1. The new frontier of innovation

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The old world order is trembling and a new world of innovation is opening up before us. New ways of doing things and new products and services, unimagined and currently unimaginable, will emerge and become ubiquitous. The groups that produce these new ways of working and new products and services will be very different and will likely not fit into the usual easy categories. Immense value will be created but the traditional ideas of finance, firm, property and profit will not always apply in the same way as they have in the past. We are at the new frontier of innovation.

Many researchers and academics excel at joining up the dots whilst looking backwards, and their detailed retrospective analyses have an important part to play in strategic analysis. However, in the context of fundamental change, where the past may no longer be a reliable guide to the future, this approach will have clear limitations for those (for example, managers, policymakers, entrepreneurs) concerned with dealing with such changes. This chapter, and indeed this entire book, is designed to provide those concerned with the ‘now’ and the future with the tools to help make sense of the fundamental changes in the shape and nature of innovation that are taking place within our economies. This book does look backwards and draws on many ideas taken from a wide range of academic and other sources in order to set the scene, but in recognising that managers, entrepreneurs and policymakers need to act in the present and plan for the future, it also looks forward. This book does not claim to tell you how to act. Rather it is designed to provide you with the insights, understanding and tools to enable you to analyse your own context and to make your own decisions.

The last few decades have seen fundamental shifts in the way in which products and services are created and offered to the world. Firms are no longer the only source of new ideas, products, services and individuals now reach out to each other in a way that creates a critical mass that sparks new ideas and leads to action. These individuals may go on to form the online communities that are now such a feature of the 21st century, and can

become major drivers of innovation. Of course, the Internet has played an important part in this but it is important to recognise that individuals, people like us, are the key ingredient in all this. The Internet is just the platform for communication – it is *individuals* that come up with the ideas and work hard to create new products and services. Until recently it was largely the people who worked within firms that drove innovation and were paid to make sure that their firm benefitted from their activities. Of course, a great deal of this still goes on, but the online communities that are now so active will often have different objectives and may have a complicated relationship with firms. In some cases such communities may work closely with firms, but they may also work against, or else want to have nothing to do with firms. In some cases the activities of such communities are so far away from the mainstream that firms find it impossible to publically relate to them in any way at all. Firms, like people, are sometimes trapped in ways of seeing and doing that may once have made sense, but have outlived their usefulness. As far as our understanding of innovation is concerned, this is where we now are.

This book is an exploration of the new frontier of innovation that is slowly but surely changing the world we live in, and the how, what and when of the new things that emerge. You'll have noticed that terms like 'market' and 'commercialisation' have not yet been mentioned, and this is because the new forms of innovation that we will explore in this book may not always be offered to the 'market' in the traditional sense – financial exchange may not take place, firms may not issue shares and no one will necessarily get rich in the traditional sense, although huge value will have been created and shared. That is not to say that some will not seek to create businesses and established firms will not learn to draw on this activity in order to create their own commercial offerings, but the key issue is that we now have a major wellspring of innovative activity that is not primarily concerned with commercial profit in the traditional sense. The communitarian strands of many societies make clear that this a recurrent feature of human existence, and the ability to reach out to others over the Internet means that this is now a feature in the realm of the products and services we use in our everyday lives. As a result many firms are now engaged in communication, challenge, and even competition with their own customers.

What we are seeing at the start of the 21st century is a result of several fundamental changes in the way in which goods and services are produced and consumed. These changes are perhaps most apparent in consumer markets, but what we can see in these contexts is simply the leading edge of the fundamental shifts that will have major implications for all firms, no matter which market they operate in. These fundamental changes are explored in more detail below.

1.1 INDIVIDUALS ARE EMPOWERED

Our attitude to the products and services that we use today in our everyday lives is very different to just a few years ago – there is now an open invitation to join the creative party. There are now whole classes of new ‘empty’ product that depend on us filling them up with our news, images, ideas, reviews and comments. The organisations that provide these social media services are (at least at the time of writing) some of the most well-known and highly-valued in the world and it is now commonplace for individuals to spend a significant part of each day ‘working’ on such systems. At the same time, it is now well known that some people will routinely hack, crack and re-engineer the products and services that they use. Admittedly, this is a much more obscure and rare activity than being on social media, but it is now part of our culture and platforms like YouTube provide a window into this world for those who wish to look. Just one example of how prevalent this idea is within our culture is demonstrated by the results of a simple Google search: the terms ‘hacking’ or ‘hacks’ deliver 147 million and 136 million hits respectively. Individuals are no longer the passive actors whose role is simply to buy, consume, and buy again and there has been a sea change in attitudes – individuals feel valued and their opinions and needs are valued and can have an impact.

