

EBOOK

Myth vs. Reality?

Debunking the 5 Most

Common Assumptions About AI



Introduction

“What does artificial intelligence have in common with the price of eggs?”

TechCrunch journalist Devin Coldewey cleverly describes the process of deciding between different egg varieties at the store when the one labeled “all natural” catches your eye. The natural ones taste good and cost only slightly more so you buy them, even though the chickens (and the eggs they lay) may not be more natural than the others “because there’s no official or even generally agreed-upon definition of natural. It’s a common ploy to make you pay 30 cents for nothing. That same exact thing is becoming a problem in tech — but with AI.”¹

But where do we draw the line between what’s myth versus reality when it comes to AI?



¹ <https://techcrunch.com/2017/01/10/ai-powered-is-techs-meaningless-equivalent-of-all-natural/>

First Things First: Define Your Terms

The way we look at it, artificial intelligence, or AI, is any system that leverages human capacities for learning, perception, and interaction — all at a level of complexity that ultimately supersedes our own abilities. But, as evidenced by that definition, it's important to understand that the term is broad in scope and will continue to evolve as related technologies become more sophisticated.

Before we can dive into debunking the most common “BS” misconceptions and assumptions about AI, we need to first take a step back and break down why exactly AI has become such a nebulous term in modern society:



Technology vendors may claim that they “do AI” in hopes to jump on the already crowded bandwagon (even if their core value proposition has, in reality, very little to do with AI)



Organizations use the term to generate excitement and attention (and, along with it, investments) to their products and services



In drastic circumstances, the ill-defined concept of AI infiltrates the mainstream media (and one-off press articles from everyone ranging from top-tier publications to more niche trade outlets), driving attention to clickbait headlines and often confusing subject matter



AI is often wrongly used interchangeably with machine learning (or ML, a subset of AI that involves programming systems to perform a specific task without having to code rule-based instructions) which creates even more perplexity

Finally and, most importantly, AI can refer to consumer-facing AI (think self-driving cars or home gadgets) but also to Enterprise AI — the ability to embed AI methodology into the very core of an organization's business practices. It means augmenting the work of people across all teams and disciplines with AI for more innovative operations, processes, products, and more.

There is a stark difference between what people consume about AI versus what Enterprise AI actually is, so much so that myths have been perpetuated and infused into mainstream media, board meetings, and even company manifestos. We're here to debunk the top five and provide some helpful insights to flip them on their heads and ground them in reality.

The 5 Most Common AI Myths

Myth #1

AI Is Evil and a Threat to the Human Race

False. Here at Dataiku, we don't believe that AI is inherently evil or an imminent threat to mankind. That's not to say, though, that the technology is risk-free. Said differently, we (as the developers and consumers of AI tools and systems) are more of a risk to ourselves if we don't exercise caution in how we go about our AI experiments and projects (versus, let's say, killer robots taking over the world).

When building AI systems at scale, organizations have a responsibility to enable and train their users on the technology at hand. In a fireside chat, Dataiku's Chief Customer Officer Kurt Muehmel once likened this responsibility to makers of (potentially) dangerous construction tools like a power saw. The toolmaker has a responsibility to build the saw in a safe way, with appropriate safeguards, appropriate training material and documented recommendations, and failsafes so the tool can be used in a way that doesn't cause harm. At Dataiku, we constantly strive to further incorporate these capabilities into our platform for Everyday AI and equip our customers with the services and materials they need.



The increase in the investment in and use of AI presents a handful of new risks:

- AI systems can behave in unexpected and inadequate ways in a production environment (versus the original design or intent).
- Models may reproduce or amplify biases contained in data.
- More automation might mean fewer opportunities for detecting and correcting mistakes or unfair outcomes.



The risk doesn't come from machines suddenly developing spontaneous malevolent consciousness... The problem isn't consciousness, but competence. You make machines that are incredibly competent at achieving objectives and they will cause accidents in trying to achieve those objectives.

- Stuart Russell, Computer Scientist and AI Pioneer²

To help put guardrails in place to prevent these risks, organizations need to implement a Responsible AI strategy — an inclusive approach to designing, building, and deploying AI that is in line with stated intentions. Practitioners must be aware of the historical and social context in which they build pipelines, and use that knowledge to inform more equitable data science applications.

