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'Business model change: a case study of independent videogame development firms and their transition from the ‘work-for-hire’ business model’

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Submitted in fulfillment of the requirements of the Degree of Doctor of Philosophy

The Adam Smith Business School
The College of Social Sciences
University of Glasgow

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Abstract

The aim of the study was to better understand the business model change process at the firm level with specific reference to small firms, an area that remains under researched. Business model change drivers, constraints and facilitators were examined in the context of small, independent videogame development firms. The videogame industry is a fast-moving, global industry with entrepreneurial characteristics and a notable number of small and micro firms involved in games development. Such firms have traditionally operated using a contractor-based, ‘work-for-hire’ business model. This is characterised by project-based activities, little or no proprietary intellectual property, a weak financial model, and limited possibilities to build value into the firm. In recent years, new market and technology-related opportunities have emerged for such firms to change to a higher value model that incorporates proprietary intellectual property ownership, an ‘IP’ model. However despite the attraction of this model, and support from industry and policymakers, the successful change from work-for-hire has been limited thereby restricting both firm and industry development. Understanding the rationale for this can contribute to the business model change literature and inform videogame industry policy.

This was an empirical study incorporating an exploratory, inductive approach with an embedded single case design that focused on independent videogame development firms and four business model change routes. Qualitative, longitudinal data were collected via 37 semi-structured interviews with purposefully selected entrepreneurs and industry experts; personal observations from interviews and 13 industry events in the UK and abroad; and documentation analysis of firm and industry data. The key findings indicated that: (i) business model change drivers were internal and external in nature with the entrepreneur’s preferences and the business model characteristics being dominant; (ii) certain business model change constraints influenced the composition, timing and success of business model change but were rarely preventative at business model adoption; (iii) the change process was opportunistic, ad hoc and facilitated by experimentation, finance, parallel models and a supportive firm and external environment; and (iv) parallel models were a critical part of business model change. For industry the study indicated that: (i) the IP model opportunity is questionable for many firms; (ii) the work-for-hire and combination models were prevalent but underrated; and (iii) innovation at the business model component may be a more appropriate way for videogame development firms to gain value.
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<td>Arts and Humanities Research Council</td>
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<td>B2B</td>
<td>Business to business</td>
</tr>
<tr>
<td>B2C</td>
<td>Business to consumer</td>
</tr>
<tr>
<td>ESRC</td>
<td>Economic and Social Research Council</td>
</tr>
<tr>
<td>F2P</td>
<td>Free to Play</td>
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<tr>
<td>IGDA</td>
<td>The International Game Developers Association</td>
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<tr>
<td>IP</td>
<td>Intellectual Property</td>
</tr>
<tr>
<td>NESTA</td>
<td>The National Endowment for Science, Technology and the Arts</td>
</tr>
<tr>
<td>SGN</td>
<td>The Scottish Games Network</td>
</tr>
<tr>
<td>TIGA</td>
<td>The Independent Game Developers’ Association</td>
</tr>
<tr>
<td>UKIE</td>
<td>United Kingdom Interactive Entertainment</td>
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<td>WFH</td>
<td>Work-for-hire</td>
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“Let me keep my distance,
Always, from those
Who think they have the
Answers.

Let me keep company always
With those who say
“Look!” and laugh in astonishment,
And bow their heads”

Extract from ‘Mysterious, Yes’ by Mary Oliver
Author’s declaration

“I declare that, except where explicit reference is made to the contribution of others, this thesis is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.”

Printed name: HELEN MULLEN

Signature:
“Pay attention.
Be astonished.
Tell about it.”

Extract from ‘Sometimes’ by Mary Oliver
Chapter 1 Introduction

1.1 The study context

This study was situated in the business models literature, focusing specifically on business model change and the factors that drive, constrain and facilitate this process. The business model can be defined as follows:

“The essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit. It thus reflects management’s hypothesis about what customers want, how they want it, and how the enterprise can organize to best meet those needs, get paid for doing so, and make a profit.” (Teece, 2010:172)

This definition has at its core, the creation, deliver and capture of value, and the business model as an expression of how the firm works (Magretta, 2002). The business model is a “hot topic” (Wiklund et al., 2011:3) and the literature is notable and evolving (Chesbrough and Rosenbloom, 2002; Teece, 2010; George and Bock, 2011; Zott, Amit and Massa, 2011; Wirtz et al., 2016) and associated with a diversity of disciplines (Osterwalder, Pigneur and Tucci, 2005; Shafer, Smith and Linder, 2005; Zott, Amit and Massa, 2011). There has been a lack of consistency in definition, theory and approach (Foss and Saebi, 2017; Baden-Fuller and Mangematin, 2013; Zott, Amit and Massa, 2011; Osterwalder, Pigneur and Tucci, 2005; Magretta, 2002; Markides, 2015). However, some areas of commonality have emerged including some research themes (Foss and Saebi, 2015), the notion of value creation, delivery and capture (Foss and Saebi, 2017) and the benefits of multidisciplinary approaches in research (Velu, Smart and Phillips, 2015).

Initially, business model research followed a more static view of the firm where the business model was studied at a particular point in time (De Reuver, Bouwman and Maclnnes, 2009). However, interest has increased in taking a more dynamic perspective of business models and the concept of business model change has become an emerging area in the literature (Foss and Saebi, 2017). There are inconsistencies in the definition of business model change and various constructs have been evident (De Reuver, Bouwman and Maclnnes, 2009; Demil and Lecocq, 2010; Mason and Leek, 2008). This study adopts the definition used by Linder and Cantrell (2000:3): “A change model is the core logic for how a firm will change over time to remain profitable in a dynamic environment.” This description can be applied to varying degrees of change, to startup or incumbent firms, to
the corporate or business model component level (Linder and Cantrell, 2000; Aspara, Hietanen and Tikkanen, 2010) and to different types of change (Saebi, Lien and Foss, 2016).

Given that some form of business model change may be inevitable (Teece, 2010), often necessary for survival and competitiveness (Sosna, Trevinyo-Rodriguez and Velamuri, 2010), and has been lacking in the literature (Teece, 2010; McGrath, 2010; Wirtz, Schilke and Ulrich, 2010), an examination of the business model change phenomena is relevant and useful. The business model change literature is relatively recent but notable in volume and emerging themes (Foss and Saebi, 2017; Schneider and Spieth, 2013; Buliga, Scheiner and Voigt 2016; Bjorkdahl and Holmen, 2013; Speith, Schneckenberg and Ricart, 2014), although there are a number of inconsistencies and a lack of overarching theories (Gassmann, Frankenberger and Sauer, 2016).

The main focus of this study was on understanding why and how business model change happened and the drivers, constraints and facilitators influencing such change. The first theme focused on the drivers for change; as such factors are important in understanding why change occurs (Achtenhagen, Melin and Naldi, 2013). Drivers for business model change have, in the main, been contextualised in the need for the firm to respond to external changes (usually market and technology related) to survive, develop and remain competitive (Teece, 2010; Chesbrough, 2010; Casadesus-Masanell and Zhu, 2013; Magretta, 2002; Doz and Kosonen, 2010). However, there are other factors that can trigger or influence this process including the entrepreneur (Cavalcante, Kestin and Ulhoi 2001; McGrath, 2010; George and Bock, 2011). There is therefore an opportunity to contribute to the literature by identifying the type and source of business model change drivers in a small firm context, including providing a better understanding the role of the entrepreneur in such change.

The second theme of the study related to the factors constraining business model change. The aim was to identify the constraint type and source, and the influence that such constraints had on how business model change was undertaken and sustained (Sinfield et al., 2012). A number of constraint-related themes of interest were evident in the literature although there was limited consolidation of these themes. Internal and external constraints have been identified (Chesbrough, 2010; Froud et al., 2009; Zott and Amit, 2013) including factors at the level of the entrepreneur such as cognition, dominant logic and
leadership reflecting the role of people in constraining business model change due to, for example, their perception of risk and the level of reconfiguration required (Chesbrough, 2010; Bouchikhi and Kimberly, 2003; Chesbrough and Rosenbloom, 2002). This study examined constraints in the context of business model change identifying the type, source and how they influence change.

The final theme of the study was how business model change occurs and the facilitators that support such change. Various facilitating factors have been identified in the literature that relate mainly to the person’s attitude and ability to make and sustain the change (for example, Demil and Lecocq, 2010; Teece, 2010; McGrath, 2010; Chesbrough, 2010; Blank and Dork, 2013; Sosna, Trevinyo-Rodriguez and Velamuri, 2010; George and Bock, 2011) but there was also recognition of experimentation as a facilitator and the role played by the existence of different business models that operated in parallel (Willemstein, van der Valk and Meeus, 2007; Connell and Probert, 2010). There was an opportunity to contribute to this literature stream by identifying the facilitators for business model change (Schneider and Speith, 2013; Spieth, Schneckenberg and Ricart 2014) and providing insight into the origins of such facilitators within a small firm environment.

The empirical site for the study was the videogame industry with a specific focus on small, independent videogame development firms. The videogame industry generated $91bn globally in 2016 (Takahashi, 2016) and has been identified as having significant growth potential and opportunities for value-added cross-fertilisation with other sectors. It is an industry heavily populated by small and micro firms and displays strong entrepreneurial tendencies, particularly within videogame development. Interest in the industry has been evident from academics, policy makers and industry bodies both in the UK and internationally (Searle, 2011; Scottish Government, 2015; TIGA, 2016; Grewar, Townley and Young, 2015a; Copenhagen Business School, 2005). Development firms have traditionally operated in a fast-moving and changeable environment (Zackariasson and Wilson, 2010) and in a value chain where the power has tended to be held by the platform owners, ‘super developers’ or publishers (Readman and Granthan, 2006). Notable rates of change are a feature of the industry (Johns, 2006) and this has implications for developers who have to respond to such changes, adapting to each platform development in order to remain competitive (Cadin, Guerin and DeFillippi, 2006; De Prato, 2014; Readman and Grantham, 2006).
This study focuses on independent videogame development firms, namely those financially independent firms (Juul, 2014) that develop games but are not part of a larger organisation. Independent development firms tend to be small or micro in size and resource, traditionally generating revenue from subcontract arrangements with publishers, with the latter retaining the intellectual property in the games created. This sub-contractor-based model, regularly referred to as ‘work-for-hire’ (WFH) (McGregor, 2013; Hotho, 2013), is perceived by some within and out with the industry to be limiting in terms of building value into the firm (Van der Watt, 2015; Juul, 2014; Mullen and Mason, 2012). There is a therefore a preference in the industry for an IP model where the intellectual property is owned by the development firm (Christopherson, 2004).

Changing to an IP model is perceived as being more beneficial for development firms (Hotho, 2013; Christopherson, 2004) as it allows the firm to own the intellectual property, control how it is commercialised, and obtain more value from its commercialisation. Changes in technological and market developments are assumed to have provided more opportunities for videogame development firms to adopt this IP model (KEA, 2010; De Prato et al., 2010; Livingstone, 2012). However, despite such developments, the preferences for an IP model (Hotho, 2013) and a number of initiatives to support IP development, the WFH model remains prevalent and the success of the IP model within those development firms that have adopted it, appear limited. It would therefore be useful to better understand the factors that influence the firm’s ability to change to the perceived higher value IP business model.

1.2 Research aims, questions and outputs

The study was situated within the literature that focuses on understanding how business model change occurs and the factors that influence how it is undertaken by the firm (for example Demil and Lecocq, 2010; Doz and Kosonen, 2010). The aim of the study was to understand why independent videogame development firms were failing to successfully change from a WFH business model to the higher value IP model. Examining this via a business model change lens helped to better understand why the WFH model remained prevalent and identify the factors driving, constraining and facilitating change from this model. This integrated approach provided the opportunity to build on existing business model change research and contribute to the gaps in the literature (Hedman and Kalling, 2003; Teece, 2010; Zott, Amit and Massa, 2011). The aim was to undertake a dynamic
study that focused on how and why small, independent videogame development firms undertook business model change, and add value to both the business model change and the videogame literatures in terms of understanding the change process and the factors that support and hinder it (Schneider and Spieth, 2013; Demil and Lecocq, 2010; Doz and Kosonen, 2010; Achtenhagen, Melin and Naldi, 2013; Al-Debei and Avison, 2010; Chesbrough and Rosenbloom, 2002).

Three research questions were addressed by the study. The first research question focused on the rationale for business model change, asking: “What are the drivers for changing from a work-for-hire business model?” The key objectives were to identify why the WFH business model was used, the drivers for changing from a WFH business model and the factors that influenced business model selection. The second question focused on identifying the challenges of business model change namely: “What are the constraints on changing to an IP business model?” The main objectives were to identify the type and source of such constraints and illustrate how they influenced the firm’s ability to implement business model change. Finally, research question three was aimed at providing insight into how business model change happened by focusing on: “How do firms change from a WFH business model?” The objectives were to identify the routes undertaken to achieve business model change, with a focus on the IP business model and the factors that supported changing to this model.

The intention of the study was to contribute to both the academic literature and industry practice. The outputs added empirical and longitudinal data to the literature about why and how business model change occurred, and within a small firm context from the entrepreneur’s perspective. For industry, the findings were of relevance to policy makers, trade organisations and practitioners. The study data provided practical insight about the issues for firms considering business model change relative to two key business models. The findings can inform policy support measures that targeted business model change in videogame development firms and can highlight to practitioners the issues involved in business model change relative to the WFH and IP models. Now that the study context and research aims have been discussed, the next section focuses on the research design and methods devised for the study.
1.3 Research design and methods

The research approach was inductive and exploratory, designed to understand business model change from the perspectives and experiences of entrepreneurs in small videogame development firms. This approach aligned with an interpretative paradigm (Burrell and Morgan, 1979), acknowledged the nature of the study, recognised the limited theoretical and empirical evidence in the business model change literature (Teece, 2010; Zott, Amit and Massa, 2011; Foss and Saebi, 2017) and aligned with previous approaches in the literature. Ethical issues were addressed throughout the study and guided by the creation of a data management plan that detailed procedures for data protection, confidentiality, ethical behaviour, data storage and data retrieval.

A case-study research strategy was adopted incorporating a single, embedded, case design. The single case focused on small, independent videogame firms and included units that represented the different business model adoption routes taken by videogame development firms to achieve the IP model namely (i) IP business model adopted at inception and retained; (ii) IP business model adopted at inception in combination with the WFH business model, and both models retained; (iii) IP business model adopted at inception and changed to a combined WFH and IP model; and (iv) WFH business model adopted at inception and then changed to a combination model with the IP model. The two units of analysis were the firm and the business model. The case-study approach best aligned with the study’s characteristics and was evident in previous studies about business model change including industry-specific research, for example, medical (Sosna, Rodriguez and Velamuri, 2010; Hvelsbeck, Merchant and Sandino, 2011) and football (Demil and Lecocq, 2010). Qualitative, longitudinal data were collected as they best supported the study’s aims including the focus on observing how respondents speak about and understand their experiences (Burrell and Morgan, 1979), the need for a deeper understanding of phenomena through an exploratory approach, and the generation of practical data to enhance firms and policy (Scriven, 1991 cited in Maxwell, 2009).

Data were collected from multiple data sources via interviews, personal observations and documentation analysis. This collection of independent data sets complemented each other and facilitated data triangulation (Denzin and Lincoln, 2005). First, 37 interviews were undertaken with entrepreneurs and industry experts, purposefully selected based on review of secondary material, discussions with industry contacts, attendance at industry events and
industry knowledge. Entrepreneur respondents were mainly managing directors of small, financially independent, videogame development firms with relevant experience of business models and change. Firms were located in Scotland ensuring a similar operating environment relative to policy and contextual factors. The industry expert respondents were affiliated to UK-based industry and public sector organisations. Each expert had experience of providing specialist support to videogame development firms and had worked within such firms. Second, personal observations were undertaken during the entrepreneur interviews and at 13 industry-related events in the UK and Europe. The events provided an opportunity to access, observe and obtain data about videogame development firms from data sources that included presentations and panel discussions, one-to-one discussions between the researcher and event delegates, firm and industry-related exhibition material, and a range of secondary documentation in hard copy and electronic format. Finally, documentation analysis was undertaken on data retrieved from online and offline sources relating to videogame development firms and the videogame industry. This incorporated a range of written, audio and film data from both the public and private sectors. Data were analysed throughout data collection and then on completion of the data collection stage using a four stage process that involved preparation, classification, interpretation and conclusion drawing, and recognised that the data were qualitative and incorporated within a case study design (Yin, 2009; Miles and Huberman, 1994; Eisenhardt, 1989).

The limitations of the study were identified and addressed. The use of the case study presented potential issues relating to validity and reliability (Yin, 2009). Construct validity was supported by triangulation and external validity by generalising the findings to theory rather than populations (Eisenhardt, 1989). To support reliability, a robust data management and retrieval infrastructure was created, facilitating transparency and ensuring a clear chain of evidence that included the inclusion of a case-study protocol and a case-study database (Eisenhardt, 1989; Yin, 2009). Bias arising from interviews and personal observation was acknowledged and addressed using techniques such as data triangulation and ongoing reflection using a research diary and research memos to maintain awareness of this (Maxwell, 2009). Finally, limitations relating to industry related data availability and accuracy issues were addressed by ensuring data were managed in a confidential and systematic way and with ongoing immersion in the field.
1.4 Thesis structure

Having introduced the study in this chapter, Chapter 2 will focus on the literature review which provides an examination of the business model and business model change literature. Definitional issues are presented together with an overview of how the literature has evolved. A range of themes is discussed before highlighting the gaps and research opportunities that exist. The videogames literature is then discussed with a focus on development firm and business model issues, highlighting the key issues associated with business model change and the importance of gaining more insight into this phenomenon. The opportunity and rationale for undertaking the study is then explained, identifying the benefits of exploring the business model change issues via the experiences of videogame development firms for whom business model change is an important issue. This illustrates the opportunity to contribute to the emerging academic literature on business model change and to industry policy.

