Democratize ML To Become An Insights-Driven Business
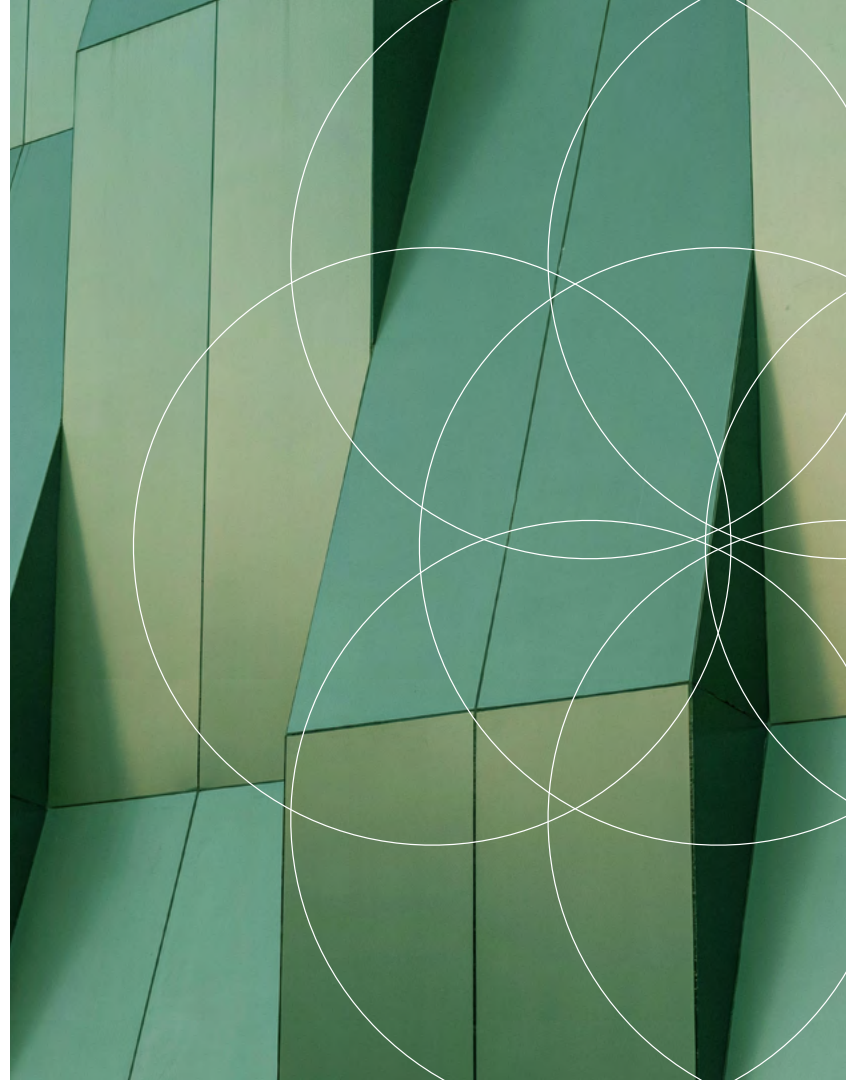
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Accessible, Democratized ML Drives Business

Forrester research says, "Becoming an advanced insights-driven business — one that uses data, analytics and software in closed, continuously optimized loops to differentiate and compete — provides significant top- and bottom-line benefits."[1] Democratizing machine learning (ML) by making readily available, ML-powered tools accessible to roles across the organization — including line-of-business (LOB) and operations — is critical to speeding up and scaling the contributions of data science to business success. Overcoming challenges with governance, trust, and communication to enable adoption of democratized workflows will accelerate insights-driven decision-making and improve business performance.

In a study commissioned by Capital One, Forrester Consulting conducted a cross-industry survey of 100 data science and 81 LOB decision-makers at North American companies about democratizing ML and the opportunities it presents for their firms.

Key Findings

Democratization is already at play across roles. Most respondents (86%) reported that their organizations were democratizing models for ML use and 91% said data engagement across roles was increasing.

