

BRANISLAV VUJOVIĆ

BETWEEN 2 WORLDS

A ROAD TO THE DIGITAL WORLD



For Milena, Sonja, Nina, Alexander, and Sophia

TABLE OF CONTENTS

FOREWORD.....	11
1 INTRODUCTION	15
1.1 WHO'S DRIVING OVER THERE?.....	15
1.2 HOW TO UNDERSTAND THE DIGITAL ECONOMY	18
1.3 ABOUT THIS BOOK	19
2 DIGITAL REVOLUTION AND DIGITAL MINDSET.....	23
2.1 WHY THE DIGITAL WORLD IS BECOMING SO IMPORTANT	24
2.2 GENERATIONS AND MILLENNIALS	28
2.3 WHO USES THE INTERNET AND WHY?	30
2.4 DIGITAL REVOLUTION AND COMPANY LIFE	34
2.5 DIGITAL MINDSET	40
2.6 DIGITAL, VIRTUAL WORLD.....	42
2.7 WHAT IS THE DIGITAL ECONOMY?.....	44
3 BASIC RESOURCES FOR THE DIGITAL WORLD.....	47
3.1 LEAP INTO THE DIGITAL ECONOMY	47
3.2 INFORMATION AND COMMUNICATION TECHNOLOGIES.....	53
3.3 DATA, INFORMATION, AND THE VALUE OF INFORMATION	54
3.4 SOFTWARE SOLUTIONS.....	60
3.4.1 ARTIFICIAL INTELLIGENCE (AI)	64
3.5 CLIENTS AS THE PRIMARY RESOURCE	70
3.5.1 SELF-SERVICE AND CUSTOMER ENGAGEMENT IN ACTIVITIES.....	74
3.6 DIGITAL ECOSYSTEM	77
3.7 DIGITAL BUSINESS MODEL	80
3.8 TALENTS	83
3.9 INNOVATIONS.....	88
3.9.1 BEING SECOND CAN BRING ADVANTAGES	95

4 BUSINESS MODELS 101

4.1 INTRODUCTION	
TO THE BUSINESS MODEL	105
4.1.1 CUSTOMER SEGMENTS	107
4.1.2 VALUE PROPOSITION	107
4.1.3 COMMUNICATION CHANNELS AND CUSTOMER RELATIONSHIP.....	108
4.1.4 KEY RESOURCES	109
4.1.5 KEY ACTIVITIES	110
4.1.6 IMPORTANT PARTNERS	110
4.1.7 REVENUE STRUCTURE.....	110
4.1.8 COST STRUCTURE	111
4.2 PRESENTATION OF VALUE PROPOSITION	114
4.3 EXAMPLES OF PRESENTING BUSINESS MODELS AND VALUE PROPOSITIONS	118
4.4 THE DIFFERENCE BETWEEN AN INDUSTRIAL AND A DIGITAL BUSINESS MODEL.....	128
4.4.1 GILLETTE'S BUSINESS MODEL	129
4.4.2 BUSINESS MODEL OF DOLLAR SHAVE CLUB	130
4.4.3 BUSINESS IN THE PHYSICAL AND DIGITAL WORLDS.....	135
4.5 VALUE OF A BUSINESS MODEL	143
4.6 BUSINESS MODEL ENVIRONMENT.....	151

5 BUSINESS MODEL INNOVATION 155

5.1 VALUE PROPOSITION AND CUSTOMER SEGMENTS.....	159
5.1.1 EXAMPLES OF SLOGANS AND VALUE PROPOSITION DESCRIPTIONS...	160
5.1.2 CHANGES IN THE VALUE PROPOSITION ENVIRONMENT BROUGHT BY THE DIGITAL REVOLUTION.....	161
5.1.3 CUSTOMER SEGMENT AND VALUE PROPOSITION ENHANCEMENT	165
5.1.4 CUSTOMER'S TASK/JOB SOLVED BY THE VALUE PROPOSITION	172
5.1.5 PRODUCTS AND SERVICES.....	181
5.1.6 MEASURING THE VALUE PROPOSITION.....	195
5.2 CHANNELS AND CUSTOMER RELATIONSHIPS	209
5.2.1 SALES TRANSITIONING TO PURCHASING.....	210
5.2.2 CHANGES IN BUSINESS WHEN ADDING DIGITAL CHANNELS	214
5.2.3 EXAMPLES OF MOBILE APPLICATIONS BY BRITISH BANKS	219
5.2.4 IN CONSTANT PURSUIT OF BETTER SOLUTIONS.....	225

5.2.5 TOUCHPOINTS WITH CLIENTS	226
5.2.6 OPTICHANNEL COMMUNICATION.....	229
5.2.7 CUSTOMER EXPERIENCE.....	232
5.3 KEY ACTIVITIES AND RESOURCES.....	237
5.3.1 TABLET APPLICATION: VIRTUAL FACTORY BY DELOITTE	251
5.3.2 AUTOMATION OF NIKE AND ADIDAS.....	254
5.3.3 AUTOMATION AND AI.....	259
5.4 PARTNER ECOSYSTEM.....	263
5.4.1 DIGITAL PLATFORMS	265
5.4.2 ENHANCING THE VALUE PROPOSITION WITH AN ECOSYSTEM OFFERING	271
5.4.3 CASE STUDY: RUHAN AND PARTNER ECOSYSTEM	273
5.4.4 CONSTRUCTION, EDUCATION, AND FOOTBALL	276
5.5 COST STRUCTURE AND REVENUE STRUCTURE	281
5.5.1 IMPROVING COST STRUCTURE: HEALTHCARE EXAMPLE	283
5.5.2 HIGH MARGINS CAN BE RISKY.....	284
5.5.3 TESTING BUSINESS MODELS.....	286
5.5.4 FREE SERVICES (FREE AND FREEMIUM).....	288
5.5.5 NEW KEY PERFORMANCE INDICATORS	290
5.5.6 POTENTIAL ISSUES: MEAL INGREDIENTS DELIVERY SERVICE	293
5.6 CONSTANT ADAPTATION TO THE DIGITAL ECONOMY	294

6 OPERATING MODEL 301

6.1 DIGITAL OPERATING MODEL.....	306
6.2 TRADITIONAL BANKS.....	312
6.3 OPERATING-INFORMATION SYSTEM	315
6.3.1 TESLA'S NEW BUSINESS AND OPERATING MODELS.....	316
6.3.2 OCADO'S EXAMPLE	317

7 DIGITAL TRANSFORMATION 321

7.1 WHY DIGITAL TRANSFORMATION PROJECTS FAIL	322
7.1.1 GENERAL ELECTRIC	323
7.1.2 GILLETTE.....	325
7.1.3 TELECOMMUNICATIONS OPERATOR	325
7.2 DIGITAL TRANSFORMATION OF PUBLIC ADMINISTRATION.....	329
7.2.1 ISSUES IN DIGITAL PUBLIC ADMINISTRATION.....	331

7.2.2 PRIMER IN DIGITAL PUBLIC ADMINISTRATION	332
7.3 DIGITAL TRANSFORMATION IN BANKING	335
7.3.1 PROBABLY THE BEST DIGITAL TRANSFORMATION PRIMER	341
7.3.2 FURTHER STEPS IN THE DIGITAL TRANSFORMATION OF BANKS ..	345
7.4 MICROSOFT BECOMES (AGAIN) THE MOST VALUABLE COMPANY IN THE WORLD	348
7.5 DIGITAL TRANSFORMATION IN THE ARTS	352
7.6 THE DIGITAL TRANSFORMATION OF CINEMAS	356
7.7 THE PROCESS OF DIGITAL TRANSFORMATION	360

8 ADDED VALUE—SMART BUSINESS 365

8.1 HOW ALIBABA CREATES VALUE	366
8.1.1 ALIBABA AND THE PAYMENT CHALLENGE	367
8.1.2 ALIBABA'S DELIVERY CHALLENGE	368
8.1.3 ALIBABA AND SCORING, INVESTING, AND INSURANCE	369
8.1.4 JACK MA AND REGULATORY IMPACT	371
8.2 SHOPIFY, BLOCK, AND STRIPE	372
8.3 AMAZON	374
8.4 TESLA	376
8.5 LEMONADE AND METROMILE INSURANCE	378

9 THE NEW WORLD 381

9.1 METHODOLOGY FOR EMBRACING THE DIGITAL ECONOMY	381
9.2 DANGERS, OBSTACLES, AND ISSUES	384
9.3 AN EXAMPLE OF DIGITAL BUSINESS INNOVATION	394
9.4 E-DEMOCRACY	398
9.5 GOOGLE GEMINI ON THE FUTURE	402
9.6 WWTHE SIGNIFICANCE OF THE DIGITAL ECONOMY	406
EXPLANATION OF TERMS AND EXPRESSIONS	408
BIBLIOGRAPHY	412
ABOUT THE AUTHOR	416

FOREWORD

The digital transformation of business is crucial for the development and survival of every business organization, regardless of its size, development stage, industry, or target market.

Branislav Vujović's book *Between 2 Worlds* offers great value not only to those who want to understand the transformative changes brought about by business in the digital world but also to those who, in addition to a fundamental understanding, seek concrete advice and examples of successful digital transformation implementation in practice.

How do we join the digital economy? How can we innovate the business of an existing company so that it remains relevant for customers, employees, partners, investors, suppliers, the environment, and society and continues to operate successfully under new conditions? How do we start a new company? How do we choose the right path when there is no final destination? These are all questions that the author of the book, Branislav Vujović, answers in a very interesting and understandable way, even for those who have not been primarily interested in the digital economy so far.

This is primarily because this book about the digital revolution was not written by a theoretician but by a digital revolutionary whose main insights were discovered and confirmed in practice (in theory, theory and practice are the same, but in practice, they are not).

