data iku

EBOOK

Digital + Data/AI Transformation: Parallels and Pitfalls

What Exactly Is Digital Transformation?

So, what is digital transformation anyway? Many people who utter the words are repeating something they have heard others say, rather than leveraging a concept they deeply understand. Here are a few memorable definitions from various industry players:

Salesforce	"Digital transformation is the process of using digital technologies to create new — or modify existing — business processes, culture, and customer experiences to meet changing business and market requirements. The reimagining of business in the digital age is digital transformation." [1]
CIO.com	"A necessary disruption; a radical rethinking of how an organization uses technology, people, and processes to fundamentally change business performance; companies have embarked on digital transformation journeys to counter the potential for disruption from incumbents and startups." [2,3]
Harvard Business Review	"Companies are pouring millions into digital transformation initiatives — but a high percentage of those fail to pay off. That's because companies put the cart before the horse, focusing on a specific technology ("we need a machine learning strategy!") rather than doing the hard work of fitting the change into the overall business strategy first." At Dataiku, we see a parallel to this one a lot when organizations say "We need to do AI!" without having a plan in place to get there and facilitate that change in a way that will drive business value. More often than not, the fundamental tension (for both digital and data/AI transformation) stems from organizations trying to make headway without a clear plan.

[1] *https://www.salesforce.com/products/platform/what-is-digital-transformation/*
[2] *https://www.cio.com/article/3211428/what-is-digital-transformation-a-necessary-disruption.html*
[3] *https://www.cio.com/article/3402022/successful-digital-transformation-begins-with-a-cultural-transformation.html*

The TL;DR is that digital transformation has been happening for years (we're talking since the 1940s and 1950s) and organizations all have a different meaning of it based on where their digital maturity and sophistication currently stands, but also how old the company is. For example, digital transformation will hold an entirely different meaning for a 100-year-old company versus a 20-year-old one.

What the definitions do share, though, is that digital transformation exists to change (fundamentally, rather than at a surface level) how a business operates. Though enabled by technology, delivering technology projects is not the point; the business is being changed to better respond to customer and employee needs. This separates it from "digitization," which is merely running the same old processes with (hopefully) more efficient technology.

While the above examples only scratch the surface, the concept of digital transformation as a whole is critical for modern businesses — per McKinsey, the global health crisis sped up the adoption of digital technologies by several years[4] and, according to IDC, worldwide spending on digital transformation will be nearly $2 trillion in 2022.[5]

In this ebook, we'll discuss the top reasons digital transformation initiatives fail, to ultimately drive learnings for business leaders. Then, we'll illustrate how data and AI can contribute to a successful digital transformation. Lastly, we'll shed light on how Dataiku is a key enabler to that transformational success. It is important to note, though, that digital and data/AI transformation are so intertwined that even though this ebook will talk about both, they can't actually be separated in such a clear way.

[4] *https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/the-new-digital-edge-rethinking-strategy-for-the-postpandemic-era*
[5] *https://www.businesswire.com/news/home/20181113005054/en/Worldwide-Spending-Digital-Transformation-2-Trillion-2022*

What's Causing Digital Transformation Failure?

A staggering 70% of digital transformation projects fall short of their goals, per a Boston Consulting Group study.[6]

Why is that? Unfortunately, it often ties back to data — poor data quality and not having the right data in the right place (in addition to bottlenecks like fragmented systems, an outdated tech stack, employees' resistance to change, and a lack of clearly communicated goals and executive buy-in) are commonly cited reasons for failure of transformation initiatives. You can almost always boil the failure of a data project down to a data problem, so understanding what the data problem can be is essential to understanding how to solve it.

A common misconception is that digital transformation leaders need to get the company's data right before embarking on transformation efforts. Not only does this mindset lead to years and millions of dollars lost since data is only contextual to its use, but delaying transformation to get the data right is not really an option — making data fit for purpose needs to be part of the digital transformation journey itself. There is no "getting company data right," there can only be "getting the right data for your use case."

