

FORRESTER®

Clarity And Control Of Your Data Landscape: The Promise Of Digital Twins In Uncertain Times

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FORRESTER OPPORTUNITY SNAPSHOT: A CUSTOM STUDY COMMISSIONED BY IOTICS | JUNE 2020

Digital Twin Ecosystems Solve Key Issues

The COVID-19 pandemic has created unprecedented business challenges that will exist well into the future, leaving a clear and troublesome impact to revenue. As companies look toward rebound efforts, refining their definition of “business as usual” on a near-permanent basis, they must prioritize digitization to increase agility, reduce costs, and generate new service revenue.

One form of digitization — the digital twin — can support business’ efforts in jump-starting this transformation. Whether creating a visual representation of dimensions, modeling an insurance policy, or constructing in-depth simulations of assets’ (virtual or physical) real-world behaviors, the digital twin is ideal for many use cases. While these models are valuable, they often exist in silos. Companies that can connect models within a digital twin ecosystem will ultimately be more responsive to ongoing change.

In February 2020, Iotics commissioned Forrester Consulting to examine the digital transformation needs of 160 North America IT leaders with insights into digital twins.

Key Findings



Business leaders focus on gathering and understanding data to lay the foundation for future innovative technology, such as machine learning and AI.



Inflexible, siloed, and restrictive solutions are the top challenges of digitization — while system complexity, security risks, and resource strain are top challenges when creating digital twins.



With the right tool for unlocking and utilizing data, companies expect total annual revenue to increase by 21.8%.

Companies Focus on Connected Data And Assets

IT leaders in the Iotics-commissioned study shared various reasons for connecting their organizations' data, but the primary drivers were to:

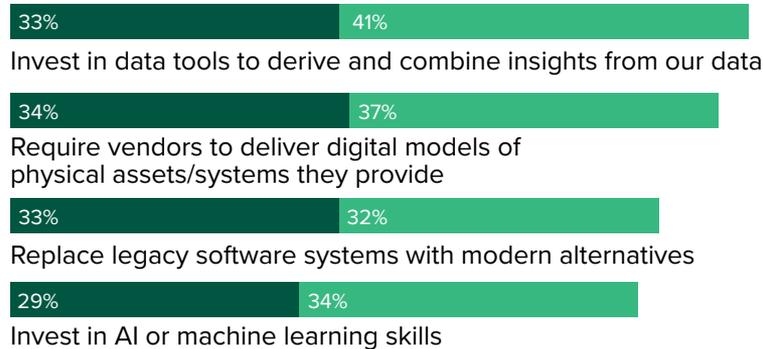
- Get actionable insights from data sources (89%).
- Drive decisions in the real world (81%).
- Maximize business value (77%).

The desire to connect data and assets (virtual or physical) is driving companies not only to invest in data tools, but also to seek vendors that have digital models. However, in the next year, many of these same organizations will either buy models or build them internally.

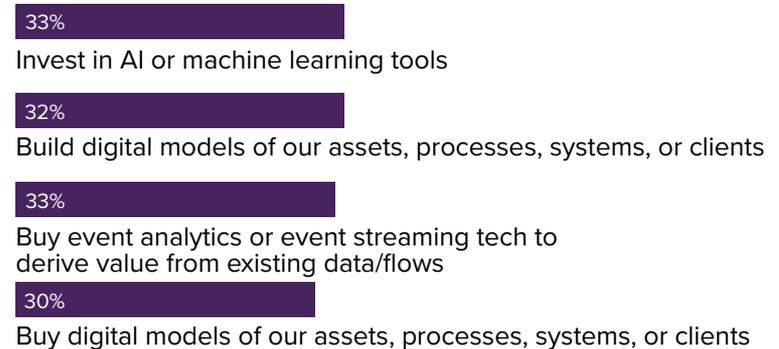
“What are your company’s plans to perform the following digital initiatives?”