At the same time there is a much wider recognition that traditional rules, norms and accepted ways of doing things can be challenged or set aside. Hacking is not necessarily widespread, but it is certainly a mainstream idea that has found its way into many areas. For example, some parts of the video games industry now encourage their customers to ‘hack’ or ‘mod’ their products and may even provide a marketplace for the sale and distribution of their hacks and mods. Such firms effectively invite consumers into their New Product Development process and change the architecture of their products to make it easier to gain access and make changes.

1.2 INDIVIDUALS MAKE THINGS HAPPEN

As a result of the changes made to product and service architecture and the easy access to resources (see below) the barriers faced by dissatisfied individuals are no longer very great. On a very simple level, individuals can now directly send feedback and comments to firms concerning the quality of their products and services, their ethical standards or any other matter that they feel is important. Social media has become a powerful force for change and firms now pay great attention to their image and presence in this sphere. At the same time some individuals are able to call upon the

knowledge, skills and resources required to hack, modify or repurpose a firm's product or service. Design choices and performance parameters will be examined and changed and, in some cases entirely new uses will be created that its original designers had not pursued or else had not considered. This phenomenon is a recurrent feature of technology and it can lead to the creation of new products and services and the opening up of entirely new markets that were pioneered by users, not producers.

1.3 INDIVIDUALS CAN JOIN AN ONLINE COLLECTIVE

One of the biggest changes in the 21st century has been the emergence of the huge online collective made up of individuals who have a range of interests almost as diverse as humanity itself. It is not unusual to search for the most apparently obscure question or topic only to find that a vast reservoir of knowledge, advice and information created by thousands of others, opens up before you. Sometimes this material is fragmentary and its currency is hard to assess, but often it has been sorted, structured and codified by the invisible workers of the online collective. In some cases, for example, healthcare, this work will have been done by trained professionals, but in many others experts (often specialist amateurs or hobbyists¹) will have performed the tasks.

This is now so commonplace it is easy to forget that this is also totally unprecedented and one can fall into the trap of ignoring the wider implications of what has been created around us. These are explored in more detail below.

1.3.1 Online Communities Emerge

It is now very easy for individuals to seek out and become part of an online community of like-minded others that share their interests. This is a fundamental shift since we are now restricted by the limits of Internet connectivity rather than geographical boundaries – we can now reach out to the several billion people around the world that use the Internet. As a result the potential pool of others who have the same needs or share the same interests is huge, and continuing to grow every year. Of course, most people will not be interested in the things that you or I may be, but the scale of the Internet means that it is far more likely to achieve a viable community around any specific interest. This is why there are so many wildly diverse special interest groups, radically different online communities and seemingly obscure topics that excite devotees. An illustration of this state

of affairs can be obtained by a simple experiment: take five minutes and use Google or your preferred search engine to see if you can find a topic or a subject that has not excited discussion or comment. The chances are that you will not be able to do so. However, even if you can it is likely that you could build a community around your topic within a short time.

1.3.2 Innovation Resources are Widely Available Online

One of the major differences in all the information, images, video and comment that are shared on the Internet is what appears to be a temporary, intangible, disposable medium turns out to be highly robust and (to date, at any rate) as near-permanent as it is possible to be. And all at the same time as being easily accessible to a large proportion of the world's population. Using the Wayback Machine (a digital archive) it is even possible to go back in time to look again at websites and other materials as they were in the past. As a result a vast and continually growing pool of resources – information, images, video and comment – are available to those individuals who wish to draw on them.

1.3.3 Non-traditional Innovators are Involved

One of the fascinating things about much of the material that has been made available on the Internet by individuals is that it is openly and freely shared. It may be that the material is a short video of kittens playing (and there is a lot of this kind of thing available) or, more interestingly from an innovation point of view, it may be a detailed technical discussion or 'how-to' that explains in precise detail to the non-technical how to perform a complex procedure. What we are observing is the creation, accumulation and sharing of a vast pool of resources, only a small proportion of which will go on to form inputs to innovative activity. However, the scale of such activity on the Internet means that, in innovation terms, this is a hugely significant resource. Further, the often visual nature of this information makes it accessible to a still wider audience and enlarges the pool of potential innovators to include groups outside those with traditional technical backgrounds and skills.