The study’s research design and methods are presented in Chapter 3. Initially, the philosophical underpinnings of the study are discussed before describing the research strategy and the rationale for a case study strategy with multiple methods and a focus on qualitative, longitudinal data. The data requirement is then examined together with the three data collection methods namely interviews, personal observation, and documentation analysis. The ethical issues are considered before detailing the overall data management plan. Data collection activities highlight the familiarisation activities undertaken, how the data sources were identified and accessed, and the tools used to capture and process data. The stages of data analysis are then presented illustrating how data were prepared, classified, interpreted and concluded. The chapter ends by considering the study’s limitations and the actions taken to address these.

Chapter 4 is the first of three chapters containing the study findings. This chapter focuses on the research question: “What are the drivers for changing from a work-for-hire business model?” The aim was to understand the rationale for business model change by addressing three objectives that focused on identifying (i) whether or not firms wanted to change from a WFH model and the rationale for this; (ii) how the WFH and IP business models were perceived and compared; and (iii) the key factors that influenced business model selection.
The second research question is addressed in Chapter 5 namely: “What are the constraints on changing to an IP business model?” The aim was to understand the difficulties firms faced when changing business models and focus on identifying (i) the types of constraints that existed for firms changing to an IP business model; and (ii) where and when such constraints emerged. The constraint characteristics and influence are discussed illustrating how the choice, adoption and longer-term sustainability of the IP model are affected.

Chapter 6 is the final findings chapter and addresses the third research question namely: “How do firms change from a WFH business model?” The aim was to examine how business model change occurred and the facilitators for this particularly identifying (i) the routes that firms followed to adopt an IP business model and (ii) the factors that supported the adoption of an IP business model. The chapter focuses on the findings derived from analysis of the business model routes of 25 independent videogame development firms that changed from, minimised or avoided the WFH model in favor of the IP business model.

Chapter 7 concludes the study. Each of the research questions is restated together with the findings and the contribution made to the business model change literature. The study’s contribution to the videogame-related literature, and the industry itself, is then discussed together with the implications for policy makers, the videogame industry and videogame firm practitioners. Suggestions for future research relating to both business model change and videogames are then presented before the chapter concludes.
Chapter 2  Literature Review

2.1 Introduction

This study is situated in the business models literature focusing specifically on business model change and the videogame industry. This chapter presents a review of the relevant literatures, identifying the key contextual themes and where the opportunities exist to contribute to this nascent area. The literature review was undertaken at the outset of the study to achieve familiarity, increase knowledge about the field, gain an insight into methodological approaches and identify areas of potential research (Randolph, 2009; Hart, 2010). However, reviewing the literature was an iterative process that continued through the study. The chapter begins by illustrating how the review was undertaken (Section 2.2). The focus then turns to business models and business model change (Section 2.3), drawing on literature from entrepreneurship and management in the main, and highlighting the three key themes of interest for this study namely the drivers for, constraints on and facilitators of business model change. An overview of the videogame industry and the issues that face videogame development firms relative to business model change is provided in Section 2.4. The opportunities for researching business model change using the videogame industry are then discussed in Section 2.5, together with the research aims, questions and objectives, before the chapter concludes in Section 2.6.

2.2 The literature review process

The literature review incorporated four stages namely planning, locating, reviewing, and recording, to provide a robust and structured approach. However, this was an iterative process with literature being reviewed on an ongoing basis to monitor developments in the field, identify how the study findings aligned with, or contradicted, the emerging literature, and provide up-to-date context for future research recommendations. This combination of structured approach and iteration acknowledged various suggestions for undertaking reviews (Fink, 1998; Hart, 2010; Becker, 2007) and recognised that the business model literature was notable but relatively young (Chesbrough and Rosenbloom, 2002; Teece, 2010; George and Bock, 2011; Zott, Amit and Massa, 2011), was linked to a diverse number of disciplines (Osterwalder, Pigneur and Tucci, 2005; Shafer, Smith and Linder, 2005; Zott, Amit and Massa, 2011), and lacked consistency in definition, theory and approach (Foss and Saebi, 2017). Similarly, the videogame industry has received
increasing attention from academics and policy makers but requires more consideration and attention from researchers (Hotho and McGregor, 2013; Scottish Government, 2015).

The planning stage of the literature review involved identifying key words, selecting literature sources and establishing recording methods. Key words included ‘business model,’ ‘business model change’ (and variations for example dynamics/innovation/evolution) and ‘videogame developer business model.’ The definitional inconsistency in the business model literature created issues in identifying the most appropriate literature. However, a review of various frequently cited papers, journal special issues and literature review papers, supported knowledge acquisition and helped to further refine subsequent searches. During the second stage, the aim was to locate the bulk of the literature and this was undertaken via various searches of online and offline sources. This included academic resources such as the university library services, Ebesco,¹ Nexis UK,² EThOS (e-theses online service),³ Google Scholar⁴ and JSTOR⁵ among others, plus research reports relating to the videogame industry from public and private sector organisations. A review of academic journals from various disciplines was also undertaken. This incorporated the strategic management and entrepreneurship literature (George and Bock, 2011; Al Debei and Avison, 2010; Osterwalder, Pigneur and Tucci, 2005) and literature from e-business, information systems, and technology (Osterwalder, Pigneur and Tucci, 2005; Shafer, Smith and Linder, 2005; Zott, Amit and Massa, 2011). The third stage focused on reviewing the literature, although this reviewing process continued throughout the study and was an iterative process as previously mentioned. While reviewing the literature, initial thoughts about key authors, the papers and themes were captured in writing on the paper and in a research journal. This informed subsequent searching, summarising, and thematic bundling of ideas and gaps in the literature. The final phase of the literature review involved recording the material, using Endnote software to support storage, retrieval and overall management of the literature.

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¹ Available at: https://www.ebsco.com
² Available at: https://www.strath.ac.uk/library/eresources/databaseguides/nexisguide/
³ Available at: http://ethos.bl.uk/Home.do;jsessionid=E38542FDF07EFF243AF28B1A6AF2B291
⁴ Available at: https://scholar.google.co.uk
⁵ Available at: https://www.jstor.org
2.3 Business models and business model change

Business model definitions are diverse and a single perspective has yet to be derived in the literature (George and Bock, 2011; Baden-Fuller and Mangematin, 2013; Zott, Amit and Massa, 2011; Osterwalder, Pigneur and Tucci, 2005; Baden-Fuller and Morgan, 2010; Markides, 2015; Porter, 2001; Casadesus and Ricart, 2011). This lack of specificity has hindered research and theory development in the field (Teece, 2010; Zott, Amit and Massa, 2011; Spieth, Schneckenberg and Ricart, 2014) although this may be a natural part of the evolution process (Kuhn, 1996). A number of scholars have provided reviews of the definitional issues. These have highlighted the gaps resulting from the failure to define the construct, the diversity of terminology used and the lack of adoption by researchers of descriptions from earlier studies (Zott, Amit and Massa, 2011). However, while there is continuing debate, there are signs of consolidation in some areas and more clarity about the focus of the future research (Foss and Saebi, 2017; Saebi, Lien and Foss, 2016). While acknowledging that varied viewpoints exist, the following definition of the business model is used within this study:

“The essence of a business model is in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit. It thus reflects management’s hypothesis about what customers want, how they want it, and how the enterprise can organize to best meet those needs, get paid for doing so, and make a profit.” Teece (2010:172)

This definition captures the notion of the business model as a cognitive tool that originates from management (or the entrepreneur) and depicts their view of the firm and its activities. It tells the story of how the firm works (Magretta, 2002). Inherent in this definition (and one of the main areas of agreement in the literature) is the notion of value and how this is created, delivered and captured by the firm (Zott, Amit and Massa, 2011; Osterwalder, Pigneur and Clark, 2010; Teece, 2010; Makinen and Seppanen, 2007; Chesbrough, 2010; Baden-Fuller and Morgan, 2010). These elements are sometimes described as the value proposition, value architecture and value economic (Fielt, 2011), and this terminology was used in this study. Further studies have extended the concept of the business model in recognition of its ‘boundary spanning’ activities connecting the firm to the outside world and providing a more holistic view of the firm’s activities (Zott and Amit, 2010; Baden-Fuller and Haefliger, 2013; Schneider and Spieth, 2013; Markides, 2015; Velu, Smart and

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6 The term ‘firm’ has been used in this study. However the business model has been evident in research relating to organisations such as universities, social enterprises and individuals.
Philips, 2015), although there are still some difficulties in being “truly holistic” (Komorowski and Delaere, 2016). Finally, despite its cognitive origins, the business model concept has practical value as a tool for example, for business review and planning as has been evident with the ‘Business Model Canvas’ (Osterwalder, Pigneur and Clark, 2010).

Business model research became more notable in the early 2000s having evolved from a little-mentioned concept in the late 1950s/early 1960s (Osterwalder, Pigneur and Tucci, 2005) to a prolific area of study (Chesbrough and Rosenbloom, 2002). Various reviews have described how the field has evolved (Zott, Amit and Massa, 2011; Baden-Fuller and Mangematin, 2013; Osterwalder, Pigneur and Tucci, 2005; Shafer, Smith and Linder, 2005; Lambert and Davidson, 2015; Klang, Wallnofer and Hacklin, 2014; Wirtz et al., 2016) and there have been a number of special issues of journals on the topic, for example Long Range Planning (2010 and 2013), Harvard Business Review (2011), Strategic Organization (2013), R&D Management (2014) and the Strategic Entrepreneurship Journal (2015). Several of these have illustrated the development of the research in areas such as e-business, information systems, technology and innovation, through to the appearance of the business model in the strategy and management literature and more recently, entrepreneurship.

The business model field was originally described as relatively young and dispersed (Zott, Amit and Massa, 2011) and lacking in theoretical and empirical studies: “the paucity of literature (both theoretical and practical) on the topic is remarkable” (Teece, 2010:192). However, since its emergence, the volume of research has increased dramatically as has its perceived importance (Massa, Tucci and Afuah, 2017). Various disagreements remain, for example definitional issues comparing business model and strategy (Massa, Tucci and Afuah, 2017) but there has been agreement about some common themes of interest (Foss and Saebi, 2015), an agreed notion of value creation, delivery and capture and the research opportunities that exist for multidisciplinary approaches (Velu, Smart and Phillips, 2015; Vives and Svejnov, 2010).

This current study contributes to the strategy management, entrepreneurship and videogame literatures relative to business models and change. The management literature is more advanced although there is still notable debate and inconsistency (Markides, 2015; Trimi and Bergegal-Miraben, 2012; Osterwalder, Pigneur and Tucci, 2005; Shafer, Smith
and Linder, 2005; Klang, Wallnofer and Hacklin, 2014). However, although the entrepreneurship literature has been more limited, it has been posited by some researchers that business models are at the heart of entrepreneurship (Trimi and Bergegal-Mirabent, 2012; Morris, Schindelhutte and Allen, 2005; George and Bock, 2011) and therefore an important area of research. Across these literatures, the increasing interest in the business model phenomenon is fueled by its perceived importance in key areas. These include competitive advantage, acknowledging the inherent value creation and capture nature of business models (Zott and Amit, 2008; Teece, 2010); firm performance, including firm creation, growth and survival (George and Bock, 2011; Zott and Amit, 2007, 2008; Redis, 2009; De Reuver and Haaker, 2009); the firm’s ability to respond to change, particularly in uncertain and changing environments (Casadesus-Masanell and Zhu, 2013; Doz and Kosonen, 2010); and the role of the entrepreneur in business model design (Zott and Amit, 2007; Al Debei and Avison, 2010; Helman and Kalling, 2003; Osterwalder, Pigneur and Tucci, 2005).

Business model change has evolved as a key theme within the business model literature and was identified by Foss and Saebi (2017:201) as an “important phenomenon that needs to be conceptualized and theorized on its own”. The business model change literature exhibits similar difficulties to those identified in the business model literature including, for example, inconsistencies in definitions, approach and theoretical underpinnings (Buliga, Scheiner and Voigt, 2016; Gassmann, Frankenberger and Sauer, 2016). A variety of terminology has been used to describe business model change for example, change, adaption, dynamics, evolution, and innovation (Linder and Cantrell, 2000; De Reuver, Bouwman and MacInnes, 2009; Demil and Lecocq, 2010; Mason and Leek, 2008; Chesbrough, 2010; Andries and Debackere, 2006, 2007), although the term business model innovation tends to dominate (Foss and Saebi, 2017; Schneider and Spieth, 2013; Buliga, Scheiner, and Voigt 2016; Bjorkdahl and Holmen, 2013). The commonality across such terms is that something different is evident in the ‘before and after’ format of the business model, whether at the holistic or business model component level (Khanagha, Volberda and Oshri, 2014). This notion of change provides the basis for the terminology and definition used in this study namely: “A change model is the core logic for how a firm will change over time to remain profitable in a dynamic environment” (Linder and Cantrell, 2000:3). This definition can be used to describe varying degrees of change, change within startup and incumbent firms, change at the corporate or business model component level (Linder and Cantrell, 2000; Aspara, Hietanen and Tikkanen, 2010) and different types of
change, for example the delineation made by Saebi, Lien and Foss (2016) about innovation and adaptation.

Earlier business model research took a more static view of the firm, examining it at a particular point in time (De Reuver, Bouwman and MacInnes, 2009). However, given the often inevitability of change (Teece, 2010: Linder and Cantrell, 2000), and its perceived importance, the interest in business model change and the level of academic literature has increased in recent years. This has included several special issues of journals for example R&D Management (2014 and 2016) and the Journal of Business Strategy (2017), interdisciplinary business model focused academic networks such as the Economic and Social Research Council business model series (Economic and Social Research Council, 2014), and a few literature reviews (Schneider and Speith, 2013; Speith, Schneckenberg and Ricart, 2014). A review of potential theoretical perspectives of relevance to business model innovation has also been undertaken (Gassmann, Frankenberger and Sauer, 2016) who identified 50 theories that could be considered relevant. This highlighted the lack of theoretical consensus, a deficit similar to that within the business model literature (Teece, 2010). Within strategic management and entrepreneurship there have been linkages made between business model/business model change and the resource based view (Penrose, 1995; Barney and Clark, 2007; Demil and Lecocq, 2010), dynamic capabilities (Achtenhagen, Melin and Naldi, 2013; Auer and Follack, 2002; Petrovic, Kittl and Teksten, 2001; Bock et al., 2012); effectuation (Chesbrough, 2010); and ambidexterity (Remneland-Wikhamn et al., 2016) and suggestions for linking to other areas such as innovation and complexity (Foss and Saebi, 2017). However, overall there remains a lack of an agreed theoretical perspective (Gassmann, Frankenberger and Sauer, 2016).

Firms need to align their strategy with the external environment to sustain a competitive advantage (Christensen, 2001). Similarly, identifying and responding to the need for business model change is thought to be inevitable: “It is also likely that even successful business models will at some point need to be revamped, and possibly even abandoned” (Teece, 2010:189), and necessary for the firm performance, survival and competitiveness (Sosna, Trevinyo-Rodriguez and Velamuri, 2010; Brannon and Wiklund, 2016; Amit and Zott, 2012; Linder and Cantrell, 2001). There is the opportunity to further explore the business model phenomenon and contribute to the limited evidence that exists (Teece, 2010; McGrath, 2010; Wirtz, Schilke and Ullrich, 2010; Foss and Saebi, 2015; Pohle and Chapman, 2006). Researching business model change can provide a better understanding
of the dynamics of business model change (Achtenhagen, Melin and Naldi, 2013; Cavalcante and Ulhoi, 2011) and provide insight into a breadth of firm-related aspects about how change is enacted, the rationale for doing so and the factors that contribute to successful change: “Operating models create core assets, capabilities, relationships and knowledge; change models extend and leverage them” (Linder and Cantrell, 2000:3). Key aspects of examining business model change include understanding how firms identify the need for business model change, how change is undertaken and how the longer term business model sustainability issues after change are dealt with. The aim of this study is therefore to understand how and why business model change happens with a focus on the drivers for, constraints on and facilitators of such change. Each of these three themes will now be discussed.

Drivers for change

The first theme of the study was the factors driving business model change. It has been suggested that business models need to be “frequently adjusted to new challenges” (Komorowski and Delaere, 2016:117) and that an inability to do so, can be problematic: “Being unable to adapt ones business model in the face of significant environmental change has proved deadly for many firms” (Wirtz, Schilke and Ullrich, 2010:273). The requirement for business model change is often contextualised in the need for the firm to respond to external changes (usually changes in market and technology conditions) to survive, develop and remain competitive (Teece, 2010; Chesbrough, 2010; Ojala, 2015; Casadesus-Masanell and Zhu, 2013; Magretta, 2002; Saebi, Lien and Foss, 2016; Doz and Kosonen, 2010; Casadesus-Masanell and Ricart, 2010). Such external changes are important drivers, particularly for startups with a new business model (De Reuver, Bouwman and Machnes, 2009; Mathar and Brettel, 2014). A number of other factors have been suggested that influence business model choice and design and therefore drive selection and change. This includes the willingness (and ability) of the entrepreneur/manager to change (Cavalcante, Kestin and Ulhoi, 2011), performance improvement (Zott and Amit, 2007; Redis, 2009; Andries and Debackere, 2006) and the combination of internal and external factors (Aspara et al., 2013). Firms often need to adapt when a competitive situation changes due to internal or external conditions, or undertake ‘trial and error’ type activities to moderate for market conditions and internal factors (Blank, 2013; Sosna, Trevinyo-Rodriguez and Velamuri, 2010). Factors such as constraint removal can also allow new business models to emerge (McGrath, 2010) as can the creation of solutions in response to customer needs (Chesbrough, 2010).
While the assumption in much of the literature is that change needs to occur, there have been some studies that question this. Some firms have used stable business models over time with growth and success (Kaplan, Sensoy and Stromberg, 2009) and may not need to change to derive benefits (Andries, Debackere and van Looy, 2013). In some instances firms may select a business model early on in their existence and retain this, particularly in the case of market-driven firms (Schindehutte, Morris and Kocak, 2008).