● Expanding efforts
 ● Doing but not expanding/upgrading
 ● Planning to do in the next 12 months

LARGEST CURRENT IMPLEMENTATION



LARGEST GROWTH IN 12 MONTHS



Today's Focus Is On Gathering Data For Future Innovation

On average, digital transformation comprises nearly 10% of a company's budget. This study examined the critical elements of digital transformation strategies, both now and in the future. To derive value from data, companies are currently building a solid foundation for their transformations by getting historical and real-time data in place and optimizing data flows between assets (virtual or physical). This in-house data organization lays the groundwork for future adoption of innovative technology, such as machine learning and AI. These capabilities are critical as they enable the prediction of possible future states. Even before the height of COVID-19, companies expected major growth in this area — but it's even more important today.

Most Important Elements In Data And Digital Transformation Strategy

	MOST IMPORTANT		DELTA
	NOW	IN THREE YEARS	
Historical data about the state of an asset, process, system, or client	71%	31%	-40%
Real-time data flowing from one endpoint to another	67%	59%	-8%
Accessible single view of all internal data sources	51%	39%	-12%
Machine learning models capable of predicting possible future states	37%	74%	37%
External sources such as weather, environment, public, etc.	26%	21%	-5%
Integration with partners, supply chain, or client data sources	19%	31%	12%

Digital Twins Are Evolving — As Is Our Understanding Of Them

Business decision makers are confused about the use cases of a digital twin. While several companies rely on event-based data to support many services, fewer decision makers report routinely using this data as part of a digital twin. Most IT leaders use data from connected assets (virtual or physical) for monitoring those assets or optimizing the supply chain — all use cases for digital twins. As these existing use cases grow in scale and complexity, adopters must quickly turn to digital twin solutions to cope — or they will fail to keep up.

“To what extent is your organization using event-based data to support the following initiatives?”

- We don't do this.
- We do this ad hoc based on use case requirements.
- We do this ad hoc based on time and resources.
- We do this routinely.

Digital twins

51%

28% 11%

9%

Predictive or prescriptive maintenance

36%

23% 22%

17%

Capacity forecasting

3%

16% 21%

56%

Monitoring of assets, systems, processes, or clients

2%

12% 19%

65%

Improved client care or services

1%

9% 18%

72%

Companies Face Hurdles In Digitization

Companies work to digitize and use their virtual and digital assets, but they face challenges with inflexible (38%), siloed (41%) systems and restrictive (43%) data policies. Legacy infrastructure, legacy ways of working, and legacy approaches to sharing data between partners or systems get in the way of a company's ability to support more agile and connected workflows in the future. Business agility is always important, but during times of uncertainty, such as the economic downturn of COVID-19, agility is critical to business success. Addressing challenges that stand in the way of agility should be a top priority.

Meanwhile, system complexity (54%) and security risks (50%) are top challenges when creating digital twins. Although companies are looking to build digital models internally, they also need partners to help them tackle some of these critical challenges while allowing them to effectively utilize and connect their data across assets or twins.

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Top 3 Organizational And Technical Challenges Of Digitizing And Using Assets



43%

Restrictive data reuse policies



41%

Siloed systems



38%

Inflexible solutions

Top 3 Challenges In Attempting To Create A Digital Asset Or Digital Twin



54%

System complexity



50%

Security risks



43%

Accessing only meaningful events among the data noise

Base: 160 North American IT leaders with insights into digital twins, digitizing assets, and digital transformation initiatives

Source: A commissioned study conducted by Forrester Consulting on behalf of Iotics, February 2020

Digital Twin Ecosystems Boost Bottom Line — In Good And Bad Times

Despite initial hurdles in digitizing, business leaders agree the benefits of sharing data across corporate boundaries include:

- Improved customer experience (91%) as products can take account of real-world usage patterns and provide a real understanding of what customers need.
- New servitization opportunities (87%) as they shift from selling physical machines to selling/renting the machine's outcomes.¹
- Increased agility (78%) by better understanding and responding to changing customer or market demands, which is especially critical in uncertain times.

Beyond these profound benefits, decision makers expect that if they could unlock and fully utilize all available data, their companies' total annual revenue would increase by an average of 21.8%. With such a large boost to the bottom line, companies should actively pursue connecting their digital assets.

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“How important would each of the benefits be to your organization if you were able to share data between any digital twin?”

