Democratizing AI: Transforming Your Operating Model to Support AI Adoption

DataRobot

AI for Everyone

Adopting Artificial Intelligence

Adopting artificial intelligence (AI) has become a strategic imperative. Early adopters are achieving massive returns, while those who wait risk falling behind. In order to empower more organizations and teams to implement AI, it is essential to embrace democratization, which puts the capabilities of AI into the hands of non-data scientists and makes intelligence accessible to every area of your organization. Technological improvements help achieve this vision, but it also requires thinking about how an organization is set up, from people to processes.

When people talk about artificial intelligence (AI), the first companies that come to mind are usually the FAANGs — Facebook, Apple, Amazon, Netflix and Google. But this is far from a definitive list. Anyone can implement AI today, and the FAANGs have no unique advantage.

The big technology companies achieved early successes with artificial intelligence. Some even built their own specialized hardware, machine learning frameworks, and research and development centers. These companies entered new markets, providing AI-led services and products, often outcompeting the incumbents. They were rewarded with impressive growth.

AI has become a strategic imperative. Early adopters are achieving massive returns, while others risk falling behind. Yet, with AI knowledge and resources scarce, most companies cannot copy the FAANG approach. Even if their vast resources were more readily available, it's hard to reboot an organization without disrupting the bottom line. Most executives need to work with the resources available — their existing people, processes, and technology.

Fortunately, any organization can implement and scale AI today. With the emergence of enterprise AI platforms that automate and accelerate the lifecycle of an AI project, businesses can build, deploy, and manage AI applications to transform their products, services, and operations. As the pioneer of automated machine learning, DataRobot has the wider capabilities needed for an efficient end-to-end AI project, with a platform supported by data analysts who integrated their business intelligence and data visualization tools with AI in order to quickly transform processes and decision-making.

However, democratizing AI within an organization requires more than just software. It requires changing your operating model and finding the right guidance to realize the full breadth of capabilities. This white paper provides that guidance and takes a closer look at the steps you need to take.

Changing the Business Model

### EVEN THE FAANGS DIDN'T START AS AI COMPANIES

Microsoft has restructured significantly over the last decade. Today, there is no Windows division. Everything is increasingly centered around AI. Similarly, before 2015, Google used to make no mention of AI in its earnings calls. Now it's a core focus area. Netflix's transformation is even more impressive. Having been founded in late 1997 as a DVD sales company, it quickly pivoted into rental by mail. In 2000, it launched the streaming service many know today and became an AI pioneer through its AI-powered, user-friendly interface and recommendations. The now-defunct Blockbuster reached its peak in 2004, employing 84,000 people, but it failed because it didn't embrace the digital revolution. Its memory lives on in business school textbooks as a cautionary tale about failing to adapt to technological change.

Why Democratize AI?

There are two reasons why democratization of AI is essential. First, there is a scarcity of experience in both data science and AI implementation, so it is essential to bring in other resources to realize your organization's goals. Second, even if you can attract sufficient AI talent, adoption will only be successful with the support of the wider business. Without the full adoption of AI practices, the scope and scale of your AI projects will be limited, if they can be executed at all.

