1 About Innovation and Entrepreneurship

Learning Outcomes

After studying this chapter, you will:

- Appreciate the relationship between innovation and entrepreneurship.
- Understand the innovation process, its constituent parts and applicable risks.
- Appreciate the concept of ecosystem and why this is central to exploitation of innovation.
- Be able to assess the likely implications of an innovation on the basis of its type.
- Be able to contrast three of the principal historical frameworks of innovation trends.
- Understand the kinds of parties that drive innovation and what motivates them.
- Appreciate the ingredients for success and the most common reasons for failure.
- Understand much of the current terminology of digital business.

Introducing Innovation and Entrepreneurship

The world of digital business is rich, diverse and fast moving in ideas, structures and terminology. This book explains and charts paths through many of the underpinning concepts and techniques.

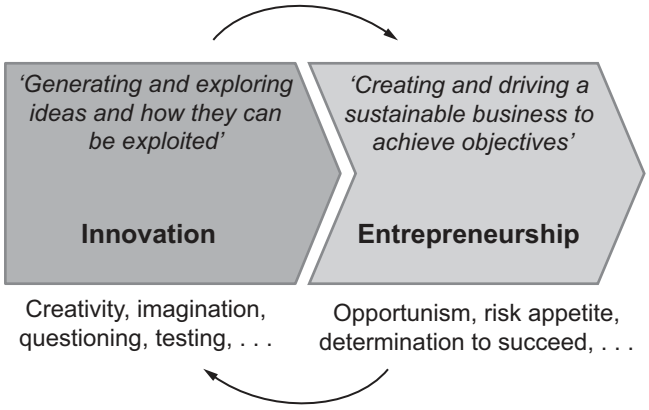

Figure 1.1 *Innovation and entrepreneurship*

This chapter sets the scene by introducing and contrasting innovation and entrepreneurship.

As illustrated in Figure 1.1, innovation is about ideas and how they can be exploited through product and service offerings. For an innovator, creativity and imagination are crucial aspects for success, as are questioning, testing and incisiveness. The term *enterprise* is sometimes used with the same meaning.

By contrast, an entrepreneur is someone with the talent, skill and determination to create and drive a viable business that transforms innovation into value. A central aspect of this is risk: the successful entrepreneur is continually identifying, assessing and working with a risk profile that ranges across people, technology, systems, the marketplace and the economic landscape. Knowledge, skills and connections with these domains must be built, hired and purchased for successful delivery of innovation.

The general term *business* is used here to encompass all kinds of ventures, including those whose objectives involve financial gain and also those *social enterprises* whose objectives are driven by social or cultural values.

Succeeding in the design, operation and growth of a business needs a blend of innovation and entrepreneurship, and the balance of this blend changes over time. An important element of the entrepreneur's risk profile is judgement of the degree of innovation that is currently sustainable. Too much innovation can mean that a business loses its focus, becomes distracted by continual internal change and presents a confused or chaotic picture to its customers. On the other hand, with insufficient innovation, a business may struggle to sustain competitiveness in the market and can lose the interest of its customers.

Some people are innovators and some are entrepreneurs. A third category are *operators*: these are people with talents that ensure effective delivery and performance of some business activity, such as product, sales or finance. The successful business achieves the right mix of these three kinds of talent through a team that has the motivation, experience, support and resources needed.

This chapter first addresses the broad topic of innovation, from five perspectives:

- The innovation process – how ideas become successful business offerings.
- The ecosystem – the importance of locating innovation in a market context.
- Types of innovation – including the market impact of different types.
- Historical context – with reference to three longer-term models of development.
- Innovators – including the different parties involved and their motivations.

It then returns to the subjects of innovation and entrepreneurship, addressing questions of the principal ingredients for success, and the most common reasons for failure.

This chapter concludes with an explanation of how the subjects of innovation and entrepreneurship will be structured and presented through the remaining chapters. This point is particularly important as the subjects embrace a wide range of interrelated topics. One of this book's principal contributions is a systematic framework within which all of those various topics can be understood and accessed.

Throughout the chapter, relevant business terminology is introduced and defined, including with reference to the Glossary. Examples are provided from the current world of digital business, and references are provided to sources of further detail.

Innovation and the Innovation Process

Innovation is more than a new idea.

A UK Government report 'Succeeding through innovation' provides a useful definition: 'the successful exploitation of an idea as a product or service offering' (DTI, 2004).