The onus is on organizations to define a precise framework of their ethical rules that should — or should not — be followed. This ensures that the company takes a clear position on all of its principles and facilitates communication of these principles among and across all teams. Here are some common foundations to a sustainable Responsible AI strategy:

1. Intentionality:

Ensuring that models are designed and behave in ways aligned with their purpose

2. Explainability:

Under the intentionality umbrella, explainable AI means that the results of AI systems should be explainable by humans and not just the ones that created the system

3. Accountability:

Having a centralized place to seamlessly view which teams are using what data, how, and in which models (closely tied to traceability).

² <https://www.theguardian.com/technology/2016/aug/30/rise-of-robots-evil-artificial-intelligence-uc-berkeley>

More widely, Responsible AI fits within an AI governance framework, a requirement for any organization aiming to build efficient, compliant, consistent, and repeatable practices when scaling AI. For example, AI governance policies will document how AI projects should be managed throughout their lifecycle (what we know as MLOps) and what specific risks should be addressed and how (Responsible AI). In order to create human-centered AI grounded in explainability, responsibility, and governance (and eliminate any concerns about an AI-initiated “Doomsday”), organizations need to:



Provide interpretability for internal stakeholders



Test for biases in their data and models



Document their decisions



Ensure models can be explained so organizations can accurately identify if something is wrong, causes harm, or involves risk of harm



Create a data culture of transparency and a diversification of thought



Establish a governance framework for data and AI



Myth #2

Robots Will Take All Our Jobs in 10 Years



False. AI is no different than other technological advances that enable humans to become more effective, processes to become more efficient, and teams to automate low-hanging fruit so they can focus on higher-value tasks. AI is a tool that can be used to augment the human workforce and help teams work in newer and smarter ways. If you think back throughout history, advances in telephone technology eventually replaced human operators and word processing and voicemail replaced some secretarial tasks. While some jobs may have been replaced, more were ultimately created that looked different and required different skill sets.

According to a McKinsey Global Institute report, over the past few decades over 19 million jobs have been created as a result of the personal computer and internet.³

Dataiku customer Standard Chartered Bank is a perfect example of this in practice. Specifically, the FP&A team needed a tool to help them process data better, was scalable and future-proof, and enabled them to leverage their existing infrastructure. Today, they use Dataiku to run three major systems at the bank and refresh daily Tableau dashboards for all the bank's finances (which used to be done in disparate spreadsheets). They have also developed a self-service data marketplace that people across teams can leverage for plugin in other pieces to get insights from data.

³ <https://www.mckinsey.com/featured-insights/future-of-work/what-can-history-teach-us-about-technology-and-jobs>

Most notably, though, two people armed with the Digital MI team's applications in Dataiku are doing the work of about 70 people limited to spreadsheets. So, yes, while increased efficiencies do sometimes mean a reduction in people for certain roles, they also lead to massive boosts in productivity and the opportunity for people to move to more high-value projects. In the case of Standard Chartered, analyst productivity increased by a factor of 30, making them more efficient and effective.



I would say that the story around artificial intelligence is very mixed. In some areas, the technology and the techniques have really moved way beyond the capacity of many organizations to consume it and, in some areas, the technology is pure hype and myth. Part of the challenge that organizations face is really trying to figure out what's real and what's fake.

So, for example, much of the tools around using machine learning and predictive analytics in the areas of fraud and recognizing historical client patterns and using those patterns to further identify issues and risks to your business is very powerful because you're able to use historical data and take those patterns and cast them forward into the future.

