

The Missing Workforce for the AI Age: Integrating Data & AI Expertise Into Business Operations

Laurel Consulting White Paper

Authored by Hong Gui

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Executive Summary

As Artificial Intelligence (AI) advances rapidly, organizations have access to increasingly powerful data & AI capabilities. Yet translating those capabilities into meaningful business value remains challenging. Business teams continue to need more data, insights, and AI to improve operations, while technical teams face growing project queues and expanding data & AI product inventories to maintain. At the same time, valuable functionality already built into application systems may remain underutilized.

These challenges are often interpreted as technology or resource problems. Organizations respond by purchasing more tools, expanding technical teams, or changing where data & AI professionals are placed. But a more fundamental problem lies in the conventional separation between business operations and technical expertise. Business professionals understand the operational context but often lack sufficient data & AI expertise; data & AI professionals possess deep technical expertise but may work at a distance from business operations. Centralized, distributed, and hub-spoke staffing models organize these professionals differently, but structure alone does not create the integrated capability that the AI age increasingly requires.

This white paper proposes a workforce capability designed to fill that gap: **Domain Data & AI Experts (DDAIEs)**. DDAIEs possess the combination of knowledge of a business domain, data & AI functionality built into the domain's application systems, and data & AI technology. More importantly, they are charged with a distinct three-fold mission: **Trailblaze, Consult, and Coach**.

Trailblaze means actively exploring what rapidly advancing technology makes possible and identifying how data & AI capabilities can be used to improve operations. **Consult** means helping business and technical teams determine the most effective way to address an operational need, including choosing between built-in data or AI functionality in the application systems and custom-built solution. **Coach** means helping business users build their own knowledge, capability, and confidence with data & AI rather than becoming increasingly dependent on technical specialists.

With DDAIEs operating within business domains, organizations can move from a transaction-based data & AI delivery model toward an integrated model. Operational needs can be examined within their business context before becoming technical requests by default. Existing capabilities can be leveraged where appropriate, custom development can be pursued when justified, and specialized technical teams can focus their expertise on work that truly requires it.

Organizations do not need to create this workforce from scratch. Technical professionals can develop deeper domain expertise; domain professionals can develop stronger data & AI expertise; and cross-functional initiatives can serve as incubators where people develop the ability to operate across both worlds. Wherever the starting point, establishing an integrated capability is the ultimate goal.

DDAIEs should be **operationally embedded but professionally connected**. The CDAIO office can help grow and sustain this workforce through professional development, common standards, community building, cross-domain learning, and connection to organizational data & AI leadership structure.

The workforce challenge for the AI age is therefore not simply how to deliver more data & AI products. It is how to make the organization itself increasingly capable of leveraging data & AI. DDAIEs provide a workforce mechanism for building that capability.

Section I

The Problem:

Organizations Struggle to Translate Data & AI Capability Into Business Value

As the development of Artificial Intelligence (AI) accelerates, many organizations are struggling to translate rapidly expanding data & AI capabilities into meaningful operational improvements.

On one side, business operations need more data, insights, and AI capabilities to improve productivity, efficiency, quality, and decision-making. Organizations invest significant amounts of money in software systems that contain more and more built-in data & AI functionality. However, modern application systems have become so sophisticated that initial configuration, ongoing maintenance, and daily utilization of these systems all require substantial technical know-how.

AI adds another level of complexity on top of these. **Evaluating appropriate use cases, understanding the data behind AI, configuring AI capabilities, integrating them into workflows, monitoring results, and continuously improving their use** all require knowledge and skills that are far beyond the general operational staff's job responsibilities. Operational teams therefore continue to depend heavily on technical teams to adopt and scale AI.

On the other side, technical data & AI teams face mounting workloads. Project lists and ticket queues remain long and continue to grow. The needs are multi-faceted: new reports and dashboards, AI use cases, bug fixes, upgrades, data issues, system changes, and maintenance of existing products. Data scientists and analysts are busy talking with business users, trying to understand their specifications or issues, and delivering what is requested.

One tricky situation they frequently find themselves in is: to build or not to build?

As application vendors add more data & AI capabilities to their systems, the same operational goal can sometimes be achieved either by adopting the functionality that already exists or by building a custom product from scratch. Which approach should be taken is not a trivial decision. Yet, in a request-and-delivery model, the natural response to a business request is often to start another project. Over time, the organization accumulates an expanding inventory of reports, dashboards, and AI solutions that must be maintained.

