

Design the information-driven enterprise

Is your organization ready for the information-driven transformation ?



As the digital transformation accelerates, companies are speeding up their efforts to unleash the benefits of data across their different businesses and departments. Undertaking a comprehensive information-driven transformation requires developing the organizational capabilities that enable better decision making and realizing the full value of data.

Leverage data across all company processes to achieve strategic benefits

The volume of structured and unstructured data generated globally is continuing to grow rapidly, transforming the way companies run their business and opening the doors to new opportunities. Organizations need to develop an appropriate path to achieve several strategic advantages:

- **Improve decision making.** Data provides extensive and solid insights to support high-impact business decisions, allowing executives to reduce uncertainty and forecast implications. Inspiring a data-driven culture and promoting the transparency of decision processes enhances communication and company-wide engagement.
- **Improve marketing and sales activities.** Analyzing customer behavior allows companies to segment their clients and personalize their offers, driving improved customer acquisition and optimized advertising spending. Data-driven marketing campaigns support brand awareness and recognition by adapting to ever-changing customer needs.
- **Improve the customer journey and experience.** Observing the customer journey, analyzing the related patterns, and acting on critical insights are important to create better customer experience and increase loyalty. Optimizing touchpoints and improving user experience effectiveness facilitate customer interactions and responsiveness.
- **Create new business models.** Leveraging data allows the discovery of new business opportunities by incorporating customer insights into product development processes to maximize product-market fit. Data can also be a differentiating element, allowing customers to access a wide variety of information and to extract value from it.

- **Improve operational activities.** Data-driven companies can leverage advanced technologies, such as robotic process automation, artificial intelligence (AI), machine learning (ML), and Internet of Things to improve operational, administrative, and asset-related processes. Data also provides information on the supply chain, enabling companies to better manage production, the suppliers network, and operating capital.
- **Improve risk assessment and management.** Data-driven technologies improve the predictive power of risk management models, generating better operational performance and significant cost savings. Innovative techniques can predict more accurately the business impacts of an event and its probability of occurrence.
- **Support smart and digital ways of working.** Data-driven organizations can decentralize several activities and enhance collaboration by enabling employees to access the right information on-demand wherever they are. Analyzing digital employees' activity touchpoints enables the creation of a seamless onsite and remote workplace experience.

In summary, as ThoughtSpot Chief Data Strategy Officer Cindi Howson argues, **information-driven companies** enjoy **“increased revenue, improved customer service, best-in-class operating efficiencies, and improved profitability.”** (Source: MIT Sloan) *Harvard Business Review* interviewed business executives to understand the positive effects of investing in big data analytics and found that 72% of respondents confirm a profitability increase. Similarly, research conducted by Enterprise Strategy Group in partnership with Splunk demonstrated that organizations that place a strategic emphasis on data could gain an average increase of 12.5% in a company's gross profit.

From service management to enterprise information management

Technology developments together with the greater availability and accessibility of novel algorithmic concepts from the fields of AI and ML enable organizations to process larger amounts of data more efficiently to extract relevant insights.

This trend is leading to companies being guided by information, where human decision-making processes are augmented through data-generated insights. Key success criteria include having all the relevant data – both internal and external to the company – processed in a secure, intelligent, and context-aware way that is aligned to business objectives. It is equally important to create an environment where all business structures are empowered to make complex data-driven decisions, and where data and analysis tools are made widely accessible across the entire organization.

In this context, centralizing the IT division within the business is increasingly recognized as providing essential value-added services to the entire enterprise. The importance of leveraging data to achieve strategic benefits has led to the implementation of data management as a key element, in addition to traditional service management processes.

Nevertheless, data in its most basic digital format does not provide insights. Only when combined with other data or manipulated through advanced algorithms can the organization gain relevant information to generate value and support successful company decisions. Therefore, it is strategic for companies to shift from focusing purely on data to a broader and information-oriented perspective.

To introduce this perspective in the way people work together and use data to support business processes, we use an extension of the DAMA-DMBOK2 Framework as a tool to the key aspects of information management (see figure below).