Unfortunately, the talented data teams that digital leaders work with might see themselves as benefactors, not contributors, of a digital transformation agenda, even though they control the key raw material: data. Without changing the way data teams work, can leaders expect things like data quality to improve to the level needed to avoid failure?

Data teams will only become reliable partners in digital transformation if they work better with each other and their business stakeholders. That means more collaboration, faster iteration, and replacing technical jargon with transparent logic. In the next section, we'll highlight some of the key reasons digital transformation often fails (and how business leaders and executives can avoid mimicking these failures in their data and AI projects).

[6] *https://www.bcg.com/publications/2020/increasing-odds-of-success-in-digital-transformation*

Digital Transformation + Data/AI Transformation: They're More Similar Than We Think

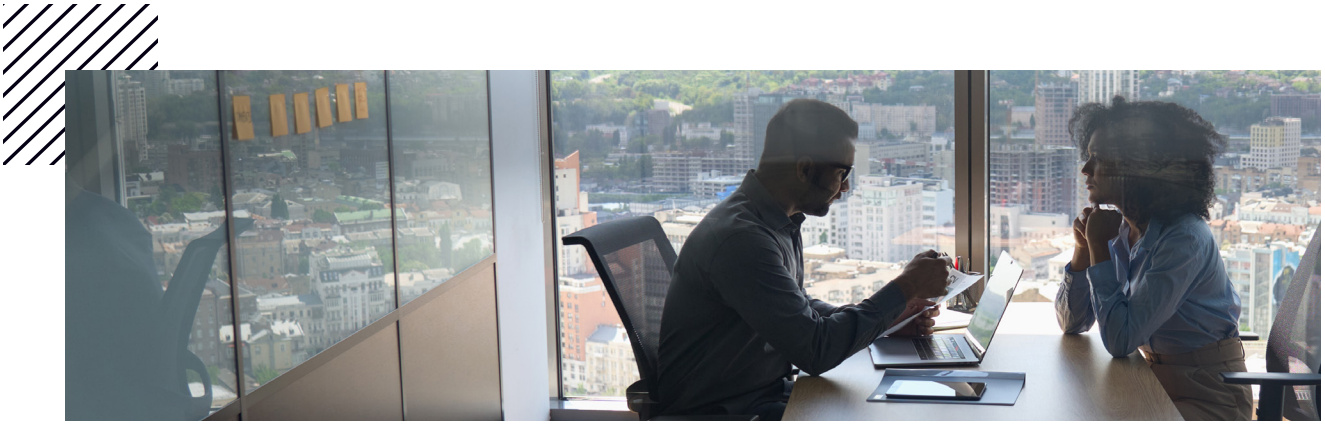
When moving from theory to practice with digital transformation, organizations often run into roadblocks and fail (think 50%-75% of the time), which is relatively comparable to failures of data and AI initiatives. Here are some of the top reasons digital transformation fails (and why, if you learn from those mistakes, data and AI can shift from solely being underappreciated contributors to success and become key enablers of it):

The program exists to spend a budget against a grand vision, but not enact fundamental change.

Just like Everyday AI, or making the use of data and AI everyday behavior for everyone across the organization, digital transformation is actually not this grandiose thing, but rather something that needs to be integrated organically over time throughout the organization. Everyday AI is the key to successful data and AI transformation because it's all about fundamental (versus surface level) change, and the same could be said about digital transformation.

At Dataiku, we've seen this successful organizational transformation in practice with Pfizer. One of the biggest challenges large enterprises face today is how to scale data science efforts such that the business actually gets an exponential amount of value from the exponential quantity of data they're amassing. At Pfizer, the story is no different. In a VentureBeat discussion with Dataiku Chief Customer Officer Kurt Muehmel, Chris Kakkanatt, Data Science Senior Director at Pfizer, shared how the company was able to orchestrate the organizational and cultural changes necessary to connect technologies and people around the world at scale.