SCARCE AI TALENT

Demand for data scientists and data engineers has been rising exponentially. Research from the Royal Society shows that demand has more than tripled over the last five years. LinkedIn's analysis suggests there's a shortage of over 150,000 people with data science skills in the United States. Companies pay large salaries in an attempt to lure data scientists to work for them. It's no wonder that Glassdoor repeatedly names "data scientist" as the best job in America.
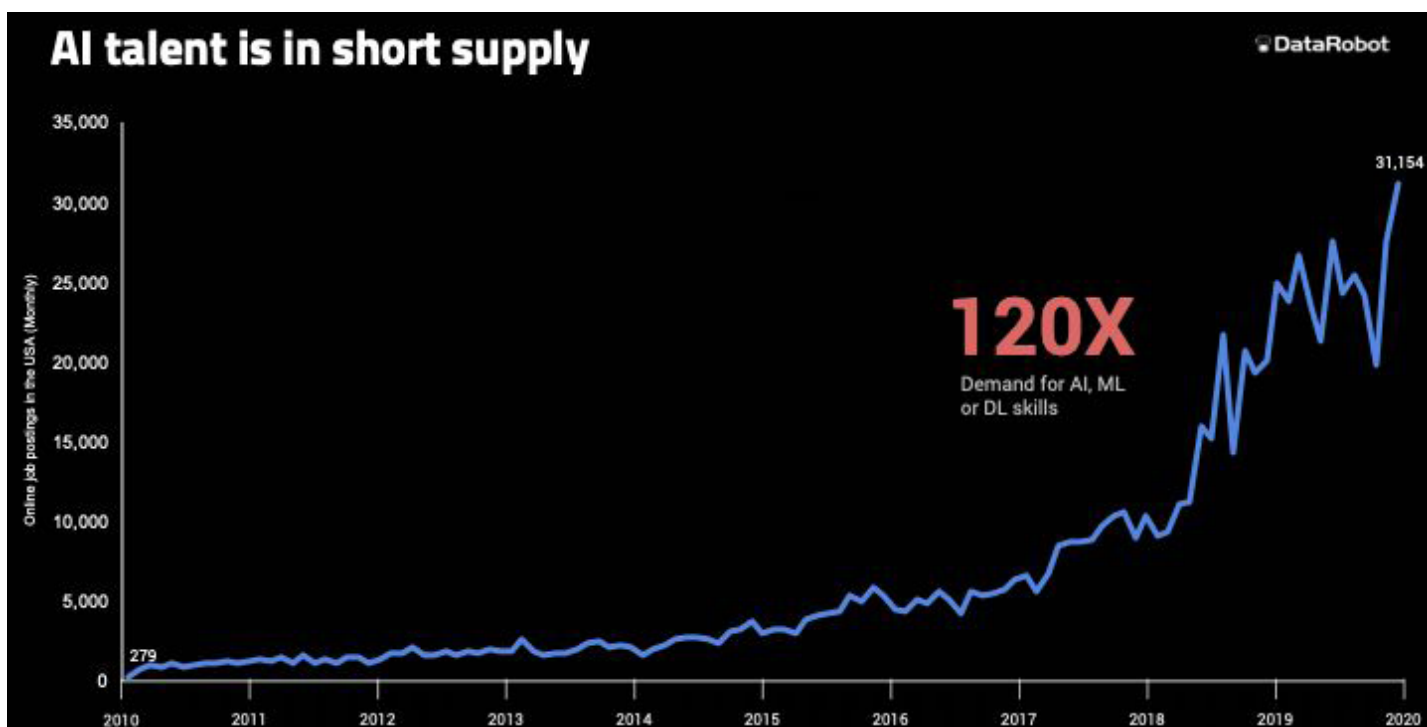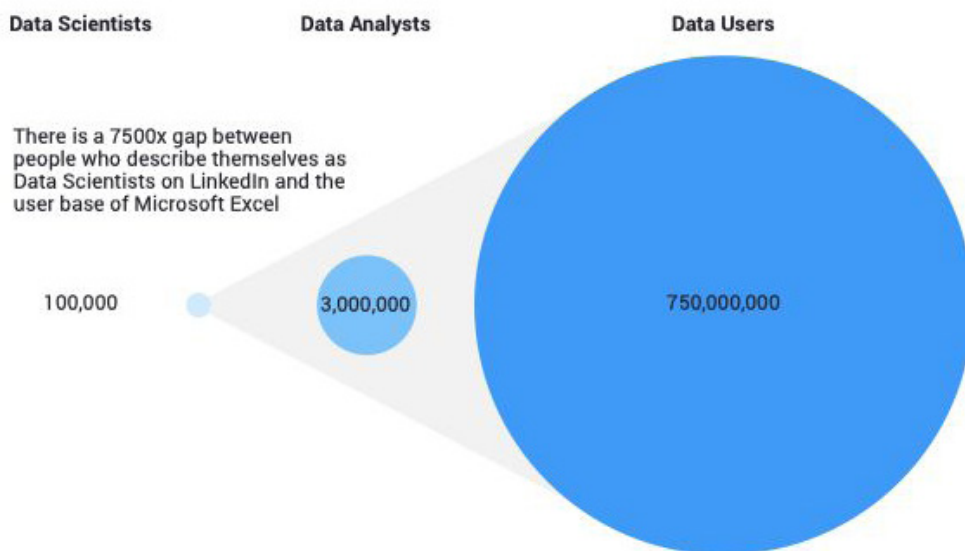
The demand for AI talent is spread across all regions, yet skills are not so widely dispersed. This makes the scarcity of talent even more acute for businesses with isolated headquarters outside of major technology hubs and large cities.