Information and data management framework



Source: Arthur D. Little elaboration of DAMA Framework

Based on this framework, organizations must revisit key areas to get value from their information assets:

- Shift the focus from vertical (siloes) accountability to shared management of information by aligning responsibilities along the information value chain.

- Introduce the necessary cultural change (information-driven culture) and new roles (acquired/reconverted).
- Adapt the organization to support the new processes managed through new roles.

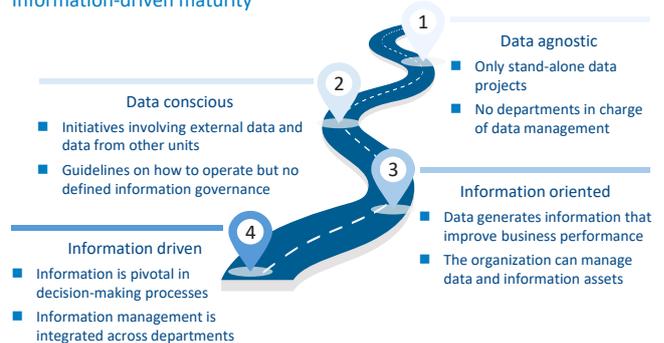
As IT departments or service companies needed to move from IT services management to the integrated management of all business services (enterprise service management), also for the information assets management, it is necessary to think not only about the management of IT-related data but to extend this management to the whole company, applying the Enterprise Information Management (EIM) model.

The EIM is an integrated discipline to structure, describe, and govern information assets across organizational and technological boundaries to improve efficiency, promote transparency, and enable better decision making with data.

Path to the information-driven organization

A successful transition to information-driven transformation requires attention to vision, strategy, organization, roles and skills, governance, tools, and practices. With this aim, the information-driven maturity model provides a framework to measure and improve a company’s ability to manage its information, allowing it to assess and define restructuring needs to get insights from data and take the path for the transformation from “data agnostic” to “information driven” (see figure below).

Information-driven maturity

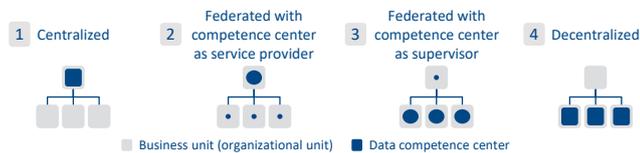


Source: Arthur D. Little analysis

When designing a service-driven company, there are mainly three knowledge areas (infrastructure, applications, and services) whose business processes need to be organized. By contrast, the information-driven enterprise must identify the most suitable organizational models for the several knowledge areas described in the information and data management framework, where every single area could be grouped in “dedicated data competence centers,” according to the different ways they are managed and structured within the organization (e.g., data security managed as data storage and operation).

Considering the information-driven company's needs, we have identified four organizational models, differing per distribution of responsibilities and tasks across business units (see figure below):

Organizational models



Source: Arthur D. Little analysis

1. **Centralized.** Data management skills are concentrated in a single business unit that serves as a competence center for the entire company and provides professionals to cover all areas of expertise. Centralization allows a more efficient management of the processes and standards but could create bottlenecks, thus requiring appropriate sizing.
2. **Federated with competence center as service provider.** A single competence center manages most of the planned data management activities and delegates more specific tasks to the single business units, while remaining responsible for all data projects. Concentrating responsibilities guarantees a comprehensive vision and consistency but requires the coordination of numerous structures.
3. **Federated with competence center as supervisor.** The responsibility of data management activities is distributed among different business units, as each has its own competence center. The central competence center only supervises and eventually provides assistance. Sharing responsibilities implies an easier allocation of expertise but requires strong collaboration between managers.
4. **Decentralized.** Data management skills are distributed among different structures, as each business unit has its own competence center, which independently manages its data projects and cooperates in the maintenance of shared company guidelines. Decentralization enables customization and proper team sizing but may be a challenge for the governance of standards and processes.