ML is key to business success. Nearly nine out of 10 respondents believe ML is important or very important to business success at their organizations.

**LOB and data decision-makers have different perceptions of democratization's progress.** LOB leaders feel their firms' efforts are more advanced than data decision-makers do and they may not fully grasp additional requirements.

ML Is Increasingly Tied To Business Success

Enterprise leaders can become truly insights-driven by democratizing data and ML, allowing different groups to independently access, manage, and combine output. This develops relevant insights, links the value of those insights to business outcomes, and builds accessible, easy-to-use platforms.[2]

Of those surveyed, 88% of decision-makers noted that ML is emerging as a key element of business success and 85% noted ML was important or very important to improving job-specific tasks at their organizations. This indicates that respondents are beginning to understand how to move from data-driven to insights-driven to drive success. Data and analytics decision-makers have a more pragmatic perspective than LOB leaders, with 81% believing ML is important/very important to business success compared to 95% of LOB leaders.

"How important is ML to business success at your organization?"

Very important

54%

Important

34%
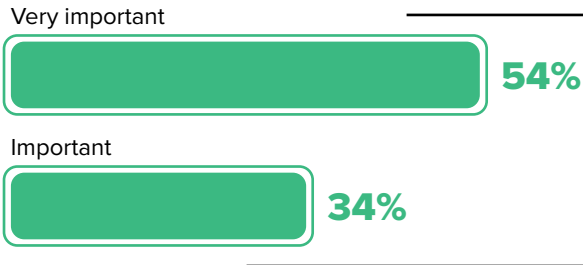
88%
Important or very important
LOB DMs **95%**
Data DMs **81%**

"How important is ML to improving your job-specific tasks at your organization?"

Very important

46%

Important

39%

85%

Base: 181 data and analytics strategy and LOB decision-makers
Note: Showing top two responses
Source: A commissioned study conducted by Forrester Consulting on behalf of Capital One, September 2023
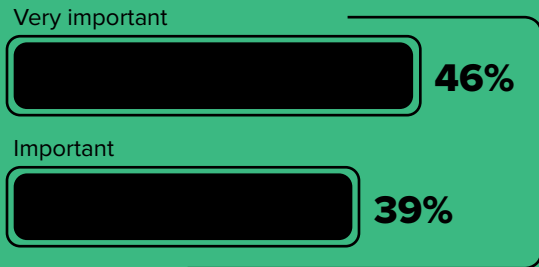
Democratization Is At Play Across Roles, But LOBs Have A Shinier View Of Progress

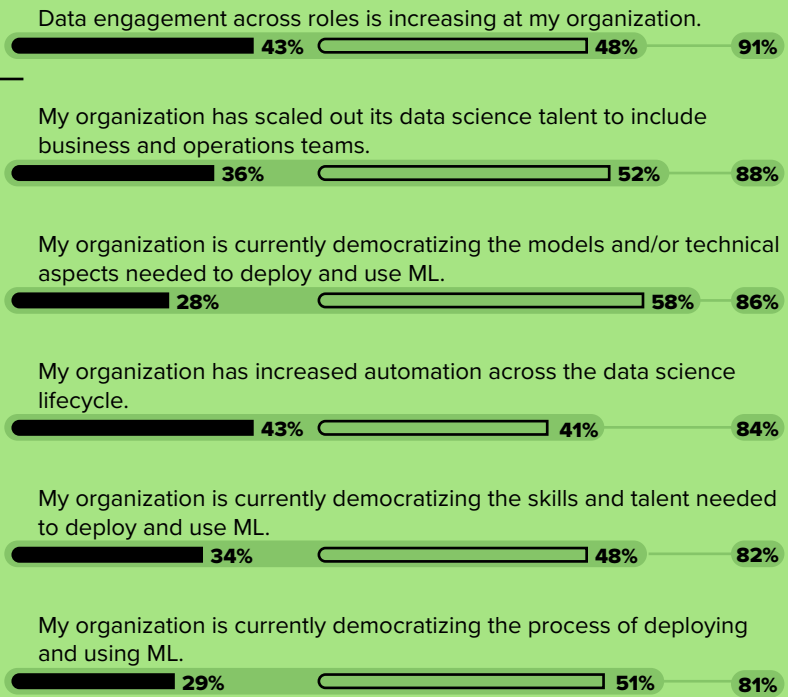Business operations require data sharing across roles. Respondents' organizations are scaling out data science talent to include business and operations teams and democratizing models, skills, and processes to deploy and use ML.