The 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. This represents the aforementioned fundamental change at work because clear goals were set to benchmark the state of affairs before, during, and after the transformation, data and analytics project goals were communicated and clear, and there was global alignment across business and technical teams.



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.

Building off this notion of delivering value to the business upon achieving transformation, Jeff McMillan, Chief Analytics and Data Officer for Morgan Stanley Wealth Management, explains that when organizations say they're aiming to become an "AI organization," it sounds like they're asking to be a fax-driven or phone-driven organization, too. Whereas in reality, AI is a tool like mobile and the internet that shouldn't be the goal in and of itself, but rather a means to become more intelligent and make better day-to-day decisions with data.

Technology delivery becomes the focus, instead of tangible improvement in customer experience.

The similarities here between digital transformation and data/AI transformation are almost uncanny. In many cases, organizations view technology for digital transformation (i.e., mobile, cloud technology, the Internet of Things, and robotics) and data/AI transformation (i.e., AI platforms) as a magic bullet that is going to drive organizational change seemingly overnight.

When taking this approach and dedicating 100% of the time, energy, and resources into implementing and delivering a new technology and throwing everything else to the wayside will naturally cause the technology to fail or never reach its full potential. A thoughtful approach that combines people, processes, and technology can help organizations solve high-value business objectives through data (i.e., what might be improved customer experiences for digital transformation might be increased productivity, decreased costs, or risk mitigation with data/AI transformation).

Why Migrating to the Cloud Isn't an Architecture Strategy (and Why It Probably Won't Solve Your Problems)

Imagine you have tens of little Allen keys sitting around all over your house. You know, the kind that comes with furniture and other items you need to self-assemble. After assembly, you figure you may eventually need the Allen key someday, so now, you've accumulated a few in the kitchen, in the closet, tucked away in a desk drawer — who knows if you even own the associated items anymore with which they originally came. In this scenario, does putting all the Allen keys in one place resolve the problem?

Well, sort of, in that next time you need one, at least you know where all of them are and potentially save marginal time in digging around in multiple locations. But you still don't know which ones you need and which ones you can get rid of, what works with which item, and how many duplicates of the same size you're holding onto, etc. You haven't been able to assign meaning to each Allen key.

When it comes to cloud migration, many (if not most) people and teams think putting the data all in one bucket is the end of the journey. In our experience at Dataiku working with hundreds of multinational organizations, often with the IT teams, they rarely have thought about completing this sentence:

> "We're migrating to the cloud, and because of that, we'll be able to …."

In other words, the value of the initiative is often an afterthought (if it's a thought at all).

However, it's worth noting that:

1. **Migrating all data to the cloud is not totally risk-free** — yes, cloud storage can be cheap, but for some organizations (especially ones that are 100+ years old and have incredible amounts of historical data), not cheap enough to put every datapoint that's ever been collected. There's some data that's valuable on the day it's collected, some a week later, some three to four years later. But what about after seven years? It's worth putting some thought around what data really needs to be in the cloud, because after all …

2. ***All* data will never be in the cloud.** Most IT teams don't consider the fact that business people plan for a world where data will pretty much never all be in one place. At Dataiku, we talk to people every week who might have 60%-80% of their data in some big data platform, but inevitably some extremely important thing — like, for example, a list of product codes — comes out of some other business process. It's in peoples' inboxes, it's in XYZ SaaS tool, not in the cloud.

The bottom line: cloud migration in and of itself doesn't mean data is getting more meaningful or useful from a business perspective, so for it to be a strategic move with positive outcomes, there should ideally be a larger goal. In other words, cloud migration can (and should) be part of that goal, but it shouldn't be the goal.

The need for hard work and deep consensus to avoid the above leads to a "lift and shift" mentality, by which the semblance of ongoing success is created but the benefits are one-off cost reductions.

Digital transformation is never going to be a win for the company if it is limited in scope, has lukewarm support from upper management, and isn't devised in a way that is sustainable for the long term. Similar to AI projects, organizations need to avoid a "per use case" mentality to make a digital transformation initiative that is more scalable and actually generates value. Real value will come from what lies "below the waterline," meaning what is possible in addition to specific use cases and cost reductions. If successful, this will completely change future conversations with stakeholders, elevating them out of a use case by use case discussion and into a capability that is embedded in every part of the organization.