What happens when you're not in a location where there's a deep talent pool for AI? Or, what if you can't afford the specialists? What can you do to avoid being left behind?

If you could put AI tools into the hands of more people within your organization, imagine the impact it could have on your organization.

Extending AI to a Wider Audience

Data Scientists	Data Analysts	Data Users

There is a 7500x gap between people who describe themselves as Data Scientists on LinkedIn and the user base of Microsoft Excel

100,000   3,000,000   750,000,000

BUSINESS INVOLVEMENT

For any IT project to be successful, it should be aligned to business objectives. Organizations that have proven most successful with AI take things one step further — getting their executives on board to explicitly endorse AI as a key pillar of their strategy.

Once the tone is set from the top, the majority of the work of implementing AI is done within the business itself. While the IT or data science team might lead the projects from a technical perspective, it is essential that they involve the frontlines.

If the business doesn't use the AI applications they've built, they have no practical value. To avoid this fate and maximize impact, business leaders should help across the AI project lifecycle. Business users can bring their domain expertise to frame the problem — setting requirements, preparing data, reviewing results, integrating the AI application into their processes, monitoring the AI's outputs and supporting lasting business change. Domain expertise is arguably one-third of the role of an ideal data scientist, beyond their programming and mathematics skills. Yet, this skill is rarely comprehensive, particularly across any complex business with a variety of products, services, and operational processes.

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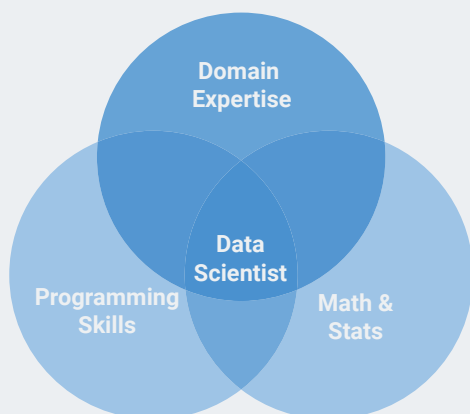
Required Skills

DOMAIN EXPERTISE
Knowledge of the business
Knowledge of the data

PROGRAMMING SKILLS
Ability to write code to gather data
Ability to write code to explore/inspect data
Ability to write code to manipulate data
Ability to write code to extract actionable intel
Ability to write code to build models
Ability to write code to implement models

MATH & STATS
Foundational statistics
Internals of algorithms
Practical knowledge and experience
Knowing how to interpret and explain models

Data Scientists need a lot of skills and are scarce

The first step to scaling AI is identifying good use cases. This requires framing the problem correctly to be solved with AI and then prioritizing based on potential return on investment. Here, the business input is indispensable, particularly if AI has been democratized so that they can contribute in an informed manner.

