



Deploy data science to build a data-driven organization

Information-based workflows are the key to activating data for growth

Companies know they need data. Research has shown [insights-driven businesses](#) are growing more quickly, are more likely to acquire customers and retain them, and are more profitable. But the challenge is how to become an organization that leverages data science.

Through analytics, artificial intelligence, and machine-learning, data science is a key enabler to help strategic and operational decisions. But data science also needs a set of tools, accelerators, and blueprints that span people, process, technology, data, and culture (PPTDC) to be successful. All the pieces must work harmoniously for data science to succeed.



Process and DSWF

A data-science workflow (DSWF) is a business enabler covering the entire process from posing a business challenge to the final sharing of insight. It encompasses the full PPTDC spectrum. In fact, DSWFs enable data-driven organizations to achieve significant and extensive business value.

The workflow needs to be established at the beginning of the project. This will create an optimized pathway with the proper PPTDC framework to solve business challenges.

The DSWF must address four primary components:

- **Integration:** the creation of an agile and responsive PPTDC spectrum
- **Fostering formalized processes:** the need to support and prioritize processes across the enterprise to allow data-driven insight generation and sharing
- **Common Conceptual Data Model (CDM):** the adoption of key foundational data frameworks tied to user stories and business challenges
- **Conceptual future-state vision:** the roadmap for a tight integration of PPTDC that democratizes and industrializes data-driven insights and knowledge.

The vision for a future-state DSWF is the need to integrate and align decision processes to the necessary data and insights that support them. Tied to this vision are user stories and use cases that demonstrate the business reasons for a data science and analytics capability and its potential value to the business. Those stories, embodied by the DSWF, encapsulate and show the variety of typical steps, the current potential limitations that should be addressed, and the touchpoints that are necessary to successfully apply analytics to a business problem or challenge.

The goal is to build a process flow for analytics and insights that:

- Accounts for experimentation, innovation, and industrialization
- Allows for a range of data-science engagements, from centralized experts to cultivated, federated talent
- Considers a means for business engagement and for industrialized outcomes, production, core delivery, platform support, and operations, and for continuous improvement of core services.

Barriers and impediments to DSWF



Consistency



Interconnectivity



People alignment



Data standards and process



Environment

Executing DSWF

A DSWF needs to be seen as a collaborative effort, since it captures the touchpoints along the complete lifecycle of a data-science product. The DSWF is centered on:

1. ingesting existing business challenges
2. scoping and prioritizing analytics approaches
3. executing analytics “sprints” and phases to build ML products
4. enveloping data science/ML/AI models to support intelligent decision-making
5. disseminating explained actionable outcomes to the respective business or product owners.

Building close relationships, effectively working together, and creating an overarching business engagement team that is responsible for the end-to-end process is paramount to success. The engagement team should be staffed with people who possess the business-domain expertise specific to the required task, as well as knowledgeable data scientists. Continuous and agile oversight will be needed as a data-science capability is built out at speed and scale. A structured and well-developed DSWF becomes a necessity in helping organizations move from individual PoCs to scale in data science.

Leveraging tools, accelerators, blueprints, and user stories

Capgemini provides a set of accelerator tools and blueprints centered on data-science process governance that combines with user stories to build a foundation for successful data-science and analytics capabilities. These tools and stories are intended to solve the common problems and challenges companies face and can be addressed with data-driven intelligence. Our tools include maturity frameworks; standardized DSWF; org transition plans; a use-case prioritization matrix; centralized data-science org, roles, and responsibilities; RACI frameworks; tailored job descriptions; long- and near-term architectures; technology rationalizations; and technology transition plans.

Democratizing data

A successful analytics and data-science strategy and roadmap need clear goals, embedding insights generated into everyday decision-making and initiating a cultural shift to a more data-driven organization. Only then can analytics and data science be considered the ultimate game changer that can drive growth.

The real value of analytics and data science emerges quickly once people realize that the insights generated will change a decision, a process, or a behavior. From data-derived insights to action and then to business value is the key pathway along which analytics and data science deliver a true competitive advantage.



About Capgemini

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Learn more about us at

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