As shown in Figure 1.2, an idea remains just an idea until it is embodied within a tangible product or service offering, at which point it may be described as an invention. An offering is only considered to be an innovation when it is

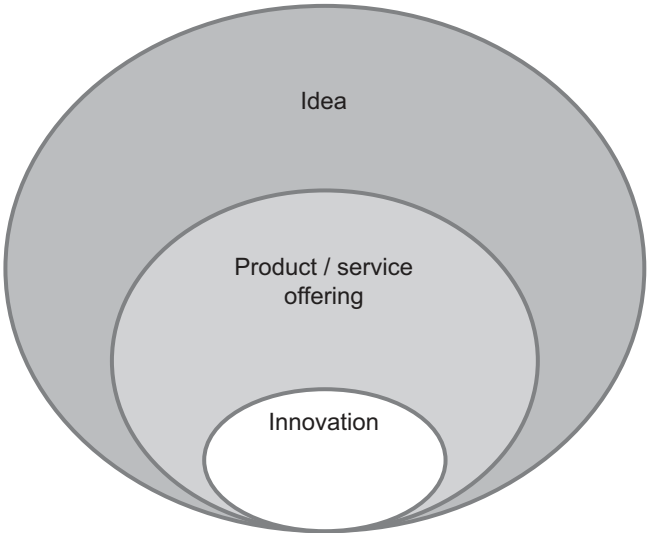

Figure 1.2 *Relationship between ideas and innovation*

successfully deployed and used by some community or market for which it delivers a benefit. The definition of success in this context depends upon the objectives that are set by those driving the initiative. This may mean widespread adoption of the innovation by a community of users, or it may mean meeting revenue-generation targets within a particular time-frame.

Putting this in an engineering context, a wide-ranging study carried out by Bhuiyan (2011) at Concordia University in Montreal, Canada found that for every seven new product ideas, about four enter development, one-and-a-half are launched and only one succeeds. Seven ideas yield one innovation.

In the current climate of fast-moving digital start-ups, it is more difficult to estimate the percentage of ideas that see the light of day, but it has been estimated by the journalist Erin Griffith (2014) writing in *Fortune Magazine* that 80 to 90 per cent of start-ups fail to succeed, principally because of lack of market need for their offering. Given that many of those ventures that do succeed are likely to have pivoted through several ideas, it is clear that the number of ideas needed to yield a single innovation in this sector is significantly higher than within more established sectors.

This factor underlines the importance of taking a systematic approach to the design of a business venture right from the outset to create confidence that an idea can be successfully exploited and deployed. Where this confidence proves elusive, the idea should be discarded before it consumes significant fruitless effort.

The Innovation Process

Building on these observations, innovation has usefully been characterized by Gee (1981) as a process through which a new product, technique or useful service is obtained from the generation of new ideas and their development. In their introduction to *The Oxford Handbook of Innovation*, Fagerberg *et al.* (2005) characterize this process as a 'systemic phenomenon resulting from continuing interaction between different actors and organizations'; hence the importance to innovation of a concept of *ecosystem*, which is addressed in more detail in the following section.

Innovation is treated throughout this book as a process that involves a range of participating players, or actors. Figure 1.3 shows its most general three-phase form, reflecting the elements in the definition introduced above.

An idea is exploited through an offering, which combines a product or service with a business model and a plan of action. As the plan executes, the market consumes, or absorbs, the offering and responds with indications of success. Based on this response, the offering, the business model and/or the plan may be reviewed and iterated. Alternatively, the idea itself may need to be reviewed or discarded.

This is succinctly expressed by Tonnessen (2005): 'innovation starts with the proposal and generation of new ideas and finishes with the use and commercial exploitation of the outcomes'.

In current parlance, a significant modification to the plan, or even a complete replacement of the idea, is referred to as a *pivot*. It is not uncommon for start-up businesses to pivot several times before investing significant effort in growing the success of an innovation.

In 2003, a start-up called Android had the idea to build an operating system for cameras. Its initial vision was an ecosystem of smart cameras connecting to

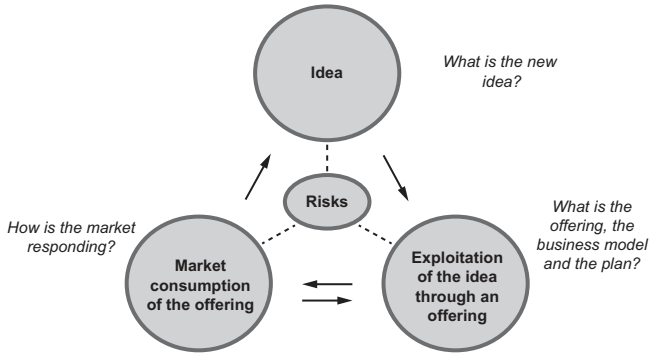

Figure 1.3 *The innovation process*

PCs and linked to Android-powered data centres that offered cloud storage for photos. However, the downward market trend of camera sales and the parallel growth in mobile device sales prompted the venture to make a significant pivot, which led to its acquisition in 2005 by Google for $50 million. Further detail of this case has been reported in TechCrunch by O'Hear and Lomas (2014).