Meanwhile, built-in capabilities for which the organization has already paid may remain underutilized. Technologies also move forward at such a fast pace that, by the time a big project is completed, the business need may have changed or the underlying technology may have already advanced.

The result is a familiar paradox. Organizations continue to invest heavily in data & AI. However, business users still thirst for data and insights, technical teams remain overloaded, adoption continues to be difficult, and the expected return on investment is hard to realize.

It is tempting to interpret these challenges as either technology problems or resource problems: perhaps the organization needs another platform, another tool, or more staff on the data & AI team. But a more fundamental question is: **Do organizations have the right kind of workforce to fully leverage data & AI capabilities for creating business value?**

Section II

The Root Cause: A Missing Workforce

To understand what is causing the above problem, we need to look at how data & AI work is organized today.

In the conventional organization structure, business operations and technology are generally set up as two distinct branches. Because data & AI work requires highly specialized technical skills, people who conduct this work are often placed within the technical branch. This arrangement definitely has its advantages—it supports technical skill progression, knowledge sharing, standardization, data security, and the development of common technical practices. Certain data & AI capabilities, especially technical infrastructure, engineering, data security, platforms, and model development, benefit greatly from the centralized team structure. However, a fundamental problem arises when data & AI are turned into technical services delivered to business operations.

In this delivery model, business teams identify needs and submit requests. Technical teams interpret those requests and deliver products or services, such as reports, dashboards, models, fixes, and so on. The relationship becomes transaction-based—business operations own the context; technical teams own the technology; and the work of integrating the two is often reduced to requirement gathering and product delivery.

Transaction-Based Model

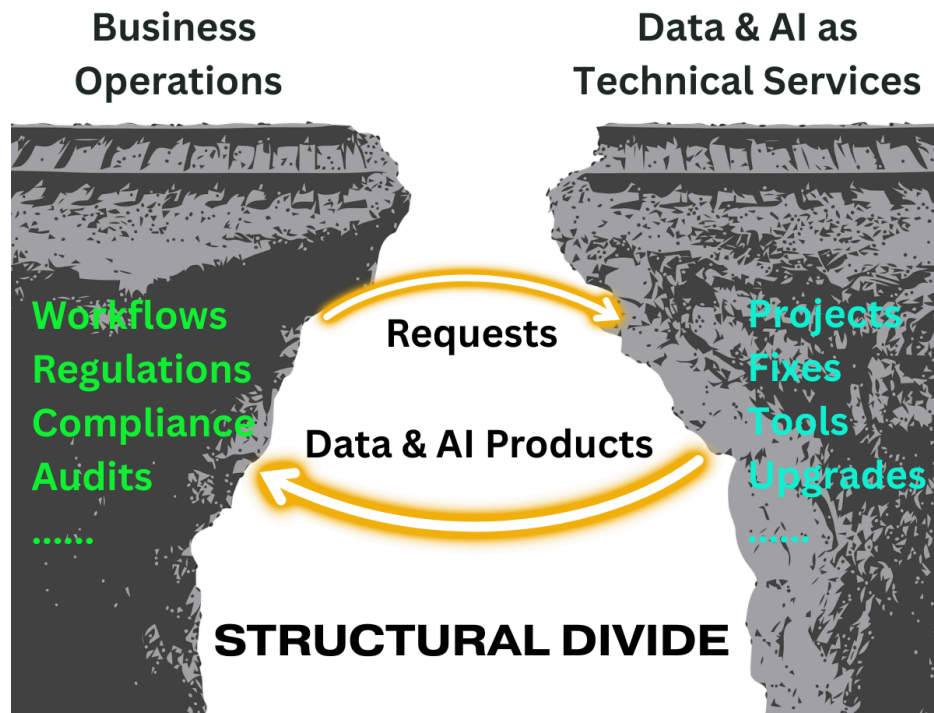


Figure 1. What happens when data & AI are treated as technical services

Organizations may have managed this structural divide in the past. But the advancement of AI is making the challenges caused by this structural problem increasingly hard to overlook.

