

## Introduction

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Digitalization has been a driver of transformation in business and society, leading to radical changes in the ideas and shapes of what work is, what organizations are and how value can be captured and created. One of the key issues of digitalization has been its capacity to enforce new ecosystems and the consequent rise of a new breed of entrepreneurs and ventures exploiting the opportunity of digital business. Therefore, this book discusses and presents the main challenges and trends related to digital entrepreneurship to an audience of managers and scholars. Moreover, this volume aims to provide a unified survey of both practice and current scientific work on the topic, considering the key issues for strategy and management as well as the role of technology in developing new digital ventures. Thus, as in my previous volumes, I will consider different perspectives, from information systems, technology management and innovation research to strategy and marketing, among others. Accordingly, this volume aims to create a bridge between industry and academia, presenting practices that are suitable for use by established businesses and digital entrepreneurs through the lens of academic work. This book continues the mission of my former published volumes in providing practitioners with a toolbox and “food for thought,” too. So, as in previous work, each theme will be analyzed in its technical and managerial aspects, also through the use of case studies and examples.

### **Outline of the Book**

The book argument is developed along three main axes, following a structure similar to the one adopted in my previous books [1–3], considering, first (Part I), strategy and management issues for digital entrepreneurship; subsequently (Part II), the role of technology, focusing on key digital business systems suitable to enable and for consideration by digital entrepreneurs and ventures; and, finally (Part III), the challenges and development of digital entrepreneurship in *three* key industries

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(fintech, manufacturing and fashion), through presentation and review of case studies at a global level.

In Part I, I first discuss digital entrepreneurship's main characteristics and types (Chapter 1) before considering its relationship with innovation and the related challenges for new ventures as well as different kinds of organization apart from start-ups (Chapter 2). I focus specifically on digital marketing as a key aspect for digital entrepreneurs wanting to successfully target and manage their customers (Chapter 3). I conclude the first part of the volume by analyzing the education and skills required for digital entrepreneurship (Chapter 4). I begin Part II by exploring the key challenges of digital information and communication technologies (ICT) for digital entrepreneurship (Chapter 5). I then consider in detail three key digital technologies for digital entrepreneurship: social media (Chapter 6), the Internet of Things (Chapter 7) and blockchain (Chapter 8). Finally, as already mentioned, I investigate, in Part III, the challenges and development of digital entrepreneurship in the fintech, manufacturing and fashion industries alongside discussion and analysis of case studies at a global level.

As in my previous volumes [1–4], I adopt both a scientific approach and a concrete stance to introduce the characteristics, challenges and opportunities of digital entrepreneurship with the goal of providing insights and “tools” for understanding and acting through new ventures in the current digital competitive environment. Thus, this book is ideally connected to my former volumes on digital challenges and trends as well as Big Data and analytics [1–3], aiming to synthesize the issues and be a ready-to-consult guide to the key topics of digital business innovation for both managers and scholars.

## References

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*Part I*

Strategy and Management

# 1 Digital Entrepreneurship and Digital Business

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## 1.1 Introduction

The digital revolution, brought about by the wide adoption and use of numerous technological tools such as smartphones, the Internet, social media and cloud technology, has created explosive changes in the economies and markets in which businesses operate. By 2020, it was estimated that there will be 50 billion Internet enabled devices, which in the entrepreneurial world is translated into more potential customers for businesses to reach. Offering billions of emerging opportunities, the digital disruption has transformed businesses as well as their processes and activities, reinventing their relationships with stakeholders such as suppliers, vendors and customers. In the era of digital trends, entrepreneurs are exploiting the dynamics of digital technologies in order to create value, expand their business and ultimately achieve high revenues that translate into the success of the firm [1]. “Software is eating the world” was the phrase used by famous Internet pioneer Mark Andreessen when trying to describe the extent of the digital phenomenon, with more and more businesses in almost every industry being run online and offering their products and services through the Internet. From movies to agriculture and defense, firms around the world have embraced the digital disruption [2].