In summary, there were gaps in the literature about the drivers for business model change (Achtenhagen, Melin and Naldi, 2013) and how such models are designed and selected. The aim of this study was therefore to understand why firm owners wanted to change business models and the type and source of such drivers in small entrepreneurial firms, including the role of the entrepreneur themself (Amit and Zott, 2015; Zott and Amit, 2007).

Constraints on business model change

The second theme of this study was the factors that hindered business model change and the difficulties of sustaining the business model post-change this:

“few organisations have conceived and executed a business model different from their current one, fewer have done it more than once and only a handful have put in place a methodical approach to business model innovation.” (Sinfield et al., 2012:86)

A number of constraints to business model change have been identified in the literature. However, there was limited consolidation and no overarching theoretical or empirical approach. Chesbrough’s (2010) citing of three barriers namely cognition, dominant logic, and leadership incorporates much of the field while external, institutional sources of constraint have been highlighted by, for example, Froud et al., (2009) but identified as needing more examination (Zott and Amit, 2013). Existing firms may be unwilling to change given the level of reconfiguration that such change required and the fact that any such change may generate conflict especially if it was complex. Similarly, cognitive barriers may emerge where managers who have been operating within the confines of a certain business model do not want to change, do not know how to do so or are unsure what is needed (Johnson, Christensen and Kagermann, 2008). Such constraints recognised the role of people in the business model change process and the importance of their perception of what was involved. Attachment to a ‘dominant logic’ about how the world works and the role of the firm therein (Chesbrough, 2010; Bouchikhi and Kimberly, 2003)
can prevent opportunities from being identified (Chesbrough and Rosenbloom, 2002). There may be a reluctance to change business model as it requires moving away from the firm’s traditional business model configuration (Amit and Zott, 2001) and may be perceived as conflicting with the firm’s existing operations and asset base (Chesbrough, 2010). Reconfiguration of assets can involve changes to resources and risk (Chesbrough, 2010; Bouchikhi and Kimberley, 2003; Wernerfelt, 1984) and a change to different systems, processes and assets that are hard to replicate. The uncertainty associated with how change can be undertaken and the likely outcomes, may create ‘uncertain imitability (Lippman and Rumelt, 1982:418) and increase the perception of risk (McGregor, 2013).

In summary, there were a number of constraint-related themes of interest in the literature that required further research. The aim was therefore to better understand the type and origins of such constraints, and how they influenced the business model change process.

Facilitators for business model change
The final theme of this study was how business model change happens and the factors that support such change.

The business model change process has been examined within the literature and the approaches to business model change identified as either structured and sometimes supported by various tools, (for example Doz and Kosonen, 2008, 2010; Osterwalder, Pigneur and Clark, 2010; Pateli and Giaglis, 2005) or experimental (for example McGrath, 2010; Mason and Leek, 2008; Ojala, 2016; Chesbrough, 2010). The latter indicated the possible linkages between business model change and both effectuation and causation (Sarasvathy, 2001, 2008; Chesbrough, 2010) and dynamic consistency (Demil and Lecocq, 2010) when trying to explore the experimental nature of business model change and the activities required by the firm to implement it:

“We view business model evolution as a fine tuning process involving voluntary and emergent changes in and between permanently linked core components, and find that firm sustainability depends on anticipating and reacting sequences of voluntary and emerging change, giving the label ‘dynamic consistency’ to this firm capability to build and sustain its performance while changing business model.” (Demil and Lecocq, 2010:227)

The facilitators of business model change have also been considered in the literature, although this remains at an early stage. Three key themes incorporate the resources and capabilities of the firm, the use of experimentation, and the role of parallel models where more than one business model is operated within the firm.
First, the facilitators for change that have been evident include the firm’s resources and capabilities and the extent of the activity required to move to the new business model. This includes the entrepreneur’s/management’s attitude and their ability to make change happen. The characteristics of the firm and the attitude of the personnel therein are important, for example the willingness and ability of individuals to adapt (Demil and Lecocq, 2010; Teece, 2010), experiment (McGrath, 2010; Chesbrough, 2010; Blank and Dork, 2012; Sosna, Trevinyo-Rodriguez and Velamuri, 2010), be flexible (Andries and Debackere, 2007), acquire knowledge (Teece, 2010), align with the market (Linder and Cantrell, 2000) and recognise the need to respond to, and be a leader for, change (Chesbrough, 2010):

“Disappointments are certain to arise as a new business is built, but success rates can be improved if the architects of the business model learn quickly, and are able to adjust within a range that still yields a satisfactory profit.” Teece (2010:189)

Second, the use of experimentation and learning were identified as facilitators. The business model is not always known at the start, particularly in turbulent markets, therefore: “an entrepreneur may be able to intuit a new model but not be able to rationalize and articulate it fully” (Chesbrough 2010:187). The business model may keep changing as the entrepreneur acquires knowledge and experience, and makes readjustments as required (Andries and Debackere, 2007; Sosna, Trevinyo-Rodriguez and Velamuri, 2010; McGrath, 2010; Linder and Cantrell, 2000). This use of experimentation can influence the firm’s ability to undertake business model change.

Third, the role of parallel models as a facilitator has been mentioned in the literature, highlighting how firms use such models as part of the business model change process. Adopting multiple models can facilitate the transition to a new model and/or provide a short-term contingency where the preferred model is not possible or known. This multiple model allows the firm to continue to operate and generate benefits while waiting to change business model. This is illustrated for example, in the work done by Willemstein, van der Valk and Meeus (2007) with early stage biotechnology firms. This study identified that constraints on product development at startup meant that other activities, such as subcontractor-based projects, were undertaken in the short term to generate finance. Similarly, the ‘soft start’ model discussed by Connell and Probert (2010), illustrated the use of non-product, subcontractor-based activities as an interim stage towards the firm
achieving an in-house product-based model, while the recent study by Aversa, Furnari and Haefliger (2015) highlighted how the Formula One industry used a variety of business models simultaneously.

In summary, the study’s third theme was based on contributing to the literature on business model change facilitators. The aim was to identify such facilitators (Schneider and Speith, 2013; Spieth, Schneckenberg and Ricart, 2014) including their type and origins, and highlight how the business model change process happens.

2.4 The videogame industry

The videogame industry is a “significant segment of mainstream media production and sales” (Komorowski and Delaere, 2016:105) with high levels of innovation (Marchand and Hennig-Thurau, 2013). The UK market is predicted to be worth £5.2bn by 2021 and is growing at 6.7% CAGR (PwC, 2017b). Globally, the industry generated $91bm in 2016 (Takahashi, 2016) and continues to have significant growth potential (PwC, 2017a), with increasing focus on social/casual gaming over more traditional game forms, and changing revenue divisions in favor of online (55%) and digital (23%), rather than physical platforms (22%), by 2021 (PwC, 2017a). A global games market has existed since the 1960s (Kent, 2001; Chaplin and Ruby, 2005; King, 2002). Since then, the industry has moved from “small firms, many even individuals programming software in their bedrooms, producing for a highly niche market, to an industry dominated by multinational hardware producers” (Johns, 2006:157), and with application to games and non-games related industries (Edery and Mollick, 2009). Within the UK, the videogame industry’s origins are strongly rooted in entrepreneurial activity, having emerged “largely thanks to a group of young, seat-of-the-pants entrepreneurs” (Leadbetter and Oakley, 2001:42). This entrepreneurial activity has continued in recent years with an “entrepreneurial boom” in the UK in the 2000s and 2010s and growth in the number of companies of 22% p.a. between 2011 and 2013 (NESTA and UKIE, 2014:5).

The videogame industry has been subject to the attention of academics, policy makers and industry bodies in the UK (Searle, 2011; House of Commons Scottish Affairs Committee, 2011a, 2011b, 2016; Scottish Government, 2015; TIGA, 2016; UKIE, 2015; Grewar, Townley and Young, 2015a) as well as internationally, for example Canada, Australia, and Europe (Teipen, 2008; Grandadam, Cohendet and Simon, 2013; Darchen, 2012; Boo-
However, statistical data about the industry remains limited and there are issues of availability and accuracy that are acknowledged by both industry and Government organisations (NESTA and UKIE, 2014; Scottish Government, 2015; De Prato et al., 2010). In the UK, a study undertaken by NESTA and UKIE (2014) highlighted a substantial underestimate of the industry’s size with, for example, the finding that only one third of the firms identified in the study were captured by the SIC code classification. The study adopted a research design that incorporated a big-data approach and produced substantially more accurate data relative to firm-related statistics such as the number of firms, average age of firms, firm location and the number of games (NESTA and UKIE, 2014). The data generated were subsequently used as the basis for further research and the establishment of an online, dynamic map of the UK games industry\(^7\) which now allows firms and other organisations to input their data on an ongoing basis (NESTA and UKIE, 2016). In Scotland, data issues in the industry were highlighted in a review by the Scottish Government: “There is little accurate data available on the current state of the videogame sector and its impact on jobs and the economy” (Scottish Government, 2015), and were evident in the reaction to the findings from a public sector-funded study suggesting that the industry’s contribution in Scotland was negligible in statistical terms (Baglow, 2012).

The focus of this current study is small, independent videogame development firms, namely those firms that develop games and are financially independent (Juul, 2014). Videogames are a “complex mix of technology, art and interactive storytelling” (Burger-Helmchem and Cohendet, 2011:318) and their development is multifaceted, requiring an intricate blend of creativity and rationality (Zackariasson, Styhre and Wilson, 2006):

“A game’s design requires balancing the more rational interests of the market (e.g. tuning games to make them playable or usable by consumers) with the interests of developers in making a creative product.” (Tschang, 2007:1002)

The term ‘independent’ or ‘indie’ associated with videogame development firms has various meanings within the videogame industry and there are definitional difficulties associated with this: “Most academic and industry discussions state that it is impossible to describe independent games in a meaningful way” (Juul, 2014:1). Such difficulties relate, in the main, to the wider connotations of the term ‘independent’ than just financial independence (Gnade, 2010; Gril, 2008; Zimmerman, 2002), for example, game types and

\(^7\) The map is available at: http://www.nesta.org.uk/gamesmap_interactive_map_uk_games
aesthetics, low cost of production, the focus on small and simple, and/or the notable value placed on personal creativity (Doughterty, 2012):

“… we are just as likely to associate “independent games” with particular designs, people, distribution channels, and platforms. Certainly, with independent games, the assumed slick commercialism of both big budget and casual games is met by a counter-image of small, cheaply developed, more personal and experimental game.” (Juul, 2014:1)

Within the value chain (see Figure 2.1), videogame development firms have traditionally operated at the weaker end of a buyer driven value chain (Johns, 2006; Parker and Cox, 2013; Parker, Cox and Thompson, 2014) with less power due to the dominant position of the platform owners, ‘super developers’ or the publishers (Readman and Granthan, 2006). The industry is considered technologically adept, innovative and able to adapt to the rate of change therein (De Prato, Feijoo and Simon, 2014) particularly in relation to technology where, historically, a 5-6 year cycle has been evident in terms of console technology developments (Johns, 2006). There is therefore the need for developers to be able to respond to such change and adapt their tools and processes for each generation of platforms (Cadin, Guerin and DeFillippi, 2006; De Prato, 2014). This need for adaption to remain competitive is one of the reasons why Readman and Grantham (2006) suggest that dynamic capabilities are important for firms, defining this term as “those capabilities that contribute to product creation and product development capabilities of ‘super developers’ over other considerations” (Readman and Grantham, 2006:256).
Developers
Focus: Game creation
Characteristics:
- Independent
- Publisher owned

Publishers
Focus: Finance & promote games
Characteristics:
- Internal studios (propriety IP)
- Buy licences to IP
- Mostly international with UK base

Platform creators
Focus: develop hardware platforms e.g. consoles, PC, mobile, PDAs
Characteristics:
- Make the hardware
- Gatekeepers of the industry
- Support developers and publishers for their platform

Retailers and distributors
Focus: Provide access to end user
Characteristics:
- Distributors sell to retailers
- Traditionally had significant impact on what gets made

Component and Service providers
Focus: provide art, animation and design; rendering, graphics and physics engines and programming; audio and sound design; and localisation

Source: Adapted from Cadin and Guerin (2006); Teipen, (2008); Skillset (2009)
Technological advances and the convergence of IT, telecommunications and digital technology have changed the way in which creative media content is created and commercialised:

“… the general expectation for the coming years is an accelerated migration of contents and services to digital, in a scenario of rapidly increasing convergence of digital technologies and integration of media services, taking advantage of improved and permanent network connections. The role of the creative content industry is expected to increase accordingly.” (De Prato et al., 2010:11)

Such external changes are perceived as having an impact on business models for industries such as videogames: “turning traditional business models upside down” (KEA, 2010:10). This has created an opportunity for creative media firms, like videogame developers, to adopt business models that enhance their value proposition, increase their power in the value chain, and acquire more control over their outputs and returns: “Content creators, no matter where they are in the world, are able to serve digital content to global audiences via high-speed broadband” (Livingstone, 2012:15). Miles and Green (2008) in their report for the National Endowment for Science, Technology and the Arts (NESTA), highlighted the growth opportunities that such technologies present for creative industry firms, indicating that change would be required at the business model level as firms innovate to survive, grow and generate revenue. The key challenge is how to adapt to the changing audience needs, technology developments, and skills requirements (KEA, 2010) and achieve sustainable business models and financial success (Miles and Green, 2008).

Two business models evident in videogame development firms are the intellectual property (IP) model and the work-for-hire (WFH) model. The traditional business model for videogame development firms has been the WFH model. This is essentially a subcontractor model, characterised by project-based activities for (normally) external clients, and where the videogame development firm holds no proprietary intellectual property ownership in the game. In the WFH model, videogame development firms traditionally generated their revenue from publishers and the publisher retained and owned the intellectual property. WFH can involve a range of activities (Chapple, 2014; McGregor, 2015), for example the licensing of intellectual property from a brand owner for repurposing on another platform, the development of a game (or part thereof) to a brief or highly collaborative game development projects where the videogame development firm is more intensively involved. However, the WFH model has often been considered inferior within and out with the industry, perceived as limiting the long-term value creation and
stability of the firm (Van der Watt, 2015; Juul, 2014; Mullen and Mason, 2012) and making it difficult to attract external finance into the firm (Jahn-Sudmann, 2008). The second model, the IP model, is different from WFH in that the ownership of the intellectual property in the videogame remains with the videogame development firm. Such ownership can arise from in-house development or from external sources, for example via the purchase of intellectual property rights, shared intellectual property arising from a collaborative project with partners/clients or the acquisition of intellectual property rights as part-payment for WFH projects undertaken. In the IP model the videogame development firm controls the development and commercialising of the intellectual property. Often this involves a business-to-consumer (B2C) rather than the mainly business-to-business (B2B) relationship that such firms have experienced within a WFH model.

The WFH and IP models are analogous in some ways to subcontract and product development of proprietary IP (McGregor, 2013), particularly how subcontractor-based activities are used to support product development activities and the change to a product development model. The work undertaken by Connell and Probert (2010) illustrated how both subcontract and product development based models were used in the high technology industry. This highlighted the prevalence of subcontract activities being used to provide financial stability and growth for the firm, but also to support product and intellectual property development. As well as general financial benefits, the subcontractor activity also supported the developments of firm in areas such as skills, knowledge, contacts and resources. This study also highlighted the relative perceptions of subcontractor and product development based models, in that the former was sometimes held in less regard and attracted less support, despite its obvious benefits to firm’s development. Similarly, the study by Willemstein, van der Valk and Meeus (2007), situated in the medical biotechnology industry, highlighted how early stage firms used the subcontractor model to generate finance in the short term and prepare the firm for a product development model, in recognition of constraints on their preferred product development activities. However, the WFH and IP business models appear to embody stronger and more deep-rooted views about the perceptions of value as expressed in terms of creativity and innovation. The IP model is perceived as incorporating both of these aspects more so than WFH:
“The innovation imperative is thus written into the strategic discourse of interviewees as the IP imperative, and as such highlights a tendency in the industry to focus on the value of originality as an idealistic rather than a commercial proposition.” (Hotho, 2013:93)

Overall, the perception of the IP model as more beneficial than the WFH model extends across practitioners, industry and the public sector (Christopherson, 2004; Hotho, 2013; Hotho and Champion, 2010). The IP model is viewed as an important route to increasing the value in the firm: “New IP is the engine of the games industry that opens new markets, triggers employment, raises tax revenues and delivers new growth to studios that own the IP” (TIGA, 2015:21). The lack of IP ownership within the WFH model is often perceived as limiting the value of the videogame development firm, negatively impacting on the firm’s growth, sustainability and economic success particularly in the longer term (Jahn-Sudmann, 2008; Mullen, 2015 cited in Scottish Government, 2015; Hotho and McGregor, 2013):

“We tend to stay away from contract work as it can be a slow death. You build no value in your own company if all that time investment goes towards someone else’s project.” (Van der Watt, 2015 cited in Grewar, Townley and Young, 2015b:6)

The IP model can indeed be valuable and there are a number of high profile examples of firms using this model successfully for example, Outplay Entertainment in Scotland generated over £6m turnover in 2015 (Handrahan, 2014); The ‘Pokemon Go’ game developed by Niantic in collaboration with Nintendo achieved $950m in consumer spend between July and the end of 2016 (UKIE, n.d.); and the globally successful ‘Minecraft’ game was developed by independent developer Mojang for the PC platform, with the console version developed in Scotland by 4J studios (Scottish Development International, 2016). However, the WFH model, rather than the IP model, remains prevalent among videogame development firms, often because of more advantageous financial returns that can support the development of the firm and its own intellectual property: “WFH is subordinate to the value residing in IP and is often seen as the goal that gets the business through tough times” (Hotho, 2013:92).