Figure 1.3 also refers to risk associated with each phase of the process. The following sections address each phase in turn, including the principal applicable risks.

Ideas and Their Origins

An idea is the first milestone in the process of building a successful business. An idea is a thought. It can be expressed in words or diagrams, but its value is only potential until it is given tangible form through a product or service offering. From a single idea, many innovations may emerge. A web browser is a generic user interface for accessing content organized as hyper-text. The idea is attributed to Sir Tim Berners-Lee, currently director of the World Wide Web Consortium (W3C), which oversees the Web's continued development. The idea was significant because, up until that time, providing access to content usually involved some form of custom user interface. Berners-Lee's idea stimulated a first generation of browser offerings which inspired the development of families of increasingly widely used products that have enabled the development of the web economy.

Some authorities promote the view that creativity can be learned, applied and improved through the application of principles and techniques. Examples include the Strategyn 'outcome-driven innovation' method, and the 'idea hunter' approach proposed by Boynton, Fischer and Bole (2011). Methods such as these encourage a broad and structured approach to ideation.

Ideas can also emerge from the following:

Association – the bringing together of previously unconnected ideas to solve a problem or open a new market. There was a time when phones were used only to make calls and photographs could only be taken by a camera. The idea to associate these functions contributed to the now ubiquitous smartphone products.

Adaptation/analogy – the adaptation of an existing solution for a different purpose, potentially in a different situation. Platforms such as Uber underlie what is now called *collaborative consumption* or the *sharing, access* or

peer economy. This approach is now being applied to a wide range of business situations to create platforms whereby consumers pay to access someone else's goods or services. Similarly, the notion of *software as a service* (SaaS) has been applied by analogy to all sorts of *x as a service* (XaaS) offerings, including infrastructure, analytics and even business.

Serendipity/chance – a new idea arises through random occurrence or accident. A classic example of serendipity occurred in 1945, when Percy Spencer was working with magnetrons (electronic devices that create microwave radio signals). He noticed the melting of a chocolate bar in his pocket when he stood next to a magnetron. This observation led to the invention of the microwave oven. Another example comes from the early 1990s during the development of Acorn Computers' first Advanced RISC Machine (ARM) chip. During testing, a fault was preventing current from passing to the motherboard and ultimately to the chip, but the team noticed that the chip was still working. It was being powered by electricity leaking out of the rest of the circuitry (less than a tenth of a watt). This serendipitous discovery led to the chip's low power consumption becoming a key competitive advantage. And due to its outstanding efficiency, the descendants of this processor now run many of today's mobile computing devices.

Irrespective of how an idea has been inspired, it is important to recognize that many of the ideas underpinning successful digital businesses were originally prompted initially either by identifying problems worth solving – such as the need for improved internet search or lower-cost overnight accommodation – or by identifying market opportunities – such as for an online book store or a video streaming service. Unless one of these criteria is met by the idea, it is unlikely to form the basis of a sustainable business.

Two risks commonly apply to the development and evaluation of ideas.

The first of these is poor research, relating either to technology feasibility or to the expected market demand, both of which can encourage false confidence in the potential of an idea. Before investing in development and exploitation planning, this risk needs to be addressed through objective market research. In his book, Rob Fitzpatrick (2013) describes a series of *mom test* techniques which can be useful in this regard.

The second risk relates to weak expression or articulation of an idea, which leads to ambiguity around its implications and potential, and a difficulty in translating the idea into an offering. Research by Phadke and Vyakarnam (2017) identifies this problem as the first of three chasms to be crossed by a venture. In

addition to clarifying the underlying idea, crossing this chasm requires a clear focus on the technology and the business model through which it will be exploited. This topic is addressed further in Chapter 4 in the context of development discontinuities and in Chapter 6 in the context of capabilities required for growth and scalability.

Exploitation of Ideas through a Product or Service Offering

This phase of the process is about the way in which an idea can be taken to market through some form of offering. An idea cannot be taken to market in its pure form: it needs to be wrapped into a product or service offering with an associated **business model**.

A business model is a set of propositions, analyses and design decisions that embrace all aspects of how an offering will be taken to market. A business model is embodied in and empowered by a business structure.

The components of a business model can be described under the following four headings:

Value creation – describing the value of the offering and the beneficiaries of this value.