**-Jeff McMillan, Chief Data and Analytics Officer,
Morgan Stanley Wealth Management**

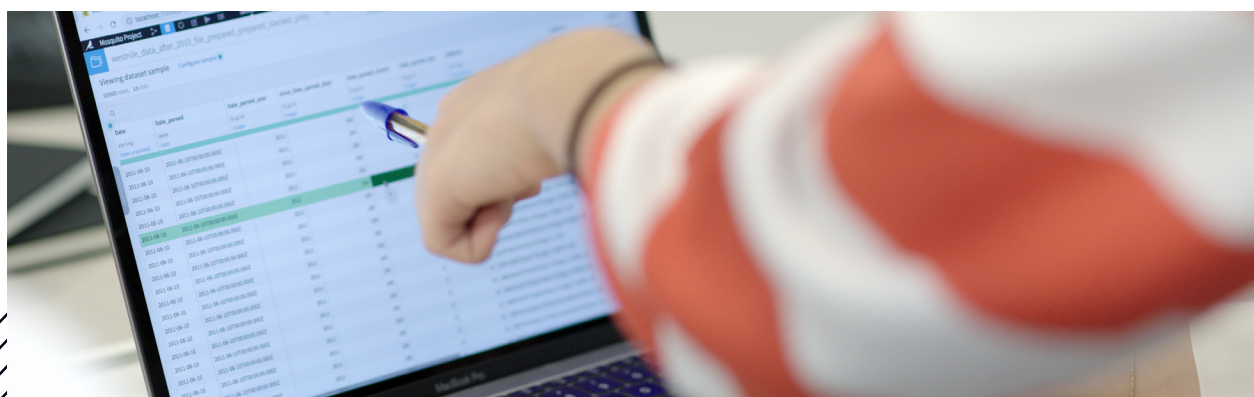
So, while AI-powered machines and tools are very good on single-line based decision making (such as choosing a financial advisor for a client around investment), as organizations start to expand to multidimensional types of questions, such technologies cannot function without human intelligence. Instead of attempting to replace humans, organizations should think about how they can get humans and machines to work together. There are two ways to do so:

1. Human-in-the-Loop Methodology:

No matter how advanced data science and AI projects get, there should always be a human to vet them from an intuition perspective. Humans can be critical in the ML process by putting checks in place to keep the model accurate, checking in with the business to ensure efficacy and common sense, confirming the model is accurate and not just “correct,” and reevaluating, retraining, and making improvements as needed. Since models cannot feel, humans have to be part of the ML workflow and feedback loop to question them and determine whether or not something feels like it works and makes sense. A model may be acting correctly, but a human element needs to be there to determine whether the results are accurate.

2. Augmented Intelligence:

Relatedly, augmented intelligence is about bringing together the power and strengths of AI with those of humans by integrating AI systems into the day-to-day work of people to help them make better decisions. While a human-in-the-loop approach is more focused on infusing the human intelligence back into ML models, augmented intelligence is more about using machines to enhance the human output.



Dataiku customer Morgan Stanley Wealth Management has mastered the art of augmented intelligence through their Next Best Action system. It takes thousands of data points and uses them to recommend possible content for the financial advisors to provide to customers (the power of machines), yet ultimately allows the advisors themselves to decide what makes the most sense in order to tailor the experience to each customer (the power of humans).

Myth #3

AI Is Only for Advanced Companies and You Need to Hire Lots of Data Scientists to Be Successful

False. At Dataiku, we firmly believe that AI is for every person in the enterprise (no matter their job title), every use case, and every organization. The below quote from British technology website “The Register” encapsulates the demystification quite nicely:

"AI is not what the general public thinks it is. Fuelled by sci-fi, childishly innocent news media and outrageously misleading futurists, Joe Average is under the impression that AI is an amoral, self-thinking machine powered by ghosts. The reality is mundane: AI is just a bunch of algorithms acting on data it is fed by its human programmers. One thing it isn't is amoral. If anything, the opposite is true as every input and process is steeped in bias and clouded by interpretation, whether out of goodwill or bad."⁴

While in theory AI is for everyone, organizations often don't know where to start and are overwhelmed when it comes to incorporating data and AI into their business model and processes. Or, if they do know where to start, they face a myriad of challenges that impede successful AI adoption, including but not limited to:



The AI skill gap, or a lack of necessary skills and expertise:

However, through investment in education, training, and upskilling programs, analysts — for example — can be activated as citizen data scientists. Business stakeholders already possess robust industry expertise, which means their targeted AI adoption will align with greater objectives. Through the use of collaborative AI tools (including AutoML features like in Dataiku), analysts and business users can expand their expertise and help fill skill gaps.