1.4 UNDERSTANDING INNOVATION AT THE FRONTIER

This book provides a detailed account of the way in which goods and services are produced and consumed at the new frontier of innovation.

Each of the chapters in this book will explore different aspects of this developing frontier and provide detailed case studies of the different forms the processes of creation and consumption are now taking. This is not an exercise in prediction, rather it holds up a mirror to what is happening around us and provides a new toolkit to help make sense of complex and confusing situations. The exciting, or disturbing, reality is that the real-world cases presented throughout the book provide illustrations of possible futures for firms, sectors and entire industries. In the words of renowned author William Gibson, ‘the future is already here, it’s just not very evenly distributed’.²

This is not to claim that the future of *all* innovation will look like the cases and examples presented in this book, rather that firms need to understand their place in this developing world of innovation before they can make informed strategic decisions. Although the likelihood is that the future will *look* a lot like the past – for example, we are still waiting for the wide availability of long-promised personal jetpacks and flying cars – it is also likely that the world that *surrounds* the goods and services we use will be totally transformed. The part of that world that is concerned with the creation and supply of goods and services is also likely to be transformed. In order to ensure that we better understand the wider context of the changes we are exploring, we must guard against falling into the trap of claiming everything will look like the cases and the ideas contained within this book. However, even though the proportion of innovative individuals is always likely to be small, the connected nature of the Internet means that they are likely to have a disproportionate impact on firms and markets. An illustration of this is in the events that are continuing to unfold in the recorded music industry – tiny numbers of innovators that pioneered the sharing of music led to a fundamental reshaping of an entire industry that is still ongoing. This is clearly not the future for many (or even most) firms and industries, but it is an important example of how a determined group of innovators and their supporters can undermine an established business model. Although there are always risks in change, this book contains many examples of the ways in which firms are learning to benefit from working with outsiders to create and supply goods and services at the frontiers of innovation.

The implications of the fundamental changes in the way in which goods and services are produced and consumed are explored throughout the book. It is clear that in some areas innovation is becoming far more of a socially-driven phenomenon and firms may be reflecting rather than driving this change. In some areas the development of the new ideas that are the basis of novel goods and services are flowing from non-commercial online communities rather than businesses. This creation

of new ideas – ideation – is often played out in the ‘open’ space of online communities that are unencumbered by corporate and regulatory restrictions and provide an opportunity for the development of really new ideas. Such online communities are perhaps the most significant new groups on the innovation frontier and although they are most apparent in business–consumer settings, it is likely that their influence will begin to develop in business–business and other contexts as well. One of the key shifts – the spread of ‘open’ products and services – is an example of how pervasive ideas that emerge from such communities can be. Emerging from the strong libertarian traditions of the west coast of the USA, and as a direct reaction to the idea that software code could be locked down and ‘closed’, the idea that code can be ‘open’ to all has become highly influential. The idea that an item of complex technology can be open to all to participate in its creation and development is now a central part of our innovation culture and will be an important driver of innovation in many industries. We are familiar with Open Source software, but many product architectures are now fully or partially open, and the implications of opening the vast quantities of data held by public sector organisations (open data) are just beginning to be explored. The opening up of the innovation process is fundamental and a clear recognition that external groups – often online communities – play a key role in value creation.

Although this is widely understood in many industries, all firms need to recognise that these fundamental changes are happening and learn the lessons that can be applied in their own particular context. Established practices, policies, theories and concepts will need to be reviewed and refreshed so that they will remain relevant in the new contexts. It is clear that the old rules and certainties of innovation are changing and it is important to recognise that the past will no longer be an accurate predictor of the future. This is new territory for everyone and a clear map of the new terrain that we are moving into does not exist – traditional ways of thinking about and measuring innovation will need to be refreshed and likely extended to deal with what has previously been viewed as largely invisible. These themes will be explored in detail, with each chapter focusing on particular aspects of this larger phenomenon.