To perfectly fit the company's specific features, the two federated models are often combined, giving rise to hybrid models where every business unit decides to set the competence center as a service provider or as a supervisor according to its own features and organizational choices.

Information-driven transformation needs a radical change and poses challenges ahead

The path to the information-driven enterprise involves great changes and challenges. Culture plays a central role in enabling the alignment with a company's data mission and in supporting the transformation. Specific points of attention should be considered when building a cultural shift pathway:

- **The importance of building commitment** throughout the organization to extensively include data and insight in the business processes.
- **The risk of underestimating the organizational effort** needed to fully transform the company at all levels.
- **The pitfalls of a short-term focus** that can lead to a failure to reach the full potential of the initiative.

To overcome these challenges and make the organization ready to maximize the value of the information-driven journey, it should develop several important capabilities:

- **Support leadership ability** to clearly identify the key objectives of the transformation and to define and communicate the vision of the information-driven enterprise.
- **Enhance technology literacy** to maximize the use of data and collaboration platforms, giving employees access to key information and innovative technologies (e.g., cloud, AI).
- **Leverage Agile and DevOps approaches** to better implement the change activities through iterative methodologies, experimentation, and communication.
- **Develop an information-sharing community** able to maximize employee empowerment through knowledge sharing and to maximize innovation ambassador sponsorships to build commitment across the organization.
- **Adopt a domain-oriented design like data meshes** to deliver a self-serve data platform that allows users to abstract the technical complexity and focus on their individual data use cases.

The transition to an information-driven enterprise also requires new professional figures possessing the technological and analytical skills to manage data with respect to new knowledge areas (e.g., data governance, data quality, data architecture) as well as the communication skills to provide effective data and information storytelling. These roles either have to be newly introduced or emerge from the reassessment process and training of roles that already exist within the company. As information-driven enterprises require additional skills, traditional roles will see an enhancement of their responsibilities or need to be complemented with professional figures to whom parts of their original tasks are delegated (e.g., chief data officer, data steward, data scientist, data architect).

Information-driven implementations

Successful data-driven implementations require tailoring the approach to the specific different needs of each entity. For example, a digital company operating in the public and healthcare sector sought to ensure security and availability of the data. A new organizational and service model, aiming to connect and share information among several stakeholders in order to provide data proficiency balanced with security, privacy, and governance, met the organization's needs.

In another example, an energy company required a new organizational structure to implement a centralized data governance that could overcome data-capturing problems resulting from the presence of complex legacy systems. An evolutionary roadmap, designed to foresee the path that the organization had to undertake to become information-driven, started from awareness with the goal to reach maturity within three to five years.

Supporting your transformation

On the journey to become information-driven, companies must:

1. Define the vision and strategic rationale of the transformation by evaluating the benefits of becoming an information-driven enterprise.
2. Assess current strategies, technologies, processes, and culture to identify hidden gaps and derive the building blocks of the information-driven journey.
3. Design and prioritize key value-creation initiatives to kick-start the transformation and build consensus throughout the organization.
4. Define the enabling digital technologies and the appropriate architecture and infrastructure to fully integrate data and analytics into the business processes.
5. Create the information-driven optimum organization, including the redesign of processes, required roles and competencies, and the definition of governance principles.
6. Build the capabilities, plan, and implement the transformation and change management activities to overcome cultural barriers and achieve benefits.

Conclusions

Leveraging data-related insights is vital for companies to achieve strategic benefits such as improving their current business model and finding new opportunities. However, the ability to leverage data assets depends on the overall organization. Only when combined or integrated into structured workflows and manipulated for specific purposes can data be turned into information that can support the decision making and the business evolution.

The information-driven transformation requires adopting an information and data management framework through a journey customized to the maturity level of the company, including:

- Implementing a suitable organization model by redesigning the operating model and assigning data management responsibilities according to the peculiarities of the company.
- Enabling a cultural shift to align the organization with the data mission by ensuring top management commitment and creating collaboration along the new processes.
- Evolving traditional roles into professional figures who possess the skills to translate data across all knowledge areas into actionable information.

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