⁴ https://www.theregister.com/2019/02/22/artificial_intelligence_you_know_it_isnt_real_yeah/



Finding, hiring, and retaining the right data talent:

Cease the search for the universally perfect data talent. Instead of looking for the data scientist unicorn, focus on isolating the precise skills needed and finding the data talent that has some of these skills. Over time, the organization can build out a data team while fostering collaboration and knowledge sharing. This has the added benefit of encouraging an open data culture and improving retention of existing talent.



Ensuring a technical infrastructure that can support the necessary quantity of data or processing the organization requires:

The data architecture design needs to be sustainable enough to support a variety of users' needs but agile enough to scale as the organization grows. In a [survey of 1,200+ data executives](#), 38% cited making sure their IT architecture and data management system can support AI as the most important lesson learned in implementing advanced AI within their organization. Data teams can work with IT, for example, to determine what's feasible and ensure processes and tools used to deploy a production system are sustainable and reliable.



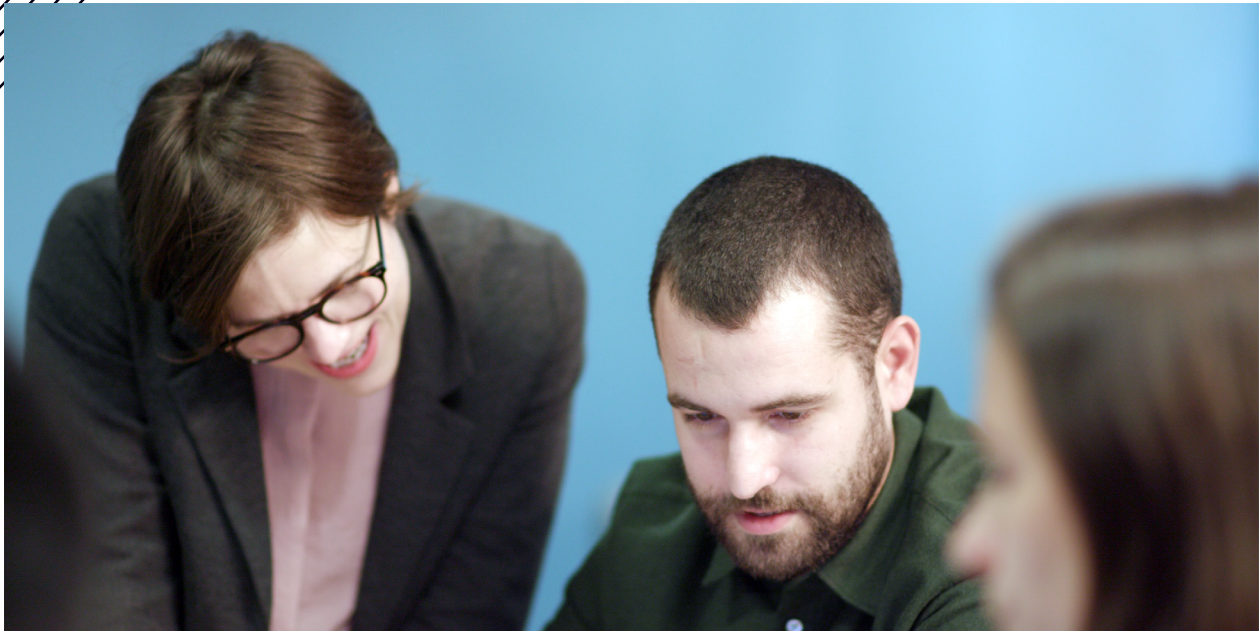
Lack of a clear AI strategy and business objectives:

Organizations often face roadblocks in gaining executive buy-in for an AI strategy, because it's the leader's responsibility to ensure that AI adoption aligns with the organization's long-term strategic goals. Making sure that outlined AI strategy (with both near- and long-term objectives) has roots going from the top-down and the bottom-up will result in a more robust vision.



