Six Steps to Chief Data and Analytics Officer Success

Ten of the World's Top Data-Focused Executives Share Their Advice for Overcoming Challenges Throughout the Data Strategy Development and Execution Process

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Contents

Click below to navigate

Executive Summary

The life of a Chief Data and Analytics Officer is wrought with challenges. But while each executive's strategy is unique to their business, the obstacles they face while delivering that strategy are not.

Based on in-depth interviews with 11 of the world's top data-focused executives, this special report highlights the six common challenges these business leaders typically face. Then, it reveals how our contributors are overcoming them to achieve their strategic goals.

First, we outline a 'questions first' approach that helped Morgan Stanley's Russell Barker align his strategy with corporate goals and reveal why Sallie Mae's Wendy Zhang believes setting expectations about what AI can do is crucial for data strategy success.

Next, three top executives share their perspectives on how to balance long-term investments with driving short-term value and VW's Gabriele Compostella PhD shares his experiences of how data-focused leaders' priorities evolve as they execute their strategies.

Third, Levi Strauss & Co's Katia Walsh PhD outlines why data-focused executives must be master communicators and Banorte's Jose A Murillo reveals the role data literacy workshops are playing in bolstering executive support for the bank's data-driven business transformation.

Next, AI-focused leaders including RappiBank's Dr Alejandro Bahnsen outline the different job roles and technical proficiencies data teams typically need at each stage of data and analytics maturity.

Fifth, executives including Citi's Dan Costanza and Theory+Practice's Rogayeh Tabrizi PhD outline their approaches to overcoming the technical and human challenges enterprises face when putting data-driven solutions into production.

Finally, our contributors explore how executives at legacy organizations can build on their early successes and drive enterprise-wide business transformations. ■

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Defining a Strategic 'North Star'

KEY FINDING

A 'questions first' approach that starts with consulting with business stakeholders to identify their most pressing challenges and ensure alignment with corporate goals can set a data strategy up for success

For Disney, it's "to be one of the world's leading producers and providers of entertainment and information". For Tesla, it's "to accelerate the world's transition to sustainable energy". For Levi Strauss & Co, it's "to be the world's best apparel company, famous for our brands and values".

Every brand has a mission that defines where it's heading and helps shape its corporate strategy – and a good data and analytics strategy needs the same kind of strategic 'north star'.

In fact, in today's digital-first business landscape, a company's digital, data and AI strategies are often critical to the success of its corporate strategy. Since they are so strongly connected, ensuring alignment is key.

"You cannot separate data from digital and you cannot separate data from AI," says Katia Walsh PhD, Chief Global Strategy and AI Officer at Levi Strauss & Co. "And you cannot separate this integrated digital, data and AI capability from the vision for the whole company."

"The vision for digital, data and AI has to be in service of the strategic vision for the enterprise," she adds. "What drives success in this transformation is focusing digital, data and AI on the overall strategic problems to solve and opportunities to seize for the company." ▶

"It requires people to really look at a lot of your business processes and to think about different possibilities"

Wendy Zhang
Director of Governance and Data Strategy, Sallie Mae

AI Success Starts with Asking the Right Questions

For Wendy Zhang, Director of Governance and Data Strategy at consumer bank Sallie Mae, the primary cause of misalignment between a company's corporate and data strategies is a poor understanding of what data-driven technologies such as AI can do.

"There are a lot of different reasons [AI projects fail]," she says. "But it all starts with a lack of fundamental understanding of AI, what it is and what it can or cannot do."

Zhang warns businesses against doing AI for the sake of AI. She argues that companies must start with the business challenges they need to solve before considering how AI might be applied to solve them.

Rogayeh Tabrizi PhD, Co-Founder and CEO at AI-focused consultancy Theory+Practice, agrees that this is the first step data-focused executives should take when developing their strategies.

"Developing a successful data, digital or AI strategy always starts with asking the right questions," Dr Tabrizi says. "It's the only way to challenge pre-existing assumptions and ensure data-focused executives truly understand the business challenges they are facing."

Once an AI-focused executive has identified projects that could benefit from data-driven technologies, they must consider what they need to deliver these projects successfully. This includes assessing what resources, funding, datasets and support they'll need for each project.

"It's really got to become the company's DNA," Zhang adds. "It requires people to really look at a lot of your business processes and to think about different possibilities, and that requires mindset change."