## 1.2 Defining Digital Entrepreneurship and Digital Business

Over the last few decades, the concept of entrepreneurship has received significant attention from extant literature, where academic consensus on an equivocal definition has not been achieved yet.

In the early twentieth century, Joseph Schumpeter, who is considered the father of the contemporary version of entrepreneurship, in his seminal work described entrepreneurship as a process that involves the creation of new opportunities through “creative destruction,” by breaking the equilibrium and embracing change [11]. In other words, an entrepreneur is an

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individual who introduces innovations, in the form of processes, products and services, into the existing system, and is willing to take the risk as well as the responsibility involved in creating and implementing a new business strategy for an existing firm or in starting up a new business. Several studies in the literature try to define the concept of entrepreneurship and contribute additional value.

Table 1.1 presents some of the various definitions that have been proposed by authors in extant literature. It can be observed that some definitions omit the aspect of innovation while others tend to focus on the outcomes of entrepreneurship, with some concentrating on different instances of it such as “international” entrepreneurship. Overall, although there has been no mutual consensus on a global definition, studies seem to agree that at the core of entrepreneurship lie the aspects of innovation, risk-taking, seeking of new opportunities and creation of

Table 1.1 *Definitions of entrepreneurship*

Author	Definition
Shane and Venkataraman 2000 [3]	“We define the field of entrepreneurship as the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited . . . Consequently, the field involves the study of sources of opportunities; the <i>processes</i> of discovery, evaluation, and exploitation of opportunities; and the set of <i>individuals</i> who discover, evaluate, and exploit them” (p. 218).
Casson 1982 [4]	“An entrepreneur is someone who specializes in taking judgmental decisions about the coordination of scarce resources” (p. 20).
Cuervo et al. 2007 [5]	“Entrepreneurship includes the identification and assessment of opportunities, the decision to exploit them oneself or sell them, efforts to obtain resources and the development of the strategy and organization of the new business project” (p. 3).
Frank Knight 1921 [7]	“Universal foreknowledge would leave no place for an ‘entrepreneur.’ His role is to improve knowledge, especially foresight, and bear the incidence of its limitations” (p. lix). “Let us consider first the simple case of unique and undivided exercise of the function, the control and uncertainty-bearing being all concentrated in the same individual, under the assumption that outsiders[,] whether employed by him or not [,] have neither opinions upon nor interest in the question of his competence. It will further simplify the problem if we begin by assuming that this is the only type of entrepreneurship in our society” (p. 280).

Table 1.1 (*cont.*)

Author	Definition
Reynolds 1999 [8]	“Any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business” (p. 3).
Ruiz 2016 [9]	“Entrepreneurship means an undertaking by an individual, a team of individuals, or an established private or public entity in any of the following activities or areas. Any attempt at new business or new venture creation such as self-employment, founding a new business organization, or expanding an existing business. Any attempt at creating a new public initiative such as a new public organism, or expanding an existing organism. Any attempt at innovation, such as launching new products or services, new strategic development, new organization of resources (including human), entering new markets (including internationalization), creating new sectors, social development, or any other action that adds economic or social value” (p. 1029).
Oviatt and McDougall 2005 [10]	“International entrepreneurship is the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services” (p. 540).

new business activity as well as management of the new business and value creation [6].

Similar to the concept of entrepreneurship and taking into account its core aspects, digital entrepreneurship entails pursuing opportunities by utilizing information communication technologies (ICT) such as cloud computing, mobile computing and social media, providing entrepreneurial innovation in order to create value and gain competitive advantage over operations as well as competitors [6, 12].