Ideally, AI understanding is sufficiently ubiquitous across teams so that they can independently identify new opportunities. To boost rapid opportunity identification, some organizations have turned towards "crowdsourcing" mechanisms. One popular method is to run a periodic "AI challenge" across the business, with prizes for winners to encourage participation and pre-funding from the executive to enable project delivery.

Another step to scaling AI is building trust.
A key part of building trust with business users is involving them in the implementation process. They are the ones who are best positioned to frame the business problem and define their requirements for AI processes. They also typically have the deepest day-to-day understanding of the data being used, which means they can help accelerate an AI project and improve results. It also helps minimize the risk that the AI models might be optimized for the wrong outcomes or using features that might be inappropriate from a business or ethical perspective.

Change management should be an ongoing concern to influence employee mindsets and encourage positive behavior.
Transformation initiatives of any kind are challenging and many fail. It's essential to remember that democratizing AI is not just about adopting technologies that are more user-friendly, even if this helps. It is important to establish role models or "champions" who demonstrate the benefits of using AI. People mimic those who surround them and can be inspired when their leaders behave differently. Staff ought to be supported in developing their skills so that they are confident in using AI. Leaders must foster understanding about why AI is being adopted and the value it can bring to organizations, in addition to providing formal mechanisms to reinforce the adoption of AI, rather than hindering good behavior.

The starting points for most organizations looking to democratize AI are to invest in training and working to integrate AI with their legacy business intelligence (BI) tools. These are obvious first steps, but they are only part of the puzzle. In order to genuinely democratize AI and use it across a global enterprise, businesses need to reevaluate their entire operating model, identifying opportunities to be AI-driven and removing barriers to AI democratization.

There are six pillars to evaluate.

AI-Driven Operating Model

Vision & Strategy

Provide executive direction on how AI will drive future organizational performance. Align AI to existing strategic initiatives to maximize value. Make difficult prioritization decisions to enable focus. Encourage, empower and unblock change across the business from processes to people.

Services & Customers

Determine what products and services you will offer in future and to whom. This includes stopping underperforming business lines, launching new market leading AI-driven offerings, and and more effective tailoring to customer needs via AI.
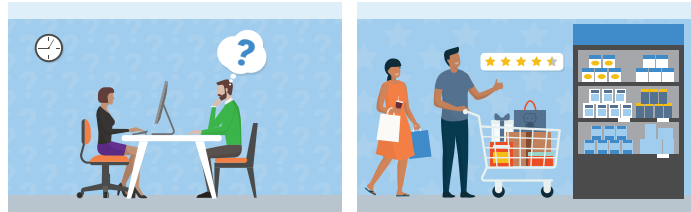
Processes & Channels

Automate work across the business wherever possible, freeing up time for more complex challenges and richer experiences. Use AI to enhance decision-making across the remaining complex processes and customer channels. Also establish a standardized repeatable process for identifying and implementing new AI solutions at scale.
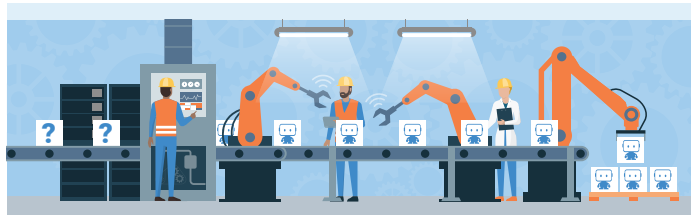
People & Organization

Set up an effective organizational model to scale AI across the business while giving every employee the opportunity to gain AI skills and experience. Establish a Center of Excellence to provide consistency, encourage rapid development, and share best practices. Offer a new operating model that appeals to the whole workforce, addressing job risk fears, while offering more fulfillment and wider opportunities.
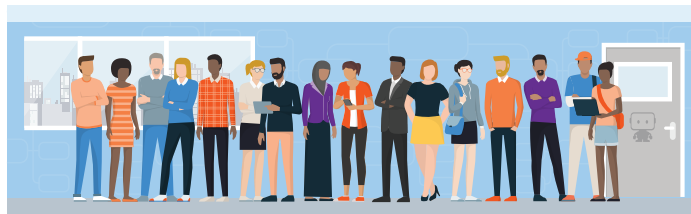
Governance & Reporting