"It's not so much working and doing the same things over and over and just automating a few things and having AI on the side," she concludes. "If you really want to get massive benefits, you have to be able to experiment and fail and also incorporate that into your core business." ▶

Consulting with Stakeholders to Discover their Needs

Morgan Stanley has a huge number of databases in many different types and formats. Meanwhile, users of data across the company have very different needs, depending on their role. For example, pricing analytics, client analysis and risk reports all require different datasets and different kinds of analysis to help users achieve their desired business outcomes.

Russell Barker, Global Head of FID Data Strategies at Morgan Stanley, says his top challenge is the sheer scope of the firm's 'digital transformation' project. This makes it hard to design a single framework that can ingest all the necessary data and serve all these needs.

"We spent a long time talking to people about their data uses and issues, all the way from senior management to the individual salespeople"

Russell Barker
Global Head of FID Data Strategies, Morgan Stanley

"We wanted to build a single consistent framework across the whole department, encompassing all these diverse data sources that could be used to satisfy the needs of the entire user base," Barker recalls.

To overcome this challenge, Barker spent a great deal of time consulting with business stakeholders about their data use. In the process, he identified a range of common needs and pain points.

"We spent a long time talking to people about their data uses and issues, all the way from senior management to the individual salespeople, traders, risk managers and our partners in finance," Barker says. "Doing this, we identified some common themes."

First, Barker found that users needed data discovery tools so they could know what data was available and which sources to use.

Access to data also needed to be simplified, as some data was kept in complex systems that required specialist knowledge to navigate.

Barker's team also needed to ensure the data sources analyses were based on were high quality, to support trust in data-driven insights.

Finally, data controls were needed to ensure staff knew what they could do with data and who they were allowed to share it with.

These four priorities became the strategic 'north star' that guided Barker's data and analytics investment roadmap. ■

Building a Data and Analytics Roadmap

KEY FINDING

Data-focused executives must develop, iterate and maintain investment roadmaps that deliver value in the short-term while building toward a long-term vision

Transforming a business is like steering a ship at sea. The larger the vessel, the longer it will take to turn and the more energy it will need to exert to change its course.

The challenge for data-focused executives is building excitement and enthusiasm around their plans and sustaining their enterprise's commitment to becoming data-driven long enough to realize their visions.

In practice, this means developing an investment roadmap that balances building for the future with projects that will deliver value in the short-term.

"We started with some high value areas," recalls Glenn Hofmann, Chief Analytics Officer at New York Life. "So, areas where we could get engagement and display the value of these efforts."

For simplicity and transparency, some executives recommend taking a 'principles-based' approach that specifies objectives and 'key results' alongside a draft roadmap on a single page. The US Department of Defense's data strategy opens with an example of this that businesses in all sectors can draw inspiration from.

Of course, focusing purely on short-term projects should not come at the expense of achieving a company's long-term vision for data, analytics and AI. So, data-focused executives must set expectations and secure buy-in to dedicate a portion of their teams' time to long-term projects.

"Don't set expectations that first you're going to build and then you will move on to value delivery and then transformation," cautions Katia Walsh PhD, Chief Global Strategy and AI Officer at Levi Strauss & Co. "You must deliver value immediately, as you also build a new capability and at the same time transform the company — all of it simultaneously." ▶

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Katia Walsh PhD
Chief Global Strategy and AI Officer, Levi Strauss & Co

How Data Strategies Evolve Over Time

Volkswagen's data and analytics strategy has evolved over time in a way that will be familiar to experienced data-focused executives. Its story underscores how the types of investment a data and analytics strategy prioritizes can evolve over time.

The company founded its Data Lab in 2015 as part of a new IT strategy to create a business unit focused on non-traditional IT solutions to business problems and catalyze data-driven innovation across the company.

Gabriele Compostella PhD, CTO at Volkswagen Data Lab, says the lab's priorities since its genesis can be grouped into three phases: 1) experimentation, 2) proof of concept work and 3) product orientation.

"At the very beginning, it was a lot of exploration work," he recalls. "We were actively engaging in conversations with different business departments, within different areas."

He adds: "[But] we were also doing our own research and our own technical scouting to try to find out solutions we thought could be applied to multiple departments at the same time."

Before Dr Compostella joined the VW, it was common for the lab to identify potentially valuable use cases and then outsource the development and implementation of any desired data-driven products or solutions.

But as the lab's list of potentially valuable projects grew longer and the in-house team grew, the focus shifted from experimentation to implementing those projects as minimum viable products (MVPs).