There has been notable interest, advocacy and support from industry and the public sector for videogame development firms to increase their own intellectual property related activities, perceiving intellectual property ownership as a route to improved growth, sustainability, and economic benefits (Christopherson, 2004; Hotho, 2013; Hotho and Champion, 2010; McGregor, 2013; TIGA, 2015; Mullen and Mason, 2012):
“The games sector is facing fundamental issues associated with the ambitions of many of the games companies to move away from their WFH-based business models towards an IP-focused model.” (McGregor, 2013:68)

Support for the IP model has also been framed in the context of the perceived opportunities presented by technology and market developments. Digital convergence, the broadening videogame consumer demographic, the changing role of actors in the industry’s value chain, and the potential to apply games-related skills, technology and content in non-games areas are all viewed as opportunities for firms that own their intellectual property: “Small, agile studios are able to innovate and self-publish, bypassing the traditional supply chain” (Livingstone, 2012:18). The IP business model with its inherent intellectual property ownership is perceived as having more value for the firm as it allows control over the commercialisation of the intellectual property and a better share of the financial return.

A number of support initiatives from the public and private sector have been developed to support IP-related activities. Some examples include the Indie Fund8, the UK Games Fund9, Greenshoots10, ‘Developing Beyond’11 and the Global Domination Accelerator Programme12 in Scotland. The industry groups TIGA and UKIE have also advocated for a British Games Institute 13 to support the UK videogame industry, and TIGA for a Scottish Video Games fund (TIGA, 2016). However, the WFH model remains prevalent despite the assumed benefits of, and the advocacy and interest in the industry for, an IP-based model.

Changing from a WFH business model to an IP business model may present various difficulties for the videogame development firm (McGregor, 2013) and for those firms that

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8 Indie Fund is a private fund that provides funding and expertise to firms but the control and publishing of the intellectual property remains with the firm. There is a revenue share arrangement if the game is successful. Available at: http://indie-fund.com/about/

9 UK Games Fund is a community interest company that is not for profit and does not have share capital. It provides funding support and does not take IP ownership, equity or profits. Available at: http://ukgamesfund.com

10 Greenshoots is a collaboration between Creative England and Microsoft. Available at: http://www.creativeengland.co.uk/games/greenshoots

11 Developing Beyond is a yearlong completion launched in 2017 for games developers based in Europe by Epic Games and Wellcome to provide funding and personnel support to selected firms. Available at: https://wellcome.ac.uk/press-release/epic-games-and-wellcome-launch-developing-beyond-500000-games-development-challenge

12 Global Domination Accelerator is a 12-week Accelerator Programmes to support games firms with international growth. Available at: http://www.elevatoruk.com/accelerator/global-domination-accelerator-application/

13 The British Games Institute is an industry driven and backed by UKIE and TIGA. Intention is to be a non-membership charity with funding from Government, National Lottery and returns from the game supported. As well as funding, the aim is to “nurture, promote and advance the UK’s games industry in the long term, creating sustainable studios.” Available at: https://britishgamesinstitute.com
have adopted an IP business models, there have been varying degrees of success. First, the IP and WFH models require different resources and capabilities particularly relating to the value architecture and economic components of the business model. In the WFH model, the (usually) business client sets the brief and takes on responsibility for activities such as marketing, distribution, monetisation and customer support. However, in the IP model, the videogame development firm has responsibility for these activities and therefore needs to have relevant skills and resources. Second, although the actors in the value chain may have changed in name and activity, the loci of power remains with those organisations with market access such as the publishers and platform providers. Distribution can involve physical outlets but increasingly such activity is undertaken via online and digital platforms (PwC, 2017a), and for the IP model, videogame development firms need to be able to access their end user consumers as well as support ongoing engagement. Third, the IP model requires the firm to manage the entire innovation process from idea origination through to commercialisation, fulfilling both the exploration and exploitation activities, the balancing of which has been identified as particularly important for the videogame industry (Raisch and Birkinshaw, 2008; Raisch et al., 2009). However, each of these activities is often associated with one of the models namely WFH (exploitation) and IP (exploration):

“The computer games industry provides a specific variation of this challenge: exploitation of current products and markets, and exploration of new ideas is framed around the issues of work for hire (WFH) […] and IP work undertaken by the developer to generate their own intellectual property.” (Hotho, 2013:86-87)

Fourth, the nature of the videogame product means that there is evident risk attached to its development and uncertainty around its success (Banks et al., 2002), with a need for balancing:

“The more rational interests of the market (e.g. tuning games to make them playable or usable by consumers) with the interests of developers in making a creative product’” (Tschang, 2007: 1002).

Finally, there have been challenges arising from within the firm from the entrepreneur, staff and management in relation to more subtle factors associated with the IP model, such as ideological issues, operating preferences (Hotho, 2013), tensions around creative and commercial goals (DeFillippi, Graher and Jones, 2007; Hotho and Champion, 2011) and the perception of videogame development firms as lacking entrepreneurship and a commercial focus (Hotho, 2013; Durrant, 2013; Mullen and Mason, 2012): “the
management of creativity is rife with paradoxes and tensions” (DeFillippi, Gragher and Jones, 2007:512).

Finally, operating an IP business model also requires the firm to undertake a number of organisational-related changes. Organisational change is an important activity within a firm and “the successful management of change is crucial to any organisation in order to survive and succeed” (Todnem-By, 2005:369). While business model change differs from organisational change: “new organizational forms can be a component of business models; but organizational forms are not business models.” (Teece, 2010: 176), both change-types are linked: “Organizational design and structure are critical features of business model innovation” (Bock et al., 2012:299). Indeed, leadership of organisational change has been suggested as an important facilitator for overcoming barriers to business model change (Chesbrough, 2010) and is key to engaging and managing staff in the organisational change process, an important aspect of making change happen (Dutton, Dukerich and Harquail, 1994).

Having an innovative culture helps avoid employee resistance to organisational identity changes that arise during transformation processes (Dutton, Dukerich and Harquail, 1994). This is particularly relevant within videogame development firms where the focus on creativity is high and the preference for IP over WFH to achieve such creativity is evident. However, transitioning to an IP business model requires a level of expectation management, particularly given that the perception of the IP model, relative to the actuality, has been an issue for some videogame development firms (Hotho, 2013). The realisation that the adoption of the IP model is not only about creative freedom, but can also bring with it a number of constraints in order to manage the balance of creativity and rationality (Hotho and Champion, 2011). The ability to manage exploration and exploitation has been explored in the videogame industry (Zackariasson, Walfisz and Wilson, 2006; Zackariasson, Styhre and Wilson, 2006; Hotho and Champion, 2011). However, while some studies indicate that such ambidexterity is evident (Remneland-Wikhamn et al., 2016), others suggest that the overt focus on IP makes it unclear as to whether videogame development firms can develop adequate ambidexterity to achieve success (Hotho and Champion, 2011).

Exploring the process of changing from a WFH model to an IP model could illustrate why the WFH model remains prevalent, and identify the factors driving, constraining and
facilitating a change to an IP model. The business model literature provides a useful route to examine this phenomenon of business model change, while the experiences of business model change in videogame development firms provides an empirical small firm setting where the issue of business model change is current, relevant and presenting difficulties for firms. This approach provides a route to better understand why the WFH model remains prevalent for firms, rather than changing to an IP model particularly: (i) do firms want to change from the WFH model, and, if so, why? (Drivers); (ii) if the desire to change exists, what is preventing firms from making the change and adopting an IP model? (Constraints); and (iii) what routes have been taken by firms that have changed from the WFH model and achieved an IP model and what has supported this? (Facilitators). The following section now focuses on how to address these three issues in the context of the business model change literature, identifying the opportunities before stating the research aims, questions and objectives for the study.

2.5 Research opportunities, aims and questions

This study focused on how and why small videogame firms undertake business model change. The aim was to contribute to the business model literature by better understanding how and why business model change happens (Al-Debei and Avison, 2010; Zott and Amit, 2007; Chesbrough and Rosenbloom, 2002; McGrath, 2010), particularly the factors driving, constraining and facilitating business model change (Schneider and Spieth, 2013; Demil and Lecocq, 2010; Doz and Kosonen, 2010; Achtenhagen, Melin and Naldi, 2013). Underlying this aim was the need to address “the paucity of literature (both theoretical and practical) on the topic” (Chesbrough, 2010:192) about business model change and better understand this phenomenon in a small firm context. In terms of research approach, there were opportunities to focus on the small firm and gain a better understanding of how business models emerge and change within such firms: “attention is needed to unraveling the ways in which individuals – entrepreneurs, scientists, artists and other professionals – shape business models over time” (Svejonova, Planellas and Vives, 2010:425). This has become evident, as the role of business models in entrepreneurship has increased. The videogame industry provided a suitable context for exploring these themes given the prevalence of small, entrepreneurial development firms and an increasing focus on business model. This approach also allowed the business model to be assessed in a specific firm and industry environment (Chesbrough, 2010). Longitudinal data was selected to support his aim as it allowed a deeper understanding of how and why the change takes
place over time (Svejenova, Planellas and Vives, 2010; George and Bock, 2011; Chesbrough and Rosenbloom, 2002).

A case study approach focusing on a particular industry and incorporating multiple methods of qualitative data collection was relevant for this study. The use of an industry case study can help to control for some contextual elements and is beneficial for empirical and resource-focused settings (Rouse and Daellenbach, 1999). The videogame industry provided an ideal context for examining business model change. As discussed previously, the industry is populated with a high level of small videogame development firms operating in a fast moving, changing environment for which business model change is a key issue. The industry is perceived by some to be at the:

“forefront of activities that challenge several commonly-held ideas about the ways firms should manage their intellectual capital, property rights, production and organisational structure.” (Burger-Helmchem and Cohendet, 2011:318)

Adopting a case study approach aligns with earlier approaches in the literature that have included case studies, qualitative data collection, an industry focus, and a longitudinal perspective. Case study strategies have been evident in both the small firm literature (Perren and Ram, 2004; Chetty, 1996; Smith et al., 1989) and the business model change literature (Kaplan, Sensoy and Stromberg, 2009; Andries, Debackere and van Looy, 2013) with industry-focused case studies undertaken in, for example, banking (Velu and Stiles, 2013), football (Demil and Lecocq, 2010), hospitality (Svejenova, Plantellas and Vives, 2010) and mafia business ecosystems (Faldetta and Provenzano, 2016).

The first aim of the study was to understand the rationale for business model change. The assumption was that firms should change from the WFH business model, but that they are not doing so. The research question therefore focused on: “What are the drivers for changing from a work-for-hire business model?” with three key objectives namely to identify: (i) the key factors that influence model selection, (ii) whether or not firms want to change from the WFH business model and the rationale for this, and (iii) how the WFH and IP business models were perceived and compared. The second aim was to identify the factors that constrained business model change. Within independent videogame development firms, there have been evident difficulties changing from the WFH model to the IP model. It was considered to be beneficial to understand the constraints that existed and how such changes influenced the business model change objectives of firms. The
second research question therefore focused on: “\textit{What are the constraints on changing to an IP business model?}” with three associated objectives namely to identify: (i) the types of constraints, (ii) when and where such constraints emerge, and (iii) the influence of such constraints. The final research aim was to examine how business model change took place and the factors facilitating it. The third and final research question therefore focused on: “\textit{How do firms change from a WFH business model?}” with the objectives of identifying (i) the routes to IP business model adoption and (ii) the factors supporting IP business model adoption. A summary of the research aims, questions and objectives is provided in Table 2.1.

\textbf{Table 2-1 Research aims, questions and objectives}

<table>
<thead>
<tr>
<th>Research aim</th>
<th>Research questions</th>
<th>Research objectives</th>
</tr>
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<tbody>
<tr>
<td>To understand the rationale for business model change.</td>
<td>RQ1: What are the drivers for changing from a WFH business model?</td>
<td>To identify if firms want to change from a WFH business model and the rationale for this. To identify how the WFH and IP business models are perceived and compared. To identify the key factors that influence business model selection.</td>
</tr>
<tr>
<td>To understand the difficulties firms face changing business models.</td>
<td>RQ2: What are the constraints on changing to an IP business model?</td>
<td>To identify the types of constraints that exists when changing business models. To identify when and where such constraints emerge. To identify the influence of such constraints.</td>
</tr>
<tr>
<td>To examine how business model change occurs and the facilitators for this.</td>
<td>RQ3: How do firms change from a WFH business model?</td>
<td>To identify the routes to IP business model adoption. To identify the factors supporting IP business model adoption.</td>
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</table>

\textbf{2.6 Conclusion}

This chapter provided the literature context for the study. It began by describing the activities undertaken to review the literature. These were aimed at gaining familiarity with the literature, increasing knowledge about the field, understanding research designs and methods that had been used, and identifying opportunities to contribute to knowledge in business model change. A structured approach was taken although there was iteration with the literature throughout the study to acknowledge the infancy, diversity and cross-disciplinary nature of the literature.
The literature relating to business models and specifically business model change was then presented. The definitional issues, disciplinary context and key issues were discussed, as were the opportunities to contribute to both theoretical and empirical knowledge. The key themes identified related to business model change drivers, constraints, and facilitators. The videogame industry was then discussed, with a focus on videogame development firms and the issues of business model change. The rationale for situating the study in this sector was presented, identifying it as appropriate given the entrepreneurial nature of videogame development firms and their difficulties with business model change.

The literature review highlighted the opportunity to build on nascent research relating to business model change by exploring empirically the business model change process in entrepreneurial firms. The three research questions derived from the literature were then presented focusing on the research aim of better understanding the drivers for, constraints on, and facilitators of business model change. Having reviewed the literature and identified the research questions, Chapter 3 will now present the research design and methods adopted in the study to address such aims.
Chapter 3  Research design and methods

This chapter presents the study’s research design and the methods employed to implement it, bringing together the philosophical assumptions, the research strategy and rationale, and the data collection and data analysis activities. The philosophical considerations for the study are presented in Section 3.1 after which the components of the research strategy and rationale are detailed in Section 3.2. This is followed by a discussion of the data collection and analysis activities in sections 3.3 and 3.4 respectively. The limitations of the research design are considered in Section 3.5. The chapter concludes with a summary of the key points in Section 3.6.

3.1  The researcher’s perspective – paradigm and philosophy

An interpretative paradigm (Burrell and Morgan, 1979) best represents the underlying philosophical assumptions in this study. The paradigmatic concept (Kuhn, 1996) and allied philosophical assumptions provide critical context for any research study and therefore need to be acknowledged at the outset. This helps to ensure consistency across the philosophical assumptions, the research design and the research methods (Leitch, Hill and Harrison, 2010; Knox, 2004), ensuring all the components are aligned and coherent (Maxwell, 2009). Acknowledging these assumptions helps the researcher avoid inconsistencies that may undermine them and their research, supports them in developing a suitable research design, and allows them to consider philosophical developments outside of their own experience (Easterby-Smith, Thorpe and Lowe, 2002; Collis and Hussey, 2003; Crotty, 2009). This interpretative paradigm is one of four suggested by Burrell and Morgan (1979) as possible research approaches in organisational analysis (the others are functionalist, radical humanist, and radical structuralist). These four paradigms differ in terms of their ontology (i.e. their assumptions about social reality), their epistemology (i.e. their assumptions about how knowledge can best be gathered and communicated), their understanding of human nature (i.e. the extent to which they see humans as able to exert free will) and their methodology (i.e. their assumptions about how best to explore and acquire knowledge about the social world). This taxonomy has stimulated debate within and beyond the field of organisational studies relating to the classifications, underlying assumptions, relevance to other fields, and issues of incommensurability (Chua, 1986; Schultz and Hatch, 1996; Willmott, 1993; Perren and Ram, 2004). However, it is a useful
description of the paradigms and components and was beneficial in defining the approach
to, and design of, this study.

The first consideration for the study was ontology. Ontological assumptions should be
considered before other assumptions (Chua, 1986) and the acknowledgement of such
assumptions are viewed as “critical in fields such as management and entrepreneurship”
(Sarason, Dillard and Dean, 2010:239). In this study, the ontological assumptions were
more nominalist (social reality is the product of one’s mind) than realist (reality is a given
“out there” in the world). The assumption was that reality in the social world is constructed
(Lincoln and Guba, 1985), consisting of “nothing more than names, concepts and labels
which are used to structure reality” (Burrell and Morgan, 1979:4). The second element to
be considered in the study was epistemology, namely how best to investigate, understand,
collect and share knowledge. In the interpretative paradigm, the epistemological
assumptions are anti-positivist, acknowledging the importance of understanding “the
processes through which human beings concretize their relationship to the world” (Morgan
and Smircich, 1980:493). This differs from the more positivist assumptions inherent in the
functionalist approach taken in the natural sciences (Dilthey 1976; Husserl, 1965). The
phenomenon of business model change in this study was therefore explored via
understanding respondents’ perspectives and experiences without focusing on rules or
causality. Third, an interpretative paradigm recognises the notion of voluntarism, where
the view of human nature is one where people have autonomy and free will rather than one
of determinism where humans are determined by their situation or environment. Finally,
the methodological approach in this paradigm was ideographic. This assumes that “one can
only understand the social world by obtaining first-hand knowledge of the subject under
question” (Burrell and Morgan, 1979:6). This also acknowledges the inherent role of the
researcher and their values, and the fact that it is difficult to remove the researcher and
their beliefs from the study. These four components combined to provide a basis for
developing the research approach.