The excitement around ML democratization is palpable among LOB survey respondents: 51% strongly agreed that data engagement across roles is increasing at their organizations compared to 36% of data and analytics respondents. With analytics, data science, and the use of AI/ML in systems a lot more common, LOB leaders are showing more confidence. However, they may not have a complete understanding of what still needs to happen to support democratization.

51% of LOB roles vs. 36% of data roles

"To what extent do you agree or disagree with the following statements about using data and analytics at your organization?"

● Highly valuable   ○ Valuable

Data engagement across roles is increasing at my organization.
43%   48%   **91%**

My organization has scaled out its data science talent to include business and operations teams.
36%   52%   **88%**

My organization is currently democratizing the models and/or technical aspects needed to deploy and use ML.
28%   58%   **86%**

My organization has increased automation across the data science lifecycle.
43%   41%   **84%**

My organization is currently democratizing the skills and talent needed to deploy and use ML.
34%   48%   **82%**

My organization is currently democratizing the process of deploying and using ML.
29%   51%   **81%**

Base: 181 data and analytics strategy and LOB decision-makers
Note: Showing top 6 responses; total percentages may not equal separate values due to rounding.
Source: A commissioned study conducted by Forrester Consulting on behalf of Capital One, September 2023

Available Tools And Capabilities Are Too Technical For LOB Roles

Despite the uptick in use of ML in their roles, LOB leaders still do not have access to user-friendly tools. Compared to 51% of data DMs, 32% of LOB leaders have access to data transformers. Likewise, just 27% of LOB respondents reported that their organization's democratization efforts included access to low-code/no-code interfaces, compared to 39% of data respondents.