These MVPs proved so popular that the lab's focus soon changed again – this time from development to the implementation of data-driven solutions.

This kind of evolution is extremely common. It's why so many data-focused executives find their roles evolve over time and their priorities naturally change as their data strategies become more advanced. This evolution must be factored into an enterprise's data and analytics roadmap. ▶

"Targeting projects that deliver benefits across business units can help to combat siloed mindsets and thinking"

Rogayeh Tabrizi PhD
Co-Founder and CEO, Theory+Practice

Balancing Data Strategy Consistency with Flexibility

For organizations with thousands of employees, getting everyone pulling in the same direction on data strategy can be a big challenge. Orchestrating a group-wide vision of the future requires a delicate balance of consistency, transparency and flexibility.

On the one hand, executives must translate the goals and phases of their data strategies into terms business stakeholders can easily grasp. On the other, it's important to have a clear and consistent message that everyone in the enterprise can galvanize around.

"Translating the technical into the non-technical and developing a plan that the whole business can get behind can be tough," says Rogayeh Tabrizi PhD, Co-Founder and CEO at Theory+Practice. "Prioritizing projects that help lots of groups at once can be a powerful thing, here."

"Think about how you can kill lots of birds with just a few stones," she recommends. "Targeting projects that deliver benefits across business units can help to combat siloed mindsets and thinking."

Executives should also allow data-focused teams embedded in different units across an organization the flexibility to work toward key strategic goals in their own ways. It's important to trust their domain expertise and knowledge of how their businesses operate.

But while there's a need for flexibility around specific data and analytics projects, the overall vision behind a data strategy must remain consistent.

"You can't come up with a bigger, better goal every 10 minutes," says Dr Tabrizi. "Getting company stakeholders on-board with your plans takes time. Moving the goalposts unnecessarily risks sending you back to square one with your more legacy-minded colleagues."

Of course, it's important for executives to revisit their strategies regularly to realign them with changing business priorities.

But provided a company's data strategy has a clear 'north star', it should be possible to make tweaks in the short- and medium-term while communicating a consistent long-term vision to the wider business. ■

> *"Getting company stakeholders on-board with your plans takes time. Moving the goalposts unnecessarily risks sending you back to square one"*

Rogayeh Tabrizi PhD
Co-Founder and CEO, Theory+Practice

Securing Executive-Level Data Strategy Buy-In

KEY FINDING

Data leaders may need to address concerns about possible business disruption, the complexity of their plans or the costs involved to secure the executive sponsorship they need to deliver their strategies

Two things that are absolutely vital to the success of any data-driven business transformation are 1) budget and 2) a mandate to deliver the company's data strategy from the C-suite.

Data leaders who attempt to operate without either of these things often complain that their ability to drive real change has been hamstrung.

Ultimately, data leaders must secure executive sponsorship if they are to stand any chance of delivering their strategies successfully. They must find a way to engage senior company stakeholders and get them on-side.

"Executives that don't have support from their C-suite usually haven't done a good job of articulating their strategy's value prop to their executive team," says Rogayeh Tabrizi, Co-Founder and CEO Theory+Practice.

"This might be because they don't have a direct line to their CEO," she continues. "But it's usually that they don't have a good articulation of their value prop that translates the technical into the non-technical and expresses the business proposition behind their strategy as a dollar amount." ▶

"You have to be an educator. You have to be a strategist. And you have to be an implementer. You have to do all these things at once"

Katia Walsh PhD
Chief Global Strategy and AI Officer, Levi Strauss & Co

Communicating Data Strategy Value to Executives

Katia Walsh PhD, Chief Global Strategy and AI Officer at Levi Strauss & Co, agrees that collaboration, stakeholder management, communication and influencing skills are vital tools in a digital, data and AI leader's arsenal.

"There's no way you can do this alone," she says. "You have to be an educator. You have to be a strategist. And you have to be an implementer. You have to do all these things at once."

She adds: "Your own skills have to be multi-dimensional to make sure you get the buy-in and support you need and, more importantly, mobilize an entire company to work toward the same goals for the enterprise."

"By tying our strategy to some very concrete deliverables, we managed to frame it not as invasive change but as a key component of the wider business strategy"

Russell Barker
Global Head of FID Data Strategies, Morgan Stanley

Russell Barker, Global Head of FID Data Strategies at Morgan Stanley, has first-hand experience of partnering with company executives to get them to see the value of his team's data strategy.