An inductive and exploratory research approach was adopted with a focus on generating
data that were grounded in empirical evidence. This aligned with the paradigmatic and
philosophical assumptions and the nature of the study. First, it recognised the theoretical
and empirical limitations of research relating to business model change (Teece, 2010; Zott,
Amit and Massa, 2011) and while its exploratory nature meant there were no initial
propositions, the study had clear aims and objectives (Yin, 2009) that were grounded in the
existing literature described in Chapter 2. Second, the focus was on understanding business model change from the perspective of the respondents. This involved acquiring evidence of the entrepreneurs’ experiences from their perspective and with consideration given to how this was interpreted. This acknowledged the subjective nature of reality and the importance of understanding, and interpreting, respondents’ views and experiences (Burrell and Morgan, 1979; Lindgren and Packendorff, 2009; Morgan and Smircich, 1980). Naturalistic methods were best suited to collect such data and allow the necessary interaction with respondents. Third, there was flexibility to identify themes and issues after data collection (Patton, 2002), which allowed for the discovery of concepts and relationships from respondents’ perspectives as they emerged. Finally, the use of data grounded in varied empirical evidence (Eisenhardt and Graebner, 2007) allowed theory building in an area where theory was embryonic, rather than theory testing to confirm or deny hypotheses or to generalise to the population. Inherent within all of these research design components was the assumption that the researcher and respondent interaction was acknowledged and permitted (Crotty, 2009). Now, having presented the paradigm, philosophy and the associated research approach, the research strategy and rationale will be discussed.

3.2 Research strategy and rationale

3.2.1 The case study

A case-study research strategy was adopted as this approach best aligned with the research questions, methodological considerations, and the nature of the study. Yin (2009:18) describes the case study as follows:

“An empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.”

The case study approach is appropriate for research that incorporates an objective or subjective perspective (Perren and Ram, 2004) and was therefore suitable for the interpretive paradigm that underpinned this study. A case strategy is suitable for addressing the ‘how’ and ‘why’ questions about business model change at the core of this study (Yin, 2009). Its use is therefore appropriate for studying the phenomenon of business model change in the context of the firm in which it occurs. It also provides a way of dealing with multiple complexities (Yin, 2009) and is therefore relevant for examining the
business change process, which is influenced by a combination of interdependent exogenous and endogenous factors. The case-study strategy has been evident in earlier studies of business model change as detailed in Chapter 2 in addition to the small business and entrepreneurship research (Perren and Ram, 2004; Curran and Blackburn, 2001; Romano, 1989; Chetty, 1986).

A single embedded case was selected incorporating both the firm and the business model as the units of analysis, and interviews, observation, and documentation analysis to collect qualitative, longitudinal data. The case was exploratory in nature (Eisenhardt, 1989; Robson, 2002), recognising the limited theoretical and empirical research about business model change. The aim was to use data grounded in varied empirical evidence (Eisenhardt and Graebner, 2007), to contribute to emerging theory (Eisenhardt, 1989; Yin, 2009) rather than test theory to confirm or deny hypotheses, or to generalise to the population. A single case design allows in-depth examination of a revelatory case (Yin, 2009; Stake, 1994) and has been evident in the business model change literature (for example Doganova and Eyquem-Renault, 2009; Demil and Lecocq, 2010). The case used in this study was a particular group of firms within the videogame industry, namely independent videogame development firms, and while a single organisational focus has been more notable in management studies, a group approach has also be taken (Perren and Ram, 2004).

The use of an industry case study helps to control for some contextual elements and is beneficial for empirical and resource-focused settings (Rouse and Daellenbach, 1999). A number of business model change studies have taken an industry-focused case study approach (see examples provided in Table 3.1) including medical (Sosna, Rodriguez and Velamuri, 2010; Hvelsbeck, Merchant and Sandino, 2011), banking (Velu and Stiles, 2013), football (Demil and Lecocq, 2010), gaming (Ojala, 2015) and airlines (Lange et al., 2015). Qualitative and longitudinal data have been evident in such studies and collected via interviews, archival data, observation, focus groups or panel data (Sosna, Rodriguez and Velamuri 2010; Velu and Stiles, 2013; Khanagha, Volberda and Oshri, 2014).
Table 3-1 Examples of the use of case study strategy in business model change research

<table>
<thead>
<tr>
<th>Authors, year</th>
<th>Case design</th>
<th>Data type</th>
<th>Data collection</th>
<th>Case focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mason and Leek (2008)</td>
<td>Single case</td>
<td>Qualitative</td>
<td>Documentation - archival Interview</td>
<td>Aerospace supply networks</td>
</tr>
<tr>
<td>Doganova and Eyquem-Renault (2009)</td>
<td>Single case</td>
<td>Qualitative Longitudinal</td>
<td>Interviews Documentation</td>
<td>New venture – academic spinoff</td>
</tr>
<tr>
<td>Demil and Lecocq (2010)</td>
<td>Single case</td>
<td>Qualitative</td>
<td>Documentation</td>
<td>Football</td>
</tr>
<tr>
<td>Sosna, Trevinyo-Rodriguez and Velamuri (2010)</td>
<td>Single case</td>
<td>Qualitative Longitudinal</td>
<td>Interviews Documentation and news</td>
<td>Medical</td>
</tr>
<tr>
<td>Andries, Debackere and Van Looy (2013)</td>
<td>Multiple cases</td>
<td>Qualitative Longitudinal</td>
<td>Interviews Documentation</td>
<td>Cross sector – new ventures</td>
</tr>
<tr>
<td>Ghezzi (2013)</td>
<td>Multiple cases</td>
<td>Qualitative Longitudinal</td>
<td>Retrospective data. Archival Interviews</td>
<td>Telecommunications</td>
</tr>
<tr>
<td>Velu and Stiles (2013)</td>
<td>Single case</td>
<td>Qualitative</td>
<td>Interviews Documentation</td>
<td>Bank</td>
</tr>
<tr>
<td>Achtenhagen, Melin and Naldi (2013)</td>
<td>Multiple cases</td>
<td>Qualitative Longitudinal</td>
<td>Interviews Documentation - archival data</td>
<td>Cross sector (award winning SMEs)</td>
</tr>
<tr>
<td>Aspara et al. (2013)</td>
<td>Single case</td>
<td>Longitudinal Qualitative Quantitative</td>
<td>Documentation Interviews</td>
<td>Telecommunications</td>
</tr>
<tr>
<td>Miller, McAdam and McAdam (2014)</td>
<td>Single case</td>
<td>Qualitative Longitudinal</td>
<td>Interviews Observation Documentation</td>
<td>University</td>
</tr>
<tr>
<td>Khanagha, Volberda and Oshri (2014)</td>
<td>Single case</td>
<td>Longitudinal Qualitative</td>
<td>Interview Focus Groups Documentation Observation</td>
<td>Cloud computing</td>
</tr>
<tr>
<td>Lange et al. (2015)</td>
<td>Multiple cases</td>
<td>Qualitative</td>
<td>Interview Documentation</td>
<td>Airlines</td>
</tr>
<tr>
<td>Laudien and Daxbock (2016)</td>
<td>Multiple cases</td>
<td>Qualitative</td>
<td>Interviews Documentation</td>
<td>Manufacturing (service transition)</td>
</tr>
</tbody>
</table>

Source: Developed by the author
3.2.2 The unit of analysis

The case design incorporated both the firm and the business model as units of analysis. At the firm level, the drivers for, constraints on and facilitators for business model change were examined. The business model as the unit of analysis has become increasingly of interest (Zott, Amit and Massa, 2011; Amit and Zott, 2015; Morris, Schindehutte and Allen, 2005) and was relevant for examining an industry or group of enterprises (Lambert and Davidson, 2013; George and Bock, 2011). The business model as a unit of analysis can provide “a better understanding of the link between customer value propositions, how the value is created, and how such value is distributed among shareholders” (Velu, Smart and Philips, 2015:21). The business model was considered at the corporate level (Linder and Cantrell, 2000) using the IP and WFH business models. This included an examination of: (i) the characteristics of the business models themselves, (ii) the change patterns from the WFH business model, and (iii) the business model components, namely the value proposition, value architecture, and value economic. This single case study incorporated four units illustrating differing business model change patterns undertaken by videogame development firms. At the outset of the project, it was anticipated that these change patterns would represent successful/failed adoption of the IP model relative to changing from, or avoiding, the WFH model as follows:

A: IP business model adopted at inception and retained.
B: WFH model adopted at inception, changed to the IP model but failed to retain the latter.
C: IP business model adopted at inception but failed to retain this model.
D: WFH model adopted at inception, changed to IP model and retained this.

However, the problems with data availability and accuracy relating to business models and business model change presented difficulties in confirming these categories and identifying firms that aligned with them. It was therefore decided that there would be a guiding principle for identifying the embedded units, namely how firms had adopted an IP model, but that the final classification of the units would be allowed to emerge from the data. The final embedded units were slightly different from those originally proposed. However, they were in line with the research aims and questions in that they allowed the examination of business-change patterns and reflected the reality of how independent videogame firms had tried to change from, minimise or avoid a WFH business model.
The final four embedded units represented the following business model patterns:

A: IP business model adopted at inception and retained.
B: IP business model adopted in combination with WFH business model at inception and retained.
C: IP business model adopted at inception and changed to a combination model.
D: WFH business model adopted at inception and then changed to a combination model.

3.2.3 Research aims and data requirement

The aim of the study was to better understand how small independent videogame development firms changed from a WFH business model, considering in particular those factors that supported or impinged on this process. This aim, and the three research questions, guided the specification of the data requirement. Understanding how and why each business model was chosen was important in identifying preferences and ultimately the drivers behind selection and change in the context of the WFH and IP business models. The key objectives were therefore to clarify how firms perceived the IP and WFH business models, and to identify the factors that influenced the choice of business model. To reiterate, the three research questions were as follows:

(i) The first research question considered: “What are the drivers for changing from a WFH business model?” The key objectives were to identify if, and why, firms wanted to change from a WFH business model, to clarify how firms perceived the IP and WFH business models, and to identify the factors that influenced the choice of business model. The requirement was therefore for rich qualitative data that provided insight into the rationale behind the firms’ business model selection as well as contextual information about the model characteristics, usages and perception in the industry.

(ii) The difficulties of adopting the IP model given its preferred status provided the basis for the second research questions: “What are the constraints on changing to a IP business model?” The assumption was that firms wanted to avoid a WFH business model in favor of an IP business model but that they faced difficulties in doing so. The aim was therefore to identify such difficulties and identify how these influenced the firms’ ability to change to an IP business model. There was a need
for rich qualitative data describing the type of constraints, the source of such constraints and how they affected adoption.

(iii) The final aim was to examine how business model change occurred and the facilitators for this by examining how firms had tried to avoid or minimise their use of the WFH business model and change to an IP business model. The research question focused on: “How do firms change from a WFH business model?” The aim was to identify the routes taken by firms to adopt the IP business model and understand the factors that had supported such firms to achieve this. The data required related to identifying the IP model adoption routes, the rationale for doing so, and the facilitators that had supported this.

The data requirements supported the decision to use qualitative data to address the three research questions and longitudinal data to examine the third research questions that focused on how business model change took place. The combination of qualitative and longitudinal data recognised the study’s aim of obtaining rich insight into the change process and understanding how and why it did or did not happen.

Qualitative data was very relevant for the study at a number of levels. The selection of qualitative or quantitative approach is not exclusive to any specific philosophy or paradigm; rather it depends on the underlying philosophy adopted by the researcher (Klein and Myers, 1999). Similarly, a case study approach is not aligned with either qualitative or quantitative data (Yin, 1981). Qualitative data-based studies can be useful in a number of circumstances (Maxwell, 2009) that were relevant for this study. First, qualitative data were suitable for an exploratory study where ‘how’ and ‘why’ questions were dominant given the empirical and theoretical deficits in the literature. The aim was to explore business model change by obtaining views and beliefs rather than quantifications: “The real purpose of qualitative research is not counting opinions or people but rather exploring the range of opinions, the different representations of the issue” (Gaskell, 2000:41). Second, the use of qualitative data provides the opportunity to view how the respondents speak about and understand their experiences (Burrell and Morgan, 1979), allowing them to “express their own understandings in their own terms” (Patton, 2002:348) and providing a deeper insight than quantitative data. This in turn allows discussion around the various complexities that exist in business model change, not all of which are known at the outset, as well as the terminology used. This approach also recognised that the knowledge of
videogame firm entrepreneurs has traditionally been “informal and tacit” (Leadbetter and Oakley, 2001:44). Finally, rich qualitative data can have practical applications, for example, enhancing current and future support initiatives as well as for firms themselves (Scriven, 1991 cited in Maxwell, 2009), which was very relevant for this study where part of the aim was to inform policy and industry.

Longitudinal data were relevant for identifying how business model change had taken place between two points in time, namely firm inception and the year of the interview (i.e. 2014). Data were collected retrospectively via interviews using respondent recall and triangulated with other contemporary and historical data that were collected via observations and documentation. The potential for inaccuracies and recall bias were acknowledged and are detailed further in Section 3.5. However, despite the limitations, the use of longitudinal data addressed some of the shortcomings of taking a static approach where the focus is on the firm’s existing business model, and allowed the identification of business model change patterns over time and the respondents’ experiences of this. The use of longitudinal data in business model change research is relatively recent but has been advocated by some researchers (Svejenova, Planellas and Vives, 2010; George and Bock, 2011). The longitudinal data in this study have been collected both retrospectively and in real-time tracking via interviews, archival data reviews (for example Achtenhagen, Melin and Naldi, 2013; Mason and Leek, 2008); and panel data (for example McNamara, Peck and Sasson, 2010).

Data were collected from multiple sources to generate independent data sets that would complement each other as well as support data triangulation (Denzin, 1970). First, independent videogame development firm entrepreneurs and industry experts involved with such firms were interviewed and observed. Second, industry-related events provided an opportunity for the researcher to become immersed in the case-study context and access data that were not necessarily available elsewhere. This included the opportunity for discussion with a range of personnel from the public, private and academic sectors while collecting data via observation. Finally, documentation was accessed from a range of private and public sources online and offline, including events. A summary of the data requirement and sources relative to the study aims and questions is provided in Table 3.2 and the data collection methods used to obtain such data are then discussed.
Table 3-2 Data requirement relative to research aims

<table>
<thead>
<tr>
<th>Research aim</th>
<th>Research question</th>
<th>Research objectives</th>
<th>Data Requirement</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>To understand the rationale for business model change.</td>
<td>RQ1: What are the drivers for changing from a WFH business model?</td>
<td>To identify if firms want to change from a WFH business model and the rationale for this. To identify how the WFH and IP business models are perceived and compared. To identify the key factors that influence business model selection.</td>
<td>Business model characteristics&lt;br&gt;Business model advantages and disadvantages&lt;br&gt;Perception of relative value between WFH and IP models</td>
<td>Personnel – entrepreneurs and industry experts&lt;br&gt;Documentation – industry and firm related&lt;br&gt;Industry events – entrepreneurs, industry experts, documentation</td>
</tr>
<tr>
<td>To understand the difficulties firms face changing business models.</td>
<td>RQ2: What are the constraints on changing to an IP business model?</td>
<td>To identify the types of constraint that exists when changing business models. To identify when and where such constraints emerge. To identify the influence of such constraints.</td>
<td>Constraint characteristics&lt;br&gt;Source of constraints&lt;br&gt;Influences of constraints</td>
<td>Personnel – entrepreneurs that have adopted an IP model&lt;br&gt;Documentation – firm related&lt;br&gt;Industry-related events</td>
</tr>
<tr>
<td>To examine how business model change occurs and the facilitators for this.</td>
<td>RQ3: How do firms change from a WFH business model?</td>
<td>To identify the routes to IP business model adoption. To identify the factors supporting IP business model adoption.</td>
<td>IP business model adoption routes and role of the WFH business model&lt;br&gt;Rationale for the routes undertaken&lt;br&gt;Internal and external supporting factors</td>
<td>Personnel – entrepreneurs of firms that have adopted an IP model&lt;br&gt;Documentation – firm related</td>
</tr>
</tbody>
</table>

3.2.4 Data collection methods

The case study is method neutral (Yin, 2009; Stake, 2005) and allows multiple data collection methods (Eisenhardt, 1989). In this study, the naturalistic methods selected included interviews, observation and documentation analysis. All of these aligned with the study approach and were evident in the business model literature (for example Sosna, Rodriguez and Velamuri, 2010; Velu and Stiles, 2013; Hvelsbeck, Merchant and Sandino,
This section provides an overview of the methods used in the study while the implementation of these methods is discussed later in Sections 3.3 and 3.4.

First, interviews were used to allow the respondents’ perspective to be expressed in detail. This method provided the opportunity to “capture the richness of detail and nuances of the phenomena being studied” (Collis and Hussey, 2003:57) and, in the case of the firm owners, to “observe, talk to and interact with real-life entrepreneurs” (Neergaard and Ulhoi, 2007:478). This was based on the assumption that “the perspective of others is meaningful, knowable, and able to be made explicit” (Patton, 2002:340) and aligned with the aim of understanding respondents’ experiences as they expressed them, in addition to discovering things that were difficult to observe directly. There were two stages of interviews and respondents were selected purposefully to fulfill certain criteria. For the initial stage, given the limited data available about videogame firms and their business models, respondents were sought that could provide insight into the drivers for model selection by understanding the perception of the IP and WFH business models and the rationale for the IP model preference. Entrepreneurs with experience of these models were sought, as were industry experts that had substantial knowledge about videogame development firms and business models. Such knowledge had been gained via substantial involvement with videogame development firms and the wider industry, including in some instances, the delivery of initiatives to support such firms.