Organizational silos and segmentation (i.e., isolating data projects exclusively to the data science team):

AI drives value best when data has an end-to-end path from collection to analysis, to insights and feedback loops. As we'll see just below, organizational silos will become restrictive and prevent a rapid response to the insights generated from AI unless everyone can contribute their unique talents to each project.



In order to flip the narrative that AI is fueled by sci-fi and strictly reserved for advanced companies, organizations need to cut through the noise (i.e., news headlines, board room chatter) that only tech or digitally native companies can excel with AI. In fact, a KPMG survey revealed that, in large and small businesses, AI adoption accelerated during the global health crisis.⁵

In order to scale it successfully, though, organizations need to achieve Everyday AI — the practice of making the use of data and AI everyday behavior. It means infusing AI and analytics everywhere and among everyone (no matter their role) so that processes and technology are so deeply ingrained that every part of the organization thrives based on them. At Dataiku, we believe that once organizations are able to systemize their use of data and AI, they will not only achieve Everyday AI, but they will also elevate their people to extraordinary, equipped with the ability to make better day-to-day decisions for positive business results.

⁵ <https://info.kpmg.us/news-perspectives/technology-innovation/thriving-in-an-ai-world/ai-adoption-accelerated-during-pandemic.html>

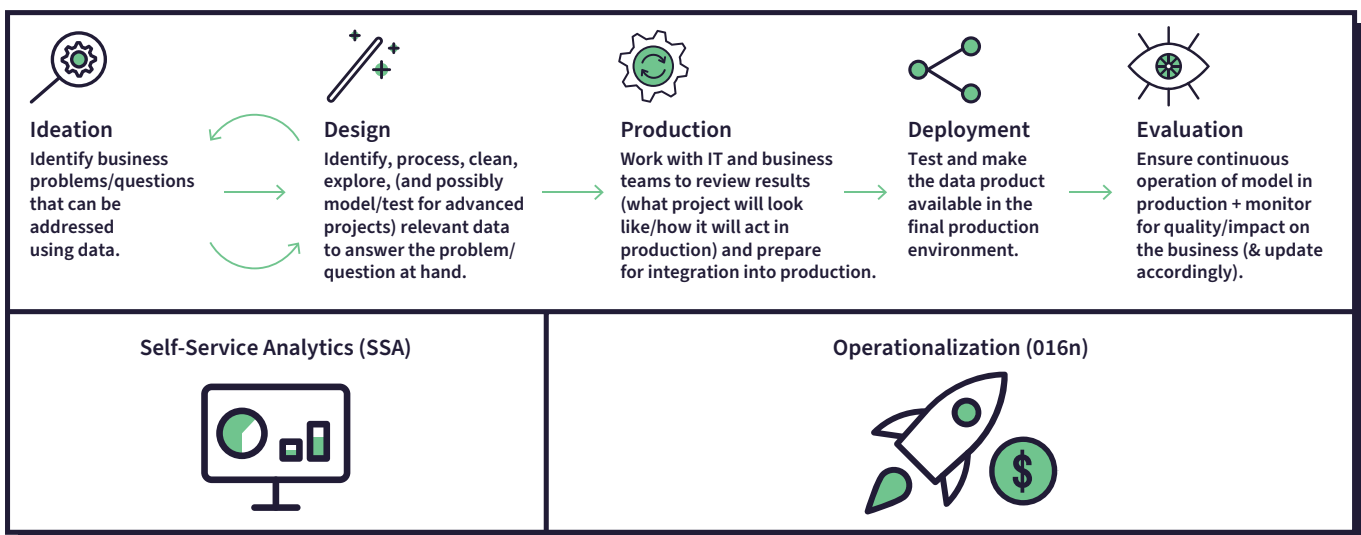
Myth #4

Buying AI Technology Alone Will Fast-Track an Organization's AI Success

False. According to the Gartner Hype Cycle for Artificial Intelligence, 2021, “The urgency and criticality of productizing AI and transforming business are driving the need for operationalization of AI platforms. These platforms enable reusability, scalability, and governance, which accelerate AI adoption and growth.”⁶

So, although the proof is in the pudding that AI technology (such as software like Dataiku that makes the use of AI everyday behavior for everyone) is necessary and can undoubtedly be transformative, it is one piece of a bigger picture. Without the right people and processes, the technology alone won't be able to achieve its full potential. Succeeding at AI initiatives requires fostering a culture of data creativity at the individual level. However, organizations also need to find a way to harness that individual data creativity for collective company progress and purpose.