AI requires much tighter integration of data & AI into business operations. Multiple factors determine whether an AI capability is successfully adopted and creates business value. Deep operational knowledge is needed throughout the process of adopting and applying AI—from selecting appropriate use cases, to integrating AI into workflows, monitoring results, and improving its use over time. Data scientists who are removed from front-line operations risk building something that does not fit operational reality. Operational staff who lack sufficient data & AI expertise risk underusing the technology or even using it inappropriately.

Organizations have tried other staffing arrangements to address this problem. In a distributed model, data & AI analysts are placed within operational teams. This brings technical professionals closer to the business, but organizations may then struggle with technical skill development, standardization, transparency, and cross-domain coordination. Data and analytics can become fragmented pockets across the enterprise.

The hub-spoke model attempts to capture the strengths of both approaches. Analysts work within business domains while maintaining an affiliation or matrix relationship with a central data & AI team. This can be effective, but the structure alone does not define what the people at the spokes are to accomplish. Without a distinct mission and a deliberate development objective, they may remain embedded versions of the same request-and-delivery workforce. Over time, people at the spokes may become disconnected from the technical community at the hub, drifting from the goals that the hub-spoke model is intended to achieve.

Centralized, distributed, and hub-spoke models differ in where data & AI professionals are placed and how they are connected. But none of these structures ensures that the organization develops people who combine deep operational knowledge with sufficient data & AI expertise. The challenges of these staffing models reveal an essential point: the issue isn't where to place the data & AI team. Moving people around does not by itself solve the problem.

What is missing is not simply another staffing model. It is a workforce deliberately developed to integrate operational knowledge with data & AI expertise—and charged with a mission that is different from just delivering what business users request.

Section III

The Missing Workforce: Domain Data & AI Experts

Solving the above problem requires organizations to deliberately develop a workforce equipped with a specific combination of expertise and a new mission. I call this workforce **Domain Data & AI Experts (DDAIEs)**.

3.1 The Combined Expertise

Because both traditional technical teams and business teams are deeply immersed in their own specialties, DDAIEs are intentionally developed to operate at their intersection. To that end, their skill set is composed of knowledge in the following three areas:

3.1.1 Business-domain operations

DDAIEs possess deep operational knowledge of a specific business domain. They understand the workflows, objectives, constraints, regulations, dependencies, and practical ins and outs that shape how business is actually executed on a daily basis for the domain.

3.1.2 Data & AI functionality built into the application systems used by the domain

As they work within operations, DDAIEs are also experts in the application systems for that domain, especially the data & AI functionality built in the application systems. In recent years, software vendors increasingly treat data & AI as central components of their product strategies and continue to invest heavily in developing new capabilities in this area. DDAIEs are on the front line of the business operations who not only know what those capabilities are, but also specialize on how to leverage them effectively in the specific operational environment.

3.1.3 Data & AI technologies

DDAIEs also possess more in-depth data & AI knowledge than a generally “tech-savvy” business professional. They understand data & AI concepts, can work comfortably with analytics tools, and understand the mechanisms and limitations of AI models. They do not necessarily perform highly specialized engineering work or build full-scale AI systems themselves, but their technical knowledge is deep and current enough to evaluate possibilities, design products, guide operational adoption, and communicate effectively with technical staff.

DDAIEs should therefore be understood less as a new job title than as a workforce capability. Organizations may use different roles or organizational arrangements for this workforce. What matters the most is the combined expertise and the mission that they are charged with.

3.2 A New Mission

With this combined expertise, what do DDAIEs aim to accomplish? They should be charged with a mission fundamentally different from simply delivering what business users request. Their mission has three parts: **Trailblaze. Consult. Coach.**

3.2.1 Trailblaze

The speed and complexity of modern software development create many opportunities that fall between business operations and technical services. Advanced functionality may be delivered by a vendor but remain largely unused because fully exploring and operationalizing that functionality is not the top priority of either the operational team or the technical team. The opportunity falls between the cracks because no one is explicitly responsible for discovering how these capabilities can be leveraged.

DDAIEs fill this gap. They are intentionally tasked to keep up with new modules and capabilities in the application systems, become proficient in their usage, and determine how they can be leveraged to improve the operations of their specific domain. Combined with deep operational knowledge, this expertise positions them to translate the growing volume and complexity of technological advances in application systems into operational improvements. This workforce helps organizations make fuller use of capabilities they already possess and translate those into business value. This can fundamentally change how data & AI staff work in many organizations today: instead of perpetually facing the dilemma of “to build or not to build,” they can devote more of their time and talent to exploring what is possible and creatively finding solutions.