The second stage of the interviews focused on those firms that had adopted the IP model in various forms to change from, avoid, or minimise the use of the WFH business model. This allowed exploration of drivers, constraints and facilitators for change. The difficulties in identifying the business models in use, and any changes that had occurred, were evident during stage 1 of data collection. To understand the experiences of how firms changed from the WFH business model, it became clear that rather than identifying those firms that had changed or wished to avoid the WFH business model, it would be useful to identify respondents that had adopted the IP model in some form. Initial data indicated that firms preferred the IP to the WFH business model therefore all of those firms using an IP business model variation could be assumed to have wanted to avoid, minimise or change from a WFH business model. The drivers, constraints and facilitators could then be explored in this context. Ideal firms were therefore identified as those with an IP model alone or within a combination model. Their history of business model change could then

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14 Further details are available in Chapter 2, Section 2.6.
be examined to understand how the WFH business model had been avoided, changed from, or minimised. The target respondent within such firms was the managing director and/or firm founders responsible for determining business model selection and change. The firms were based in Scotland to provide a comparative operating environment relative to policy and contextual factors. A summary of the interview respondent criteria and associated data objectives is provided in Table 3.3.
<table>
<thead>
<tr>
<th>Respondent type</th>
<th>Respondent characteristics</th>
<th>Selection criteria</th>
<th>Data requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry experts</td>
<td>Highly experienced professionals with in-depth knowledge about the business model issues and videogame development firms</td>
<td>Experience of providing advice and support to independent videogame development firms</td>
<td>1. To understand the growth and sustainability issues for videogame development firms.</td>
</tr>
<tr>
<td></td>
<td>Knowledge of industry context plus firm-level experience as an advisor and senior executive</td>
<td>Experience of working within an independent videogame development firm</td>
<td>2. To identify business model types in use.</td>
</tr>
<tr>
<td></td>
<td>UK based but varied geography</td>
<td>UK based but with representation from organisations in different locations</td>
<td>3. To understand issues associated with different business models.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. To understand the terminology used by firms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. To identify data accessibility issues.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6. To identify contacts and information relating to firms.</td>
</tr>
<tr>
<td>Entrepreneur (stage 1)</td>
<td>Managing Director and/or firm founder with responsibility for determining business model selection and change</td>
<td>Managing Director or similar executive</td>
<td>1. To understand the perception of the WFH and IP business models.</td>
</tr>
<tr>
<td></td>
<td>Independent videogame development firm with the IP or WFH business model.</td>
<td>Financially independent videogame development firm</td>
<td>2. To understand the factors influencing business model selection.</td>
</tr>
<tr>
<td></td>
<td>Geography with comparative policy environment and operating conditions</td>
<td>Scotland-based</td>
<td>3. To understand the drivers for change from the WFH business model and/or to IP business model.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experience of the WFH or IP business models</td>
<td>4. To obtain suggestions for interview participants.</td>
</tr>
<tr>
<td>Entrepreneur (stage 2)</td>
<td>Managing Director and/or firm founder with responsibility for determining business model selection and change</td>
<td>Managing Director and/or firm founder</td>
<td>1. To understand the rationale for the business models used by firms.</td>
</tr>
<tr>
<td></td>
<td>Independent videogame development firm with evidence of changing from the WFH business model and/or adopting the IP model</td>
<td>Financially independent videogame development firm</td>
<td>2. To understand the perception of the WFH and IP business models.</td>
</tr>
<tr>
<td></td>
<td>Geography with comparative policy environment and operating conditions</td>
<td>Scotland-based</td>
<td>3. To understand the drivers for change from a WFH and/or to an IP business model.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP business model experience</td>
<td>4. To identify the business model change routes undertaken and associated rationale.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. To identify the facilitators to, and constraints on, IP model adoption.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6. To obtain suggestions for interview participants.</td>
</tr>
</tbody>
</table>
Interviews were semi-structured to allow the respondent’s view of the world to emerge (Easterby-Smith, Thorpe and Lowe, 2002) and for issues discussed to change as new data were revealed - a “process of open discovery” (Collis and Hussy, 2003:168). The aim was to interview the first stage respondents by telephone and the second stage respondents face-to-face in situ at their firms. An interview protocol (Eisenhardt, 1989) was developed to guide the interviews. This was derived from the research aims and questions but with enough flexibility to avoid respondents having to “fit their knowledge, experiences, and feelings into the researcher’s categories” (Patton, 2002:348). The content of the interview protocol is discussed later in this chapter in Section 3.3. The use of the interview method was felt to be more advantageous than problematic as it allowed respondents to share their experiences in their own words, providing rich, insightful data about business model change from their perspective. However, the potential limitations of interviews were acknowledged, particularly those relating to various forms of bias. These issues, and the actions taken to address them, are detailed later in the chapter in Section 3.5.

The second method of data collection was personal observation. This was used to collect data in situ at interviews and events. This method provided a means to capture contextual detail, observations about phenomena in context, and non-verbal signs. The intention was to record data in real-time and review afterwards for relevance (Eisenhardt, 1989) as well as capture additional reflections when revisiting the data post interview/event. Interview-related observations were used with the stage two-entrepreneur respondents that had experienced business model change. This helped to better capture respondents’ reaction to questions, how they related their experiences, and the environment within which they operated (or were interviewed in). When combined with other data sources, observation data supported triangulation and provided useful nuances and additional considerations that were not otherwise possible from verbal data alone.

Observations were also undertaken at industry-related events where immersion in the case-study context was possible. Events were purposefully selected based on their relevance to the research questions and identified using secondary data and via discussions with industry. Further details about the selected events are provided later in this chapter in Section 3.3.6. Those events that involved business model issues, development issues for videogame development firms, and/or were targeted at videogame development firms were considered relevant. This facilitated descriptive observation (Robson, 2002) about: (i) the look and feel of the gathering (for example the nature of the audience, the setting context
and the positioning of the event), (ii) the issues being raised (for example the types of questions posed by the audience and the responses to presentations being made), and (iii) the attitudes of delegates towards business models. This was particularly relevant for gaining a ‘sense’ of how business models were perceived and for exploring emerging themes further. The observation guide used to support data collection is discussed later in this chapter in Section 3.3. While observation data are difficult to capture in real time, this method was beneficial in obtaining diverse observations from a wide range of event types and sizes. Personal observations do have limitations as a research method particularly relating to researcher input and bias, inaccuracies of collection and recording. However, the benefits of the method were felt to outweigh its limitations. Ethical issues were not a concern as observation was not covert. Interview participants were aware that they were being observed and, at all of the events, the researcher was open about their reason for attending and what was being sought.

Finally, documentation analysis was used to examine and interrogate a range of secondary data sources relating to videogame development firms and the wider industry context. This is a relatively unobtrusive research method and the emphasis can be decided after data collection (Saunders, Lewis and Thornhill, 2009). It was appropriate for generating unique data as well as facilitating triangulation of data from interviews and observations, although “a modest skepticism” was retained (Marshall and Rossman, 1999:124) when inferring meaning. This approach to the data recognised the limitations of various data sources, issues with firm-related data (including business models definitions), firm activity definitional problems (including the absence of SIC codes) and data measurement tools. The aim was to collect and interrogate data throughout the study to support planning, familiarisation, data contribution, and data triangulation. The use of historical data was used to provide useful background data about the videogame industry, firms and business models. As well as providing a dataset, such historical data supported credibility and respondent access (Marshall and Rossman, 1999). Secondary data were also used to support respondent identification and selection, which was important given the lack of firm-related data. A number of sources were needed to create a database of firms and business model that could be used to identify respondents. Finally, documentation data were intended for use on completion of the interviews and observation to triangulate the data and identify similarities and discrepancies. This recognised the potential for respondents’ inaccuracy of recall. Having considered the research design and rationale, the ethical issues relating to collection and management are now discussed.
3.2.5 Ethical considerations

There were a number of important confidentiality issues in this study given that data were linked to personal, confidential, and/or sensitive issues. Ethics permission was gained from the University to undertake the study. It was important to maintain the confidentiality of respondents and be aware of how the data could be used. For example, the 25 firms selected for data collection in stage 2 were all based in Scotland and might have been identifiable given the relatively small size of the industry and the level of familiarity therein. Care was therefore taken in reporting findings to prevent respondent identities being revealed. This included anonymising respondents throughout the research.

Respondents were informed about all aspects of the study prior to data collection. A project information sheet (Appendices 5, 9 and 12)\textsuperscript{15} was provided to all respondents and detailed a range of project information relating to the aims, data collection and usage information, researcher and supervisor contact details. Respondents were notified of their right to withdraw from the study at any time without prejudice and without providing a reason, but that any anonymised data could not be withdrawn. Consent was sought from respondents prior to recording interviews and a signed consent form was secured (Appendices 6, 10 and 13)\textsuperscript{16}. Observation at interviews and events was not covert and respondents were aware of the researcher’s reason for attendance and that notes were being taken.

A professional, flexible and credible approach was taken with respondents to facilitate access. This acknowledged potential access difficulties such as respondent availability due to time constraints and other priorities (especially given the small size of the firms), their level of interest in the study and their willingness to engage with the researcher (i.e. credibility and knowledge levels). Approaches to respondents were supported by formal documentation, and followed up consistently but sensitively. Flexibility regarding meeting times and places was important and resulted in meetings at firm premises and other venues depending on their preference.

\textsuperscript{15} During the study, the researcher transferred from the University of Strathclyde to the University of Glasgow following supervisory changes. This resulted in the project information and consent documentation for some stage 2 interviews being updated to refer to Glasgow University. All other content remained the same.

\textsuperscript{16} Ibid.
An external transcription service was used for the interview data therefore a non-disclosure agreement was signed by both parties. The agreement was developed under guidance from the university and set out the terms of the service between both parties including the requirement for the transcription subcontractor to comply with Data Protection law (Appendix 15). The transcriber was UK-based, recommended by university colleagues, and had substantial academic experience within a university environment. The transcripts themselves were formatted in accordance with guidance from the UK Data Service\(^\text{17}\) to ensure consistency in style, layout and editing. For example, each respondent was allocated a unique identifier and personal data were anonymised. A cover sheet was created for each transcript containing interview details (i.e. date, time, location, respondent details). Within the transcript, a standard layout was followed which included speaker tags to indicate the question/answer sequence or the respondent and interviewer, line breaks to separate these, and page numbers.

A data management plan was created to address data protection, confidentiality and ethical behaviour issues for the study (Appendix 2). This was informed by attendance at the University’s data management course, guidelines from the University of Strathclyde and the UK Data Service, the ESRC’s ‘Framework for Research Ethics’ and liaison with the University’s research management team. All data were stored securely, confidentially and backed up on a separate hard drive. The data obtained were held on digital format and hard copy including a portable digital recorder for interview data, a fieldwork note book containing written notes from the interviews and events, and electronic and paper versions of the interview transcripts created from the digital recording of the interviews. Any personal data were processed in accordance with the provisions of the Data Protection Act 1998.

The intention was that post-PhD, data would be stored indefinitely but securely. This included personal data about participants, which were valuable given the small size of the industry, the lack of data about the industry, and the unique experience of such participants. This retention strategy was based on the ‘historical and research value’ that this unique personal data provided and was aligned with Principle 5 of the Data Protection Act: Retaining personal data.\(^\text{18}\) The intention was to review the data at the end of a five-year period after thesis submission and decide whether to retain or dispose of such data. If

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\(^{17}\) Information at UK Data Service [http://ukdataservice.ac.uk/manage-data/format/transcription.aspx](http://ukdataservice.ac.uk/manage-data/format/transcription.aspx)

\(^{18}\) Information available at: [http://ico.org.uk/for_organisations/data_protection/the_guide/information_standards/principle_5](http://ico.org.uk/for_organisations/data_protection/the_guide/information_standards/principle_5)
data were no longer required, they would be disposed of appropriately. Confidential data including personal data would be disposed of securely, including shredding of hard copy material, and permanent deletion of electronic data.

This concludes the considerations made about ethical issues. The research plan is now presented before discussing the implementation of the data collection and analysis stages.

3.2.6 Study implementation plan

A plan was developed to guide the study’s implementation incorporating the key components, rationale and outputs. The plan is summarised in Table 3.4 and it provided a structured approach to undertake the research (Marshall and Rossman, 1999) and a robust basis on which to implement the case study (Yin, 2009).

Having presented the philosophical underpinnings, and the research design and rationale, the implementation of the data collection activities and data analysis is now discussed in Sections 3.3 and 3.4 respectively.
Table 3-4 Study implementation plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Components</th>
<th>Rationale</th>
<th>Actions</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Literature review</td>
<td>Source, review, interrogate, apply, revisit</td>
<td>Familiarity with academic and industry literature context</td>
<td>Identify key words Search by key words and by journals Identify relevant previous work Iterative</td>
<td>Key contextual issues Ideas for methodology Research questions</td>
</tr>
<tr>
<td>2. Research strategy</td>
<td>Case study with embedded units</td>
<td>Exploratory Address ‘how?’ and ‘why?’ questions Multi-methods Multiple units Contemporary and complex phenomenon</td>
<td>Define case study Define embedded units Identify sources for data collection Creation of data collection tools</td>
<td>Case-study protocol – project overview, data collection procedures, case study questions, and report outline</td>
</tr>
<tr>
<td>3. Data collection</td>
<td>Interviews: -Industry experts -Entrepreneurs</td>
<td>Rich qualitative data Understand business model change experiences Triangulation</td>
<td>Respondent identification Data collection tool Recruit respondents Interviews Record/review data</td>
<td>Data collection tool Data from firm owners and industry about research questions Documentation</td>
</tr>
<tr>
<td></td>
<td>Observation: interviews and events</td>
<td>Immersion in case study group Access general discussion Acknowledges unavailability of data Triangulation</td>
<td>Data collection tool Event identification Event attendance Observe interview Record/review data</td>
<td>Data collection tool Observations - research questions and emerging issues Case study contextual information</td>
</tr>
<tr>
<td></td>
<td>Documentation analysis</td>
<td>Historical data Triangulation Context Preparation for interviews</td>
<td>Identification of data sources Obtain and review industry/firm data Review data pre and post interview/events</td>
<td>Contextual and historical data Informed fieldwork discussions Identification of data sources</td>
</tr>
<tr>
<td>4. Data analysis</td>
<td>Data preparation, classification, interpretation and conclusion</td>
<td>Focusing on the overall case incorporating embedded units</td>
<td>Within case analysis Analysis of embedded units</td>
<td>Synthesised data re research questions Business model adoption patterns Identified contribution</td>
</tr>
<tr>
<td>5. Reporting</td>
<td>Define and finalise</td>
<td>Share findings externally</td>
<td>Define reporting format and report</td>
<td>Contribution to knowledge</td>
</tr>
</tbody>
</table>

### 3.3 Data collection implementation

#### 3.3.1 Familiarisation with case study context

Two familiarisation activities were undertaken in the initial stages to allow the researcher to better understand the case-study context and to establish connections that would support data collection. The first activity was a workshop delivered by an industry expert to the researcher on a one-to-one basis. The industry expert was purposefully selected based on their relevance and experience. The expert had in-depth experience as a founder and employee of multiple videogame development firms, as a business advisor with industry-specific public sector organisations, and as a member of a videogame industry advisory board. The workshop was held over two half days at the University of Strathclyde. The content was determined by the researcher (see Appendix 1) and focused on three themes: (i) videogame development, (ii) videogame commercialisation and (iii) key issues for independent videogame development firms. The workshop was very interactive and provided ample opportunity for in-depth discussion. On completion, the researcher had a deeper understanding about how videogame development firms operated particularly in relation to producing and selling videogames. The workshop also provided useful insight into firm and industry related data, which helped to inform the data collection stage of the study.

The second familiarisation activity involved regular communication with an industry expert throughout the data collection stage. The expert had experience as an advisor, entrepreneur and was a member of various videogame industry-related organisations. This relationship provided ongoing access to expertise about videogame development firms and the videogame industry, in addition to the opportunity for discussion and reflection about the study. Ten discussions were held between the researcher and the expert. Each discussion had a duration of between 60 and 150 minutes and were conducted face-to-face or by telephone depending on the expert’s availability and preference. The combination of the workshop and the ongoing expert relationship supported familiarisation with the case study context, supplemented the researcher’s existing knowledge and experience, supported data access, and helped to address any trust and credibility issues that might have arisen in data collection (Marshall and Rossman, 1999; Patton, 2002).
3.3.2 Interviews – industry experts

Industry experts were selected purposefully to ensure they fulfilled the criteria specified in the study design. The aim was to recruit respondents that were highly informed and experienced professionals with in-depth knowledge about the business model issues facing videogame development firms. Potential respondents were identified using secondary sources (industry and public sector) and discussions with industry contacts. This incorporated organisations that had a focus on videogame development firms and business models. Four respondents were identified in the first instance, two were from industry-related organisations and two were from public-sector organisations. Three of these organisations focused on Scotland-based firms (one was part of a global organisation), and the fourth organisation supported firms in England. Respondents were contacted initially by telephone or email to ascertain their interest in participating in the study. All four respondents agreed and were sent a Participant Information document containing the study details (Appendix 3). The respondent profiles are summarised in Table 3.5 and referenced as IA1-4 in the study.