Branislav Vujović has woven himself and his rich work and life experience into this book. Behind every word, you can feel faith, both in technology and, even more, in the people who will create and use that technology. As you read this book, which prepares you for a business environment where the rules we are accustomed to will no longer apply, you do not feel discomfort or fear, but on the contrary, you gain self-confidence and the conviction that there is great potential ahead of you, which will make you and your company better than ever. When Branislav connects the two worlds in which we will work and live in parallel, it seems natural and logical. And only someone who already lives what they preach can do that.

The book offers particular value to the reader through the brilliant examples of the most successful, innovative digital business models from practice, which the author has presented so clearly, detailedly, and as rarely anyone has done before.

Digital transformation begins when you create a transformative vision of how your company will be different in the digital world and then engage your employees and the entire ecosystem to turn that vision into reality. The author writes in great detail about digital transformation, which he describes as transforming business from the physical to the virtual world or companies from traditional business to digital. Digital transformation is rightly presented as a business transformation rather than an IT transformation.

A special section of the book is dedicated to innovating digital business models, which is the most effective way to create new value and exponential growth in the digital economy. Technology does not bring radical change and expected profit; it creates well-created business models.

The book also highlights the importance of platforms as the future business model. In the future, organizations that successfully create a platform with a robust partner ecosystem will have a superior advantage over organizations that rely solely on their resources.

In private and business life, ignorance is not a significant danger if you know you don't know. The danger is when you have the illusion that you know. It's the same with digital transformation. If you haven't yet entered the fast lane of digital transformation, you're already seriously late, but there's still hope to join in. But

if you've only superficially digitized individual and peripheral segments of your business and think you've digitally transformed, you're in serious trouble.

This is precisely why anyone who reads *Between 2 Worlds* will have a significant advantage over those who do not take advantage of this privilege.

Miša Lukić, CEO New Startegy

www.newstartegy.com

1 INTRODUCTION

1.1 WHO'S DRIVING OVER THERE?

Vienna, Friday, March 17, 4 p.m. As I can tell that my meeting will end on time, I use the personal assistant app, based on AI algorithms, on my smartphone during a break to request transportation from where the meeting takes place to my home by 6 p.m.



Figure 1.1

A self-driving car awaits me at the building entrance at 6 p.m. I make sure my grocery order and my dry-cleaned suit are in the trunk, and as soon as I get in the car, my mobile phone connects to the screens around the back seat. My personal assistant app presents the messages I need to respond to and logs me into the banking app to perform and confirm a few bank account transactions. Then, I check the most recent news before slumping into the comfortable back seat of the car, which silently and driverless glides toward my home.

I sip a glass of prosecco and think about how my personal assistant app wisely decided to use the self-driving car service offered by the local supermarket chain this Friday. The grocery store's weekend essentials are simple to add, and for larger orders, they also give away well chilled prosecco, which is just perfect.



Figure 1.2

If it's necessary to move quickly from one point to another in the city, my personal assistant app chooses Uber vehicles. If the journey is longer, my personal assistant picks the cars of the telecommunications company, as they have the best service AI programs, which are free to use during the ride in their vehicles, and the fastest internet communication.



Figure 1.3

Yes, March 17, 6:05 p.m., but which year? Will we use these services in five, 10, or more years?

Different driverless car producers, including Tesla, are already testing various software solutions in several cities in America and China. They also test vehicle communication with each other and different traffic control devices, thereby avoiding collisions and dangerous situations.



Figure 1.4

If you believe this will happen in five or 20 years, sooner or later, the following questions arise: Who will be the vehicle's owner? Will there be more or fewer vehicles? Will the same road capacities, garages, and hospitals still be necessary? How will this affect insurance companies, taxes, healthcare spending, traffic safety, and the police?

Would it be reasonable and moral for private individuals to own cars, pay for insurance, struggle with parking zones, and waste time, energy, and money on cars if private cars are idle more than 90% of the time? Especially if the customer can choose the model and size of the car that will transport them from one point to another, easily reserve it in advance, and pay for it using an app.

Instead of focusing on consumerism and the need for possession, society may move toward an economy where resources are shared among participants, minimizing production and pollution and emphasizing nature's protection and respect.

Today, most households have at least one electric drill (and many have two or three), so if the drill is used, on average, for only 11 minutes per year, then it is clear that this is a wasteful practice. If, soon, a self-driving car, vehicle, or drone can deliver an electric drill quickly when needed, it won't be necessary for households to continue to own three drills.

Furthermore, the intelligent personal assistant application could be integrated with the vehicle reservation application (both applications are part of the ecosystem of the automated vehicle management solution), allowing the vehicle to be reserved and automatically planned for, for example, 6:00 p.m. at a specific address, exchanging information on price and payment method, additional requests and orders, and loyalty program information, which calculates all discounts and adds benefits to customers.

This new digital business model can solve transportation from point A to point B in a new way. Other innovative business models are also acknowledged, such as growing the business of self-service shops by introducing a fleet of autonomous vehicles and launching additional consumer services, including delivery. Telecommunications companies may incorporate a fleet of self-driving cars into their business plans, and for Uber, it may be a terrific opportunity to increase profit.

If this scenario comes true, it's crucial to carefully analyze what changes will occur and their impact on different industrial sectors. Companies must start planning how to use these developments to become and remain relevant to their customers.

1.2 HOW TO UNDERSTAND THE DIGITAL ECONOMY

Understanding the digital economy, how to create value, and how companies may adjust to new rules is essential. Companies risk losing relevance with their current and potential clients and customers if they don't adapt and change. They won't produce value as clients want and need and won't create value for their owners, employees, or society.

Whether in state administration, public companies, nonprofit and charitable organizations, or private and state-owned firms, it is crucial to thoroughly understand the digital economy and adapt operations, procedures, and overall business. The digital economy and business models capture more industrial sectors and provide clients with better value than traditional business models.

Adapting to the digital economy is essential to all countries' and companies' plans for the future. For instance, by the end of 2022, as many as 81 countries were considering creating a digital currency. Canada, China, and Russia are far along, while El Salvador has accepted Bitcoin as legal tender.

The fact that we are only at the beginning of the digital revolution and that significant changes are still to come gives all this a new dimension. While it may not be possible to entirely shift all business activities to the digital world currently, as we still live between two worlds, technological progress and innovation will continue to transfer more and more activities to the digital world, leading to further growth of the digital economy and digital business models.

To thrive in this new era, we must adapt to these digital changes, as Charles Darwin's message from 1809 reminds us: "It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change."

1.3 ABOUT THIS BOOK

The purpose of this book is to explain the contrasts between physical and digital/virtual companies in a new way. It considers how value is created and altered in the digital economy, how to start new businesses, or how traditional companies can transform all or a portion of their business to the new digital environment. It looks at how to add value through business adaptation, design new strategies, innovate business models, including product innovations, and change the operational model with better use of new resources, a new organization, and the inclusion of IT in the operational component of the business. It also addresses how new digital and hybrid company models produce value, how to convert

current businesses to the digital economy, and how to do business in the economy between the two worlds. The book highlights how existing firms can adapt to this milieu, avoiding the fate of many great brands and brilliant firms that have recently become obsolete and shuttered their operations. The goal is to help us enter the digital world as one of the 10% of successful start-ups or to reach the planned effects of digital transformation for traditional companies. The goal is to help readers understand and grasp the digital mindset better.

This book aims to increase readers' understanding of the virtual world and how to do business within it. Topics covered include the digital economy, creating value, identifying main resources, parameters, and guidelines, and adapting to new business opportunities by learning from examples. The book examines the differences between business in the physical and digital worlds, namely how value is produced in the digital economy.

Although these steps can be based on any new product innovation, business model, or method of conducting business, in this book we primarily focus on innovations that result from carefully managing the transition to the virtual world or starting a business there..

Part 2 begins by explaining the digital world and digital mindset. Part 3 then introduces business resources for businesses in the digital world.

Part 4 discusses business models and their presentation, including the value proposition canvas. The business model canvas and value proposition canvas are introduced as essential tools and methodologies for designing and innovating business models. This section examines the value of a business model, the differences between business models that describe operations in the traditional/physical and digital/virtual worlds, the changes to the environment brought about by the digital economy, and how the environment affects the business model. The book further provides guidelines for measuring the value of a business model and value proposition.

Part 5 focuses on business model innovation, the transition to the digital world and economy, and the process of innovating the business model based on the changes brought by the digital revolution.

Part 6 briefly discusses the operational model and information system and the necessary changes required for successful business operations in the virtual world.

Part 7 discusses digital transformation and provides instances of digital transformations in various industrial fields, emphasizing smart business and additional value creation.

Part 8 discusses smart businesses that provide additional value in the digital world. Part 9 presents a holistic approach to the methodology of transitioning to the digital economy, examining the elements of the new world, including risks and opportunities and e-democracy. We provide a brief description of a unique business model that enhances the value proposition in tourism.

This task may seem ambitious, especially given the different angles from which the digital economy and digital transformation can be observed and explained. However, we offer a unique perspective on adapting to the digital economy and aim to convey it through the pages of this book to aid in the practical development of new digital firms or to assist in transforming existing ones to maximize the benefits of the digital economy. Our experience is based on analyzing many digital firms, the process and results of digital transformations, and working with companies from various industries to improve their operations in the digital economy.

In addition to analyzing and discussing how business is changing in the digital economy and where the added value lies, the focus is also on understanding how to adjust to changes, how to redesign business processes, translate them into an information system that enters the operational part of the business, and to explain the methodology for innovating the business model. In other words, how to translate the innovative business model through redesigned business processes into an information system. Finally, we will predict the future and consider the question from today's perspective: whether we are facing what Orwell predicted in the book *1984* or whether there is an alternative vision and how we can adapt to it.