Trailblazing does not mean adopting every new feature. It means actively exploring what the technology makes possible, understanding where it fits in the workflow, and identifying opportunities that the organization can take for better business outcomes.

3.2.2 Consult

No vendor product is one hundred percent tailored to the needs of a specific organization. There will always be situations in which an in-house data solution or AI model development is justified.

DDAIEs are uniquely positioned to consult on those decisions because they understand both what the business needs and what the technology offers. This matters because someone finally has both the expertise and the responsibility to ensure that the ‘build or not to build’ judgment is made within the full operational and technological context. Operational staff should not simply get what they ask for; they should get what they need in the most effective way that the available technology can offer. Likewise, technical teams should not simply deliver what is requested; they should be able to implement solutions with a clear understanding of the operational context, the latest technology updates, and the existing capabilities.

The consulting part in the mission fundamentally changes the relationship between operations and technical teams. Instead of one side taking orders from the other, the two sides can form a genuine partnership around a common goal: the best use of data & AI to improve business operations. DDAIEs play an important role in cultivating this partnership.

3.2.3 Coach

Being shoulder to shoulder with their business colleagues, DDAIEs are also in an excellent position to help operational staff develop stronger data & AI capability.

First, because of their operational knowledge, DDAIEs do not face the same communication hurdle that often exists between technical data & AI staff and business users. They speak a language that business users can naturally understand and relate to. Second, DDAIEs have real-life knowledge of how to utilize data & AI to meet the needs in a specific business domain. They don’t just talk the talk, they have actually walked the walk by blazing the trails for the workflows in their business domain, which enables them to communicate with general business users effectively.

Notice the word used here is “coaching”. Some may think of the various forms of training that organizations already have—for new hires, new leaders, new product go-lives, and so on. Assuming such training covers the data or AI aspect for business operations, why isn’t training enough?

Training fulfills the purpose of knowledge transfer. However, training alone is rarely enough. Even if people retain what they learn in a training session perfectly, it is a different story when they return to their daily work and face a

real dataset, dashboard, model, or operational decision. Capability develops through repeated practice in everyday operational context.

Coaching extends beyond knowledge transfer. DDAIEs understand real use cases, observe where people struggle, ask relevant questions, guide exploration, provide expertise at the point of need, and help business users take responsibility for their own success. Over time, operational staff become more knowledgeable, capable, and confident in working with data & AI.

This is an important distinction. DDAIEs intentionally avoid ways of working that make business users increasingly dependent on another group of specialists. Their purpose is the opposite: to help business users become increasingly capable themselves and be self-sufficient in using data & AI.

Section IV

A New Data & AI Delivery Model

With the new DDAIE workforce in place, organizations can reinvent their data & AI delivery model for the AI era, moving from the transaction-based model toward an integrated model. In the former, an operational need becomes a request, which enters a queue waiting for the technical team to answer. In the latter, the need is first examined within the operational context by a DDAIE who understands both the business and data & AI. This is where the DDAIE becomes especially valuable: they are equipped with the right mission and skill set to realize the integration of data & AI in business operations.

4.1 Built-in Capability First—Where Appropriate

When an operational need arises, the DDAIE first explores whether the application systems used by the domain already contain functionality that can satisfy the need effectively. This practice is becoming increasingly important because software vendors continue to invest significant resources in data & AI. Underutilizing built-in functionality can diminish the value organizations receive from their technology investments, including the advantage of functionality designed to work directly within the application's workflow.

This is not to say that vendor functionality is always preferable over custom development. The principle is that organizations should deliberately determine whether existing capabilities can meet the operational need before adding another product to the custom-built data & AI solution inventory. This is the **trailblazing** part of the DDAIEs' work.

Assuming a feature is found to satisfy the operational need, what happens next is equally important. It should not be expected that simply handing a solution over to business users will enable them to unlock its full potential. For a long time, self-service has been viewed as a way to get more data into people's hands, but that goal has remained elusive partly because working effectively with data requires knowledge, practice, and confidence. AI adds another level of complexity. The key to making self-service truly powerful is not simply providing better tools, but growing business users' knowledge, capability, and confidence with data & AI.