Table 3-5 Respondent profiles for industry experts

<table>
<thead>
<tr>
<th>Reference</th>
<th>Organisation type</th>
<th>Relevance</th>
<th>Respondent involvement with the videogame industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA1</td>
<td>Industry organisation</td>
<td>Membership-based organisation representing videogame development firms</td>
<td>Entrepreneur, employee, academic</td>
</tr>
<tr>
<td>IA2</td>
<td>Industry organisation</td>
<td>Information provider to the videogame industry</td>
<td>Entrepreneur, employee, advisor, advisory group member, academic</td>
</tr>
<tr>
<td>IA3</td>
<td>Public sector organisation</td>
<td>Involvement in sector development including programmes to support videogame development firms adopt an IP model</td>
<td>Employee, advisor, programme manager</td>
</tr>
<tr>
<td>IA4</td>
<td>Public sector organisation</td>
<td>Provision of business-related advice to videogame development firms including startup, funding, commercialisation</td>
<td>Entrepreneur, employee, advisor, advisory group member</td>
</tr>
</tbody>
</table>

Three interviews were undertaken by telephone and one in person due to the respondent’s preference for a face-to-face meeting. Each interview was approximately one hour in duration and guided using an interview protocol (Appendix 3) derived from the research aims and questions (see Section 3.2.3). First, the respondents’ experience and perception of videogame development firms was used to discuss the issues facing such firms and the key factors influencing the development of the firms. Second, firms’ usage of business models, particularly the IP model was discussed. This included consideration of the
characteristics of the business models in use, drivers and preferences for different models and usage of the IP model including difficulties and facilitators. Third, practical issues such as data availability and access were discussed as well as recommendations for contacts and potential firm respondents. Data were written up in accordance with the protocol and revisited after the interview. Documentation about the respondent and their organisation was reviewed prior to the interview and any additional details were checked afterwards. The four respondents were deemed to be sufficient given the breadth of their experience, the relative similarity of responses despite the respondents’ differing backgrounds and organisations, and triangulation with other data.

3.3.3 Interviews – entrepreneurs stage 1

Entrepreneur respondents were selected purposefully based on the criteria determined in the research design stage (Section 3.2.4). The aim was to interview managing directors of independent videogame development firms based in Scotland with experience of either the IP or WFH business model. Data were sourced from industry (for example trade publications and trade groups), the public sector (for example support initiatives, policy groups) and discussions with industry contacts. Initial contact was made with respondents in various ways including telephone, email and social media (via LinkedIn and Facebook) to ascertain their interest in participating in the study and provide initial details about the project, the interview duration, the format and confidentiality. All interested respondents were further contacted with a formal interview request and provided with information about the project including the project details, the researcher, the supervision team, and data collection issues (Appendix 5). Consent was also requested from participating respondents for an audio recording to be made of the interview.

Interviews were undertaken by telephone except for one respondent who preferred to meet face-to-face. Each interview had a duration of between 30 and 60 minutes and was recorded where the respondent had granted permission. An interview protocol (see Appendix 4) was used to address the various themes derived from the research aims and questions. First, the project and confidentiality conditions were reiterated and the respondent was given the opportunity to ask any questions. Second, the respondent’s business model experience was explored identifying usage, rationale, and perception. Third, the firm’s experience of business model change was discussed to understand the drivers, process, constraints and facilitators. Fourth, firm-related information was collected
including background, activities and positioning to provide firm context. Finally, respondents were advised about the subsequent project stages, their willingness to continue participating, and any recommendations they had for data sources. On completion of the interviews, an email was issued to respondents to thank them for their participation. Post-interview, the audio and written data were reviewed together with publicly available information relating to the firm. The latter was also used prior to the interview to familiarise the researcher with the firm and business model. The interviews were then transcribed and reviewed again.

The resultant eight respondents were all founders and managing directors (or equivalent if that title was not used) except one who was a board director but not a founder. All access activity was recorded in a spreadsheet incorporating details about the respondent, the firm, the data source and the contact made. The data generated from eight respondents was deemed sufficient to address the key thematic areas and had a high level of similarity of response. The respondents are detailed in Table 3.6 and referenced as IB1-8 in the study.

Table 3-6 Respondent profiles for entrepreneurs (stage 1)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Respondent position</th>
<th>Firm experience with the WFH or IP business model</th>
</tr>
</thead>
<tbody>
<tr>
<td>IB1</td>
<td>Founder and co-owner</td>
<td>WFH, IP</td>
</tr>
<tr>
<td>IB2</td>
<td>CEO and co-founder</td>
<td>WFH, IP</td>
</tr>
<tr>
<td>IB3</td>
<td>Managing Director and founder</td>
<td>WFH, IP</td>
</tr>
<tr>
<td>IB4</td>
<td>Managing Director and founder</td>
<td>WFH, IP</td>
</tr>
<tr>
<td>IB5</td>
<td>CEO and co-founder</td>
<td>WFH, IP</td>
</tr>
<tr>
<td>IB6</td>
<td>Managing Director and co-founder</td>
<td>WFH, IP</td>
</tr>
<tr>
<td>IB7</td>
<td>Managing Director and co-founder</td>
<td>WFH, IP</td>
</tr>
<tr>
<td>IB8</td>
<td>Founder and Director</td>
<td>WFH, IP</td>
</tr>
</tbody>
</table>

### 3.3.4 Interim review

An interim review was undertaken after the first stage of data collection. This incorporated a review of data from the interviews, observations, documentation and the ongoing analysis undertaken during this first stage. The review outputs were discussed with industry and academic contacts and the literature was revisited, with the results used to guide stage two of the data collection process, particularly the identification and recruitment of respondents. A summary of the outputs from this interim analysis is provided in Table 3.7.
**Table 3-7 Key outputs from interim analysis**

<table>
<thead>
<tr>
<th>Research theme</th>
<th>Initial findings</th>
<th>Implications for entrepreneur interviews stage 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business models in use</strong></td>
<td>Use of the IP business model was less apparent including those firms who presented this as their model.</td>
<td>The IP business model may be limited. Recruit firms using a combination business model, a WFH only business model and an IP only business model.</td>
</tr>
<tr>
<td></td>
<td>The IP business model was more prevalent than expected due to its use within a combination model. Respondent identification should therefore include firms using this model.</td>
<td></td>
</tr>
<tr>
<td><strong>Constraints on business model change</strong></td>
<td>The IP business model is the desired model therefore constraints on changing from a WFH business model are mainly considered relative to this.</td>
<td>The constraints associated with adopting the IP business model (whether at startup or changing from another model) are relevant and should be considered together with business model change constraints.</td>
</tr>
<tr>
<td></td>
<td>The difficulties in changing from a WFH business model are often conflated with the issues of adopting an IP business model.</td>
<td></td>
</tr>
<tr>
<td><strong>Business model change routes</strong></td>
<td>The relative strength of desire for the IP business model influences how change from the WFH business model occurs.</td>
<td>Clarify the change routes undertaken relative to the WFH and IP business models. Focus on understanding how the IP business model is adopted and the WFH business model related drivers, for example avoiding, minimising or changing from the WFH business model.</td>
</tr>
<tr>
<td></td>
<td>Change usually involved a combination business model.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Business model change patterns were difficult to identify given the lack of publicly available data.</td>
<td></td>
</tr>
<tr>
<td><strong>Data related issues</strong></td>
<td>The lack of official sources, and the accuracy of existing data, may present difficulties in obtaining data about firms and their business models.</td>
<td>Create a firm and business model database using a range of sources and recognise the importance of triangulation for interview data.</td>
</tr>
</tbody>
</table>

### 3.3.5 Interviews – entrepreneurs stage 2

Stage two of the interviews focused on entrepreneurs that had experienced changing from the WFH business model by adopting the IP business model via differing routes. Respondents were selected deliberately to satisfy the criteria established at the outset of the study namely that they were managing directors of financially independent videogame development firms based in Scotland and that they had experience of adopting the IP business model. Before selecting respondents, a firm and business model-related database had to be created due to the lack of readily available data about videogame development firms (see Chapter 2 for more details). The basis of the database was the Scottish Games
Network’s (SGN)\(^{19}\) directory, a list of Scotland-based firms that is maintained voluntarily by the SGN. The directory was used to support the development of a list of videogame development firms and their business models that could be used to identify respondents. Several discussions were held with the SGN about the database, videogame development firms in Scotland and the perceived business models in use to ensure the accuracy and substantiality of the list. As a result, 108 firms were identified of which 98 were sourced initially from the SGN database and 10 firms were generated from discussions with SGN. Additional research was undertaken to address gaps in the data including cross-referencing the list with a variety of additional data sources (see Table 3.8) to ensure completeness and accuracy. The final list contained 100 firms.

Further research was undertaken to identify the business models of the 100 firms. This required extensive data retrieval from, and cross-referencing with, secondary and primary sources. The firm and business model data relating to the 100 firms were then combined to create a final database of firm information (for example game type, establishment date, firm type) and their perceived business models (either WFH, IP or a combination of both models). Multiple data sources were used to create this database (see Table 3.8) and the final version was discussed with the SGN. However, despite the thoroughness of this research process, it was recognised that it was likely that the actual business model being used by the firm, and any business model change patterns, would only be clearly identifiable through discussions with the firm. The final database contained 100 firms incorporating 14 firms with a WFH-only business model, 26 firms with a combined WFH and IP business model, and 60 firms with an IP only business model, as perceived at the time of the study in 2014.

\(^{19}\) This is a self-funded organisation with a website that includes a company database among other components. Available at: [https://scottishgames.net](https://scottishgames.net)
### Table 3-8 Data sources for the creation of the firm and business model database

<table>
<thead>
<tr>
<th>Data source</th>
<th>Rationale</th>
<th>Activities and outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scottish Development International publication of Scottish Games industry profiles20</td>
<td>Scottish industry-specific publication</td>
<td>Review of firm profiles including development platform detail. This was compared to the database and resulted in some reconciliations and reclassifications (e.g. differences in whether they were classified as games developers or technology developers).</td>
</tr>
<tr>
<td>Scottish Enterprise Talent Scotland site21</td>
<td>Database of Scottish firms</td>
<td>Review of 42 firms that were cross-referenced against the database, plus secondary research, and resulted in the removal of some firms they were suppliers to games developers (e.g. music, localisation, testing) or were technology developers, and some firms that needed further checking.</td>
</tr>
<tr>
<td>The University of Abertay 22 and the NESTA R&amp;D fund recipients23 Scotland</td>
<td>IP development support programmes</td>
<td>Review of recipient firms that had received support from programmes supporting the development of an IP development and/or the establishment of an IP model. This was cross-referenced with other sources.</td>
</tr>
<tr>
<td>TIGA24, UKIE25 and the IGDA26</td>
<td>UK-wide Industry membership organisations accessible to videogame developers and firms (and others)</td>
<td>Discussions were held with UKIE and TIGA to identify statistical information of relevance. The publicly available data did not provide the firm-related details needed for this study. Similarly, the Scottish chapter of the International Game Developers Association did not have a publicly available members list.</td>
</tr>
<tr>
<td>Scottish Enterprise27 and Creative Scotland28</td>
<td>Public sector organisations with creative industry related activities</td>
<td>Discussions with publicly funded organisations.</td>
</tr>
<tr>
<td>Industry experts and publications</td>
<td>Firm and industry related data</td>
<td>Discussions with various experts at events, review of secondary data from specialist industry publications, corporate websites and industry-specific reports.</td>
</tr>
</tbody>
</table>

The database was used to identify firms to approach, taking into consideration different firm types and business models. Initial contact was made to small groups of firms. This was undertaken via telephone, email, social media (via LinkedIn and Facebook) and in person at events. As the project progressed, a project summary was also posted on the

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21 Available at: [https://www.talentscotland.com/about-us](https://www.talentscotland.com/about-us)
22 Recipients of the University of Abertay’s Prototype Development fund that supported the development of intellectual property. Website no longer active but example of publicity item can be found at: [https://www.abertay.ac.uk/discover/news/news-archive/2013/name,26872,en.php](https://www.abertay.ac.uk/discover/news/news-archive/2013/name,26872,en.php)
23 NESTA’s Digital R&D Fund for the Arts in Scotland funded arts and cultural organisations to collaborate with technology partners including game developers. See CReATE (2014)
24 Organisation website available at [https://tiga.org](https://tiga.org)
25 Organisation website available at [https://ukie.org.uk](https://ukie.org.uk)
26 Organisation website available at [https://www.igda.org](https://www.igda.org)
27 Organisation website available at [https://www.scottish-enterprise.com](https://www.scottish-enterprise.com)
28 Organisation website available at [http://www.creativescotland.com](http://www.creativescotland.com)
Scottish Games Network Facebook page\textsuperscript{29} (see Appendix 11). Initial contact with potential respondents was made to ascertain their interest in participating in the study. Those that were interested then received a formal request to interview them. This contained an explanation of what would be involved relative to the interview duration, format and confidentiality. All interested respondents were provided with information about the project that contained details about the project, the researcher, the supervision team, and data collection issues (Appendices 9 and 12). Consent was also requested from participating respondents for an audio recording to be made of the interview (Appendices 10 and 13). All access activity was recorded in a spreadsheet which contained information about the potential respondent, their organisation, the data source and a description of the contact made.

Interviews were undertaken with 27 respondents from 25 firms as two interviews each involved two co-owners. Several of the respondents were directors and/or owners of multiple firms as well as having a diverse range of experience with other games-related firms as entrepreneurs, employees, stakeholders and/or investor. However, to maintain clarity, one firm per interview was selected, resulting in the 25 firms. Interviews were undertaken face-to-face at the firm’s premises or offsite if the premises were not convenient (for example lack of privacy or non-existent). One interview was undertaken face-to-face but then continued via Skype at a later date due to time constraints on the respondent’s part. Interviews lasted between 45 and 150 minutes and were recorded with permission of the respondent. Seven of these firms had been interviewed during stage 1 where the focus was on business model selection therefore care was taken not to report in duplicate.

An interview protocol (see Appendix 14) was created consisting of five areas derived from the research aims and questions. Initially, firm-related information was discussed included background, activities and positioning to provide firm context. Second, the respondent’s understanding of business models was discussed including their perception of the WFH and IP business models, terminology used, definitions, selection rationale and advantages and disadvantages. Third, the firm’s business model experience was then explored to identify the usage patterns of the WFH and IP business models, and the makeup of the value proposition, architecture, and economic. Discussions were then held about the usage of the IP model including the implementation process, drivers, constraints and facilitators,

\textsuperscript{29} The notification was posted on the site on 25\textsuperscript{th} September 2014 and generated one respondent firm.
as well as the outputs from its adoption. Finally, respondents were asked to recommend other suitable interview respondents as a check that the firm identification activities had not omitted key firms. Observations were noted during and post interview to capture contextual data relating to the research setting and the respondent, and their reactions during the interview.

Post-interview, data were reviewed and written up in accordance with the interview protocol. Interviews were subsequently transcribed and reviewed again. Observations were made throughout the interview and again post interview when reviewing the interview data. Personal reflections were also noted. Publicly available firm information was reviewed pre and post interview both to familiarise with the firm and business model, and to triangulate the data obtained via the interviews. Recruitment was halted after 25 firms had been interviewed as saturation had been reached. The resultant respondents are referenced in the study as IC1-25 and their profiles are presented in Table 3.9. The four embedded unit groups created from the respondent profiles are summarised in Table 3.10.
### Table 3-9 Firm profiles for respondent entrepreneurs (stage 2)

<table>
<thead>
<tr>
<th>Respondent reference</th>
<th>Business model at inception</th>
<th>Business model 2014</th>
<th>IP business model adoption pattern (inception to 2014)</th>
<th>Firm longevity (years)</th>
<th>Number of employees (excludes contractors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC1</td>
<td>IP</td>
<td>IP &amp; WFH</td>
<td>IP to combination</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC2</td>
<td>IP</td>
<td>IP</td>
<td>IP from inception</td>
<td>&lt;5</td>
<td>10-20</td>
</tr>
<tr>
<td>IC3</td>
<td>IP &amp; WFH</td>
<td>IP &amp; WFH</td>
<td>Combination from inception</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC4</td>
<td>IP</td>
<td>IP</td>
<td>IP from inception</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC5</td>
<td>IP</td>
<td>IP</td>
<td>IP from inception</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC6</td>
<td>IP</td>
<td>IP &amp; WFH</td>
<td>IP to combination</td>
<td>5-10</td>
<td>&gt;20</td>
</tr>
<tr>
<td>IC7</td>
<td>IP</td>
<td>IP &amp; WFH</td>
<td>IP to combination</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC8</td>
<td>IP &amp; WFH</td>
<td>IP &amp; WFH</td>
<td>Combination from inception</td>
<td>5-10</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC9</td>
<td>IP &amp; WFH</td>
<td>IP &amp; WFH</td>
<td>Combination from inception</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC10</td>
<td>WFH</td>
<td>IP &amp; WFH</td>
<td>WFH to combination</td>
<td>5-10</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC11</td>
<td>IP</td>
<td>IP</td>
<td>IP from inception</td>
<td>5-10</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC12</td>
<td>WFH</td>
<td>IP &amp; WFH</td>
<td>WFH to combination</td>
<td>5-10</td>
<td>10-20</td>
</tr>
<tr>
<td>IC13</td>
<td>IP</td>
<td>IP &amp; WFH</td>
<td>IP to combination</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC14</td>
<td>IP &amp; WFH</td>
<td>IP &amp; WFH</td>
<td>Combination from inception</td>
<td>&gt;10</td>
<td>&gt;20</td>
</tr>
<tr>
<td>IC15</td>
<td>WFH</td>
<td>IP &amp; WFH</td>
<td>WFH to combination</td>
<td>5-10</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC16</td>
<td>WFH</td>
<td>IP &amp; WFH</td>
<td>WFH to combination</td>
<td>&lt;5</td>
<td>10-20</td>
</tr>
<tr>
<td>IC17</td>
<td>WFH</td>
<td>IP &amp; WFH</td>
<td>WFH to combination</td>
<td>&gt;10</td>
<td>10-20</td>
</tr>
<tr>
<td>IC18</td>
<td>IP</td>
<td>IP &amp; WFH</td>
<td>IP to combination</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC19</td>
<td>IP</td>
<td>IP &amp; WFH</td>
<td>IP to combination</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC20</td>
<td>IP</td>
<td>IP &amp; WFH</td>
<td>IP to combination</td>
<td>&gt;10</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC21</td>
<td>IP &amp; WFH</td>
<td>IP &amp; WFH</td>
<td>Combination from inception</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC22</td>
<td>IP</td>
<td>IP</td>
<td>IP from inception</td>
<td>5-10</td>
<td>&gt;20</td>
</tr>
<tr>
<td>IC23</td>
<td>IP</td>
<td>IP</td>
<td>IP from inception</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC24</td>
<td>IP</td>
<td>IP &amp; WFH</td>
<td>IP to combination</td>
<td>&lt;5</td>
<td>&lt;10</td>
</tr>
<tr>
<td>IC25</td>
<td>WFH</td>
<td>WFH</td>
<td>WFH to combination to WFH</td>
<td>5-10</td>
<td>10-20</td>
</tr>
</tbody>
</table>