He says executives can push back against elements of a data strategy if they're uncertain about possible business disruption, the complexity of the proposed project or the costs involved.

For Barker, addressing this challenge is about starting with an executive's vision for their business or business unit and working with them to develop a plan that reflects this vision. Showing executives how the data strategy supports their business plans is critical.

"The best way to meet these challenges is to engage with stakeholders as early as possible," he explains. "Get them to feel not just a sense of ownership, but also a genuine excitement about the project."

"We started by identifying several key areas where they wanted to grow the business," he adds. "We worked with people in those areas to find out how [better data access] could help grow the business, and we based our data journey around these key business deliverables."

He concludes: "By tying our strategy to some very concrete deliverables, we managed to frame it not as invasive change but as a key component of the wider business strategy." ▶

The Need for Executive-Level Data Literacy

Banorte Chief Analytics Officer Jose A Murillo's beliefs around the need for data literacy in staff outside his teams have evolved in recent months.

"In some sense, I never thought it was so important to have data literacy across the company, because we were advancing and we were going at a really fast pace," he recalls. "I thought it was enough if you have a center of excellence that knows what's going on."

However, as Murillo and his team have expanded their ambitions and set their sights on organization-wide business transformation, he has come to realize that this approach is no longer efficient.

For one thing, he realized that a lack of understanding around key ideas and concepts was deterring some executives within the bank from investing in or adopting new data-driven technologies.

To address this challenge, Murillo set up a data science workshop for 70 of the company's senior leaders during the first wave of the pandemic.

"That's something that was a game changer for Banorte," he says. "Everybody was in some sense singing from the same hymn book and everybody understood concepts like the customer lifetime value, machine learning and why we're using those techniques."

This workshop proved so successful, he has since delivered follow-up workshops to further-develop the knowledge of his colleagues.

He is also planning future workshops on topics that will be crucial to the efficient scaling of data-driven solutions across the bank, such as how to build a 'minimum viable product' and the concept of 'continuous iteration, continuous delivery' (CICD).

Dr Tabrizi agrees that ensuring company executives grasp key strategic concepts is key. Those who are unclear on what AI can do, or what delivering an AI project looks like in practice, will have reservations about why they should invest in advanced data solutions.

"That can be a very real barrier to adoption," she concludes: "It really is about campaigning. But you have to be subtle about it. I really believe it's the small evolutions that will add up to a revolution." ■

"I really believe it's the small evolutions that will add up to a revolution"

Rogayeh Tabrizi PhD
Co-Founder and CEO, Theory+Practice

Building High Performance Data Science Teams

KEY FINDING

Training data scientists in 'soft skills' and partnering them with subject matter experts who understand the business is an important first step. But the breadth of skills a data function needs will grow over time

E nterprises with limited experience of working with data scientists can struggle to find candidates with the skills and experience to thrive in a business environment. Meanwhile, data-focused professionals who started their careers in business environments may lack the technical know-how to stay abreast of the latest techniques.

This may be why the question of how to secure the right data and analytics talent has been a mainstay of Corinium's global Chief Data and Analytics Officer conferences for years.

For many enterprises, the answer lays in training data and analytics staff in soft skills such as communication and partnering them with subject matter experts who understand the business in-depth.

"Don't quite shy away from hiring from academia," recommends Rogayeh Tabrizi PhD, Co-Founder and CEO at Theory+Practice. "If you create a training path and be patient with people who are coming out of academia, the odds are you're going to be able to build a very successful team." ▶

Pair Innovative Thinkers with Domain Experts

Experimenting with technologies to find valuable use cases is key during the early stages of a data-driven business transformation.

In addition to having data management and engineering specialists to put their core data infrastructure and governance frameworks in place, enterprises need staff dedicated to identifying the best ways to harness data to drive business value.

Some companies will enlist the help of outside experts or consultancies to catalyze, steer and/or accelerate this experimentation process. Others prefer to build in-house teams staffed with visionary thinkers. This was certainly the case at Volkswagen's Data Lab.

"Experience diversity is important. But you have to really make sure that the culture encourages cross-pollination. We call this Intellectual diversity"

Rogayeh Tabrizi PhD
Co-Founder and CEO, Theory+Practice

"We needed people with a wide competency range, possibly with a lot of experience in different fields, with lots of new ideas," recalls Dr Gabriele Compostella, CTO at Volkswagen Data Lab.

Dr Compostella says the lab started by hiring skilled data scientists and pairing them with business admin experts to help guide their research and ensure the lab's research focused on the right things.