ML and AI are all the rage, and LOB leaders are eager to be a part of the movement. Right now, the tools they have access to are not intuitive and too controlled. Focusing on usability, adopting low-code/no-code interfaces wherever possible, and applying governance policies that do not interfere with the actual data that users want to see can propel initiatives forward.
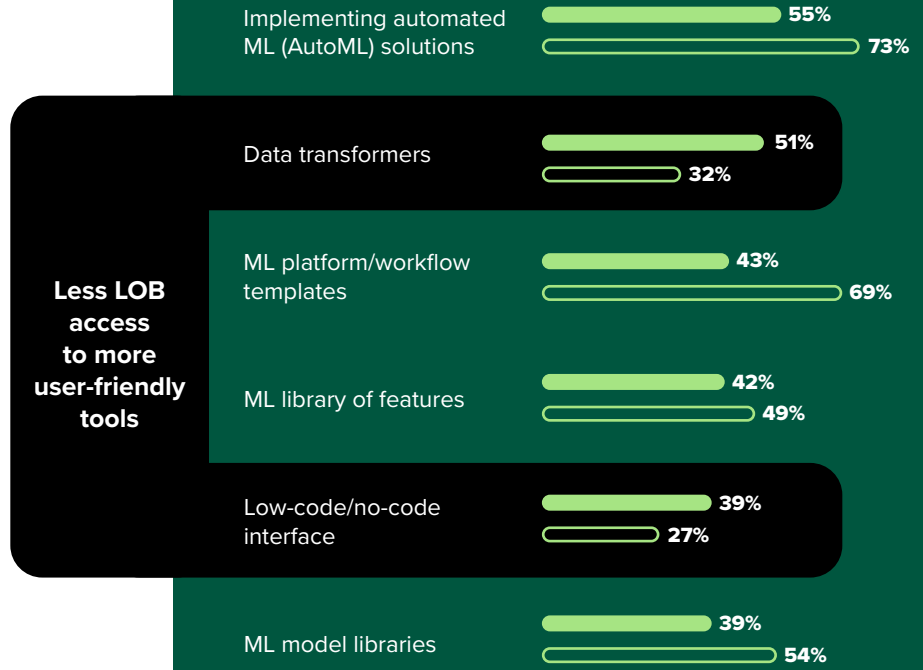
67%
agree that a lack of easy-to-use tools is slowing cross-enterprise adoption of ML.
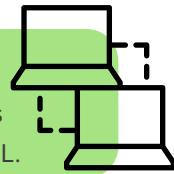
"Which of the following capabilities do your organization's ML democratization efforts include?"
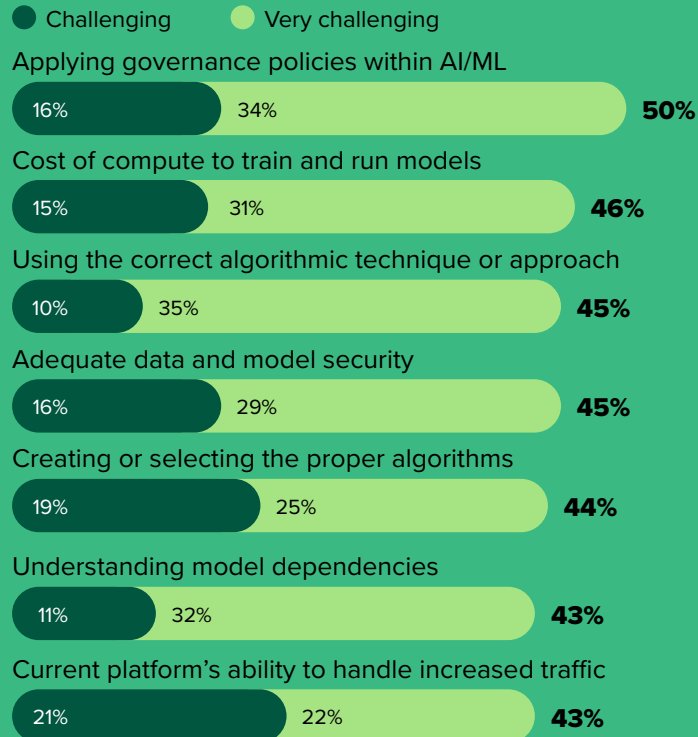
● Data roles   ○ LOB Roles

	Data roles	LOB Roles
Implementing automated ML (AutoML) solutions	55%	73%
Data transformers	51%	32%
ML platform/workflow templates	43%	69%
ML library of features	42%	49%
Low-code/no-code interface	39%	27%
ML model libraries	39%	54%

Less LOB access to more user-friendly tools

Base: 181 data and analytics strategy and LOB decision-makers
Note: Showing top six responses
Source: A commissioned study conducted by Forrester Consulting on behalf of Capital One, September 2023

For Data Leaders, Democratization Is Not As Easy As It Sounds

When asked about technical challenges to their organization's democratization initiatives, nearly half (45%) of data decision-makers encountered issues using correct algorithmic techniques and approaches. Democratization requires a consumerized approach across the data lifecycle, and having to hurry up and wait at every step to determine the success of an approach slows momentum. Other challenges, like data and model security and applying governance policies, speak to the newness of these initiatives and a need to better understand how democratizing ML impacts trust and privacy.

Many hyperscalers are not prepared for the increased volume of users coming their way, but 21% of respondents recognize that their current platforms can't handle increased traffic, finding it very challenging. This group represents more advanced thinkers who are trying to stay ahead of the anticipated uptick in ML users.

"How challenging are the following technology-related issues to your organization's ML democratization initiatives?"