BETWEEN 2 WORLDS

2 DIGITAL REVOLUTION
AND DIGITAL MINDSET**3** BASIC RESOURCES
FOR THE DIGITAL WORLD**4** BUSINESS MODELS**5** BUSINESS MODEL
INNOVATION**6** OPERATING MODEL**7** DIGITAL TRANSFORMATION**8** ADDED VALUE—SMART BUSINESS**9** THE NEW WORLD

2 DIGITAL REVOLUTION AND DIGITAL MINDSET

“It’s important to appreciate that the Fourth Industrial Revolution (Digital Revolution) involves a systemic change across many sectors and aspects of human life: the crosscutting impacts of emerging technologies are even more important than the exciting capabilities they represent. Emerging technologies are redefining and blurring the boundary between the digital and physical worlds.

“Therefore, the Fourth Industrial Revolution (Digital Revolution) is not a prediction of the future but a call to action. It is a vision for developing, diffusing, and governing technologies to foster a more empowering, collaborative, and sustainable foundation for social and economic development built around shared values of the common good, human dignity, and intergenerational stewardship. Realizing this vision will be the core challenge and great responsibility of the next 50 years.”

—Klaus Schwab, “The Fourth Industrial Revolution.” This essay was initially published 2018 in *Encyclopedia Britannica Anniversary Edition: 250 Years of Excellence (1768–2018)*.

The digital revolution has changed people’s private and business lives. The exponential development of processor power and software and the development of the internet and mobile technologies have enabled digital hyperproductivity and hyperconnectivity and paved the way for a digital form of working.

2.1 WHY THE DIGITAL WORLD IS BECOMING SO IMPORTANT

The digital revolution has created a digital and virtual world that is a counterpart to the traditional and physical world. In this new world, value is created digitally.

For businesses, creating value in the digital world has many advantages. The digital world opens many possibilities for innovation and disruption of traditional companies by introducing digital products and services or digital ways of innovating existing products and services. It is based on pure economic principles, changed only to accommodate the new rules of the digital economy.

Roberto Saracco (“Digital Transformation—Scarcity vs Abundance.” *IEEE Future Directions* blog, <https://cmte.ieee.org/future-directions/2019/01/25/digital-transformation-scarcity-vs-abundance/>) defined economy in the physical world as an economy of atoms, and economy in the digital world as an economy of bits. Saracco explains that traditional business, or the economy of atoms, is an economy of scarcity. There is a limited number of atoms; if we give atoms, we no longer possess them. The digital economy is an economy of bits and abundance because there are no limitations. If we give away bits, we still have them (a copy is indistinguishable from the original). “More than that. The economy of atoms has high transaction cost, i.e. it cost money (and resources) to move atoms along a value chain, whilst the cost of moving bits is basically nihil.”

Esko Kilpi, in the article “The Future of Firms. Is There an App for That?” (<https://medium.com/@EskoKilpi/movement-of-thought-that-led-to-airbnb-and-uber-9d4da5e3da3a>) relying on the work of Nobel laureate Ronald Coase, “The Nature of the Firm” explains this change: “The Internet, together with technological intelligence, makes it possible to create totally new forms of economic entities, such as the “Uber for everything” - type of platforms/service markets that we see emerging today. Very small firms can do things that in the past required very large organizations.”

He adds that if the costs (transactions) of value exchange in society are drastically reduced, as is the case today, the form and logic of economic entities must change! Traditional (organizational) firms are a more expensive alternative.

Ismail, Diamandis, and Malone in *Exponential Organizations 2.0: The New Playbook for 10× Growth and Impact* explain:

“What’s important to understand is that in the age of the Exponential Organization, the exponential cost drops not only for sales and demand generation but also for the cost side, with a radical drop in the cost of supply. For example, the use of crowdsourcing and community ideation by companies like Xiaomi, GitHub, or Reddit means their product development costs approach zero. What we’re now seeing with ExOs—and this is tremendously important—is that the marginal cost of supply goes to zero.”

Consequently, the arrival of the digital age has resulted in an evolution of business practices, with a significant shift toward the virtual world. Ray Kurzweil, a prominent futurist, introduced the Law of Accelerating Returns in 2001, stating that technological progress follows an exponential growth pattern rather than linear, as often predicted.

An analysis of the history of technology development shows that changes in technology grow exponentially and that in the 21st century, technology will not advance for 100 years, but progress will be much closer to a growth rate of 20,000 years compared to today’s growth rate.

The digital world opens up opportunities for exponential growth and a transition into a virtual world of unlimited possibilities. It is necessary to change the mindset, which is a pessimistic mindset about the struggle for a limited number of atoms (scarcity mindset), and adopt an optimistic attitude about abundance in the virtual world (abundance mindset). This promising approach can contribute to Schwab’s vision of values of the common good and human dignity.

The digital revolution opens up the world of bits with potential for innovation and disruption. Hyperconnections (internet) are another component of the digital world that supports value increase by reducing cost and simplifying transactions, bringing communication and collaboration to the next level.

It brings additional value to democratization, demonetization, and the distribution of endless opportunities to everyone, even the poorest. Neobanks offer democratization, demonetization, and financial inclusion for those who could not use financial services before.

Companies' traditional organizational structures and operating methods, both internally and externally, are not efficient enough, are not adaptable to digital operations, and cannot provide rapid and cost-effective operations and growth.

Business is significantly changing, and existing companies or their organizational structure may need to adapt to the new virtual business. As explained by Sangeet Paul Choudary in his report "The State of the Platform Revolution 2021" (<https://platforms.substack.com/p/the-state-of-the-platform-revolution> published in December 2021), a company can be observed from three perspectives: supply, production, and demand: "Through most of the twentieth century, businesses scaled through vertical integration, integrating multiple activities across supply, production, and distribution. This offered greater control and greater capture of profits and was a natural solution to the problem of transaction costs—costs incurred in coordinating activities across the value chain. Transaction costs determine an industry's structure—the manner in which firms organize themselves and interact with other players. To minimize transaction costs, most firms engaged in vertical integration."

"Digital technologies enable cheaper inter-firm communication, greater interoperability, and higher standardization. These factors together reduce transaction costs and enable firms to more effectively coordinate without requiring vertical integration or bilateral contracting."

Choudary, in "Platform Scale" (2015), defines managing the platform model in the digital world as designing and optimizing the value exchange between producers and consumers (the two sides of the platform). It is unlike managing traditional firms through a hierarchy of command and control.

Skinner describes banking in the digital world as "a global world of *digital data distribution* using software solutions and cloud servers," unlike traditional banking, of which Skinner says, "The task of the banking industry is *the physical distribution of paper (money)* in localized networks of buildings and people."

The digital revolution significantly changes the way of doing business and the dynamics (speed) on both the supply and demand sides, creating additional value. Newly established firms use this to achieve a successful market entry. Considering that many manufacturing technologies have already become standard and do not represent competitive advantage and that production is significantly automated and robotized, the change in the dynamics of the remaining two sides (supply and demand) becomes more critical.

As we are at the beginning of the digital revolution, many businesses are still operating in the traditional realm. For clients, that means constantly transitioning between the physical and virtual worlds while changing the rules, methods, and tools. These changes can be confusing for all of us. The easiest way to understand whether one lives between these two worlds is by writing down one's activities after waking up in the morning and indicating in which world each activity takes place. Many people first pick up their smartphones to check messages and emails, read the news (the virtual world), then wash up, have breakfast, and have coffee (the physical world), then check the weather forecast and traffic conditions (the virtual world) to know how to dress and when to leave home. Continuing to document our activities would confirm that we live between two worlds. The internet has become an essential communication and operational channel for many private and business activities.

Participants in the digital economy are offering new value, engaging clients in new ways, and posing a threat to companies that operate only in the physical world.

By undergoing digital transformation and joining the digital world, traditional companies can remain relevant to existing clients and attract new clients with competitive offerings, especially new generations of clients.

2.2 GENERATIONS AND MILLENNIALS

New generations prefer using the virtual world to communicate, collaborate, perform administrative tasks, and conduct business. The next generation is so integrated and bound with the digital world that it is becoming necessary for any company to address their needs, problems, and jobs through digital offers.

Let's consider the general population and embrace the commonly used categorization. We have Baby Boomers (born from 1946 to 1965), Generation X (1965 to 1980), Millennials (from 1981 to 1996), Generation Z (1997 to 2012), and Generation Alpha (from 2010 to mid-2020s). Various analyses indicate that in 2019 (varying across countries), the millennial generation became one of the largest generations in the Western world. Furthermore, they are considered one of the wealthiest generations since they now hold well-paid positions and have inherited significant wealth from their Baby Boomer parents and relatives. As the Baby Boomer generation diminishes, Millennials are expected to accumulate even more wealth. Millennials lead in the adaptation of digital solutions. Millennials are the largest generation in the United States, with 72.1 million. They surpassed Baby Boomers in the United States (2019), about 95% have smartphones, and nearly 86% buy digitally.

Also, the habits of Millennials are changing. For instance, this generation initially did not invest in real estate. In recent years, there has been a significant shift, resulting in a surge in the real estate market demand in the United States as Millennials have entered the market in large numbers. Millennials were not significant investors in the stock market, but now they have become important and have challenged established investment rules through several market disruptions. In January 2021, Millennials embarked on a battle against hedge funds. GameStop is a favorite company among this generation for buying computer games and accessories in physical stores or using catalogs, online stores, or websites. It experienced a situation similar to Blockbuster. New digital firms offering subscriptions to use games over the internet significantly threatened GameStop's business. It was expected that GameStop would declare bankruptcy and cease to exist. They reached rock bottom with a value of around

\$2.50 per share, while hedge funds were purchasing short options (betting that the stock value would decline). These funds engage in short selling, promising to deliver the shares later and paying a percentage of the value (for the option to do so).