1.5 CHAPTER 2: INNOVATION PIONEERS: THE ESSENTIAL ROLE OF USERS, ONLINE COMMUNITIES AND THE CROWD

Chapter 2 provides a lively and informative exploration of the language and concepts that have been developed over many years to describe how

new products and services are created and brought to the marketplace. In particular, this chapter explores how the language and ideas that have been developed in the context of old forms of innovation often fail to capture and can serve to mislead when one thinks about the ‘new’ forms of innovation explored in this volume. The chapter explores the emergence and evolution of the traditional forms of innovation and examines how the users of technology can have major impacts on its development over time. The new forms of innovation that are emerging are also examined and a series of case studies that illustrate the many different approaches to the creation of products and services are outlined. The developing roles of online communities are also explored and the creation of Safecast – the international innovation community established following the Fukushima nuclear disaster in 2011 to deal with the lack of reliable radiological information – is presented.

1.6 CHAPTER 3: EXPLORING THE CHANGING LANDSCAPE OF INNOVATION: THE RISE OF USERS, ONLINE COMMUNITIES AND THE CROWD

Chapter 3 focuses on the part played by users of technologies and online communities in the creation of new goods and services. Taking as its starting point some of the earliest recorded mentions of innovation by users of technologies, the chapter charts the role of technology users in the invention and innovation of new machines, consumer products and services. It explores how practical people, and not scientists, were at the leading edge of invention in years gone by and highlights the importance of users’ knowledge and experience in the processes of invention and innovation. The way in which the recent growth of online communities and the crowd is revolutionising the creation and consumption of goods and services is also examined and a series of case studies are used to illustrate the impact of this phenomenon. Ideas around different forms of use and types of user are unpicked and analysed and the value of such users to firms that produce goods and services is outlined. Some users and online user communities may find and promote unexpected applications of technologies, and this is also explored within the chapter, using Machinima as an example.

1.7 CHAPTER 4: MAPPING THE NEW WORLD OF INNOVATION: THE INNOVATION OPPORTUNITY SPACE

Chapter 4 introduces a new approach to thinking about the parts played by non-traditional actors in innovation, for example, online user communities. The Innovation Opportunity Space is a new conceptual framework designed to provide strategic managers, entrepreneurs, policymakers and academics with an improved way of viewing innovation-related issues. Rather than starting with firms and focusing on products, as so often is the case, the Innovation Opportunity Space takes a more neutral starting point – the space into which an innovation will be introduced. Developed in response to difficulties in understanding how non-firm actors like users create value from their innovation activities, the Innovation Opportunity Space approach allows managers to better comprehend the opportunities that exist. The chapter makes very clear that Innovation Opportunity Spaces can vary wildly and the characteristics of the main types of Innovation Space are presented and their characteristics and the strategic implications analysed. The chapter outlines how the key features of an Innovation Opportunity Space may be analysed – focusing on the Architecture, Actors, Activities and Aftershocks within an IOS – and how different forms of data may be required to more fully understand the innovation activity that is underway. These ideas are applied to four case studies and the chapter concludes with a technical appendix.

1.8 CHAPTER 5: DEFENDING TERRITORY: CHANGING FORMS OF INTELLECTUAL PROTECTION

Chapter 5 explores the important part played by the creation (and protection) of intellectual property (IP) within the innovation process. The growth in importance of IP within the modern business world is clearly laid out and the different forms of IP are defined and their importance explored. The emergence of new forms of IP in areas like online media are also explored and emerging tensions between ‘closed’ and more collaborative and ‘open’ forms of IP are examined. Mainstream approaches to the protection of IP are contrasted with the new forms of IP protection that are beginning to emerge. With much of the IP in these contexts emerging from online communities these new forms of IP protection also tend to be characterised by their non-commercial nature and their openness. The chapter explores the challenge this creates within the traditional approaches

towards IP that are central to many firms' business models. Traditional 'closed' and newer 'open' models of IP protection are compared and new forms of business model based on IP are laid out in detail, including many examples. The chapter concludes with a technical appendix that relates the ideas presented to a range of policy, business and academic sources.

1.9 CHAPTER 6: NEW FRONTIER BUSINESS MODELS: CREATING VALUE THROUGH INNOVATION

Chapter 6 examines how firms are developing business models that work in concert with the new 'open' approaches that are being pioneered within online innovation communities. The chapter explores how these new business models require a step-change in their relationship with their users and the developing roles they can play. The part played by online communities in business start-ups and in the renewal of existing businesses is also explored with reference to a large number of recent examples. The emergence of crowdfunding and its developing role in business models is explored and the impact of peer-to-peer lending on innovation is also examined. Business models that focus on making use of the resources that individuals are willing to share with others for payment is also explored. The growth of this 'sharing economy' is examined in some detail and provides the basis of a detailed case study. The chapter concludes with a technical appendix that maps the ideas explored back to a range of academic and other sources.

