American participation.

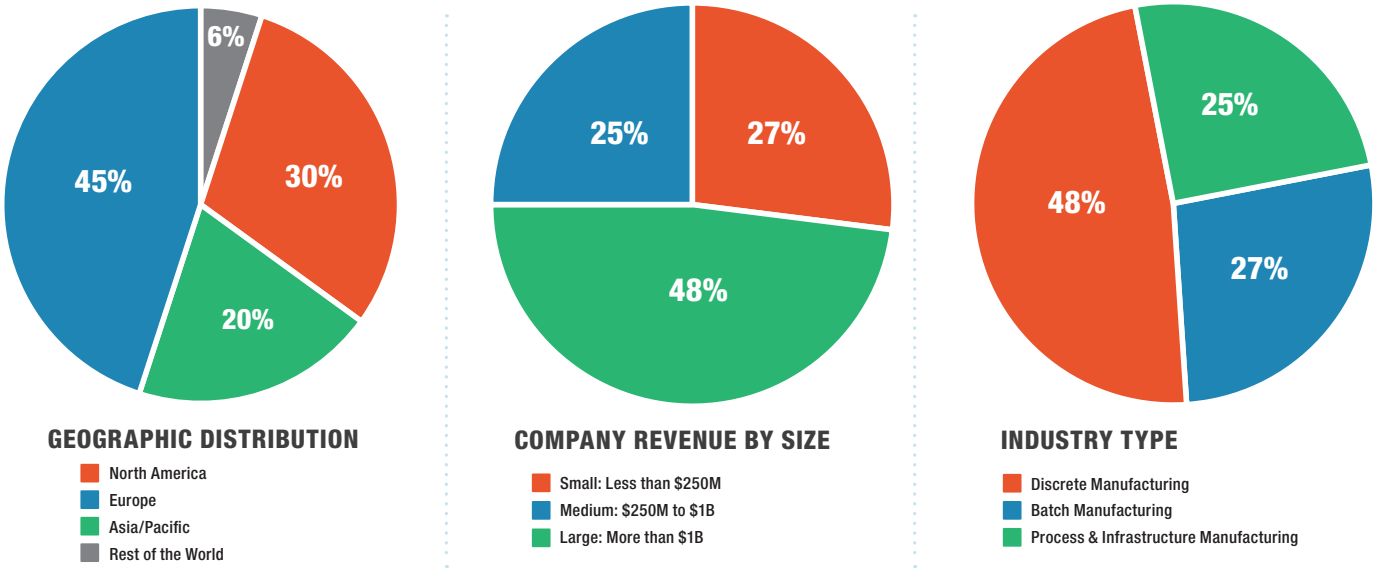

FIGURE 13 - Demographics

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Transformation Chasm and Pivot to Value - LNS Research

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