Adopt and scale the use of tools that automate and accelerate the lifecycle of AI projects to boost data science productivity and enable democratic contribution. Integrate your AI with existing investments and complementary technologies, like cloud databases, business intelligence tools, RPA (Robotic Process Automation) and proprietary datasets.
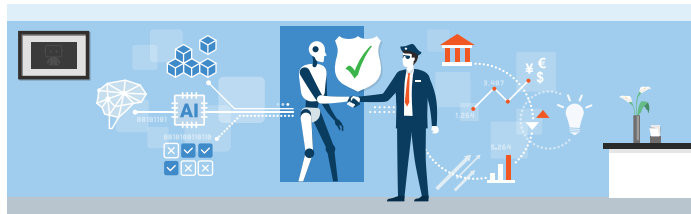
Technology & Enablers

Create a governance framework that enables customers, staff, and regulators to trust your AI, such as ensuring that there are ethical guidelines in place that fit your brand and values, removing sources of bias, and implementing robust operational controls. Use guardrails for AI models developed by non-data scientists. Proactively monitor and manage AI in production to maintain performance.
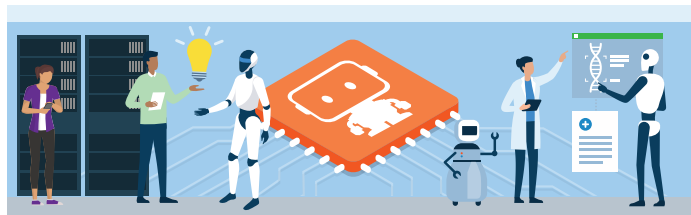
AI-DRIVEN BUSINESS

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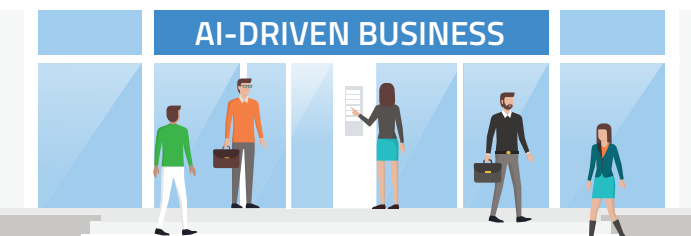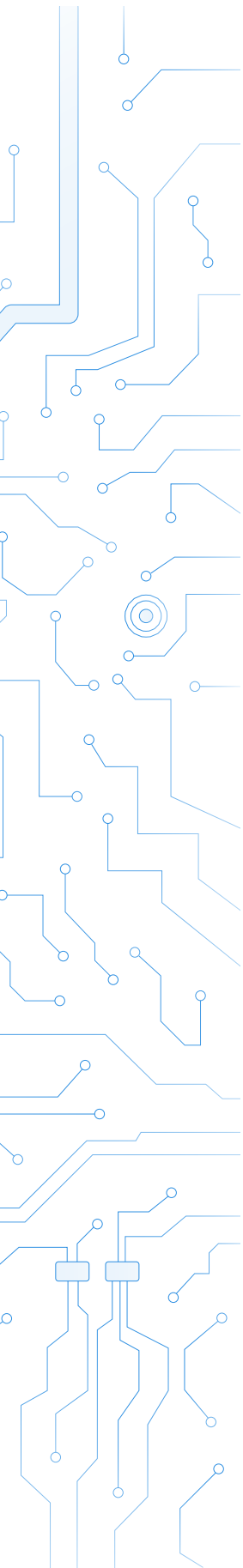
Questions Leaders Need to Answer

VISION AND STRATEGY

- Who will lead the AI initiatives?