For example, Dataiku enables our customers to empower every employee to be a game changer in his or her own discipline, providing them with the autonomy to make more informed decisions with data. Not only does this encourage more people to be involved and share knowledge and insights around data, but it ultimately serves the company's collective purpose (i.e., solving their business goals, becoming more agile and productive, etc.).



⁶ Gartner - Hype Cycle for Artificial Intelligence, 2021 - Shubhangi Vashisth, Svetlana Sicular - 29 July 2021

Myth #5

AI Will Automatically Bring ROI

False. Like we've been saying at Dataiku since 2013, AI is not a magic bullet that is going to drive organizational change in the blink of an eye. But, as we mentioned earlier, a thoughtful approach that combines people, processes, and technology can help them solve high-value business objectives through data (and do so in a way that is customized to their business composition — size, industry, unique business goals, etc.).



Whether an organization is working on optimizing processes (i.e., automating monthly business reporting) or more advanced machine learning applications (i.e., complex modeling that could, if executed with the right approach, generate millions in incremental revenue), AI can't be put on a pedestal as this flashy solution that will alter a business's trajectory overnight.

It's not a magical fix that will change everything about a business. Rather, it's a powerful tool that can optimize every single process, but it has to be embedded into the organization's operating model in order to actually make an impact.⁷

--Florian Douetteau, CEO, Dataiku

How, though, can organizations that have moved past the conceptual phase and their proof of concepts, seen initial successes with AI and may even have some products in production, reach Everyday AI at scale? One Dataiku customer, a global pharmaceutical company, decided nearly a decade ago to invest in data and analytics to build its future. When the company got started on its journey, they looked for what data sources were available, what teams needed to garner from said data, and started stitching together those data sources. A lot of the work was cobbling together what data was sitting where and identifying the needs and skills available at their disposal in order to build out new data and analytics capabilities.

⁷ <https://techcrunch.com/sponsor/dataiku/everyday-ai-is-the-future-of-enterprise-ai-heres-why/>

When the company got started with Dataiku, they focused on breaking down barriers formed from data as well as the people on internal teams, bringing in a diverse range of them to work with the data. Today, the company has over 3,000 different data projects running concurrently, hundreds of thousands of datasets, and nearly 1,000 direct contributors to the data process. These people are using the tools best suited for them, coders and visual users alike, to untap new insights and make their day-to-day more productive.



Just like AI itself isn't a one-size-fits-all magic bullet, neither is the ROI associated with it. Even though AI often gets the wrap in the media that it equates to instantaneous ROI, that's not the case. According to Deloitte, "It's not uncommon to hear cognitive technology projects equated with moonshots — highly ambitious, transformational change initiatives. A manager might assume that cognitive projects that don't transform their companies are not worth undertaking."⁸

In reality, tangible value comes from what is achieved beyond specific use cases (i.e., the mundane ones that are used to gain executive buy-in and as proof points for something bigger that the organization wants to achieve). If the mundane use cases are successful, organizations will be able to change the discussion from "on a per use case basis" to broader business cases that are likely loftier and more radical (the moonshots).