● Challenging ● Very challenging

Applying governance policies within AI/ML

| 16% | 34% | **50%** |

Cost of compute to train and run models

| 15% | 31% | **46%** |

Using the correct algorithmic technique or approach

| 10% | 35% | **45%** |

Adequate data and model security

| 16% | 29% | **45%** |

Creating or selecting the proper algorithms

| 19% | 25% | **44%** |

Understanding model dependencies

| 11% | 32% | **43%** |

Current platform's ability to handle increased traffic

| 21% | 22% | **43%** |

Base: 100 data and analytics strategy decision-makers
Note: Showing top 7 responses
Source: A commissioned study conducted by Forrester Consulting on behalf of Capital One, September 2023
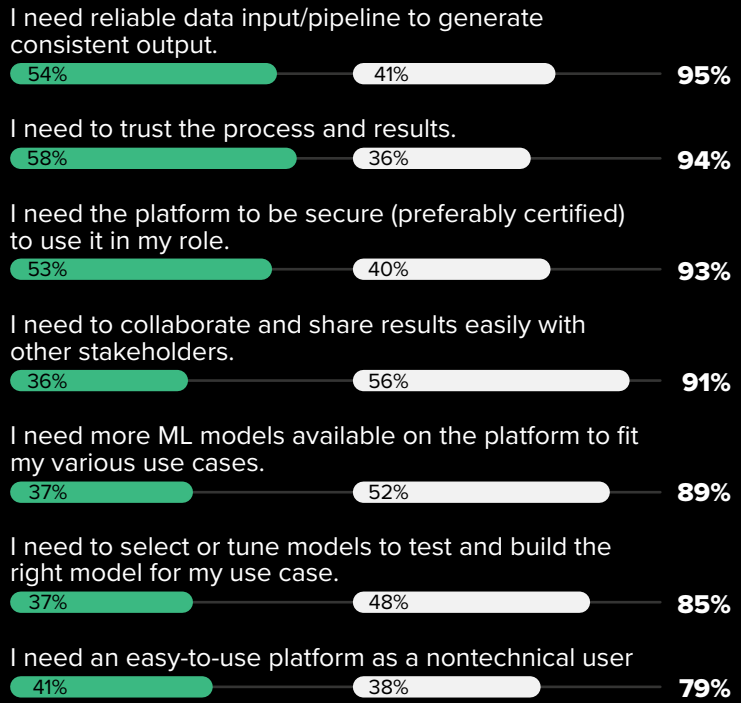
Issues With Trust And Security Can Be Solved With Ambient, Well-Communicated Governance

LOB leaders need their data, processes, and platforms to be reliable and secure; both things the proper governance framework could help provide. Some data/IT roles may overcompensate for this with heavy governance that can limit the capabilities of platforms and processes. According to Forrester, this isn't the right answer.[3] Governance needs to be ambient — the trust should be implicit, and LOBs should be able to do what they need to without having to think too much about permissions or whether they're doing it right (e.g., not being worried about signoffs, etc.). Finally, and most importantly, these measures must be communicated to LOBs. Not only does ambient governance ensure regulatory compliance, but it also instills confidence in employees without limiting their ability to engage with data.[4]

"How much do you agree or disagree with the following statements about using ML in your role?"

● Strongly agree   ○ Agree

I need reliable data input/pipeline to generate consistent output.

| 54% | 41% | **95%** |

I need to trust the process and results.

| 58% | 36% | **94%** |

I need the platform to be secure (preferably certified) to use it in my role.

| 53% | 40% | **93%** |

I need to collaborate and share results easily with other stakeholders.

| 36% | 56% | **91%** |

I need more ML models available on the platform to fit my various use cases.

| 37% | 52% | **89%** |

I need to select or tune models to test and build the right model for my use case.