- What targets will the executive team set?

- What changes to the composition or roles of the executive team are needed?

- How will leadership encourage, empower and unblock change?

- What "bargain" will we offer to staff that addresses job risk fears and offers the more fulfillment and opportunity?

SERVICES AND CUSTOMERS

- What are the products and services we will offer? Which ones will we stop offering?

- What new AI-led offerings can we create?

- Who are our customers?

- Which customers should we target?

- How could we tailor our offerings more to individual customer needs?

PROCESSES AND CHANNELS

- Which existing process can be automated or enhanced with AI and through redesign?

- Which existing processes can be enhanced with AI and through redesign?

- What new processes will be needed to deliver our new AI-driven offerings and customer centricity?

- How can we use AI to enhance our customer communication channels?

- What are our best AI use cases and which will be prioritized?

PEOPLE AND ORGANIZATION

- What capabilities will be needed across the organization?

- How should AI projects be staffed and organized?

- How many people are needed in each skill profile? (data scientists vs. business subject matter experts)

- How do we roll out pragmatic AI education?

- How do we retrain and develop the wider skills of existing staff? What are our best AI use cases and which will be prioritized?

TECHNOLOGY AND ENABLERS

- How will we prepare our data for AI?

- What technologies and platforms do we need to automate and accelerate our AI projects?

- How will we integrate AI into our analytics and business intelligence?

- How will we integrate these technologies and tools with the wider tech stack?

- What other transformation enablers are needed? Do we need new equipment? Offices?

GOVERNANCE AND REPORTING

- How do we govern our AI programs and projects?

- How will we manage the operations and monitoring of our AI?

- How will we ensure that AI is trusted by our customers, staff and regulators?

- What ethical guidance will we provide?

- How will we document and report on compliance?

The Advent of Automated Machine Learning and Enterprise AI

Automated machine learning, which was invented by DataRobot, can create Enterprise AI applications to address many of the challenges described above and make others more manageable.

Automatically creates most of the **documentation** required for model validation and model risk management — reducing the opportunity cost of time spent on lower value activities that data scientists, almost universally, dislike spending time on.

Provides transparency into each model's use of data, telling you not just which features in the data had the most impact to the predictive power of each model, but also explains individual predictions down to specific data features and their values.

Makes **retraining models** on new data and redeploying models into production simple, fast, and low risk.

Builds and ranks dozens of predictive models so you can quickly evaluate and select the model best suited to your particular problem.

Reduces the cost, difficulty, and risk of deploying models into your production environment by providing **minimally invasive deployment options**, such as scoring code generation, prediction APIs, and deployment to Hadoop.

Provides **tools for understanding** model accuracy and making tradeoff decisions (e.g., between speed and accuracy, positive versus negative predictive value, when and where additional models may be cost justifiable).

Makes it easier to **monitor model performance** and detect drift or performance degradation over time, alerting modelers to the need for retraining or creation of challenger models.

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Conclusion

AI holds huge promise to help businesses transform. AI technologies are becoming much easier to use, with substantial elements of data science automated or accelerated. Democratization is essential to accelerate adoption and empower more organizations and teams to realize its potential. This helps address the scarcity of AI talent and the need for business involvement. However, democratizing AI successfully is not just about technology. To genuinely democratize AI in your organization and reap the full benefits, you need to consider embracing an AI-driven operating model.

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DataRobot is the leader in enterprise AI, delivering trusted AI technology and enablement services to global enterprises competing in today's Intelligence Revolution. DataRobot's enterprise AI platform democratizes data science with end-to-end automation for building, deploying, and managing machine learning models. This platform maximizes business value by delivering AI at scale and continuously optimizing performance over time. The company's proven combination of cutting edge software and world-class AI implementation, training, and support services, empowers any organization – regardless of size, industry, or resources – to drive better business outcomes with AI.

Learn more at **datarobot.com**

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