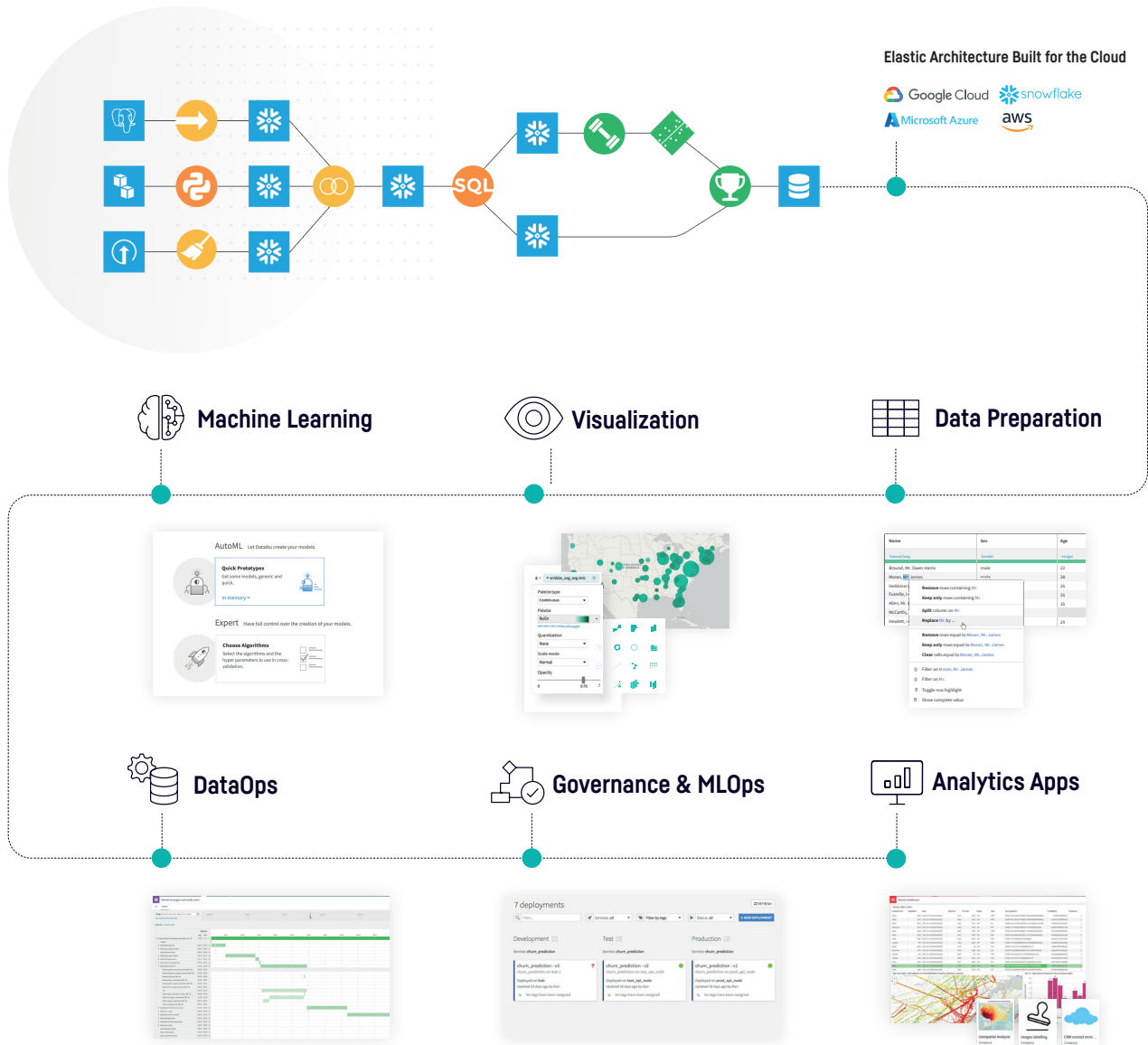
⁸ <https://www2.deloitte.com/us/en/insights/focus/cognitive-technologies/dispelling-five-myths-about-cognitive-technology.html>

Conclusion

As it stands, companies around the globe struggle to turn business data into business impact. And the regularly tossed around and frequently misused myths and misconceptions around AI only add fuel to the fire and further complicate an organization's ability to implement an AI strategy, act on it, and see true business value from it. We hope that dispelling the top five myths about AI enables your organization to build an AI strategy that addresses the individual and the collective, use cases that are mundane and moonshots, and tools and processes that are inclusive and sustainable.



Everyday AI, Extraordinary People



450+
CUSTOMERS

45,000+
ACTIVE USERS

Dataiku is the world's leading platform for Everyday AI, systemizing the use of data for exceptional business results. Organizations that use Dataiku elevate their people (whether technical and working in code or on the business side and low- or no-code) to extraordinary, arming them with the ability to make better day-to-day decisions with data.