When stock prices decline, the funds purchase them at a lower price and deliver them as promised. They profit significantly from this practice by investing substantial capital in anticipation of significant gains. However, if the stock value rises, the funds incur losses equal to the increase in stock prices plus the amount they must pay for the options. The number of open short options is publicly available and can be tracked, along with any other data about individual companies on various stock exchanges. In January 2021, Millennials noticed many short options on GameStop's stocks. They initiated communication through the Reddit platform, urging interested individuals to buy GameStop shares, essentially starting a battle against the funds. The response was incredible, and many retail investors participated, primarily through the Robinhood investment platform, where transactions were commission free. The number of purchased shares (demand) increased, leading to a surge in the stock's value, reaching as high as \$483 per share. When such an event occurs (a "short squeeze"), the funds are compelled to quickly buy back the promised shares, further increasing the number of purchased shares and driving the stock price higher. The funds incurred significant losses, contributing to the growth in the value of GameStop's stocks.

Naturally, such a price could only be sustained for a short time. However, even after the value dropped to around \$25 per share on June 7, 2023, GameStop's market capitalization stood at \$7.5 billion. Despite reporting losses for four consecutive quarters, they achieved a positive financial result in Q4 2022 with a net income of \$48.2 million. Nevertheless, the overall net income for the year 2022 remained negative. Many unprecedented events occurred during this "war," including the temporary suspension of GameStop stock trading on the Robinhood platform, which drew widespread criticism. Analysts continue to predict that GameStop will not be able to sustain itself, but only time will tell.

Following the significant decline in the value of technology companies' stocks in 2022, GameStop continues to persevere despite reporting approximately \$313 million in yearly losses.

Alongside GameStop stocks, a group that communicates through the Reddit platform (comprising over 12 million members who refer to themselves as “degenerates” and often adhere to the motto “YOLO”—*you only live once*) supported other stocks as well, such as BlackBerry, Macy's, and AMC.

Irrespective of this movement, many investors use smartphones to engage in stock market investments, especially since there are applications that offer commission-free buying and selling of stocks. Millennials have become a significant segment in numerous industries, and to successfully conduct business with them, the value proposition must align with their needs and concerns. They closely monitor companies' performance and invest in firms and their products only if they demonstrate sustainable practices and maintain fair and ethical relationships with their clients, partners, and employees while prioritizing environmental considerations.

This example explains how specific new generations may act and how disruptive it can be if companies neglect their business views and opinions.

2.3 WHO USES THE INTERNET AND WHY?

The digital revolution and internet-enabled hyperconnectivity dramatically increased the speed of digitalization. It is assumed that until 2003, people created five exabytes of data. In 2011, this amount was created in two days. In 1986, only 1% of data was in digital format, while “in 2007 only 0.007% of the planet's data is on paper and 99.99% is in digital format” according to Fundacion Mapfre (<https://www.fundacionmapfre.org/en/blog/how-much-information-is-generated-and-stored-in-the-world/>).

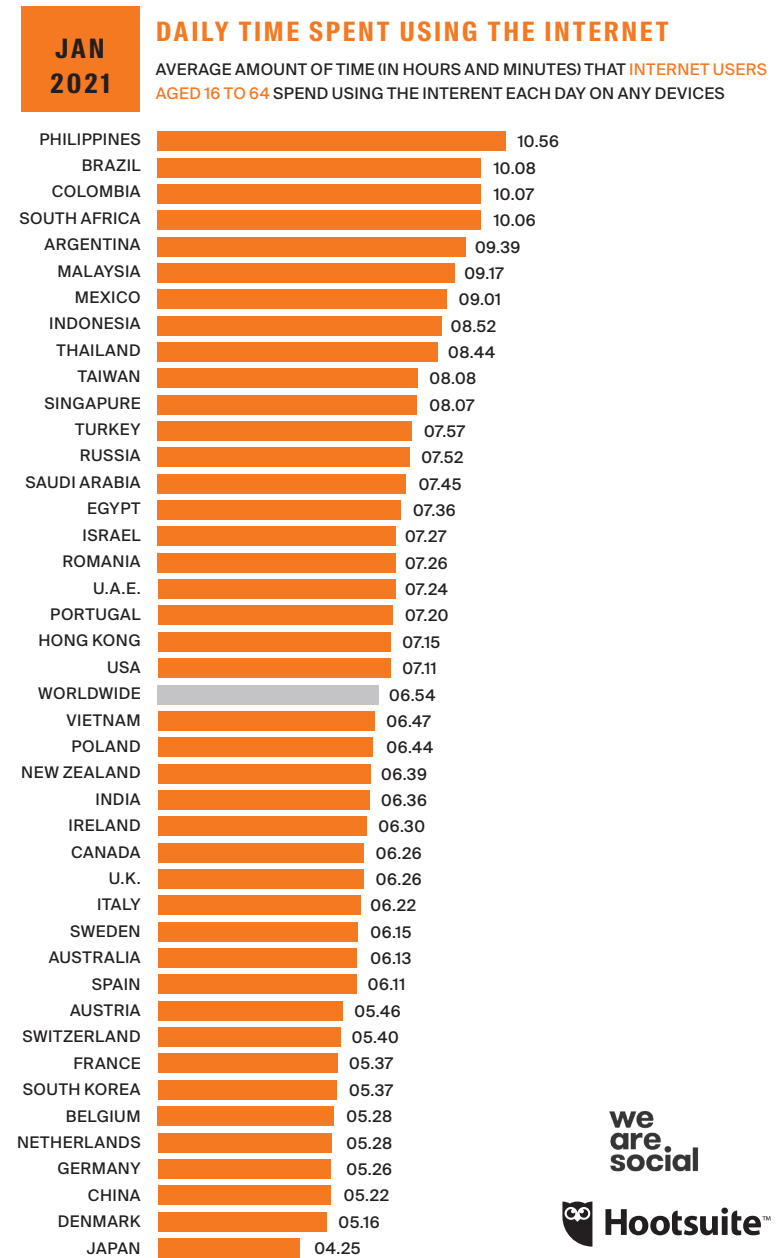


Figure 2.1 . Source: GWI (Q3 2020). Figures represent the findings of a broad Global survey of internet users aged 16 to 64. see globalwebindex.com for more details



Based on the globalwebindex.com reports for individual countries, Simon Kemp published a global internet usage overview (datareportal.com/reports/digital-2022-global-overview-report). According to this overview, people between the ages of 16 and 64 in all tested countries spend an average of seven hours (6.54) per day on the internet, while in the Philippines, Brazil, and Colombia, they spend between 10 and 11 hours *daily*.

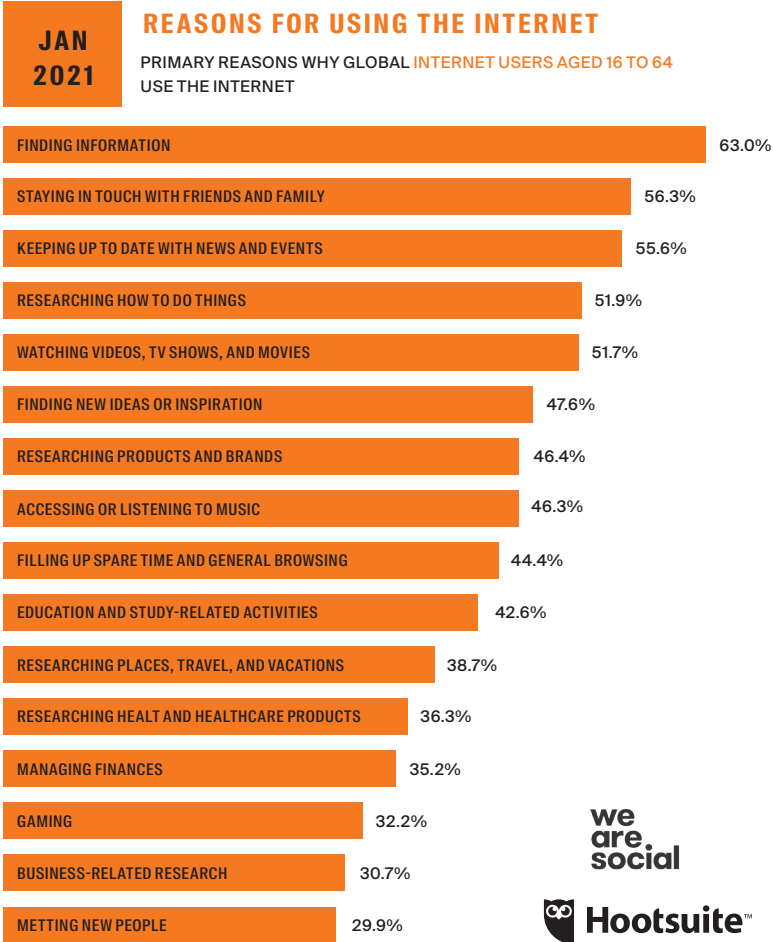


Figure 2.2. Source: GWI (Q3 2020). Figures represent the findings of a broad Global survey of internet users aged 16 to 64. See globalwebindex.com for more details.

On average, 55% of internet usage comes from mobile devices, with Nigeria (82.1%), South Africa (79.4%), and India (76.6%) leading the way. Interestingly, over 45% of internet users employ voice commands for search, while around 33% use images to identify objects and read and translate text. Each mobile user transfers an average of 9.4 gigabytes of data, while all users transfer approximately 55 exabytes (1EB equals 10¹⁸ bytes) every month (data from the third quarter of 2020). This research also indicates that 70–80% of internet users purchase products online, while 50–60% research and compare products online before buying them in the physical world.