Digital transformation success is not about launching apps, services, or buying technology, but creating conditions for permanently greater efficiency and continuous innovation. No single use case for data and AI will support this, only a permanent change in how data contributes to digital transformation. This means better connecting processes, systems, and people.

How to Help Everyone Work in a Way That Makes Value Delivery Easier

Broadly speaking, poor data is commonly cited as a reason for digital transformation failure (i.e., “All of our fancy digital platforms went live and nobody used them because the platforms didn’t communicate and data remained inconsistent across them”). While teams cannot afford to delay data and AI transformation to wait for data quality to be perfect, a key contribution of those teams to digital transformation is precisely to help deliver quality data because:

Digital transformation initiatives will fall short when the effort is spent only on shiny new customer-facing technologies (think websites, apps, experiences) without laying the necessary data foundations to make these scale robustly. But, to be clear, this should be part of the process and not something that will be done and dusted prior to beginning the transformation journey.

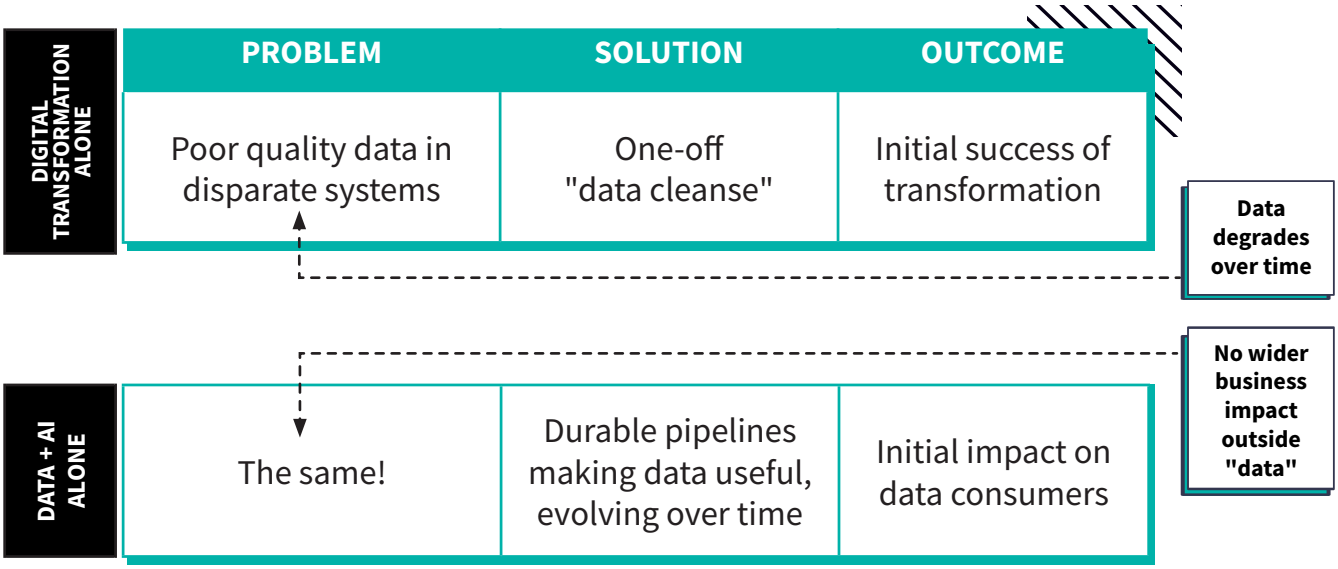
For example, Jeff McMillan, Chief Analytics and Data Officer at Morgan Stanley Wealth Management, cites data quality as one of the decisive factors to becoming an intelligent organization. To control data quality, Jeff advises organizations to have a data quality infrastructure, metrics around accuracy, a clear definition of what “quality” means to the organization, and people who are specifically accountable for the accuracy and monitoring of data quality on a daily basis.