1.10 CHAPTER 7: EMERGING BUSINESS MODELS IN SETTLED CONTEXTS

Chapter 7 presents two in-depth case studies that explore the challenges of developing new business models in mature or settled contexts. These cases provide very different responses to the quite different strategic and operational challenges that are faced in the two contexts – one a traditional agricultural sector, the other a mobile telecommunications service provider. The Finnish forest industry is an example of a very mature and stable extractive industry that has changed little over many decades and has very clear structures around 'user' and 'producer'. This is a classic example of a process industry in which there should be very little opportunity for users and online communities to make any impact. However, this case study provides insights that show how the industry is in the process

of reimagining and reinventing what it can offer and opening up a new Innovation Opportunity Space that draws in users and others and creates new value. The second case in this chapter – giffgaff – is an example of how a new entrant to the mature mobile telephony service market in the UK reimagined the service model and drew in its users to help provide core aspects of its sales, marketing and customer services.

1.11 CHAPTER 8: EMERGING BUSINESS MODELS IN FRONTIER CONTEXTS

Chapter 8 presents two in-depth case studies of new business models that are being developed on the frontiers of innovation. The cases explore the two quite distinct forms of Innovation Opportunity Space that have emerged and the business models that are being developed in order to benefit from them. The first case study examines the move to make the vast stores of, often publically held, data available to firms and others in order to provide a basis for new forms of value creation and, potentially, new types of business model. This move, to what is popularly called open data, is a potentially fundamental shift in the way data that has been collected for other purposes and can be used to create new and different forms of value. The second case is a detailed case study of an organisation that emerged specifically to create and supply what was, at the time, a new class of product – a user-developed version of the Android smartphone operating system. The case explores the foundation and development of the CyanogenMod project, and how the collective development of its products, takes place in concert with its large and active user base. Unlike many more traditional firms CyanogenMod represents a new organisational form – the User Organisation – in which extensive volunteer labour has been drawn into the core of its operations.

1.12 CHAPTER 9: CAPTURING THE INNOVATION OPPORTUNITY SPACE

Chapter 9 draws together the many strands in this book and provides a roadmap for managers who wish to develop new business models to benefit from new sources of ideas and effort characterised by new forms of innovation. The chapter links the Innovation Opportunity Space approach, a strategic mapping tool, to the forms of innovative activity that currently exist, or may be developed, around novel and innovative products and services. Starting with the IOS approach the chapter

explores how managers can begin to think about their interactions with the external groups that drive the new forms of innovation, and move them to a context in which optimal value is obtained by both the firm and those involved. In order to better understand the fundamental shifts that have taken place in the innovation landscape the chapter makes a clear distinction between the source of the resources required for innovation (within the firm or external to the firm) and the primary intent of the innovation itself (commercial or non-commercial). This provides the basis for a detailed analysis of the cases presented within the book as a whole and highlights the scale of the potential innovation opportunities available to managers who work in traditional 'old' innovation contexts. Building on this analysis the chapter presents a four-stage action-oriented approach that managers can utilise as they seek to capture an Innovation Opportunity Space.

NOTES

1. The term 'amateur' or 'hobbyist' is often used by 'professionals' to denigrate those who undertake this form of unpaid work in their spare time. However, it is important to recognise that the collective nature of this output means that it tends to improve in quality and reliability over time. It is also important to be clear that professional status and expert knowledge may not always be synonymous. Significantly, it is only the amateur or hobbyist that is so passionate about something that they are prepared to pursue it in their spare time – not because it will make them rich, but because it will make them happy.
2. Taken from a radio interview in August 1993.

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TECHNICAL APPENDIX

Arguably we are at an inflection point in the study of innovation at which the long-established understandings of its primary actors, and the processes and dynamics by which new products and services become widespread, will be swept away. In this account it is argued that we are in the process from switching from the current dominant ‘producer-centric’ paradigm towards a new understanding that includes users and online communities and is focused on ideas around co-production. We are in the process of making a Kuhnian shift (Kuhn, 1962) towards a new innovation paradigm.

In the current paradigm innovation producer firms are at the centre of the analysis and all other actors and groups (for example, individual users of goods and services, online user communities) are thrown into deep shadow. Although this may have been a useful working approximation at one point, this model no longer describes the reality of many industrial contexts and, as a result, has been under increasing pressure for some time.