The following graph shows the reasons for using the internet. From all this information, we can see how crucial the virtual world is to our personal and professional lives. Companies must use digital channels to interact with their current and potential customers if they spend time online. To help with the anticipated increase in business volume during the Christmas season at the end of the year 2021, UPS’s (United Parcel Service) PR director, Dan McMackin, discussed how they attempted to hire 100,000 temporary workers.

He said that UPS would hire 70–75% of people using the internet at that time and that candidates would mainly use mobile phones. 75% of the marketing budget for this operation would be allocated to social media advertising, compared to 75% of the budget for traditional media for similar activity five years earlier. It would be crucial for candidates to receive a response within 30 minutes regarding whether they had been hired.

As a result, businesses are increasingly relocating to the virtual space and shifting their operations to the digital economy.

However, according to reports from leading consulting firms such as Bain, BCG, McKinsey, and Deloitte, despite the massive investments, resources, and time spent on transitioning companies or starting new businesses in the digital world, around 90% of start-up companies close their operations within the first five years, and 70–90% of digital transformations fail to meet their objectives. IDC predicts that investments in digital transformation projects will reach \$3.4 trillion in 2026.



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Leonardi and Neeley explain that there is no alternative: “As leaders, if we do not transform the company and if we do not use technologies in a new way—if we do not innovate the business and change the organization; if we do not think about the speed of innovation—the company will be disrupted. And it will be a brutal disruption.”

The first prerequisite for improving the success of transitioning into the digital world is for leaders and other project participants to understand the characteristics of operating in the digital world (digital and abundance mindset).

2.4 DIGITAL REVOLUTION AND COMPANY LIFE

According to Wikipedia (https://en.wikipedia.org/wiki/List_of_oldest_companies), the oldest company in the world is Kongo Gumi in Japan. It was founded in 578 AD and specializes in construction services. They began their journey 1,446 years ago in constructing a Japanese Buddhist temple. They played a significant role in building many renowned structures, including Osaka Castle, in the 16th century while maintaining their expertise in constructing Buddhist temples. Unfortunately, the company faced financial difficulties in 2006 and was acquired by Takamatsu, and it continues to exist as a separate subsidiary to this day.

The second-longest continuously operating company is Nishiyama Onsen Keiunkan, a hotel in Hayakawa, Japan. It was established in 705 AD near hot springs and has been continuously managed by the same family for 52 generations up to the present day. If you visit Yamanashi Prefecture in Japan, it is worth visiting this hotel, which the *Guinness Book of World Records* recognizes as the oldest hotel in the world. Among the top 10 oldest companies worldwide, six are from Japan. The oldest restaurant in Europe is St. Peter Stiftskulinarium in Salzburg, which was mentioned for the first time in 803 AD, with claims that guests like Mozart and Columbus dined there.

While there are such long-standing companies, maintaining business operations over such a lengthy period is difficult, especially

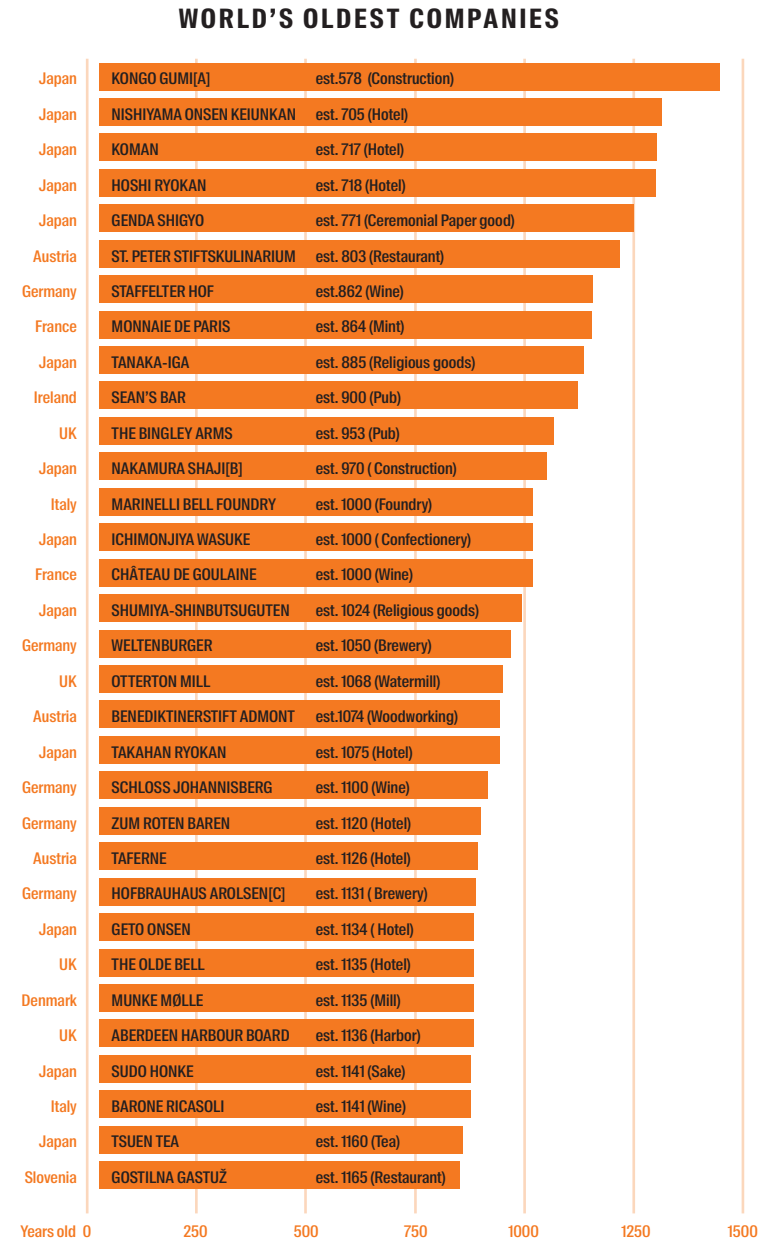
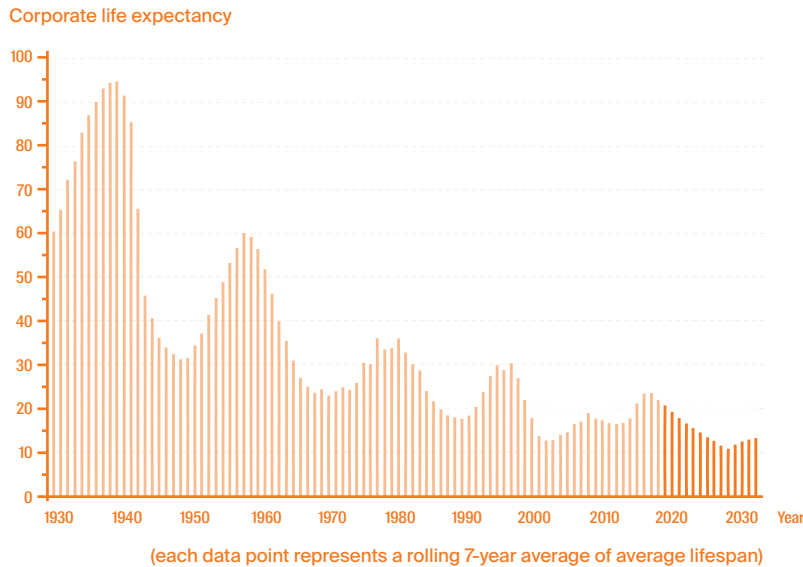


Figure 2.3 . Source: Digg.com - Reddit - dataisbeautiful based on Wikipedia list

during wars and significant changes like industrial revolutions. Today, the digital revolution disrupts businesses if they fail to embrace the changes it imposes.

Analysis of the longevity of all companies in the stock market reveals that over the past 60 years, the average lifespan of firms has declined from nearly 60 years to under 20. This indicates that business changes, particularly business models, have been intense during and after each industrial revolution. With the advent of the digital revolution, these changes have become constant and inevitable. New technologies, innovative business models, and the transition to operating in the virtual world—typically pioneered by newly established companies—have become part of normal business operations, compelling existing companies to adapt by continuously innovating their business models.

AVERAGE LIFE EXPECTANCY OF S&P 500 COMPANIES



THE UNITE INNOVATION & TRANSFORMATION MODELS

Figure 2.4 . Source: Foster & Kaplan (2001), Innosight, Standard & Poor's

Another confirmation of this trend is reflected in the change in investor sentiment. As business model transformations, starting from products or services, are primarily based on new fundamental resources—data, information, and the value of information—the way companies are evaluated has also shifted. Previously, investors would invest in companies whose value was calculated based on their tangible assets, such as factories, machinery, buildings, and hotels. However, in the past 30 years, there has been an increasing focus on investing in firms that lack physical assets but possess intellectual property, patents, a loyal customer base, innovative solutions, and business models that generate and enhance the company's value. This process of dematerialization has led to a double increase in investments and, consequently, the valuation of companies that have embraced new digital business models.

In 2015, the market value of the top 500 companies worldwide consisted of 87% intangible assets, as opposed to 1975, when the ratio was reversed in favor of tangible assets.

