Chapter 1
Introduction to Digital Strategy

The digital age is here to stay. Unfortunately, many organizations do not take advantage of its possibilities. Every industry is facing transformational change right now. And for many organizations, how they defined success yesterday is not how they are defining it today. For example, while growth may have been the only goal in the past, other metrics, such as a sustainability score, have become essential nowadays.

Having endless possibilities (and new competitive challenges), organizations are asking themselves how their businesses must evolve to survive and thrive. The answer to this question is digital strategy!

A digital strategy will lead the way for your organization to become part of the digital age, also known as the Fourth Industrial Revolution. "The changes are so profound that, from the perspective of human history, there has never been a time of greater promise or potential peril," says Professor Klaus Schwab, founder and executive chairman of the World Economic Forum. "My concern, however, is that decision-makers are too often caught in traditional, linear (and nondisruptive) thinking or too absorbed by immediate concerns to think strategically about the forces of disruption and innovation shaping our future."[i]

Organizations that have already embarked on their transformation journey are seeing the advantages. Disney, for example, produced hand-drawn movies in the past, relying on a very costly distribution system. Today Disney has gone completely digital, from movie production to the screen, leveraging the entire value chain. Disney's new digital endpoint, the streaming service Disney+, is even outperforming its own forecasts.[ii]

With cloud-powered technologies, all organizations have access to AI-infused tools and modern work capabilities tailored to their needs. With scalability of implementation and speed of adoption, these organizations are seeing increased cost savings and more productive employees across all departments.

This is called *digital maturity* and is basically the sum of *digital capabilities* that are available in the organization. Every organization in every industry will increasingly need to level up their digital maturity to be successful and grow.

Strategic Topics

An organization's digital strategy is characterized by the application of new technologies to existing business activities and a focus on the enablement of new digital capabilities. These new digital capabilities can be clustered into five strategic topics (which form the structure of this book).

- **Modern Work (Part II)**: How does technology change the way we work and communicate, and how does this change interfere with culture and strategy?
- **Data Democracy and Analytics (Part III)**: How can every person achieve more by being enabled to access, understand, and communicate data?
- **Big Data Processing and Cloud Computing (Part IV)**: How do we retrieve, store, and process vast amounts of data?
- **Artificial Intelligence (AI) (Part V)**: How do intelligent agents take actions that maximize the chances of successfully achieving our business goals?

- **Process Automation, Blockchain, and the Internet of Things (IoT) (Part VI)**: How does direct integration of the physical world into computer-based systems result in efficiency improvements, economic benefits, and reduced human exertions?

Data is treated as a key strategic asset, and organizations are committed to realizing value from it. Therefore, data democracy and analytics and big data processing and cloud computing can be collectively referred to as *data strategy*.

Culture

Henry Ford said, "Culture eats strategy for breakfast." This statement has probably never been as relevant as it is today. Many employees started working from home because of the COVID-19 pandemic as this book was being written. Micromanagement, which is characterized by mistrust, became obsolete, giving rise to a new, digital culture of trustful cooperation. Crafting and fostering culture within an organization is essential. Culture supports the digital strategy, enabling and empowering all people in an organization during transformational change.

Organizations are best fitted to go through a transformation when employees are unified and working with shared values and ideas. They have a culture that keeps their team connected, and an organizational mindset rooted in flexibility and openness: openness to new ideas, technologies, and digital capabilities.

Organizations whose culture accepts the diversity of personalities, abilities, ideas, and those approaches that are requirements for driving an organization forward are those that do best with adopting new digital capabilities.

Culture is not mapped 1:1 to a single strategic topic. Culture spans multiple strategic topics, which also influence each other, as shown in Figure 1.1.