This is where the **coaching** part of the DDAIE mission becomes indispensable. **DDAIEs make their business partners strong players in data & AI utilization.** When business users become more capable and confident with data & AI, self-service begins to fulfill its intended purpose. Users can explore operational questions independently, examine data from different perspectives, and identify patterns and insights. The value of self-service therefore depends not only on the capabilities of the tools, but also on the capabilities of the people using them. DDAIEs help develop those capabilities through an ongoing partnership with business users.

4.2 Custom Development When Justified

What if no existing functionality can satisfy the operational need? Then custom development may be justified.

In this case, the DDAIE also makes a difference in the process. Rather than simply opening a ticket and waiting for a technical team to gather requirements, the DDAIE can help frame the problem, clarify what the solution must accomplish, consider existing in-house products and data assets, and design an approach that fits the operational context.

When the work reaches the core technical components—such as database development, production-grade coding, advanced model engineering, security, or specialized infrastructure building—the DDAIE will play the **consulting** role by reaching out to the centralized technical team for implementation. This part of the mission is therefore not a substitute for specialized technical expertise. Rather, it helps that expertise be leveraged much more efficiently.

4.3 Technical Engineering Remains Connected

An integrated model does not eliminate centralized technical capability. Organizations still need strong specialized data & AI expertise, including database management, platform engineering, security, architecture, among others. DDAIEs do not replace such talent pools.

Instead, DDAIEs change the relationship between operational and technical capabilities. They reduce unnecessary requests, improve the quality of justified requests, bring operational context into solution design, and help technical teams focus their expertise on work that truly requires it.

The result is an integrated delivery model: operational teams become increasingly capable of leveraging data & AI while remaining connected to the enterprise core technical capabilities. Figure 2 is a visual illustration of this new delivery model.