Improving data quality, along with using data and analytics as a whole, is a continuous process (i.e., Morgan Stanley has monthly governance meetings to talk about any data quality issues, infrastructure to take in data quality problems and evaluate it to determine a solution) and can take years. However, doing so within a centralized data repository can keep roadblocks to a minimum, as it avoids multiple sources of truth, inconsistencies, and other concerns.

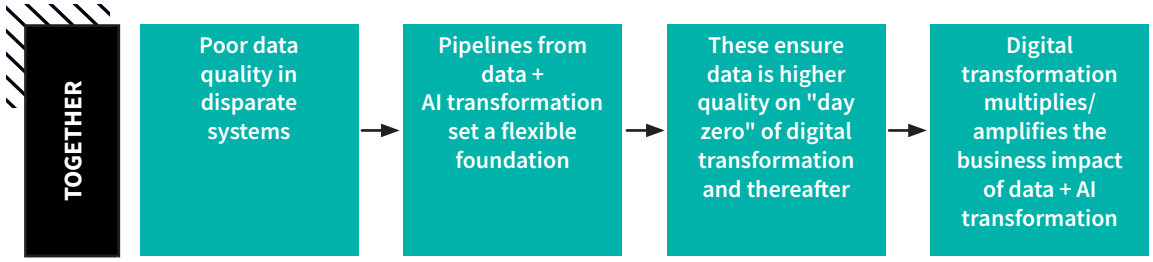
The initiatives succeed with greater ROI when they generate additional value from the new data they unlock.

So, ideally, digital transformation success depends on the quality of the data flowing between new processes, but existing data on customers, products, etc. was generated by old processes. As a result, leaders are often blinded by these problems until it's too late and "going agile" to build websites and apps won't be a turnkey fix.

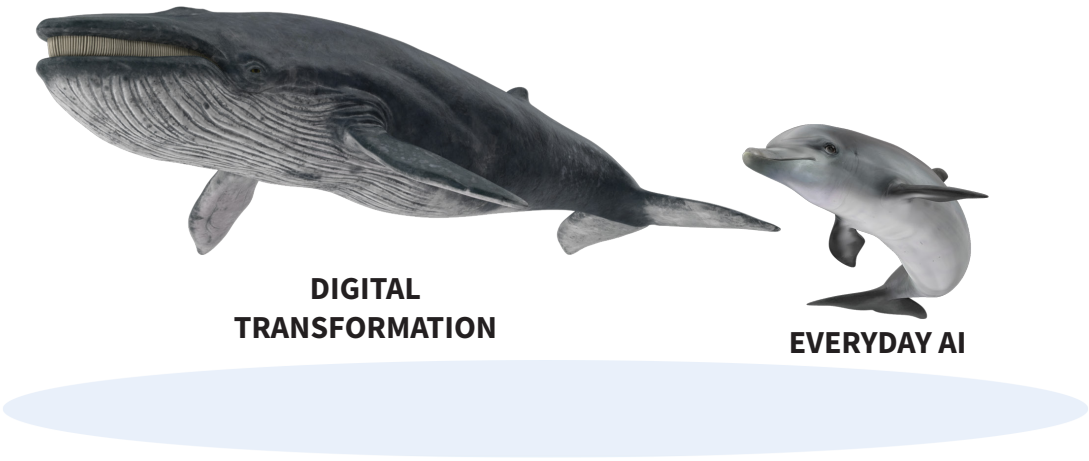
Embedding data and analytics across the enterprise successfully, on the other hand, depends on enabling people to easily access data relevant to them and work with it to deliver business outcomes faster or more reliably. Ideally digital transformation creates more relevant data and makes it more accessible while generating opportunities for the people empowered and upskilled by data initiatives to continually improve their processes.



When done separately, digital and data + AI transformation reproduce the very problem they were trying to solve.