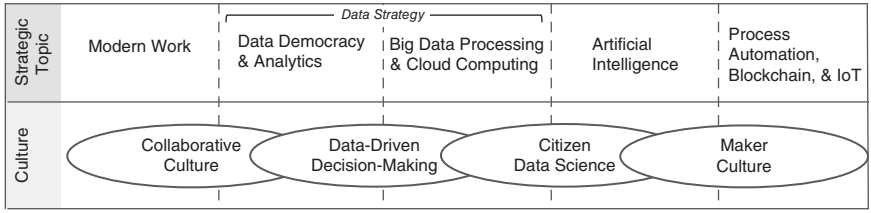

Figure 1.1 Strategic topics and culture

Collaborative Culture

Collaborative culture helps organizations maximize employee knowledge and capabilities. Ideas and information can spread more easily when employees communicate and collaborate freely across functional and departmental lines, which will have tremendous impact on the organization's performance. Amy Djeridi, group head of Workplace Products at AXA, explains: "Now that working together can be seamless, employees no longer struggle to make teamwork happen with time-consuming tools and technology. Today, we're focusing on the business stakes."[iii]

Adopting a collaborative culture breaks up knowledge silos. Employees collaborate on documents, spreadsheets, dashboards, and presentations, all while using chat and video call features. This enables employees to quickly exchange ideas and help each other to achieve more and achieve it much more quickly.

All kinds of information — from raw-data sources to polished presentations — are shared and searchable by everyone in the digital organization. This means employees seldom need to start from scratch but instead can leverage existing assets.

The collaborative culture is based on the strategic topics of modern work and data democracy and analytics and supports data-driven decision-making.

Data-Driven Decision-Making

Data-driven decision-making is the culture of making organizational decisions based on actual data rather than on observation or intuition

alone. Data-driven decision-making involves collecting data based on measurable goals or key performance indicators (KPIs), analyzing patterns and facts from these insights, and using them to refine business strategies and activities that benefit the organization's goals.

The culture of data-driven decision-making is based on the strategic topics of data democracy and analytics and big data processing and cloud computing, and supports collaborative culture and the culture of citizen data science.

Citizen Data Science

While an academic education is necessary for data science, citizen data science is more a matter of attitude. In principle, every employee, even one without knowledge of statistics and programming, can become a citizen data scientist. Therefore, citizen data science should be viewed as a culture.

According to the analysts from Gartner, a citizen data scientist defines a citizen data scientist as a person who creates models that use advanced analytics and predictive and prescriptive capabilities, but whose primary job function is outside the field of statistics and analytics.[iv]

Citizen data scientists tell stories about a company based on company data by translating this data into a language that everyone can understand. Most of all, citizen data scientists need to be curious. They have to be able to recognize potentially useful information in a large amount of data and to highlight and translate key findings for other employees and departments.

The culture of citizen data science is based on the strategic topics of big data processing and cloud computing and artificial intelligence, and supports data-driven decision-making and the maker culture.

Maker Culture

The maker culture encourages employees to think about what kind of apps, processes, or algorithms they could build for their organization. While it once required software development skills, building apps today

can be done within minutes and without writing a single line of code. This creativity is not limited to apps; it also includes process automation and algorithms that can be easily reused in the entire organization.

The maker culture is based on the strategic topics of artificial intelligence, process automation, blockchain, and Internet of Things (IoT), and it supports citizen data science.

Impact

Every organization has a set of core competencies and unique assets. The digital strategy needs to identify specific differentiators that can unlock impact beyond the original core competencies and leverage the unique assets.

Core competencies can manifest in different ways depending on the industry. Unique assets might be physical assets like retail stores, proximity to customers, or intellectual property. While some of these impacts are specific to core competencies and unique assets, some impacts are more generic and can be triggered by fostering a certain culture. Here are some examples:

- **Attracting new employees**, enabled by the collaborative culture
- **Knowledge generation and exchange**, enabled by the collaborative culture and the culture of data-driven decision-making
- **Understanding customer behavior**, enabled by the culture of data-driven decision-making and the culture of citizen data science
- **Improving products and customer service**, enabled by the culture of citizen data science and the maker culture
- **Reducing time to market**, enabled by the maker culture

There are, of course, also certain impacts that cannot directly map to the culture but are conditioned by a strategic topic directly. Here are some noteworthy examples:

- **Reducing total cost of ownership (TCO)**, enabled by big data processing and cloud computing

- **Scalability**, enabled by big data processing and cloud computing
- **Agility**, enabled by process automation, blockchain, and IoT

Furthermore, it is possible that impact initiated by a certain culture helps to improve another culture within the organization, for example, by using the insights from remote work data to understand the way the team works (data-driven decision-making) and to modify future tasks and processes for better collaboration (collaborative culture).