In this new context the producer firm is no longer the sole or, in some contexts, even the most important source of innovation, with users and online user communities becoming far more important. The important role played by the user of technology within innovation has been recognised for a very long time (see Chapter 3 for a more detailed account), and a number of writers have anticipated the impact that new technologies would have on this role. For example, Marshall McLuhan observed that under certain circumstances users would become producers (McLuhan and Nevitt, 1972), and the futurist Alvin Toffler predicted that a certain kind of professional consumer, the Prosumer, will play a very active part in the design of the products that they buy (Toffler, 1980). In his highly influential work the sociologist Manuel Castells also predicted that in certain circumstances ‘users’ would become ‘doers’ (Castells, 1996). Toffler’s idea of the consumer who is also an active innovator has been further developed by a number of others (for example, Tapscott and Williams, 2006; Ritzer and Jorgenson, 2010) but the core idea – that the individual consumer has become an important actor in the innovation process – remains the same. The work of von Hippel has explored the important parts played by users of technology in the innovation process (for example, von Hippel, 1988, 2005, 2016). This work has provided a series of detailed insights and much of the conceptual underpinnings for the current understandings of user activity including the lead user (von Hippel, 1986), free revealing (Harhoff et al., 2003), sticky information (von Hippel, 1994), and innovation tool-kits (von Hippel and Katz, 2002).

The potential for online communities to become important sources of

innovation has come to the fore largely as a result of the emergence and growth of Open Source software. The clear demonstration that online groups were able to produce, maintain and continue to develop highly complex software products (for example, Linux, but there are many more recent examples) was a clear demonstration that (at least in software, and probably other areas as well) producer firms are no longer the sole source of goods and services. The implications of this shift has been explored by a number of authors who have examined what this means for various aspects of the way innovation is managed within modern economies (for example, Lessig, 2005), how this will impact innovation (Leadbeater, 2008), the diminishing role of professional expertise (Keen, 2007), and the economics of this new situation (Tapscott and Williams, 2006) and the potential for individual users to be co-opted into undertaking unpaid work (sometimes called Playbour) within their leisure time (Postigo, 2003). Despite its focus on a series of disparate aspects of this phenomenon the emergence and growth in the importance of online communities of users as producers of new goods, services and knowledge is a recurring theme in this literature. This is a very new phenomenon and remains under-explored but it has been recognised that the aims, processes and outputs of innovation within such communities is likely to be quite different from what would take place in traditional firm-led processes. Paraphrasing Callon and Rabeharisoa (Callon and Rabeharisoa, 2003) this is ‘innovation in the wild’, innovation that takes place outside of the Research and Development process and where the traditional understandings of the supposed ‘rules’ of innovation are no longer likely to apply.

The conceptual and theoretical underpinnings of this new world have begun to be explored and concepts like Horizontal User Networks (von Hippel, 2007), ‘Social Production’ (Benkler, 2007) and the ‘User Organisation’ (Christian, 2015) have been developed. Each of these approaches seeks to highlight different aspects of this large and complex phenomenon, but they all emphasise the role of online communities as an important source of innovation. This supplements the Schumpeterian account that places the entrepreneur and the firm as the motor of innovation and the source of the creative destruction within capitalist economies (Schumpeter, 1942). Arguably, online innovation communities may in certain circumstances replace the role of the entrepreneur, but in others may simply provide the ideas and inspiration that are the foundation for creativity and subsequent innovative activity.

However, although this book takes as its starting point the emergence of a new and developing source of innovation, it is important to recognise that such activity is not an accurate reflection of what happens most commonly within even the most modern economies. In any account of

innovation it is important to recognise that it is far too easy to over-focus on the leading edge and overlook that fact that the bulk of products and services in use will not be at the leading edge and be far more likely to belong to older generations of technology (Edgerton, 2007). This is also likely to apply to every aspect of an economy and the organisations that operate within it, such that many (possibly most?) business models, organisational structures and management approaches will be drawn from earlier generations of industrial organisation and will not reflect the leading edge of practice. Looking inward, it is also likely that many mental models and rules of thumb will tend to be based on long-held, possibly outdated, ideas and experience.¹ The Innovation Opportunity Space is designed to move us to a new starting point and open up a new understanding of innovation possibilities involving external groups.

NOTE

1. Indeed, the eminent British economist John Maynard Keynes observed that ‘ideas . . . are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back’ (Keynes, 1936, p. 383).