This approach makes sense for companies that want to use data in new and unique ways to secure a competitive advantage over their competitors.

Dr Alejandro Bahnsen, Chief AI Officer at RappiBank, says, companies that just want to ensure they're using the latest technologies to drive business efficiencies have less need for staff with data science PhDs.

"Everyone will say they want to innovate with data, but what does that mean?" he says. "Companies that are using analytics as a way to improve their processes; they don't really need to innovate. They just need to figure out what is already out there that fits their needs."

Dr Bahnsen predicts that companies will eventually start to differentiate between 'machine learning researchers' and 'data scientists' to account for the different roles different companies need in-house when experimenting with data-driven technologies. ▶

Adding More Technical Data Team Roles

Once a company has identified the areas of its organizations that can benefit from data-driven technologies, its data teams' priorities will typically shift from experimentation to solution development.

Developing analytics or AI-driven solutions efficiently requires additional resources, and some enterprises may wish to bring in external experts to oversee the implementation of their first data science initiatives.

It's common to see data and analytics teams grow as they start to lay the foundations for efficient in-house development capabilities. For example, VW's Data Lab currently has around 90 staff members.

"The lab grew by adding more profiles," Dr Compostella says. "We hired people who are more focused on application development. So, software engineers, software developers, software architects and so on. We [also] hired people who are responsible for putting the ideas we have into operations. So, system engineers, solution architects and cloud engineers."

"We now are trying to turn into a product development factory," he concludes. "So, we had to complement our data scientists' capacities with these technical roles that were not present before."

As more companies solve their application and model development challenges, we are also seeing investment in new functions dedicated to monitoring and maintaining models in production.

When we surveyed 100 data-focused executives from 100 of the US and Europe's largest financial services companies for our State of ModelOps 2021 research, 90% of respondents said they will have a dedicated budget for model operations within 12 months.

What's more, 60% of respondents said they already have staff in dedicated 'model operator' roles, who are responsible for the ongoing operations and monitoring of models in production.

"From a governance and maintenance perspective, our team includes professionals specifically focused on post-deployment monitoring and reporting," says Glenn Hofmann, Chief Analytics Officer at New York Life. ▶

"Our team includes professionals specifically focused on post-deployment monitoring and reporting"

Glenn Hofmann
Chief Analytics Officer, New York Life

Partnering with Business Unit Stakeholders

Enterprises that are working to industrialize their data and analytics functions typically also find that they must engage stakeholders from across their businesses in a formalized and structured way.

In the early days of a data and analytics strategy, teams often operate inside a 'center of excellence', independently from the rest of the business.

But as demand for data-driven products and solutions grows, executives often find it beneficial to establish multidisciplinary teams that serve specific business units. These teams usually include business stakeholders who act as a

"We have to make sure that we have the right contact person in the different business areas so that we offer them our help"

Gabriele Compostella PhD
Chief Technology Officer, Volkswagen Data Lab

bridge between data teams and the business units they serve.

"We now have teams that are focusing on specific business areas," says Dr Compostella. "We have to make sure that we have the

right contact person in the different business areas so that we offer them our help."

It's important not to undergo this evolution prematurely. Inviting business stakeholders with a limited understanding of data scientific principles to steer data team priorities risks stifling those teams' ability to innovate.

But Dr Compostella argues that building strong bridges between the data lab and the business units it serves helps to drive awareness of the work his teams are doing.

He concludes: "We also have to market ourselves to make sure that our colleagues understand what is possible with data science and AI, and how our unit can help them implement innovative solutions in their areas."

"That's what you focus on as a digital, data and AI leader," says Katia Walsh PhD, Chief Global Strategy and AI Officer at Levi Strauss & Co. "You partner very closely with your stakeholders and tackle the top priorities and opportunities that may keep us up at night and, even better, define our future." ∎

Implementing Data-Driven Solutions Successfully

KEY FINDING

Challenges around getting models or products into production efficiently, equipping staff with the skills to use them and ensuring staff want to use them can derail data product implementation

Implementing data-driven solutions is a very different beast from identifying potentially valuable projects and delivering proofs of concept (POCs) to show that those ideas have merit.

Part of the challenge is around ensuring projects can be scaled to all parts of the enterprise that may benefit from them. Overcoming this challenge is about building strong bridges between teams that innovate with data and the rest of the business.