INVESTMENT AS A PORTION OF GDP

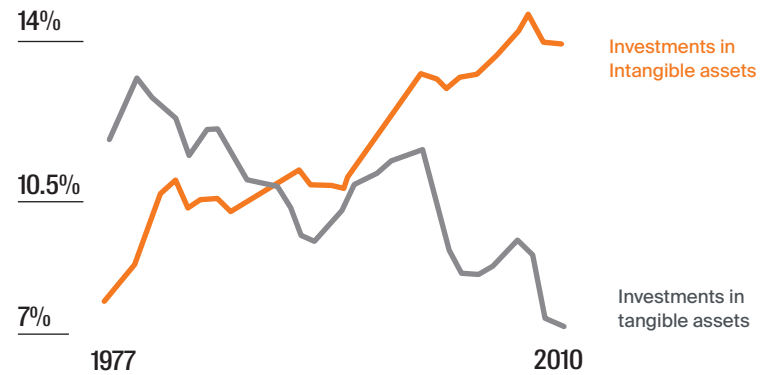


Figure 2.5 . Data: Corrado and Hulten, 2012

Furthermore, companies are undergoing rapid ranking changes due to the influence of the digital revolution. Failure to adapt business models to the digital economy is a significant risk to successful business operations.

In March 2024, seven of the top 10 most valuable companies were technology companies operating in and for the digital world.

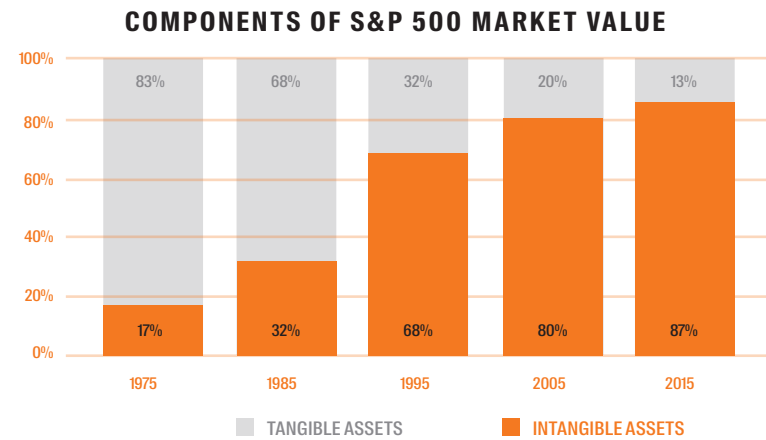
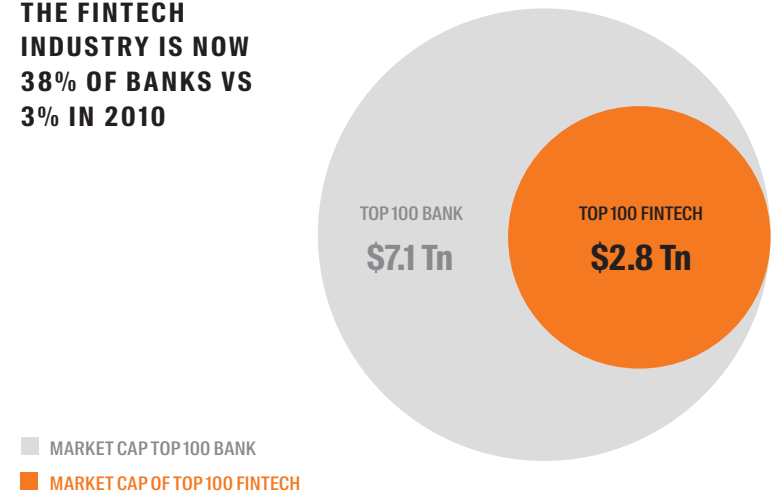


Figure 2.6 . Source: Ocean Tomo, LLC

In November 2021, the Center for Finance, Technology, and Entrepreneurship published the *Fintech Job Report 2021*, comparing the value of the top 100 banks with the top 100 neobanks and fintech firms. They determined that fintech companies have reached 38% of the value of banks despite being worth only 3% in 2010 compared to the world’s top 100 most valuable banks.

THE FINTECH INDUSTRY IS NOW 38% OF BANKS VS 3% IN 2010



THE FINTECH JOB REPORT 2021

Figure 2.7 . Source: Companiesmarketcap CFTE 2021

Banking and financial services are linked only by data, thus requiring a completely new organization, business approach, and decision-making process—an innovative way of creating value. That is why investments in fintech companies are growing, and investors’ expectations are very high.

We will discuss “why” and “how” in the following chapters. We will share explanations of the digital world, where value is, and how to create it, measure it, transfer business to the digital world, and improve it constantly.

2.5 DIGITAL MINDSET

If most people use the internet and spend a significant part of their day on it, and if practically all of the world's data is digital, this represents an opportunity for people and companies to improve their lives and businesses by transferring to the digital world.

The foundation for everyone involved in digital projects is a digital mindset, which includes an understanding of unlimited possibilities. Leonard and Neeley (2018) state, "A mindset is a set of approaches we use to understand the world. The approach shapes our thinking about phenomena in the world and their significance and determines our actions. A digital mindset is a set of approaches to understand and use data and technologies. This set of approaches and behaviors enables people and organizations to see new opportunities and plan a path into the future."

To embrace a digital mindset, we need to understand the digital world, what changes it brings to the business environment, how these changes impact the business itself, how to adjust, innovate, and operate in the digital world, and how to create value.

The digital and virtual worlds transform traditional companies' operations, decisions, and organization. New leadership and talents are required to lead and manage the transition to the digital world, specifically leaders and teams with a digital mindset who understand the economy of bits.

Transforming any business from the traditional to the digital world means converting tangible assets from the traditional world into intangible assets in the digital world.

A firm opinion promotes a technology-only view where the primary precondition is deep knowledge of new digital technologies. That is why the management of many companies decides to transfer responsibilities for opening or transferring business in the digital world to their IT departments. The development of digital technologies initiated the digital revolution, but joining the digital economy is not a technology-only or even technology-first project.

Leonardi and Neeley: "We used to see ourselves as workers in technical or nontechnical fields. But that's an outdated paradigm. We are all digital workers now, whether we are software engineers in Silicon Valley, salespeople in a Hollywood advertising agency, entrepreneurs in the food manufacturing industry, or instructors in any academic field. Learning to shed the old paradigm is not easy. In many ways, changing one's mindset can be much more challenging than developing practical technical skills.

"Understanding digital technologies is necessary, but it is enough to have a good grasp of around 30% of a few technical topics to develop a digital mindset."

Company leaders must understand how businesses operate in the virtual world and how to organize their businesses optimally in the digital economy. Knowledge and experience gained solely in traditional business are insufficient qualifications for digital project leadership positions. Sometimes, it is even an obstacle. Kodak likely made a mistake when they appointed one of its experienced board members as director of digital business and leader of the digital transformation instead of someone with a digital mindset and talent for the digital economy. In this book, we will discuss and explain all the ingredients for a digital mindset, and our goal is to help increase the percentage of successful digital ventures.

The digital revolution has emerged due to technological innovation, and it is crucial to understand how new digital technologies impact each business organization and its business model. However, innovating business models entails more than just adopting new technologies. It is necessary to understand how the business operates in the digital virtual world and how the transition from the traditional physical world to the digital one occurs, or at least in a hybrid environment where business is conducted partly in the physical and digital worlds. Individuals and companies are constantly shifting between the physical and virtual worlds, and their understanding and perception of these two worlds determine where and how they will behave and conduct business in each of them.

2.6 DIGITAL, VIRTUAL WORLD

There are different definitions of the digital world. The digital revolution has changed people's private and business lives. The exponential development of processor power and software, combined with the development of the internet and mobile technologies, has enabled hyperconnectivity through digital channels and paved the way for creating a virtual realm. The digital revolution has created a digital and virtual realm as a counterpart and parallel universe to the traditional and physical world.

This digital domain “is not just about bits and bytes; it's about how we perceive reality, connect, and navigate a landscape that's increasingly being influenced by the digital world,” and the definition at <https://medium.com/@thecrowdstage/digital-realm-revolution-transforming-life-in-the-virtual-domain-cb28680b3bf3> continues: “The term ‘digital realm’ generally refers to the virtual, electronic, or computer-generated space in which digital information exists and operates. It contains all the digital data, content, interactions, and experiences facilitated by computers, networks, and various digital technologies.”

The digital realm parallels our physical world with unique rules and regulations. It is a realm where life goes digital and fast when sharing on social media or using communication tools and e-business. People perform different activities: searching for and reading digital information in various forms; social interaction, communication, and collaboration; working, using e-government and e-learning; entertaining and playing games; and using many business applications.

In the digital world, companies are trying to perform their business differently. 5.3 billion people are using the internet—4.9 billion of them on social networks—and they, on average, spend seven hours connected. Businesses that are operating in the digital world have many benefits: working in an abundance economy with enormous growth potential, lower barriers to entering different industry groups, addressing client segments worldwide, addressing needs of new generations of clients, the possibility for innovation and disruption, better inclusion, and many more.

Challenges and difficulties include securing digital operations in the faster-changing environment and protecting data, software, and people; ensuring validity and data correctness; overcoming the digital divide to include the rest of the world's population; and protecting their innovations and disruptions from competition.

There are challenges with organizations and people, such as a “competency trap”: the false belief that what brought success in the past will bring success in the next period—just continue doing the same. The digital revolution is changing how value is created, and it helps companies disrupt traditional business ways. Continuing to do the same is not an appropriate way to start or transfer a business into the digital world.

What is the first “why” or “how”? Most management teams are looking for recipes with simple steps for “how” to adjust to the digital world, but the only right way is to understand why and then how, and teams do their own “what.” Because the digital revolution is at its very beginning and additional changes are coming, if teams understand “why” and “how,” they need to constantly assess the impact of new changes and adjust as appropriate. In November 2022, OpenAI released ChatGPT 3.5, which changed how companies create value in the digital world. Every company must now review the impact of artificial intelligence solutions on their business and assess opportunities to improve their business model. And similar changes will happen in the future.