(Showing percentage choosing “Very/Extremely important”) shown)

Improved customer experience

91%

New servitization opportunities

87%

Increased business agility

78%

Maximized ROI from investments

78%

Identification of a single source of truth

76%

Base: 160 North American IT leaders with insights into digital twins, digitizing assets, and digital transformation initiatives
Source: A commissioned study conducted by Forrester Consulting on behalf of Iotics, February 2020

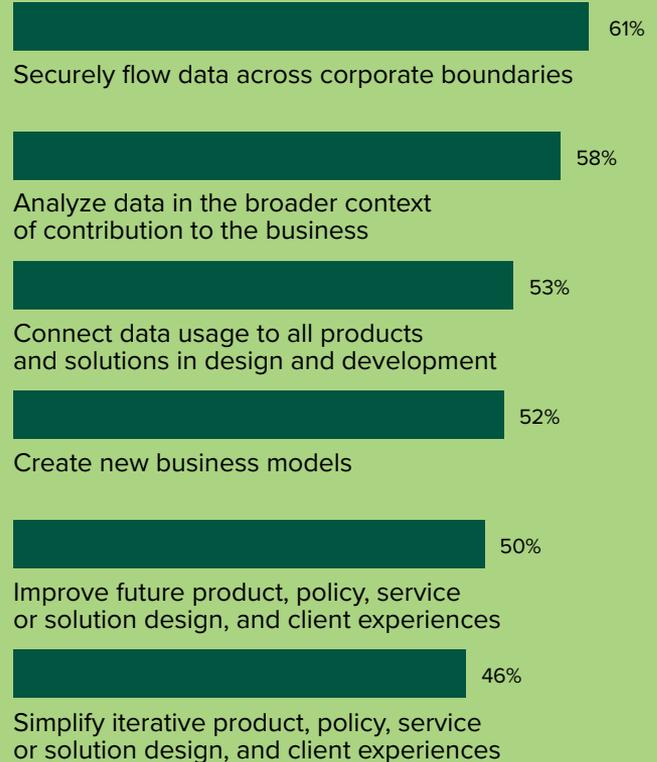
Digital Twins Drive Critical Business Value

As companies work toward connecting and fully utilizing their data, they recognize the broader use cases that a digital twin ecosystem can serve. IT leaders report that sharing data between twins of any endpoint could eliminate corporate silos and improve data analysis — critical for a data-driven business. Top use cases for digital twins include:

- Securely flowing data across corporate boundaries (61%).
- Analyzing data in the broader context of contribution to the business (58%).
- Connecting data usage to all products and solutions in design and development (53%).

Organizations are prioritizing maximizing business value and getting real-world, actionable insights from data. Digital twin ecosystems present a viable vehicle for accomplishing this.

“What would be your use cases for sharing data between digital twins of any internal or external endpoint?”



Conclusion

Business leaders trust digital twin ecosystems to unlock data, boost the bottom line, and increase business agility.

- Digitizing virtual and physical assets is a top goal, although freeing data from older systems or restrictive contracts to derive actionable insights is rife with challenges.
- Leaders should seek tools that allow them to unlock data silos and deliver business value while ensuring that data sharing is handled securely.
- Digital twin ecosystems bring great business and technical benefits to companies: Enterprises expect revenue to increase an average of 22% with the ability to fully unlock and utilize all available data.

With significant potential for maximized business value, actionable insights, and new services revenue, companies should actively pursue unlocking the real power of their data in a digital twin ecosystem.

Project Director:

Emily Drinkwater, Market Impact Consultant

Contributing Research:

Forrester's Infrastructure & Operations research group



Methodology

This Opportunity Snapshot was commissioned by Iotics. To create this profile, Forrester Consulting conducted research with custom survey questions asked of 160 North American IT leaders with insights into digital twins, digitizing assets, and digital transformation initiatives. The custom survey was completed in February 2020.

ENDNOTES

¹Source: "IoT Takes Service-Based Business Models To Less Expensive Assets, But The Organizational Change May Prove Too Difficult For Many," Forrester Research, Inc. September 23, 2019.

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Demographics

COUNTRY

United States: 63%

Canada: 37%

RESPONDENT LEVEL

C-level executive: 15%

Vice president: 23%

Director: 62%

TOP 4 INDUSTRIES

Manufacturing and materials: 18%

Construction: 16%

Healthcare: 16%

Telecommunications: 15%

ANNUAL REVENUE (USD)

\$500M to \$999M: 65%

\$1B to \$5B: 29%

>\$5B: 6%



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