Digital Capabilities

Enabling impacts requires continually developing a wide range of digital capabilities. Let's stick with the previously mentioned examples and take a look at which digital capabilities would be required to pursue them.

Attracting New Employees

- **Unified communications:** Using chat and video call beside traditional channels, such as email and phone
- **Collaboration tools:** Working together on notes, documents, spreadsheets, and so on
- **Remote work:** Working from everywhere with secure access to all company resources

Knowledge Generation and Exchange

- **Self-service business intelligence:** Asking your own questions without tying up your traditional business intelligence (BI) team
- **Visual analytics:** Seeing and understanding patterns with interactive visual interfaces[v]
- **Data literacy:** Communicating insights for a human-information discourse

Understanding Customer Behavior

- **Stream processing:** Streaming customer feedback and needs in real time

- **Governed data discovery/mining:** Acquiring new or enriching existing data sources that the organization can rely on
- **Social media ingestion:** Improving customer retention by leveraging social media data

Improving Products and Customer Service

- **Machine learning:** Providing the ability to automatically learn and improve from experience without being explicitly programmed
- **Chat bots and recommender systems:** Providing information to users according to their preferences via a chat interface
- **Human-in-the-loop**: Leveraging the power of human intelligence to improve machine learning–based models

Reducing Time to Market

- **Low-code/no-code:** Allowing citizen developers to drag and drop application components, connect them, and create platform-agnostic apps
- **Application design (UI/UX):** Creating products that provide a meaningful user interface (UI) and a relevant user experience (UX)
- **Cybersecurity:** Protecting computer systems from the damage or theft of data, as well as from service disruption

Reducing Total Cost of Ownership (TCO)

- **Serverless architecture:** Eliminating the need for server software and hardware management
- **Data center transformation:** Migrating the on-premise IT infrastructure to a cloud hyper-scale environment
- **DevOps:** Shortening the development life cycle and providing continuous feature delivery

Completing Your Digital Strategy Big Picture

Once you've identified the impacts that you want to generate and the corresponding digital capabilities, it is time to complete your digital strategy big picture, as shown in Figure 1.2.

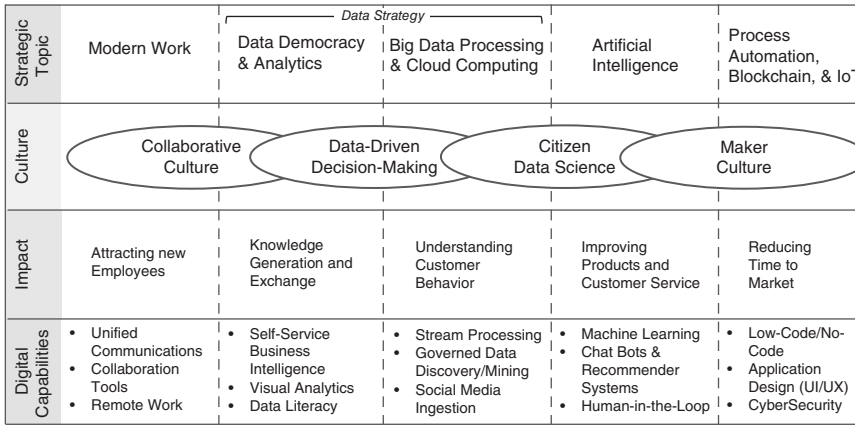

Figure 1.2 Digital strategy big picture

This digital strategy big picture serves as reference while you adopt a strategic topic, foster culture, generate impact, and implement digital capabilities. The template is available online.[vi]

While the first rows, strategic topic and culture, should be fairly static, the impact and digital capabilities vary depending on your industry and your current level of digital maturity and organizational readiness.