| 37% | 48% | **85%** |

I need an easy-to-use platform as a nontechnical user

| 41% | 38% | **79%** |

Base: 81 LOB decision-makers
Note: Total percentages may not equal separate values due to rounding.
Source: A commissioned study conducted by Forrester Consulting on behalf of Capital One, September 2023
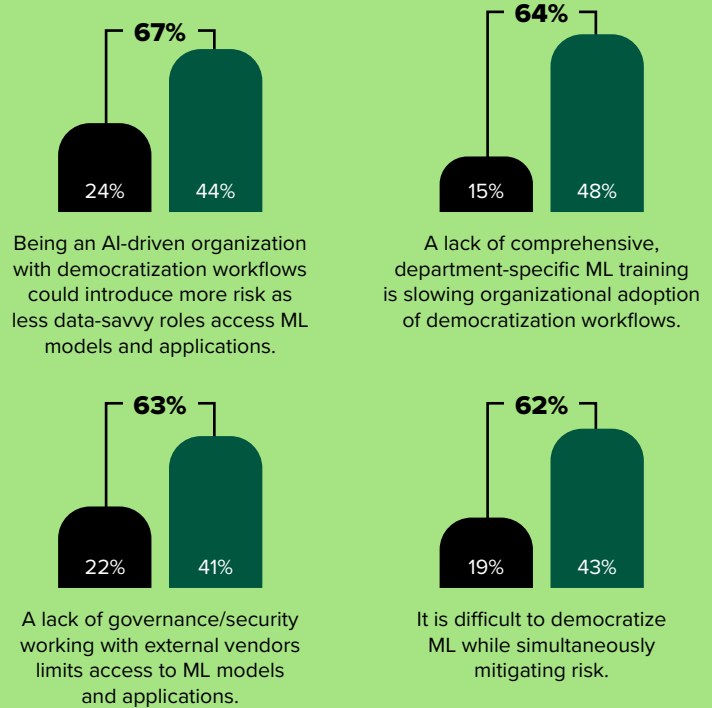
LOB And Data Disconnect Point To Communication And Training Issues

Open communication throughout the democratization process must be consistent. ML use can be siloed, so focusing on collaboration is a key cultural component of success. Governance measures need to be implemented and communicated to LOB leaders for them to trust these workflows and to alleviate their concerns about risk; 67% of respondents agree that democratization workflows could introduce risk with more uptake. Likewise, 64% agree that a lack of training is slowing adoption of democratization workflows.

A recent Forrester report notes that cultural challenges are often more pervasive than technical challenges — "data teams deliver dashboards and reports no one uses (often because of poor literacy among business users) and leaders who use data selectively when it validates a decision."[5] In these cases, there are gaps in data literacy that must be closed with comprehensive training and communication.

"How much do you agree or disagree with the following challenges to your organization's ML democratization initiatives?"

● Strongly agree   ● Agree

67%

24%   44%

Being an AI-driven organization with democratization workflows could introduce more risk as less data-savvy roles access ML models and applications.

64%

15%   48%

A lack of comprehensive, department-specific ML training is slowing organizational adoption of democratization workflows.

63%

22%   41%

A lack of governance/security working with external vendors limits access to ML models and applications.

62%

19%   43%

It is difficult to democratize ML while simultaneously mitigating risk.
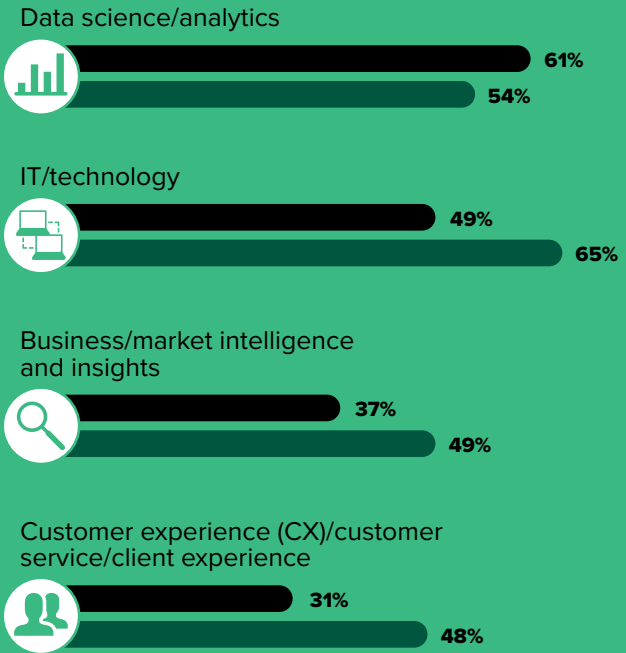
Base: 181 data and analytics strategy and LOB decision-makers
Note: Not showing all responses; total percentages may not equal separate values due to rounding.
Source: A commissioned study conducted by Forrester Consulting on behalf of Capital One, September 2023