The management teams must embrace the digital mindset and culture and understand why and how. This is what we are covering in this book.

2.7 WHAT IS THE DIGITAL ECONOMY?

A digital economy is an economy operating in the digital world. Characteristics are:

1. A digital business operates with digital products (data) in a virtual environment.
2. It is an economy of bits. Data are one of the main assets.
3. All business activities and related processes are fully automatized (software, robots, and automated machines) and virtualized (dematerialized).
4. Software solutions (algorithms) process data using digital infrastructure and perform and control (by making operational and tactical decisions) all operations in the virtual world without human intervention.
5. Communication and collaboration with clients, partners, and employees are performed using digital channels.
6. Data are used to produce valuable information, reports, and analyses, optimize processes and business activities, and create new value for new business lines.
7. Digital partners help extend offerings or perform business processes for digital companies. Software solutions through application programming interfaces enable communication and collaboration with the digital ecosystem.
8. Clients perform self-service processes.
9. Digital companies are using digital business models.

Digital companies conduct their entire business exclusively in the digital world—the world of bits. Everything is tied to data and information; software solutions perform all business activities and algorithmically make decisions based on collected data. In the digital world, the goal is to produce high-value information for business participants.

The characteristics of business change due to the focus on information. Authors Shapiro and Varian note that in digital business there is a high cost in producing information but a low cost in reproduction (almost zero), which economists call “high fixed costs and low marginal costs.” They add, “The price of information (as

a commodity) is based on its value to the user and is not tied to production costs.”

In the digital virtual world, all business activities and processes, as part of those activities, are automated, robotized, and executed in software solutions (algorithmically) using data (bits) that come from within the company or organization and data that come from outside the organization, from customers, partners, and the environment. All operational and tactical decisions are taken over by algorithms (including AI), allowing immediate execution. All communication and collaboration of software solutions with customers, partners, and the environment are automated and conducted through digital channels.

Consequently, the organization, rules of management and decision-making, improvements and optimization of operations, talent profiles, and company culture change significantly.

As we are at the beginning of the digital revolution, it is not possible to transfer every process and all business activities to the digital world. That is an additional obstacle to the straightforward transformation of businesses from the traditional to the digital world. Many companies operate partially using traditional business models and partially using digital business models. That is why we live and work between two worlds.

BETWEEN 2 WORLDS

- 2 DIGITAL REVOLUTION AND DIGITAL MINDSET
- 3 BASIC RESOURCES FOR THE DIGITAL WORLD**
- 4 BUSINESS MODELS
- 5 BUSINESS MODEL INNOVATION
- 6 OPERATING MODEL
- 7 DIGITAL TRANSFORMATION
- 8 ADDED VALUE—SMART BUSINESS
- 9 THE NEW WORLD

3 BASIC RESOURCES FOR THE DIGITAL WORLD

3.1 LEAP INTO THE DIGITAL ECONOMY

How can we successfully launch a new business or innovate an existing one to maintain its relevance to customers, the company, the environment, and society while operating under new conditions? That is the million-dollar question. According to numerous expert articles, internet blogs, renowned consulting firms, and experts in the digital economy, there are multiple paths to choose from, each promising guaranteed success if companies follow them. Everything appears straightforward.

The initial challenge lies in the selection of guidelines to follow, as there is an overwhelming abundance of them, and despite many having similar or identical steps, a vast majority of projects for transitioning into the digital economy still fall short of success. It is often the case that proposed solutions, methodologies, or sets of rules fail to take a comprehensive view of the problem, neglecting the essence of the change, which is the shift of business into a new digital virtual world where new fundamental resources and entirely new business rules exist, alongside a fresh approach to creating additional value. Translating a small number of business processes onto digital channels and considering the transition into the digital economy complete is not enough. Concentrating on a few business model elements or focusing only on technology and technological solutions will not bring planned results. Innovating a product or service alone is also insufficient without innovating all business activities in alignment with the principles of the digital economy.

Some works discuss only the use of the cloud as a solution for transitioning into the digital economy, improving the utilization of existing data, or digitizing specific business processes.

But the first prerequisite is for team members to share a digital mindset, which can help them establish new digital businesses or transform existing ones.

Today it is easy to submit requests through digital channels for various governmental administrative tasks or services from different companies, but after that, all operations proceed as before—manually—and decision-making remains only in the hands of responsible individuals without whom the process cannot be completed. For instance, submitting a pension application online is possible, which is a significant advancement, especially during the COVID pandemic. Afterward, however, there is still a lengthy wait for manual calculations and decisions on what and how to recognize or disregard to actualize the acquired pension entitlement. Resolving any issue with government identification and authorization applications requires clients to visit one of the support centers personally. A similar situation arises with loan applications in many banks, which depend on officers verifying the documentation's accuracy and whether the credit committee has time to convene and approve loans. There are numerous examples where business processes are organized in the traditional manual manner and directly depend on the number of requests, employees working on those processes, and the decision-making approach.

The problem and potential solution we are considering here are limited and defined as follows: the digital revolution opens up a digital world.

It alters the business model landscape, substantially impacts every company's operations, organizations, and decision-making process, and even changes main customer segments. Digital channels, customer-centricity, software solutions replacing operational processes, and decision-making translate business into the digital world. Digital businesses are faster and more efficient than traditional businesses and enable additional value creation. The digital world opens the world of bits with abundance and exponential growth. Every company must consider enhancing its operations by

transitioning to hybrid or digital business. The question is how to manage the transition to digital business and which methodology can help realize the additional value in the digital realm.

Establishing new business ventures and transforming current operations are two different kinds of projects during a business shift to the digital environment:

1. Launching a new business venture entails both advantages and challenges. The advantage lies in organizing the entire operation in the digital world, where data are the primary resource, the product is digital, and everything is based on software and automated solutions, digital channels, customer-centricity, and a digital ecosystem. Analyzing the new value proposition in the virtual world requires special attention, including comparison to competitive offerings in the physical realm.

If it is not possible to automate all business processes (due to the nature of the process, regulations, or tradition), then only those business processes that can't be designed in the digital world will continue to execute in the physical world, or execution of these processes can be outsourced and delegated to partners, allowing the new company to conduct the entire business in the virtual world. Success will depend on various factors, but the goal is to design a digital business model that delivers maximum added value while considering the environmental context. Subsequently, this model needs to be translated into the design and architecture of an information system, followed by the design and development of a new information system that enables operations in the digital realm. An increasing number of practical examples confirm that new digital companies can quickly enter the competitive market and attract customers who perceive a higher value in their offerings than incumbent firms. The primary reason lies in the value of innovative digital business models. To win over clients, these new firms provide free services, lower product or service prices, and offer additional conveniences such as subscriptions instead of one-time purchases or pricing influenced by the sharing economy.

For instance, neobanks operate without physical branches, conducting all their operations through applications using digital channels. The operations include presenting their offerings, opening accounts for new clients, and conducting mandatory digital verification of documents and risk assessment following the “know your customer” rules. Additionally, they provide digital services that address clients’ problems or needs, ranging from entirely new services to a combination of multiple traditional processes and products, all fully automated through software, from familiarizing with the services to downloading and using them. Thus, the procedure for cash loans is automated, from introducing oneself to the terms of applying to the approval and disbursement process. This is why challenges arise in categorizing such companies. Are they considered technology firms engaged in software development or financial institutions? Which regulations apply to such companies, and what standards must they meet to provide financial services to their clients?

For new digital companies, there are numerous challenges. The first one is the engagement of digital talents—individuals with a digital mindset who understand where and how value is created in the digital economy, those who comprehend how to design new digital products and services, design digital business processes for the digital world, and secure financial resources, and who can develop automated software solutions delivering designed value in the digital world, to mention only a few.

2. The digital transformation of existing businesses is even more challenging for many reasons. As companies are already operating successfully, with an established market, existing customers, and consistent revenues, they have the financial resources for transformation and innovation. However, a significant percentage of digital transformations fail to achieve their set objectives.

There are numerous challenges to consider. Let us mention a few: Existing companies already have established revenues and profits, and no one is willing to give them up for uncertain success and promises of better results in the digital economy

after a few quarters or years. The coexistence of two business models is far from easy; disrupting one’s business is painful and commercially unacceptable. The organizational structure is different, requiring significant changes that no one desires. Designing new digital products and services and defining the new value proposition in the digital business model is challenging but critical. It is challenging to design business activities and underlying processes for the digital world, and it is a challenge to extend and innovate an existing information system to include new digital processes to support digital operations.

A prime example is Kodak, once the fifth most valuable brand in the world, which planned to replace its successful and profitable business with a digital model.

In 1888, George Eastman introduced the first Kodak camera in the United States. Until 1976, Kodak held 90% of film and 85% of camera sales in the United States. In 1975, Kodak engineer Steven Sasson created the first digital camera and digital photograph, which would help Kodak continue its successful market dominance in cameras and photography. Unfortunately for Kodak, the traditional film-based approach yielded 95 cents for every dollar invested, while digital photography brought in only five cents. Kodak had an extensive partner ecosystem (not to mention photography stores, supermarkets, and local businesses that housed large film development and photo printing machines). They also worked with the entire film industry, including cinemas.

It is tough to abandon existing, successful partnerships for new digital ones that are not risk free.

These are just a few elements that prevented the company’s governing bodies from fully embracing the development of digital photography and recording devices. An additional problem arose when they appointed one of their long-time vice presidents to lead Kodak Digital, a great corporate player but not a digital talent and somebody with a clear understanding of value creation in the digital economy. The result is well-

known: they had to file for Chapter 11 bankruptcy under the US Bankruptcy Code.