Dataiku, the platform for Everyday AI, helps leaders prevent the digital transformation failures outlined in this ebook and helps ensure data and AI transformation is successful because:



Digital transformation and Everyday AI help each other avoid failure as well as go faster for greater ROI.

It's the tool to accelerate connection, preparation, and distribution of data needed for successful digital transformation, while managing the risks inherent in "moving fast and breaking things."

It's safe to say that the speed, agility, and control necessary for digital and data/AI transformation does not lend itself well to a long master data management project to get all the data perfect, just in time. Rather, that speed and control can be achieved by empowering subject matter experts (SMEs) with deep knowledge of the processes being reengineered to acquire, prepare, and distribute that data themselves.

This avoids parallel IT workstreams with constantly changing requirements, which will break due to complexity as the digital transformation agenda evolves over time. Finally, if all of this work is done in a centralized platform that can connect to any data source and any cloud, you neutralize a key risk — losing control of the production process of the most critical raw material: data.

It's a multiplier of digital transformation ROI, ensuring the data on newly transformed processes generate continuous improvement instead of simply recreating old silos.

In order to ensure scalability and resilience over time, the newly transformed business will need to avoid slipping back into old ways of working, which would negate the benefits that funded digital transformation in the first place. A common source of inefficiency that digital transformation addresses is manually passing data between different siloed functions and it is entirely possible to recreate all that inefficiency unless the workforce embraces the opportunities presented by digital transformation to think differently, continuously improve, and innovate.

None of this happens automatically as a result of digital transformation, because the new data generated about transformed processes will come from new technology and thus disrupt traditional reporting pipelines that used to keep data flowing. Data/AI transformation puts the power of solving this ongoing challenge into the hands of the SMEs impacted by transformation and whose buy-in and knowledge are pivotal to success. By upskilling them with the right tools, you are building in-house capabilities for the next phase of digital transformation instead of outsourcing the clean up to internal IT teams or third parties.

Further, as we have witnessed across our customer base in recent years, companies do not want to limit data and AI initiatives to any one business unit or team. By making the use of data and analytics an everyday practice (that isn't isolated to any one team), organizations will not only be able to deploy more models to production and drive high-value business outcomes, but they will be able to launch self-service analytics (SSA) as they scale AI. To truly transform an organization, leaders should consider SSA a global program so that data and analytics are not used in isolation but rather as a means to evoke systemization and efficiency.

By using one platform to go from data to insights, various teams and user profiles can access data and contribute to the final product. A parallel can be drawn to digital transformation here, because without bringing in the right teams from the get-go, digital transformation leaders risk spending more to deliver a worse outcome (at a slower pace) by overcomplicating the solution to the problem.

When setting up any self-service data initiative, **GE Aviation** always works with business lines to make sure the needs of the business are incorporated into the project. To ensure ongoing success, they get even more people involved. They combine both grassroots efforts within the business and executive buy-in and support to increase self-service program visibility, exposure, and word-of-mouth advocacy. This exemplifies the correct placing of customer and employee needs as the actual goal of transformation, not technology.

Conclusion

According to McKinsey, “digital transformations require cultural and behavioral changes such as calculated risk taking, increased collaboration, and customer centricity.” As we’ve alluded to, digital transformation comes down to enacting fundamental, organization-wide change and identifying a plan to both derisk their data program and simultaneously “do data right” (whether that looks like the basics or more complex AI initiatives, Dataiku can help). But, just like AI transformation, executives embarking on a digital transformation journey should:

Never be limited to technology alone — people and processes are a critical part of the story (i.e., without getting everyone in the enterprise involved and/or under-communicating how each role will be impacted will, over time, thwart any new technologies from reaching their full potential)

Align with the company’s near- and long-term business objectives (i.e., implement a plan — including budget and ROI benchmarks — for driving and tracking value from digital transformation projects)

Take a close look at the existing technology strategy and infrastructure (i.e., to see where the gaps lie and identify a project priority within the digital transformation effort)

Always have a proper program (i.e., with the right operating model that fits the organization’s composition)

As we’ve seen here, there’s no denying that organizations struggle with digital transformation for a myriad of reasons. We hope that the best practices outlined here (what strategies to retain and which ones to throw to the wayside) highlights how digital transformation and Everyday AI help each other avoid failure and go faster for greater ROI.