Focus On ML For BI And CX
To See Democratization Thrive

When asked which business functions would benefit the most from increased democratization efforts, both data and LOB respondents pointed to data science/analytics and IT as top users. Though these roles can certainly use ML to streamline operations, increased focus on BI/market insights and CX roles — especially by LOB respondents — points to an understanding that ML and democratized workflows should be available to nontech roles. Furthermore, data and IT-heavy roles must take on more responsibility for business performance and growth. Democratization should enable a wide range of personas to access, understand, transform, and personalize data for intelligent, insights-driven decision-making. Moving away from focusing solely on data and IT functions can make this happen.

"Which of the following business functions do you think will benefit most from increased democratization efforts at your organization?"

⬤ Data roles ⬤ LOB roles

Data science/analytics

- Data roles: 61%
- LOB roles: 54%

IT/technology

- Data roles: 49%
- LOB roles: 65%

Business/market intelligence and insights

- Data roles: 37%
- LOB roles: 49%

Customer experience (CX)/customer service/client experience

- Data roles: 31%
- LOB roles: 48%

Base: 181 data and analytics strategy and LOB decision-makers
Note: Showing top four functions with +/- 5%+ difference
Source: A commissioned study conducted by Forrester Consulting on behalf of Capital One, September 2023

Insights-Driven Enterprises Foster Businesswide Success

As part of their efforts to democratize ML at their firms, respondents want to speed up and scale the deployment of ML applications across their organizations. In doing so, they hope to adopt new BI technology or platforms and accelerate insights-based decision-making. These respondents understand that their firms are well on their way to becoming insights-driven enterprises with democratized ML workflows.
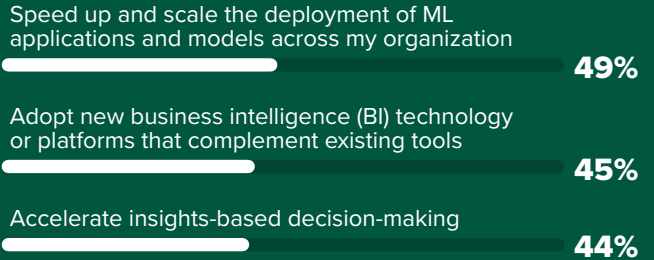
Likewise, 86% of respondents intend to measure the success of their initiatives by how they improve the firm's ability to make insights-driven decisions, understanding that these decisions are what hasten their other top measures of success — revenue growth and increased operational efficiency. In addition to growing revenue, insights-driven businesses can expect to see more engaged employees and greater customer retention.[6]

How important are the following to measuring the success of your organization's democratization efforts?

● Very important   ● Important

Increase in operational efficiency
54%
37%
91%

Increase in revenue
51%
36%
87%

Improve our ability to make insight-driven decisions
40%
46%
86%
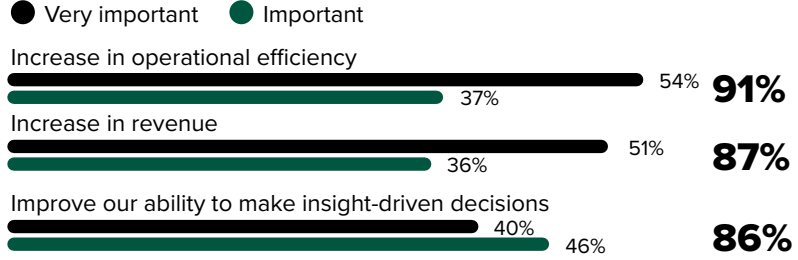
Note: Showing top 3 responses

"What do you hope to achieve as a result of efforts to democratize ML at your organization?"