Understanding two worlds and how to create value represents the most significant challenge in transformational processes for four fundamental reasons.

The first reason is the fear of change, which inhibits any innovative work within companies. Participants in workshops on the digital economy demonstrate resistance to disruptive changes that shift business into the virtual realm. The most challenging task is helping them realize that the value brought by the digital economy in their industry holds far greater promise than what they currently possess. Still, significant changes and a new distribution of value are required.

The second reason is that the highest management levels in companies often seek only quick wins and short-term results based on old metrics. At the same time, they are unwilling to thoroughly analyze changes and initiate transformative shifts within the company, where long-term and comprehensive objectives measure success.

Charlene Li writes, “I once served on an ‘innovation committee’ that would only approve projects with a six-month return on investments, which guaranteed that any approved initiative would have minimal impact” (*The Disruption Mindset: Why Some Organizations Transform While Others Fail*).

The third reason is that, due to changes in the business model, companies transitioning from an industrial business model often must sacrifice existing high margins and reduce their profits to attract new clients and withstand competition. Neo-banks have gained many customers by substantially reducing fees for many financial services traditional banks charge clients. The foundation for this lies in clients performing all the necessary actions of the processes required for these services to be carried out automatically in the digital realm, resulting in significantly lower costs for banks if clients use digital banking. Clients expect banks to share the savings brought by digital operations by decreasing their fees for transactions, services, and account maintenance costs.

The fourth reason is that the digital revolution is at its beginning, and not all companies can transfer their complete business into the digital world. Some business activities and corresponding processes cannot be shifted into the digital world. That is why some companies must combine operations in the physical and digital worlds and use a hybrid model. This model is another complication in transferring a business into the digital world. That is why we live and operate our businesses between two worlds.

To better understand the digital world, it is essential to recognize the primary resources for the digital world.

3.2 INFORMATION AND COMMUNICATION TECHNOLOGIES

The rapid pace of development in information and communication technologies enables the creation of the infrastructure for a new virtual world and the foundation of the digital economy. Innovation in computer chip manufacturing enables doubling the number of transistors on an integrated circuit every 18 months, leading to an exponential increase in processing power, communication speed, graphics card capabilities, and storage capacity. The world is interconnected through optical cables and satellites, while advancements in mobile technologies and the internet have brought new possibilities in communication, collaboration, and innovative business practices. Digital channels have opened up, facilitating direct communication between companies and clients regardless of their physical location, and ushering in a new way of conducting business. These new digital technologies have enabled numerous innovations and have given rise to entirely new digital products, services, and solutions that streamline and accelerate various private and business activities. In a business context, they bring new approaches and additional value to operations.

The Internet of Things (IoT) and sensors, robotics, and automation are rapidly advancing, as are the possibilities of artificial intelligence. New decentralized and distributed algorithms, such

1

2

3

4

5

6

7

8

9

as blockchain algorithms, are increasingly being used, and the expectation is that they will bring decentralized management to the internet (Web 3.0). Software solutions are becoming the central lever in the rapid development of the digital world.

IT infrastructure, communication channels, and software solutions are translated into the cloud and offered as a service, replacing the purchase of infrastructure or software licenses with infrastructure as a service, platform as a service, or software as a service. This simplifies business operations and facilitates even faster development of software solutions, which take over numerous business processes across many industrial sectors. At the same time, the entire infrastructure (including communication equipment, channels, and IoT) becomes a crucial resource in the digital economy, whether owned directly by the company or used through cloud-based solutions.

3.3 DATA, INFORMATION, AND THE VALUE OF INFORMATION

Back in 1964, at the New York World's Fair, renowned science fiction writer and futurist Isaac Asimov provided his vision of the world in 50 years in 2014. He accurately predicted smartphones for video calls, the ability to read documents, and view photographs, flat 3D televisions, self-driving cars, and automated kitchen appliances. He may have underestimated the world's population and the capabilities of robots while being overly optimistic about flying cars and 3D printers for food production—producing meat cuts without harming animals.

Indeed, most people's lives have undergone significant changes due to innovations and digital technologies, from new modes of communication to using smartphones for various services, shopping, and even entertainment in the digital world. With new ways of conducting banking transactions, booking flight tickets, checking in for flights, and handling administrative tasks with government authorities using the internet and smart devices, there are many situations where accomplishing something through digital channels is faster, easier, and more straightforward.

In the digital world, we begin with the most vital resource in the digital economy—information. Information is generated based on collected data.

Garrett Camp stood at the corner of Second Street and South Park Street in San Francisco, waiting for the taxi he had ordered. He was nervous because the cab was running late and was already behind schedule for an important meeting. He had encountered problems with ordering and scheduling vehicles, including delayed arrivals or no-shows. Garrett was a well-known entrepreneur. He had sold his IT company to eBay and purchased shares of Apple before they introduced the first iPhone. The surge in Apple's stock value after the launch of the iPhone had made Garrett very wealthy. He held the first version of the iPhone in his hand, which, following software modifications in early 2008, introduced the capability of locating every phone. Frustrated by the delay, Garrett had the idea that if the location of two iPhones were known—one belonging to the taxi driver and the other to the client—it would be very convenient to order a ride using a smartphone and track the approaching vehicle. He liked the idea and continued developing it over the following days and months.

He also realized that the iPhone could serve as a taxi meter by using the data generated by the accelerometer (another sensor already built into the iPhone). He continued to work on that idea and often discussed it with his friend Travis Kalanick. Adam Lashinsky's book *Wild Ride: Inside Uber's Quest for World Domination* claims that Travis and Garrett decided to embark on the realization of the Uber project one rainy night in Paris after their unsuccessful attempts to order or flag down a taxi following their participation in a major conference dedicated to internet business. They decided to create UberCab—a company that initially connected users and limo service drivers in San Francisco through an iPhone application. Later, it expanded to include regular drivers with their private vehicles in many cities.

To use services through Uber's platform, users first install the application on their smartphone, open it, sign up as a new user, and set up their payment method. Afterward, they can access the services offered by Uber in any city where Uber operates. The foundation of

the application is a screen with a map displaying the user's marked location and small car icons representing Uber vehicles (if available in the area). It is easy to see how many Uber cars are nearby and what distance they are from the user.

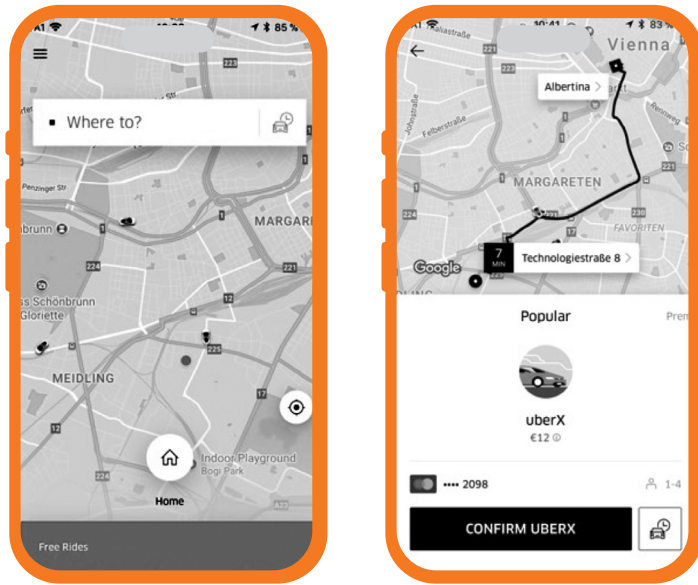


Figure 3.1

The Uber application on the user's smartphone presents all of this information based on data collected: their geolocation and the geolocation of nearby vehicles (with smartphones and Uber's driver application). If the user enters the desired destination address, the Uber application will plot the route to the specified address on the map. It will also calculate the vehicle's estimated arrival time and the ride's duration to the desired location and provide an approximate price for the transportation service. The route calculation considers additional information about the current traffic situation and route optimization between the user's location and the destination. With just a single click, the client can request a vehicle, and Uber displays the vehicle's license plate number, the driver's name, and the path the car will take to reach the user. The user can track the

real-time progress of the approaching vehicle and has the option to contact the driver if additional instructions are needed. The client can monitor the route and the remaining distance to the destination throughout the ride. Upon arrival, the user receives the final price, and the Uber platform processes the payment automatically using the user's credit card.

Although the transportation of passengers from point A to point B by car involves many physical (material) resources such as vehicles, roads and streets, drivers, and fuel, Uber conducts all aspects of its business model in the virtual world, using its application and the data at its disposal. Based on the data provided by each smartphone, Uber generates a wide range of valuable information about the service it offers to its clients in a straightforward, transparent, and efficient manner. The material resources mentioned earlier are the responsibility of the Uber registered driver. On the one hand, there are the drivers who own the vehicles and take care of them, including maintenance and fuel, and on the other hand, there are the customers.

Through the application, the user receives all the necessary information for transportation from point A to point B, ensuring a safe journey with an estimated price, route, and travel time, all known in advance and presented in just a few screens. The Uber application fulfills the client's need to be transported from point A to point B in a new and transparent manner. The client controls all events and makes decisions before, during, and after the transportation.

The Uber application illustrates how additional value is created for the user by introducing new possibilities brought about by the digital economy: using smartphones and maps, route optimization based on traffic information, cashless payments, storing all rides for security purposes, and more. Everything is automated and data-driven, and valuable insights are extracted for the offered service, placing the client at the center of the business and empowering them with control. Through their application, Garrett and Travis leveraged available data, such as location and acceleration, and transformed them into valuable information for users. They built an entirely new digital business model that separates the value of the essential asset (the vehicle) from the service drivers provide.