"Let's focus on effectiveness," says Rogayeh Tabrizi PhD, Co-Founder and CEO at Theory+Practice. "How do you build systems that are generalizable enough, flexible enough and scalable enough that you don't have to keep repeating everything again and again?"

"You have to think about the entire value chain," she adds. "So, all different pieces that are going potentially to benefit from each project."

Our research has uncovered three additional challenges data-focused executives must grapple with as they progress to this stage of the plans laid out in their data strategies. These include 1) getting models or products into production efficiently, 2) equipping staff with the skills to use them and 3) ensuring staff genuinely want to use them. ▶

Implementing Data-Driven Solutions Efficiently

Deploying and scaling data-driven products across an enterprise is hard. Experienced data leaders will often comment on how it's one thing to deploy a proof-of-concept on a Jupyter Notebook and quite another to get that model running in a live production environment.

Streamlining data team processes is key as companies advance down the path to data maturity. Rising demand for data-driven solutions can quickly create a backlog of projects.

Given that business needs evolve and change over time, it's important for an enterprise's data and analytics functions to be able to deliver projects relatively quickly. So, it's common for enterprises to invest in new staff roles and tooling during this phase of their data strategy executions.

"The organization of the data lab has changed," confirms Gabriele Compostella PhD, CTO at Volkswagen Data Lab. "We are trying to move slowly and gradually to a new business model where we license our products to the internal customers that need them."

VW's Data Lab was originally organized as if it was a consulting company. The team would work on 'projects', identify a solution to the problem at hand and consult with the business on how to implement it. Then, VW would generally hire an outside company to do the implementation.

"Now, we are organized around products," Dr Compostella explains. "We have product teams that focus on a specific solution that we are building, and we have our capacity or the skillsets organized around that."

Companies that are still at the beginning of their data and analytics journeys may consider starting with the internal 'consultancy-style' approach similar to that of VW Data Labs.

However, bringing in outside experts is one way to build momentum around these projects and start delivering value quickly. Leveraging external consultancies to accelerate the pace of innovation and catalyze investment in a company's internal data and analytics capabilities. The key here is to ensure that there is a transfer of knowledge from outside experts to internal teams. Companies must build capability, not dependency. ▶

> ## "We are trying to move slowly and gradually to a new business model where we license our products to the internal customers that need them"

Gabriele Compostella PhD
CTO, Volkswagen Data Lab

Targeting Company-Wide Data Product Enablement

In parallel with solving technical challenges around developing and deploying data-driven systems, enterprises must make sure staff have sufficient data fluency to use new systems correctly.

This is particularly true self-service analytics tools or systems that will be used by many people across an organization.

As such, many enterprises have launched 'analytics academies' or similar programs geared toward equipping staff with the skills they need to work with data and make the right decisions with data-driven insights.

For example, WPP's Global Head of Data and AI, Di Mayze, predicts that advances in analytics self-

"We really try to develop a white glove approach where we're really closely integrating with people and driving direct usage"

Dan Costanza
Chief Data Scientist, Capital Markets and Advisory, Citi

service and automation will create a new class of 'citizen data analysts'. To prepare for this, WPP is scaling up its analytics university to train thousands of its staff members.

For data professionals, such initiatives are an opportunity to hone soft skills and become better at communicating ideas to non-specialists. But for the wider organization, they're essential for ensuring staff can transition successfully to more data-driven ways of working.

Adding data fluency requirements into job specs and incorporating basic data skills training into the onboarding or new hires is also helping many enterprises create data savvy workforces.

However, Theory+Practice Co-Founder and CEO Rogayeh Tabrizi PhD warns against taking a 'one size fits all' approach.

Different stakeholder groups can have very different data needs and require very different skillsets depending on their roles. So, rather than rolling out generic courses or certifications, enterprises may benefit from tailoring bespoke training and enablement projects for each stakeholder group.

"The question is, what is the desired behavior of my end user that I want to move them toward?" says Rogayeh Tabrizi PhD, Co-Founder and CEO at Theory+Practice. "It's really that kind of training that is needed." ▶

Managing Change to Drive End-User Adoption

Data-focused leaders place a great deal of emphasis on the importance of developing the right data-driven solutions and arming users with the data literacy they will need to use them.

But Dan Costanza, Chief Data Scientist of and a Managing Director in Citi's Banking, Capital Markets and Advisory business, cautions that this alone isn't enough to drive adoption of these solutions. Staff still have to genuinely want to use them.

"Giving everyone the ability to use and think with data and the tools to do that is not the same as getting people to actually do it," says Costanza.