Speed up and scale the deployment of ML applications and models across my organization
49%

Adopt new business intelligence (BI) technology or platforms that complement existing tools
45%

Accelerate insights-based decision-making
44%

Note: Showing three of 12 responses

Base: 181 data and analytics strategy and LOB decision-makers
Source: A commissioned study conducted by Forrester Consulting on behalf of Capital One, September 2023

Conclusion

As the demand for ML-driven insights outside IT and data science roles increases, implementing democratization workflows can provide a safe, easy-to-use means of accessing them. This study yielded the following conclusions:

- **Usability and accessibility of ML is paramount to buy-in.** It is critical to break down data silos to get cross-functional support for ML democratization workflows.

- **Governance measures must be communicated to instill confidence in users.** Proper governance policies are critical to ensuring data, processes, and platforms are reliable and secure for all users.

- **LOB roles are ready and excited to use ML.** However, they may not completely understand what still needs to happen to support democratization. Data leaders should leverage that excitement to ensure democratization workflows get funding and resources.

Endnotes

[1] Source: "Enable An Insights-Driven Business," Forrester Research, Inc., April 29, 2021.

[2] Source: Ibid.

[3] Source: "Balance The Surge In Self-Service "BI With "Goldilocks" Governance That's Just Right," Forrester Research, Inc., September 9, 2020.

[4] Source: Jayesh Chaurasia, "Data Governance Unlocks The Impact Of Analytics: Data Strategy & Insights 2023," Forrester Blogs.

[5] Source: "Insights-Driven: A Foundational Principle Of Customer Obsession," Forrester Research, Inc., May 1, 2023.

[6] Source: Ibid.
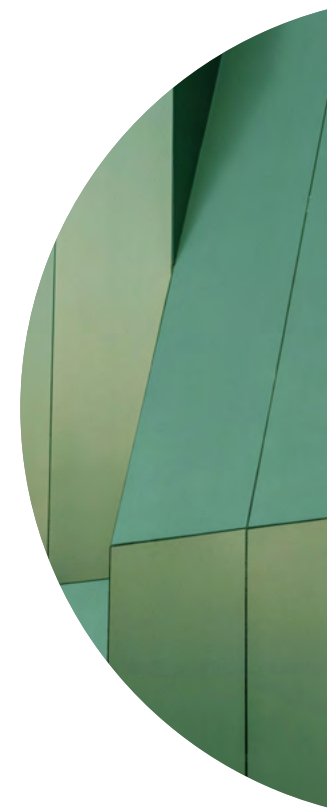
Resources

Related Blogs and Webinars

Michele Goetz, Community Is The Kinetic Potential Of AI, Forrester Blogs

Brandon Purcell and Aaron Katz, Bridge The Trust Gap Between AI And Impact, Forrester Blogs

September 4, 2022, Hometown AI, Episode 1: Data Science — To Code Or Not To Code, Webinar

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Methodology

This Opportunity Snapshot was commissioned by Capital One. To create this profile, Forrester Consulting supplemented this research with custom survey questions asked of 181 data and analytics strategy decision-makers and line of business decision-makers at North American companies. The custom survey was completed in September 2023.

Demographics

GEOGRAPHY	
United States	**75%**
Canada	**25%**

TOP 5 INDUSTRIES	
Technology and/or technology services	**20%**
Manufacturing and materials	**12%**
Financial services and/or insurance	**12%**
Healthcare	**10%**

COMPANY SIZE	
20,000 or more employees	**13%**
5,000 to 19,999 employees	**26%**
1,000 to 4,999 employees	**56%**
500 to 999 employees	**5%**

ROLE	
Data and analytics	**55%**
Line of business	**45%**

DATA AND ANALYTICS STRATEGY SENIORITY (FOR 100 DATA AND ANALYTICS DECISION-MAKERS SURVEYED)	
Final decision-maker for data and analytics strategy	**35%**
Part of a team making decisions for data and analytics strategy	**29%**
Influence decisions related to data and analytics strategy	**19%**
Prepare and govern the data used by organization	**13%**
Manage the platforms used for data management use case	**4%**

LOB LEADERS SURVEYED)	
Director in charge of a LOB or function	**26%**
Senior manager/ operator in charge of a LOB or function	**12%**
Executive in charge of a LOB or function	**7%**

Note: Percentages may not total 100 due to rounding.