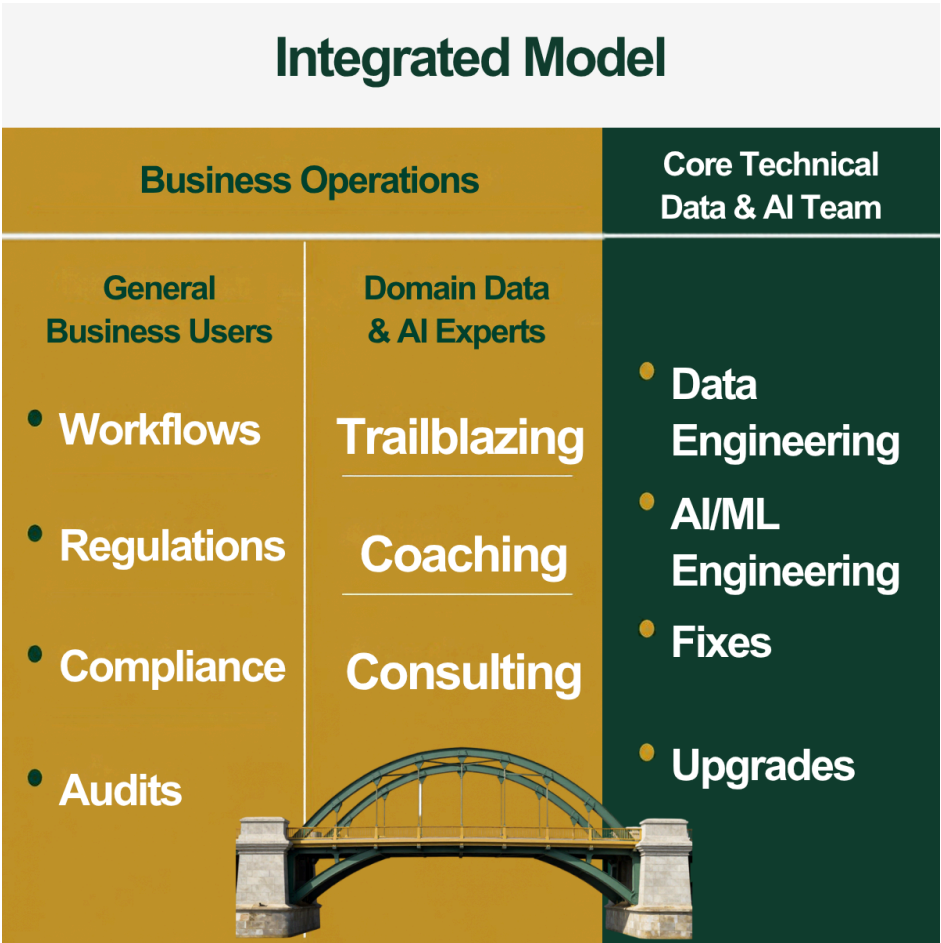


Figure 2. Integrated Data & AI delivery with the DDAIE workforce

Section V

Building the DDAIE Workforce

For most organizations, the DDAIE workforce does not yet exist as a deliberately developed capability. A practical question is how organizations move from the current state to a future state in which DDAIEs are established across business domains to integrate data & AI work more deeply into operations.

There is no single starting point. Different organizations—and even different domains within the same organization—may have different starting points. Several approaches can be used to reach the destination, which is the combined capability.

5.1 Develop Technical Professionals Toward the Domain

One pathway is to develop data & AI analysts, data scientists, and other technically oriented professionals toward deeper domain expertise. Many of these professionals already possess strong technical foundations and have developed some business knowledge through years of working on data & AI requests from business users.

The difference is intentionality. Instead of treating analysts as generalists who can be deployed wherever the next request comes, organizations can allow some data & AI professionals to develop sustained relationships with particular business domains. Over time, they learn the workflows, regulations, business processes, and operational priorities deeply enough to become genuine domain experts.

This pathway also breaks the perpetual reactive cycle in which analysts spend most of their time fulfilling requests, producing more artifacts, and then maintaining the growing inventory those artifacts create. Domain depth gives them the context to question the request itself and explore creative solutions.

5.2 Develop Domain Professionals Toward Data & AI

A second pathway begins from the other end. Many organizations already have business analysts, application specialists, operational improvement professionals, informaticists, or other staff who understand the domain and the application systems used in it deeply. Some of these people have the aptitude and interest to develop stronger data & AI expertise.

With intentional development in data, analytics, AI, and their application to operational problems, these professionals can grow toward the DDAIE capability. Their advantage is that they already understand the operational environment in which data & AI are utilized to create value.

Neither of the above pathways is inherently superior. The key is to develop the DDAIE workforce practically from the organization's existing talent, based on the current state of each domain.

5.3 Use Cross-Functional Work as an Incubator

A third and highly practical pathway is to use cross-functional work as an incubator for DDAIE talent.

Organizations regularly bring operational and technical people together for solution implementations, workflow redesign, system upgrades, analytics initiatives, AI pilots, and other targeted efforts. These projects create an environment in which people learn from one another through real problem-solving.

A technically oriented analyst may begin to understand why a seemingly simple workflow requirement matters. A business professional may begin to understand how data is structured, why a model behaves in a certain way, or what technical tradeoffs shape a solution. As the work continues, some participants naturally become comfortable operating on both sides of the boundary.

Those people often demonstrate the curiosity, aptitude, communication ability, and boundary-spanning mindset required of DDAIEs. Leaders can deliberately identify these people and develop them toward the DDAIE capability. By doing so, cross-functional work serves two purposes at once: it solves an immediate business problem and creates an environment in which the missing workforce begins to grow organically.

5.4 Build the Organizational Support Around the Workforce

Developing individuals is only part of the work of establishing the DDAIE workforce. DDAIEs also need an organizational environment that allows them to remain connected, continue learning, and share their successes and lessons learned across domains.

Without that support, embedded experts can gradually become isolated domain specialists. Practices diverge, communications stay local, technical knowledge becomes uneven, and the organization recreates the fragmentation that distributed staffing models often struggle with.

The goal is to create a workforce that is operationally embedded and professionally connected.

Section VI

Connecting the DDAIE Workforce to Enterprise Leadership

The DDAIE workforce addresses one part of a larger organizational challenge, i.e., integrating data & AI closely with business operations. To that end, an appropriate leadership structure in which authority, responsibility, accountability, standards, and enterprise coordination are clearly defined is also important.

This is where the DDAIE model connects with the Integrated Operational Leadership Network (IOLN), introduced in Laurel Consulting's first white paper [1].

The two frameworks address different but complementary questions:

Framework	Primary Question	Primary Contribution
IOLN	Where do data & AI leadership, authority, responsibility, and accountability reside?	Data & AI leadership integrated with operational execution
DDAIE Workforce	How can data & AI expertise be integrated with business operations?	Data & AI workforce embedded in business domains

Leadership provides the authority, responsibility, and accountability to act; workforce capability provides the expertise needed to act effectively within the operational context. The two need to work together.