Russell Barker, Global Head of FID Data Strategies at Morgan Stanley, agrees that staff concerns about disruption to their day-to-day routines can create inertia around adopting new data-driven tools. He says working closely with trading floor staff helped address this challenge.

Ultimately, this final piece of the adoption puzzle comes down to trust. When staff trust new tools to help them do their jobs better or more easily, they will want to use them.

On the technical side, this means developing products that meet pressing business needs, are easy to use and function as intended.

But it also means making judgement calls about how 'bought in' different user groups are to the need for adopting new technologies and investing in change management initiatives to get the wider business on side.

Costanza concludes: "That's why we so heavily focus on individual adopters over an 'if you build it, they will come' kind of approach."

He adds: "Instead of dumping a bunch of interesting datasets and tools into people's hands and saying, 'Go', we really try to develop a white glove approach where we're really closely integrating with people and driving direct usage of that data." ∎

"Our strategy of talking to a lot of individual stakeholders really paid off. They could see that the data strategy wasn't an abstract policy being forced upon them"

Russell Barker
Global Head of FID Data Strategies, Morgan Stanley

Creating a Truly Data-Led Organization

KEY FINDING

Enterprises must provide data-focused teams with space to innovate and develop new business models. Their data-focused executives must then secure buy-in to scale new ways of working across the business

The greatest advantage the disruptive start-ups of the world have over legacy enterprises is that they were built with data in mind.

To establish data as an innovation driver at a company with a history of 'legacy thinking', data-focused executives must set their sites on total organizational change.

As Theory+Practice Co-Founder and CEO Rogayeh Tabrizi PhD says, this journey must start with ensuring teams don't get sucked into legacy activities such as reporting. The beauty of the 'data lab' or 'center of excellence' model is that it helps teams carve our time for innovation.

"Executives have to really protect their teams," Dr Tabrizi says. "On one hand, you really do need to expose your team to the bigger business landscape. But once that piece is done, you have to be able to close the doors so your team can focus on delivering that innovation."

However, once new technologies have been successfully piloted in some business units or regions, the challenge becomes scaling these successes to drive total organizational change. ▶

"You have to be able to close the doors so your team can focus on delivering that innovation"

Rogayeh Tabrizi PhD
Co-Founder and CEO, Theory+Practice

Establishing a Culture of Experimentation

Securing executive support for experimentation is a crucial first step on the path to becoming a data-led organization. Company stakeholders must understand that testing new innovations against old ways of doing things is the key to discovering opportunities to unlock greater ROI.

"One has to sell the concept that conducting an experiment often requires a departure from a team's traditional way of operating and a certain amount of reprioritization," notes Glenn Hofmann, Chief Analytics Officer at New York Life. "Functional groups have to be comfortable with the tradeoff as there is the potential for takeaways that ultimately make the business better."

"One has to sell the concept that conducting an experiment often requires a departure from a team's traditional way of operating and a certain amount of reprioritization"

Glenn Hofmann
Chief Analytics Officer, New York Life

Banorte Chief Analytics Officer Jose A Murillo cites establishing a culture of experimentation across the bank as one of his key achievements of 2021.

He credits a series of data literacy workshops he has run with the bank's senior leaders throughout the pandemic with providing executives with fluency around key concepts such as 'control groups' and the scientific method. This has helped build enthusiasm for experimentation.

"We're running about three interventions per week," he says. "Now we've gone to scale, you can do meta-analyses on all the different interventions and you can really understand, with a broader perspective, what works and where you should be investing in transformation."

However, Murillo feels there's still work to be done to truly embed a culture of experimentation into Banorte's DNA.

For example, work has to be done to educate his colleagues about the need to deliver projects in an agile way, so value can be achieved in the short-term and perfection can be worked toward iteratively.

To address this challenge, he is planning a new workshop around how to build a minimum viable product (MVP) and impart the need for speed and agility during this experimentation phase to Banorte's senior leadership. ▶

Spreading Data-Driven Business Culture at Citi

Dan Costanza became Citi's Managing Director for Capital Markets and Advisory in December 2020. Before that, he was the business unit's Chief Data Scientist, and has been working to build a data-driven business culture and drive the adoption of data-driven tools in the company since 2017.

"On the investment banking side, it's gone from not having [a data strategy] to now having one," he says. "We've gone from having a very close relationship with a small number of people of products now into an area where we're covering a really broad swathe of the bank."