Digital entrepreneurship can be defined as “the pursuit of the generation of value through the creation or expansion of economic activity by identifying and exploiting new ICT or ICT enabled products, processes and corresponding markets”[6]. If we considering digital enterprise to be the intersection of physical and digital economy, as depicted in Figure 1.1, as well as the intersection of digital technologies and entrepreneurship [14], we can differentiate digital entrepreneurship from traditional venturing in the following respects:

- **Focus.** Digital entrepreneurship is focused on technology innovations that are inspired by developments in science and engineering,

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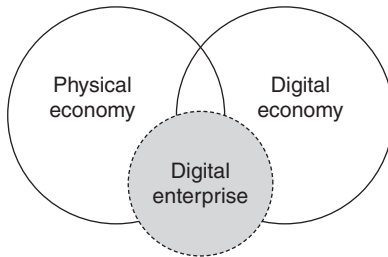


Figure 1.1 Digital enterprise as the intersection of physical and digital economy  
Source: Adapted from [13].

promoting the emergence of novel entrepreneurial opportunities including promising markets, novel products and even new customer segments and industries [15].

- **Activity form.** In a digital firm, some or all of the entrepreneurial activities happen digitally instead of via traditional forms. This includes not only firms that have embraced digitization as an endeavor to reduce their costs and improve their customer service, for example through the adoption of a website, or to aid in the distribution of physical goods and services, such as with Amazon or eBay, but also digital enterprises that sell completely digitized products or services, such as music and applications [12, 16].
- **Business strategy and model.** Digital ventures use different business models from those favored by traditional ventures as well as different marketing strategies to promote their products and reach their customers [12, 17].

According to [18], a digital business is defined as an organization that uses a combination of two or more digital technologies in order to create new revenue opportunities, boost customer engagement, penetrate into new markets and increase product or service development speed to market. By harnessing the power of digital technologies such as mobile computing, cloud computing and social media, the digital enterprise achieves mobility by bringing teams of people together regardless of their location, enabling face-to-face interaction among different parties dispersed around the world via social collaboration tools. By leveraging digital technologies to create virtual offices, digitize its business processes or create an e-commerce platform, the digital venture is able to achieve international expansion by introducing its products into the world's most promising markets while at the same time reducing the costs of internationalizing its business activities and operations [19].

The infusion of new digital technologies into the entrepreneurial era has provided digital ventures with a vast amount of business innovative opportunities to explore as well as novel market segments to enter. These digital technologies, which enhance entrepreneurial pursuit as well as play a crucial role in shaping entrepreneurial actions and outcomes, manifest in three interrelated elements, according to [14]:

- **Digital artifacts.** Digital artifacts are digital components or applications embedded into physical objects, providing specific functionality to users. They can be in the form of either stand-alone software and hardware components on physical devices, such as applications in smartphones or fitness watches, or parts of products such as home appliances and personal products (Amazon Virtual Dash Button, Oral-B connected toothbrush). Characterized by reprogrammability and recombining ability, digital artifacts are open, flexible, easily modifiable and expandable, enabling the entrepreneur to infuse new functionalities into the object thus generating new entrepreneurial opportunities. For example, drones, digital devices that were originally invented for military services, have been recently modified and adopted by several industries, such as agriculture, logistics and real estate, which are exploiting their functionality in new purposes [14].
- **Digital platforms.** A digital platform is a technology business model that enables exchanges among different groups such as producers and consumers. The most popular example is the Apple iOS platform, otherwise known as Apple Store, where users can buy applications for their smartphones and developers can contribute to the ecosystem with innovative ideas translated into applications. Another example is the Android platform, which operates on similar lines. Emphasizing variability and agility, then, digital platforms create a wealth of opportunities for entrepreneurs, among other things, to develop apps [14, 20].
- **Digital infrastructures.** Digital infrastructures are digital tools, systems and technology structures – such as cloud computing, social media, analytics, 3D printing and digital marketplaces – that offer the necessary collaboration, communication and computing capabilities in order for a digital enterprise to function [14, 21]. Assisting in the digitization of the entrepreneurial process, digital infrastructures are open, dynamic, extremely flexible as well as scalable, as their components can be easily updated or replaced; they therefore promote generation of entrepreneurial ideas that can be translated into development of successful products and services [21].