6.1 DDAIE and DAIS: Different but Complementary Roles

It is also important to distinguish a Domain Data & AI Expert (DDAIE) from a Data & AI Steward (DAIS) which is introduced in the IOLN framework.

Capability	Primary orientation	Primary contribution
DAIS	Stewardship and leadership	Helps exercise appropriate authority, responsibility, and accountability for data & AI assets within the operational context
DDAIE	Workforce capability and operational enablement	Applies combined operational and data & AI expertise through Trailblaze, Consult, and Coach

Sometimes the same person may carry both responsibilities, especially in smaller domains. But the concepts should be distinguished. A person can have stewardship responsibility without possessing the depth of technical capability expected of a DDAIE, and a DDAIE can provide expert operational enablement without being the person who holds stewardship authority for a particular asset or decision.

6.2 The CDAIO Office as the Enterprise Facilitator

DDAIEs need to work close to the operations they support. At the same time, they should not become isolated from one another or from the broader data & AI capability of the organization.

The CDAIO office should therefore help organize and sustain the mechanisms that connect the DDAIE workforce across the enterprise. These mechanisms may include:

- training and continuous development in emerging data & AI concepts, tools, and methods;
- a DDAIE community and professional network for cross-domain learning;
- shared standards, methods, and best practices;
- forums for sharing successful use cases, lessons learned, and reusable approaches;
- connections to enterprise technical experts, governance, stewardship, and leadership structures.

This organizational arrangement preserves the two things DDAIEs need most: deep operational proximity and continued professional growth.

The CDAIO office does not need to direct the details of how DDAIEs work within individual domains. Its role is to build and sustain the enterprise environment in which the workforce can remain current, connected, consistent, and effective while working within the context of individual domains.

Section VII

Conclusion: From Data & AI Delivery to Organizational Capability

The rapid advancement of AI is creating enormous opportunities for organizations, but technology alone does not determine how much value those opportunities will create. Adding more technology and expanding data & AI teams may increase technical capacity, but neither by itself addresses the deeper question: how to integrate data & AI capability into everyday business operations.

The traditional delivery model asks: **How can the data & AI team deliver what the business needs?**

The more important question for the AI age is: **How can the organization itself become increasingly capable of leveraging data & AI to improve how it operates?**

This shift changes how we think about the data & AI workforce. Success should not be reflected only in the number of reports delivered, dashboards built, models deployed, projects completed, or tickets closed. The ultimate measure is whether the organization is becoming more capable of using data & AI in everyday operations and adapting as technology continues to evolve.

Domain Data & AI Experts (DDAIEs) provide a workforce mechanism for building this capability. Through **Trailblaze**, they explore what rapidly advancing technology makes possible and identify opportunities to apply it within the operational context. Through **Consult**, they help business and technical teams make better decisions about how operational needs should be addressed. Through **Coach**, they help business users build the knowledge, capability, and confidence to use data & AI increasingly effectively themselves.

This workforce does not replace centralized technical expertise. Nor does it simply move existing technical staff into business domains. It creates a different capability at the intersection of operations and technology—one that is **operationally embedded but professionally connected**.

The result is a fundamentally different relationship between data & AI and business operations. Instead of treating data & AI primarily as technical products and services delivered across a structural divide, organizations can integrate data & AI expertise directly into the way people work, solve problems, make decisions, improve operations, and innovate.

The missing workforce for the AI age is therefore not simply another category of technical specialists. It is a workforce deliberately developed to help the organization itself become stronger with data & AI.

Section VIII

References

- [1] **Gui, Hong.** *Integrated Operational Leadership Network (IOLN): Embedding Authority into Execution for the AI Age.* Laurel Consulting White Paper, 2026:
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About the Author

Dr. Hong Gui is Founder and Principal Consultant of Laurel Consulting LLC. She has over two decades of experience in data strategy, data governance, analytics, and organizational leadership, including leadership roles in healthcare and enterprise data governance. She is the author of *Empowerment: A Holistic Approach to Building Healthy Data Ecosystems* and creator of *the Integrated Operational Leadership Network (IOLN) framework*.