The term *value* here relates to anything that can be perceived as beneficial to one or more customer communities, irrespective of whether such value can easily be quantified.

Value may relate to solving a problem, or saving time, or making money, or reducing a cost, or mitigating a risk, or enabling something that was not previously possible. In plain business speak, it has been said that value means 'either making more money or keeping out of jail', and it can be a helpful discipline to express any proposed statement of value against these criteria.

Typically, a business model will comprise several value propositions, each relating to a particular customer, or beneficiary. As a simple example, consider the idea behind *Westfield*, a smartphone app intended to help shoppers get the most out of visiting any of the company's shopping centres. A value proposition for retailers is that it enables shoppers to find what they want and hence increases their sales volumes. A second value proposition – this time for the shopper – is that it saves them time by enabling them rapidly to locate what they need.

Chapter 2 will show how multiple value propositions can be expressed and consolidated through a representation of the business ecosystem.

Common risks associated with value creation include assuming a value that does not really exist, and failing to recognize that the promised effect can be

achieved by another means. Effective market research is the mitigation in both cases. Unless the value is real and distinctive, the offering will not succeed.

Value promotion – describing to whom the value proposition will be offered, and how.

This means understanding the *target market* in terms of its size, structure and dynamics, and constructing and executing a plan for achieving visibility and generating demand within that market. Such a plan will include activities to create visibility, build knowledge, engage with customers and other relevant parties, and develop beneficial partnerships.

Central to these activities is the notion of brand: value promotion is driven by the objectives of creating and establishing *brand image* and of growing *brand value*. And a significant contributor to both is a strong customer community.

A business model may address several target markets, sometimes aligned with geographic segmentation, and sometimes with other characteristics, such as industry sector. This topic is addressed further in Chapter 3.

Common risks associated with value promotion include targeting the offering at a customer base for whom the value proposition is unattractive or meaningless, adopting ineffective or overly expensive promotional approaches, and underestimating the effort needed and hence allocating insufficient resource to the activity. Each of these is mitigated through market research, planning, monitoring and having the agility to pivot in response to feedback and learning.

Value delivery – describing how the value will be made available to the beneficiaries.

This introduces the subjects of *supply chain, channel strategy* and *routes to market*. Decisions here combine considerations around technologies and processes for production and delivery with the development of relationships and partnerships through which materials can be sourced and the offering can be *channelled*.

Developing and managing value delivery mechanisms can be demanding. Whereas a simple consumer app might be delivered directly through an online app store, a more sophisticated enterprise software offering might need to be integrated and accredited onto a customer infrastructure by a network of competent and qualified partner companies, which in turn could be motivated to further promote the offering to other customers.

Global technology company Cisco, for example, uses many routes to market, including value-added resellers, independent software vendors, IT service providers and platform partners. In some cases, these relationships will be arm's

length arrangements, in other cases they will involve co-creation of offerings for specific markets.

This area is addressed in greater detail in Chapter 4, along with the design of a *customer journey* and a roadmap for continuing development.

Many large organizations can and will only make purchases through licensed channels, which means that if an offering is targeting such customers, it needs first to achieve appropriate accreditation. This will be the case with many health-care and defence-related offerings, but can also apply to other sectors in which activities are regulated.

As with value propositions, a business model may comprise several value delivery mechanisms, aligning with the various value propositions and target markets.

Consider again the Westfield app introduced previously. In relation to the retailers, value delivery will involve a data integration activity whereby the stores' offerings and location will be made available to shoppers. For the shopper, it will involve creating app store listings whereby the product can be downloaded for the supported brands and models of smartphone.

Two risks commonly apply to value delivery. The first of these is failing to achieve an offering that can be deployed. The resulting delays will inhibit value capture ambitions, which may in turn affect the viability of the venture. Phadke and Vyakarnam (2017) identify this as the second of three chasms to be crossed by a venture. Crossing this chasm requires organization, talent and leadership to shape and package a market-ready product. This topic is addressed further in Chapter 4 in the context of development discontinuities and in Chapter 6 in the context of capabilities required for growth and scalability.

A second risk is that the offering is not accessible or usable by those for whom it is intended. This can result from an inadequate understanding of the requirements of customers, poor design of the associated customer experience or an ineffective delivery ecosystem. These subjects are addressed further in Chapter 4.

Value capture – describing how the business will benefit from exploitation of its offering.

Value capture is about how the customers' perception of value will be translated back into value for the business. This might take the form of financial revenue, market endorsement, community impact, brand awareness, enhanced visibility, reputational growth, demonstration of effectiveness . . . and in many cases some combination of these.