Overall, digital technologies have been embraced by digital ventures as they lie at the heart of every entrepreneur's powers of innovation and



economic competitiveness. Two of these technologies, namely social media and the Internet of Things (IoT), will be discussed in greater detail in Chapters 6 and 7, respectively.

### 1.3 Types of Digital Venture

Digital ventures range from large enterprises, already established in several industries, to small businesses or start-ups that use ICTs in order to create value and carry out business activities targeted toward their customers.

Academics and industry experts agree that start-ups can be defined as organizations that have been designed to scale very quickly into large companies [22, 23]. Although there is no timescale that determines how long a company can be considered a start-up, reaching certain thresholds – for example achieving revenue of more than \$20 million, employing more than 80 people, having a high growth rate, founders being able to sell their shares, acquiring endeavors from larger companies – can signal the end of its “start-uphood.” All in all, when a start-up starts becoming profitable, it means that it will cease being a start-up very soon [23].

While start-ups are considered to represent a big percentage of today’s digital firms, small and medium-sized enterprises (SMEs) have long dominated the markets, characterized as the “backbone” of every economy. More specifically, SMEs represent 99.8 percent of the European economy; almost all European businesses can be considered as SMEs [24]. But how do start-ups and SMEs differ? Some key differences are listed here [25, 26]:

- **Growth:** As already mentioned, start-ups are designed to scale quickly and evolve into big companies; they are eager to reach their aspirations and disrupt the market. A small business, on the other hand, usually offers traditional products and services and is mostly focused on making profit within controllable boundaries with a set number of customers; it does not have high expectations in terms of scaling and growth.
- **Innovation:** A small business is usually not something new in the industry, while start-ups are infused with innovation, trying to translate novel ideas into products and services in ways that have never been done before, thus disrupting the industry. A very well-known example is Uber, which will be discussed in greater detail in Section 1.7.
- **Focus:** While small businesses are focused on their profit with low operational costs, start-ups are more concerned about scaling fast and growing quickly by bringing innovative ideas into the market.

- **Funding:** Small businesses usually rely on personal savings, bank loans and friends or family funds, while start-ups usually receive funding from investors and venture capitalists.
- **Exit strategy:** For a small business, future aspirations involve passing the company to the next generations such as family members or a large company that is interested in buying it. However, start-ups aim much higher, to sell big to a large corporation or go public (initial public offering (IPO)).

That covered some of the main differences between start-ups and SMEs. The next sections provide a deeper look at digital ventures: both start-ups (Section 1.3.1) and spin-off companies (Section 1.3.2).

### 1.3.1 *Start-Ups: Big Ideas from Small Businesses*

Focused on growth with no geographical boundaries, a start-up team works with excitement to solve existing critical problems by introducing innovative ideas, ultimately aiming to make an immediate impact in the market [23]. One of the central characteristics of a start-up is innovativeness: “[T]o be a startup is to claim a freshness that suggests a finger on the pulse of the future” [23].

Lying at the heart of entrepreneurship, innovation constitutes a key value for the success as well as the longevity of a business. An innovative company constantly keeps up with trends and demands and seizes arising opportunities to fulfill the ever-changing needs of customers by coming up with novel ways to produce products or services. In the entrepreneurial world, open innovation refers to the notion that ideas and resources should be shared among a wide range of players such as large firms and start-ups. Open innovation, which will be discussed in greater depth in Chapter 2, is facilitated through several digital technologies that offer tremendous opportunities for a firm’s growth and success. As shown in Figure 1.2, in the open innovation ecosystem, the demand and supply sides of innovation are connected through bridge-makers, who constitute the “glue” between the two actors of the ecosystem. For example, Singularity University, founded by Peter Diamandis and Ray Kurzweil in the NASA research park in California, is characterized as a one-of-its-kind hybrid accelerator; it serves as a bridge-maker connecting the demand and supply sides of innovation, offering both educational programs to potential students and innovative partnerships within a business incubator to start-up companies, to help them in their entrepreneurship endeavors [19].