About the Author

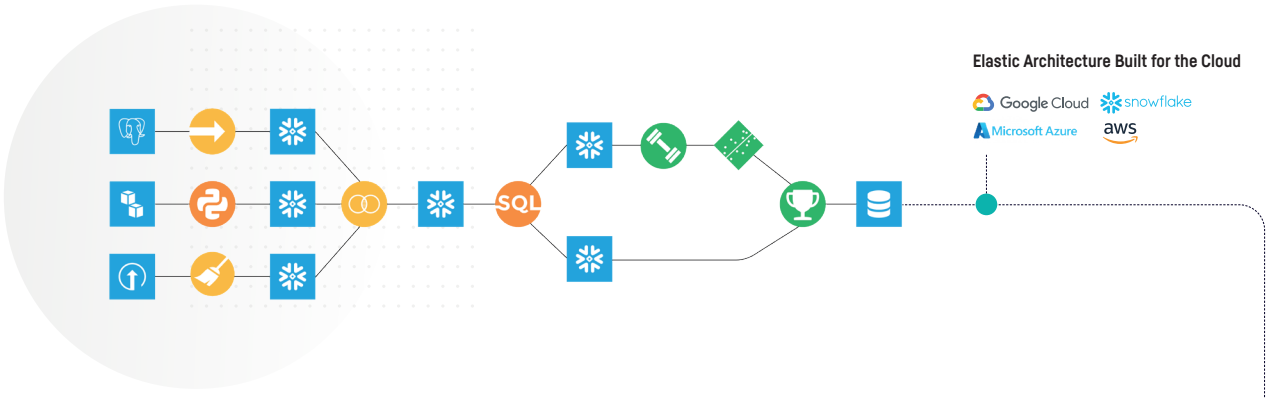
Shaun McGirr

Shaun McGirr is a data leader with experience across official statistics, academia, consulting, and data science in a large automotive services company. He recently achieved minor stardom in a documentary “Data Science Pioneers,” coining the phrase “Things that happen 35% of the time, happen ALL the time” to explain why quite likely outcomes are often dismissed out of hand.

Shaun believes the toughest part of doing data well is finding the right questions and ensuring the answers will actually push a lever to change the world, a theme developed further in his podcast Half Stack Data Science. At Dataiku, he helps customers and colleagues identify and articulate the value of putting data science in the hands of everyone.

[7] *https://www.mckinsey.com/business-functions/organization/our-insights/unlocking-success-in-digital-transformations*

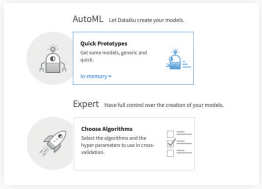
Everyday AI, Extraordinary People



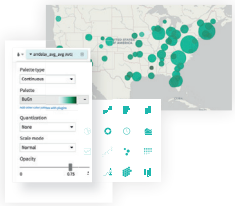
Elastic Architecture Built for the Cloud

Google Cloud snowflake
Microsoft Azure aws

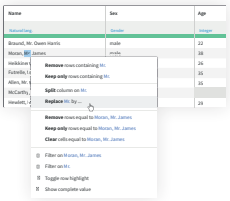
Machine Learning



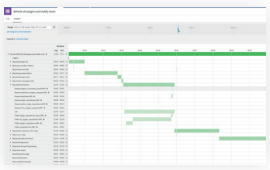
Visualization



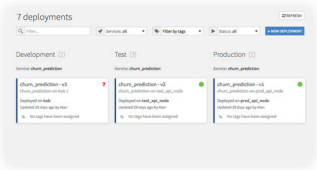
Data Preparation



DataOps



Governance & MLOps



Applications

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.

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