Impact Venn

Your digital strategy will not generate impact if you don't foster culture or acquire digital capabilities, as illustrated in Figure 1.3. As you will probably not start on a greenfield, it is important to identify and fill the missing pieces to generate impact.

For example, an organization wants to create apps and automate processes faster and therefore sets up a low-code/no-code platform. However, the platform is seldom used because the organization lacks the maker culture. Once the employees are nurtured with workshops, hackathons, and casual training days, many employees gain new ideas and have an intrinsic motivation to pursue them. Soon after, the employees develop many apps (such as an HR chat

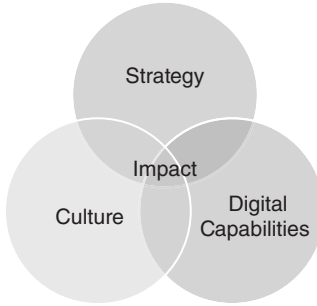

Figure 1.3 Impact Venn

bot and an employee dictionary) and automate some processes (such as analyzing and tagging incoming email attachments).

Digital Maturity and Organizational Readiness

Acquiring more digital capabilities will increase the organization's level of *digital maturity*. Providing digital capabilities is just the first step into transforming into a digital business. Helping employees to adopt these new digital capabilities is crucial for any digital strategy.

The level of adoption is called *organizational readiness*. While some digital capabilities will be adopted more quickly (like unified communications), some digital capabilities require some more training or skilling initiatives (like low-code/no-code). The level of adoption depends on how the organization nurtures the skills of the employees who then drive the innovation process and manifest it into your business processes. This is how you truly enhance your digital capabilities.

These are further aspects to consider that can drive organizational readiness:

- Are our employees well connected?
- Do we need a center of excellence or user groups?
- Does everyone have the resources needed to do their job?
- How are people being trained to work in new ways?

Digital maturity and organizational readiness can be tracked as KPIs for your entire digital strategy — or for each strategic topic. Measuring digital maturity and organizational readiness by strategic topic delivers a good indicator that helps you to define or adjust your digital strategy.

Figure 1.4 shows an example of both values plotted by strategic topic. In this graph we see that the organization has plenty of digital capabilities for big data processing and cloud computing, but the employees are not yet trained accordingly. On the other side, the employees are ready for modern work, but the organization has not yet adopted the required digital capabilities.

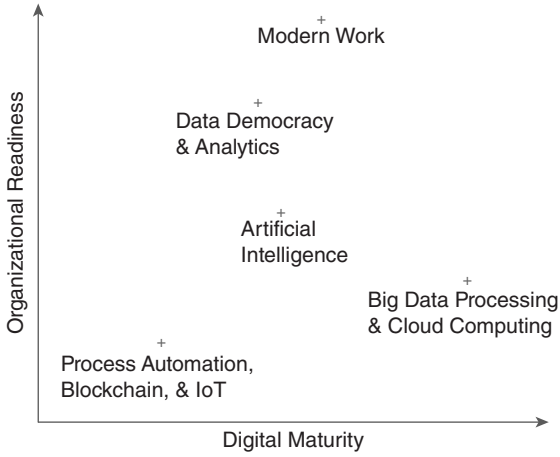

Figure 1.4 Graph showing digital maturity and organizational readiness by strategic topic

Digital Maturity Assessment

A digital maturity assessment, shown in Figure 1.5, can help you to understand which digital capabilities are already available in your organization and if the organization is ready to use these capabilities. These questions are quite generic and should be seen as a rough blueprint that you can enhance and fine-tune for specific audiences within your organization.

The questions for this assessment are grouped by strategic topic and have two sections each.