He adds: "I'm working across a bunch of different products and really have created some pretty deep roots in a pretty broad spectrum of areas."

As Costanza expands the scope of his data strategy, he's sticking to the same approach that brought him success at the start of his data strategy journey at the company.

Costanza explains: "We find our early adopters. We try and drive value within their initiatives. And we then take those successes and show them to their peers and look to have their peers be able to see

that tangible success and have a clear idea of what they want to replicate."

This journey started in M&A. But Citi is now applying this approach across all its different

product groups, from debt and equity to capital markets, the corporate bank and beyond.

Costanza concludes: "We've now also established a team over in Europe where we're looking to take what was a sort of tactical utilization of our content here and there into a more strategic push."

Generating concrete examples of success that show staff the benefits of data-driven solutions has been key to Costanza's success to date. This approach has proven instrumental as the driver for spreading data-driven ways of working across the business. ▶

> *"We find our early adopters. We try and drive value within their initiatives. And we then take those successes and show them to their peers"*

Dan Costanza
Chief Data Scientist, Capital Markets and Advisory, Citi

Reaching the Data-First 'Tipping Point'

Being a data-first organization has never been more vital. The past 20 years of digital transformation were about using data in a static form. But today's cutting-edge enterprises are using dynamic data to optimize business performance in near-real-time.

Companies that aren't taking advantage of these opportunities risk losing ground to competitors and disruptive start-ups in all verticals.

Success in this environment means truly committing to data-driven business transformation, and businesses are waking up to the fact that data-focused executives must lead these transformations. Gartner's sixth annual CDO survey shows that 72% of data-focused executives are either leading or heavily involved

72%

The proportion of Chief Data Officers that are either leading or heavily involved with their organizations' digital transformations

Source: Gartner, 2021

with their organizations' digital transformations.

But even for enterprises that are committed to change, the road ahead is fraught with obstacles.

"For many enterprises, change happens slowly and one step at a time," says Dr Tabrizi. "Executives with the full backing of their CEOs, a strong mandate and ample budget

are certainly the most likely to drive rapid change. But not everyone is lucky enough to be in that position."

Regardless of budget size, there are many ways to take steps toward becoming a data-driven company. Following the examples of the 11 executives laid out in this report will help executives to anticipate and navigate key challenges as they progress through their journeys.

But there will always be some factors outside of the CDAO's control. And the larger the enterprise, the longer it will generally take to move away from old fashioned ways of doing things.

Enterprises that are unsure where to begin may wish to enlist outside help to hit the ground running with their data strategies. But the most important thing for any organization with data-first ambitions is to start – and to make a start now. ■

Key Takeaways

1 Define a Strategic 'North Star'

A 'questions first' approach that starts with consulting with staff to identify their most pressing challenges and ensure alignment with corporate goals can set a data strategy up for success.

2 Build a Data and Analytics Roadmap

Data-focused executives must develop, iterate and maintain investment roadmaps that deliver value in the short-term while building toward a long-term vision.

3 Secure Executive-Level Data Strategy Buy-In

Data leaders may need to address concerns about possible business disruption, the complexity of their plans or the costs involved to secure executive sponsorship for their strategies.

4 Build High Performance Data Science Teams

Training data scientists in 'soft skills' and partnering them with subject matter experts who understand the business is important. But the breadth of skills a data function needs will grow over time.

5 Efficiency is Key When Implementing Solutions

Challenges around getting models or products into production efficiently, equipping staff with the skills to use them and ensuring staff want to use them can derail data product implementation.

6 Create a Truly Data-Led Organization Incrementally

Enterprises must provide data-focused teams with space to innovate and develop new business models. Data-focused executives must then secure buy-in to scale them across the business.

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About the Editor

Solomon Radley is an experienced editor and reporter with a deep understanding of the data, analytics and CX space and close relationships with many of the sectors' most prominent C-level executives.

He works with data and analytics, learning and development and customer experience leaders to champion new innovations and highlight how the world's most forward-thinking brands are using data to fuel their digital transformations.

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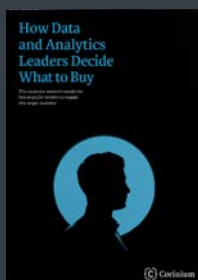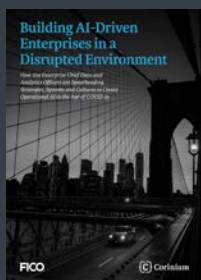
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