- **Digital Maturity**: The digital capabilities that are available in the organization
- **Organizational Readiness**: The digital capabilities that are adopted by the employees

Modern Work	
Digital Maturity	*Organizational Readiness*
How do you work together on the same document?	How do colleagues in your organization send a quick reminder?
✔ Sending the document via email and consolidating it afterwards (0 points)	✔ via email (0 points)
✔ Working online together on the same document in real time (5 points)	✔ via chat (3 points)
	✔ via integrated communication platform (5 points)

Data Democracy & Analytics	
Digital Maturity	*Organizational Readiness*
What do you do when you need another type of aggregation in your report/dashboard?	Do employees have access to analytics tools and data sources to ask questions of their own business data? E.g., an accounts-receivable specialist analyzing his own collection effectiveness rate or analyzing average days outstanding for invoices in a certain region
✔ Nothing (0 points)	✔ No (0 points)
✔ Ask the BI department and wait some days (1 point)	✔ Limited on certain teams/ roles (3 points)
✔ Copy data from the PDF report and perform some magic in Excel within hours (3 points)	✔ Available for everyone (5 points)
✔ Use a self-service BI tool to modify this dashboard within minutes (5 points)	

Big Data Processing & Cloud Computing

Digital Maturity	*Organizational Readiness*
Where is your organization's data stored?	How does your organization apply the term big data?
✔ Somewhere on a network share (0 points)	✔ Excel files that are larger than 50 mb (0 points)
✔ On a relational database on premises (1 point)	✔ We don't use the term big data (1 point)
✔ On a multi-node data warehouse on premises (3 points)	✔ Large data sets stored in the cloud or on a server (3 points)
✔ On a cloud-based data lake (5 points)	✔ Data of high volume, high velocity, and high variety (5 points)

Artificial Intelligence (AI)

Digital Maturity	*Organizational Readiness*
How does your organization apply artificial intelligence?	How does your organization think about chatbots?
✔ That's not happening (0 points)	✔ Useless functionality (0 points)
✔ We locally run some Python scripts that we found on GitHub (1 point)	✔ Limited as customer-facing support channel (3 points)
✔ We assembled our own data science environment (3 points)	✔ Feature that also boosts the productivity within the organization (5 points)
✔ We use cloud-based pre-trained models and add customizations if needed (5 points)	

Process Automation, Blockchain, & IoT	
Digital Maturity	*Organizational Readiness*
How does your organization automate (small) processes? ✔ We don't do that (0 points) ✔ We have some legacy VBA/ Java/etc. code (1 point) ✔ We use a low-code solution that everyone understands (5 points) Sum: ____	How does your organization enhance existing processes? ✔ We'd better not touch it (0 points) ✔ A change request needs to be filled out and signed on paper (1 point) ✔ A change request needs to be sent by email (2 points) ✔ Everyone can use drag & drop to easily modify an existing process (5 points) Sum: ____

Figure 1.5 A digital maturity assessment

Based on your results you can further explore specific (or all) strategic topics with the interviews and customer examples in the following chapters.

Endnotes

i Schwab, Klaus, *The Fourth Industrial Revolution*. Geneva: World Economic Forum, 2016.

ii "Disney Strikes Streaming-TV Gold," *The Economist*, November 12, 2020 (`www.economist.com/business/2020/11/14/disney-strikes-streaming-tv-gold`).

iii Microsoft, "AXA Ensures Innovation in Digital Customer Service and Empowers Employees with Microsoft 365," November 13, 2019 (`customers.microsoft.com/de-DE/story/765562-axa-insurance-m365-casestudy`).

iv Tapadinhas, Joao, and Idoine, Carlie, "Citizen Data Science Augments Data Discovery and Simplifies Data Science," December 9, 2016 (www.gartner.com/en/documents/3534848).

v Loth, Alexander, *Visual Analytics with Tableau*. Hoboken, NJ: John Wiley & Sons, 2019.

vi The Digital Strategy Big Picture Template is available online within the Supplementary Material section on the Decisively Digital companion website: www.decisivelydigital.org/supplementary-material/.

vii "Gartner's Big Data Definition Consists of Three Parts, Not to Be Confused with Three 'V's," Forbes, www.forbes.com/sites/gartnergroup/2013/03/27/gartners-big-data-definition-consists-of-three-parts-not-to-be-confused-with-three-vs/