### Table 3-10 Business model adoption patterns in respondent entrepreneurs’ (stage 2) firms

<table>
<thead>
<tr>
<th>Groups</th>
<th>IP business model adoption routes from inception to 2014</th>
<th>Number of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>IP business model adopted at inception and retained</td>
<td>6</td>
</tr>
<tr>
<td>B</td>
<td>IP adopted in combination with WFH at inception and retained</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>IP business model adopted at inception and then changed to combination business model</td>
<td>8</td>
</tr>
<tr>
<td>D</td>
<td>WFH business model adopted at inception and then changed to combination (and then reversion for some)</td>
<td>6</td>
</tr>
</tbody>
</table>
3.3.6 Observation - events

Personal observations were undertaken at 13 events in the UK (Dundee, Birmingham, Edinburgh, Inverness) and France (Paris). These events were selected for their relevance to business models and/or independent videogame development firms. Events were identified on an ongoing basis and informed by secondary data, the researcher’s industry knowledge, and suggestions from respondents. Event hosts were varied and included the private, public and academic organisations. Audiences were primarily industry focused, but included the public and academic sector in some instances. Observations were noted during the event and when reviewing the data post-event. An observation guide (Appendix 7) was used to record the data incorporating: (i) contextual data such as the event location, type of setting, audience, (ii) the three research themes namely drivers, constraints and facilitators, as well as any emerging issues, and (iii) personal reflections together with details of for example, contacts, papers and follow-up activities. For analysis, each event was written up individually in an event template (Appendix 8). This provided a way of considering each event individually in-depth and highlighting relevant data for the study. It also facilitated a standardised review across all events allowing comparisons to be made. Details of the events attended are provided in Table 3.11 and referred to in the study using the indicators E1-13.
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Research themes</th>
<th>Detail (Type, title, host, audience, website)</th>
<th>Date, location and duration</th>
</tr>
</thead>
</table>
| E1   | Context Business models Facilitators Constraints | - Type: Conference and exhibition  
- Title: ‘Dare Indie Fest 2013’  
- Host: University of Abertay with public and private sector sponsors as  
- Audience: General public, industry, academia, public sector.  
| E2   | Context | - Type: Presentation  
- Title: ‘The Future of the Scottish Games Network’  
- Host: SGN and focusing on the future of the Scottish Games network  
- Audience: Industry  
- Website: [https://www.eventbrite.co.uk/e/scottish-games-network-launch-edinburgh-tickets-9112815677](https://www.eventbrite.co.uk/e/scottish-games-network-launch-edinburgh-tickets-9112815677) | 14/11/14 1900-2230 TechCube, Edinburgh, UK (3.5hrs) |
| E3   | Context Business models Facilitators Constraints | - Type: Conference and exhibition  
- Title: ‘Launch: Future Gaming and Digital Media’  
- Host: Innovation Birmingham  
- Website: [http://launchconference.co.uk/about/](http://launchconference.co.uk/about/) | 21-23/11/13, Innovation Birmingham, Birmingham, UK (16hrs) |
| E4   | Business models Facilitators Constraints | - Type: Conference and exhibition  
- Title: ‘Evolution of Video Games industry ecosystems’  
- Host: The Innovation & Regulation Chair (Ecole Polytechnique, Telecom Paris-Tech & Orange) with Mosaic, HEC Montréal, Pole Creativité & Innovation  
| E5   | Context Constraints | - Type: Policy group  
- Title: ‘Skills and Creativity in the videogame industry’  
- Host: The Scottish Government’s Cross Party Group on videogame technology  
- Audience: Industry, public sector, academia  
| E6   | Business models Facilitators Constraints | - Type: Conference, exhibition and recruitment  
- Title: “Game in Scotland 2014”  
- Host: Interactive Tayside, Scottish Enterprise, Abertay University, Locate in Dundee  
- Audience: Industry, academia  
- Website: [http://www.gameinscotland.com/](http://www.gameinscotland.com/) | 1/3/14, 1200-1700 Abertay University, Dundee, UK (5hrs) |
| E7   | Context Business models | - Type: Presentation  
- Title: ‘How to get your Games Production Tax Credits’  
- Host: UKIE.  
- Audience: Industry  
Table 3.11 Data sources for events continued…

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Research themes</th>
<th>Detail (Type, title, host, audience, website)</th>
<th>Date, location and duration</th>
</tr>
</thead>
</table>
| E8   | Context Business models Constraints | − Type: Conference and exhibition  
− Title: ‘GoNorth 2014’  
− Host: Creative Highland (consolidation of ScreenHI and Go Events).  
− Audience: Industry, public sector, general public  
| E9   | Context Constraints | − Type: Policy group  
− Title: ‘Annual General Meeting’  
− Host: Scottish Government’s Cross Party Group on videogame technology  
− Audience: Industry and academia  
− Website: n/a | 12/6/14, 1730-1900, The Scottish Parliament, Edinburgh, UK (1.5hrs) |
| E10  | Context Business models Facilitators | − Type: Presentation  
− Title: ‘IGDA Scotland Presents: Ed Fries’  
− Host: IGDA and Abertay University.  
− Audience: Industry and academia.  
− Website: [https://igdascotland.org/2014/06/special-event-with-ed-fries-in-dundee/](https://igdascotland.org/2014/06/special-event-with-ed-fries-in-dundee/) | 16/7/14, 1900-2100, Abertay University, Dundee, UK (2hrs) |
| E11  | Context Business models Facilitators Constraints | − Type: Conference  
− Title: ‘Upping your Game’  
− Host: Creative Scotland, Abertay University, the ICC at University of St Andrews, and the RCUK Centre for Copyright and New Business Models in the Creative Economy (CREATE).  
− Audience: Academia, public sector and industry.  
− Website: [http://www.eventbrite.co.uk/e/upping-your-game-tickets-12821749197?aff=es2&rank=1#](http://www.eventbrite.co.uk/e/upping-your-game-tickets-12821749197?aff=es2&rank=1#) | 25/9/14, 1230-1700, Abertay University, Dundee, UK (4.5hrs) |
| E12  | Business models Facilitators Constraints | − Type: Conference  
− Title: ‘Develop Live’  
− Host: Develop in partnership with Abertay and opm recruitment. Focus on current issues for the videogame sector.  
− Audience: Academia (mostly students), public sector and industry.  
− Website: [http://www.develop-online.net/events/develop-live/0193364](http://www.develop-online.net/events/develop-live/0193364) | 2/10/14, 0900-1600, Traverse Theatre, Edinburgh, UK (7hrs) |
| E13  | Business models Facilitators Constraints | − Type: Presentation  
− Title: ‘Unlimited Shelf Life’  
− Host: The Cultural Enterprise Office.  
− Audience: Public sector and industry (games or music)  
3.3.7 Documentation analysis

Documentation analysis was used throughout the study as a way of obtaining data about business models, independent videogame firms and the industry context. A summary of the sources used is provided in Table 3.12.

Table 3-12 Data sources for documentation analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>Type of provider</th>
<th>Data type</th>
<th>Source examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>Government bodies, sector support, geographic specific organisations</td>
<td>Policy documents, statistical data, directories, support initiatives, consultancy reports, Government enquiries, conference material</td>
<td>Scottish Government, Cultural Enterprise Office, NESTA, Scottish Development International, European Commission</td>
</tr>
<tr>
<td>Industry – games and non games specific</td>
<td>Firm founders, employees, analysts, investors, professional advisors, trade associations, consultancies</td>
<td>Entrepreneur, firm and industry-related data from various publications, social media, presentations, research reports, evaluations, conference</td>
<td>MCV, Develop, Gamesutra, GamesIndustry.biz, Edge, gamesBrief, TIGA, UKIE, Game in Scotland, Idate, Games Consulting</td>
</tr>
<tr>
<td>Education</td>
<td>Universities, Colleges, Educational focused organisations</td>
<td>Support programmes, student-based firms and spinoffs, research, conference material</td>
<td>University of Abertay University, research networks (e.g. AHRC, ESRC, Creative Territories)</td>
</tr>
</tbody>
</table>

Firm and industry-related documentation were accessed from a range of private and public sources on and offline. Such data included written and audio material regarding the videogame industry such as firm information, publicity material, interviews, newspapers and media, reports and policy documentation. Some of this was grey literature, produced by organisations whose main business is not publishing therefore it is not usually widely disseminated. A range of online blogs and videos were also accessed including videogame specific sites providing data such as news, interviews, industry trends and firm profiles. This data also included postmortems given by industry practitioners where they recount their experiences of, for example, issues with fundraising, product development or publishing proprietary IP, in order to share their knowledge more widely within the industry. This source of data has been evident in some of the videogame-research related literature (Tschang, 2007) and provides insight into the experiences of practitioners, as expressed in their words, that might not be available in other sources.
3.4 Data analysis

3.4.1 Approach

A predominantly inductive approach was adopted to allow the identification of themes and issues during data collection without prescribing the key elements beforehand (Patton, 2002). Analysis was therefore ongoing throughout data collection and included an interim review point to inform respondent recruitment and data collection tools prior to commencing the second stage of the entrepreneur interviews (as detailed in Section 3.3.4). This approach was compatible with a qualitative data-based study (Maxwell, 2009; Miles and Huberman, 1994; Cresswell, 2003) and acknowledged the existence of diverse routes to qualitative analysis (Miles and Huberman, 1994). On completion of data collection, the main data analysis activities were undertaken. A descriptive strategy was adopted (Yin, 2009) with a focus on explaining why and how firms were changing from a WFH business model.

Data analysis was undertaken manually rather than using a computational programme. Both manual and computational methods of analysis were considered and assessed early in the study. This included an evaluation of NVivo, a programme designed to support qualitative data analysis, to better understand the programme. This evaluation included participation in an in-house training course at the University to familiarise with the programme. Having considered both the manual and computational approach, the use of manual methods was preferred as it provided a high-level of ongoing interaction with the data and aligned with the underlying approach to the study. A robust and transparent approach was taken to data analysis despite a non-computational method being adopted, and this is further detailed later in this section.

The analysis was guided by Yin’s (2009:126) suggestions for case-study data analysis to include “examining, categorising, tabulating, testing, or otherwise recombining evidence” and Miles and Huberman’s (1994) recommendations for reduction, data display, and conclusion drawing/verification. The four stages of data analysis undertaken were: (i) preparation (review and organisation), (ii) classification (data reduction and coding levels), (iii) interpretation (data display and pattern identification), and (iv) conclusion drawing (verification and presentation). These are summarised in Table 3.13 and discussed in the remainder of this section.
### Table 3.13 Stages of data analysis

<table>
<thead>
<tr>
<th>Stage</th>
<th>Aim</th>
<th>Actions</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preparation</td>
<td>Review and organise data</td>
<td>1. Data reviewed and cleaned.</td>
<td>Data and context details for event summaries, interview transcripts and observation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Data identified and inserted into storage system.</td>
<td>Matrix of respondents relative to research question</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Accurate and transparent record of data providing evidence trail</td>
</tr>
<tr>
<td>2. Classification</td>
<td>Reduce and code data for interpretation</td>
<td>1. Data review and code using RQ themes and an emerging category.</td>
<td>Coded data relative to research question themes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. First and second order coding for thematic development re drivers, constraints and facilitators.</td>
<td>Emerging themes identified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Analysis within, and across, four embedded units re business model change patterns.</td>
<td></td>
</tr>
<tr>
<td>3. Interpretation</td>
<td>Display/analyse data relative to research questions</td>
<td>1. Illustrate drivers, constraints and facilitators.</td>
<td>Study objectives and outputs addressed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Vignettes of firms and business model change routes.</td>
<td></td>
</tr>
<tr>
<td>4. Conclusion drawing</td>
<td>Verify findings and conclude analysis</td>
<td>1. Discussions with academics and industry about findings.</td>
<td>Contribution to knowledge identified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Revisit literature.</td>
<td>Areas for further exploration identified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Finalise analysis and present findings.</td>
<td></td>
</tr>
</tbody>
</table>

#### 3.4.2 Preparation

The aim of this stage was to review and finalise the data to support analysis and allow future identification, storage and retrieval. The volume of data generated in the study from interviews and observation at events is summarised in Table 3.14. Entrepreneur interview data included 34hrs 27mins of audio and 969 pages of transcripts, while event attendance totaled 80 hours. Several research diaries were also compiled throughout the study in which all activities were recorded together with reflections about the knowledge acquired, relevance for the study, and thought development.
First, data were examined relative to each individual source, for example interview audio, transcripts or notes, documentation, and observations, as well as personal reflections and memos. Any final modifications and/or eliminations were undertaken. Several data tables were established to support clarity in reviewing including a summary of events, each with contextual and observational data, and a matrix of interview responses relative to the interview topics. Second, data were incorporated into a secure storage system, allowing an accurate and transparent record of the study’s data. A computer-based storage system had been established in accordance with the data management plan that incorporated a thesis storage system representing various sections of the study activities (for example literature review and data collection) and a case-study database (for example case-study protocol, data collection tools) that supported a chain of evidence for data (Yin, 2009). An identifier was allocated to data based on their source and order of collection, for example interview data (I) from the four industry experts (Respondents A) were referenced as IA1-4 while observation data (O) from 13 events (E) were referred to as OE1-13. These identifiers are summarised in Table 3.15.

Table 3-15 Data identifiers for data sources

<table>
<thead>
<tr>
<th>Data source</th>
<th>Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry experts – Interviews</td>
<td>IA1-4</td>
</tr>
<tr>
<td>Entrepreneurs stage 1 – Interviews</td>
<td>IB1-8</td>
</tr>
<tr>
<td>Entrepreneurs stage 2 – Interviews</td>
<td>IC1-25</td>
</tr>
<tr>
<td>Entrepreneurs stage 2 – Observations</td>
<td>OC1-25</td>
</tr>
<tr>
<td>Event summaries and materials</td>
<td>E1-13</td>
</tr>
<tr>
<td>Event observations</td>
<td>OE1-13</td>
</tr>
</tbody>
</table>

Table 3-14 Data output from interviews and observations

<table>
<thead>
<tr>
<th>Data source</th>
<th>Reference</th>
<th>Data type</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry experts</td>
<td>IA1-4</td>
<td>4 semi-structured interviews Documentation analysis pre and post interview</td>
<td>240 mins (4hrs)</td>
</tr>
<tr>
<td>Entrepreneurs (stage 1)</td>
<td>IB1-8</td>
<td>8 semi-structured interviews Documentation analysis pre and post interview</td>
<td>285 mins (4hrs 45mins)</td>
</tr>
<tr>
<td>Entrepreneurs (stage 2)</td>
<td>IC1-25</td>
<td>25 semi-structured interviews Observation during and post interview Documentation analysis pre and post interview</td>
<td>1602mins (26hrs 42mins)</td>
</tr>
<tr>
<td>Industry events</td>
<td>OE1-13</td>
<td>Observation during and post 13 industry related events Documentation analysis pre and post event</td>
<td>4800mins (80hrs)</td>
</tr>
</tbody>
</table>
This preparation stage ensured that data were securely stored, clearly identified and had a clear and secure retrieval path that allowed the tracing of data from the relevant thesis section back to their original source and associated context.

### 3.4.3 Classification

The classification stage involved reducing and coding the data to enable further analysis and interpretation. Simplifying and reducing data improved manageability and clarity for analysis, while avoiding stripping the data of their original expression and meaning. Data were reviewed and coded in line with guidelines for qualitative data (Miles and Huberman, 1994; Maxwell, 2009; Strauss and Corbin, 1998). Documentation data relating to firms and the videogame industry were used throughout to support the development of the themes and overall case, and literature was revisited as necessary (Miles and Huberman, 1994; Maxwell, 2009).

First, the raw data from the transcripts, observations, and event summaries were reviewed and tagged. This involved annotating the documents and noting any additional reflections on a separate document. Four data ‘bins’ (Maxwell, 2009) were created and labelled as drivers, constraints, facilitators (all three derived from the research questions), and emerging (to capture additional issues worth consideration). Part of this review involved distilling the interview data from the respondent entrepreneurs (stage 2) using the mind mapping technique. Mind maps were generated for each respondent around four themes linked to the research aims and questions namely: (i) the firm and business model, (ii) influences on business model selection, (iii) barriers to business model change and (iv) other. An example of the mind maps generated for one of the respondent entrepreneurs is provided in Appendix 16. Creating mind maps for each respondent facilitated immersion in the data provided a route to visually collate the data and supported the thematic development undertaken during this stage of data analysis. The resultant mind maps provided a visual representation incorporating rich summary data for each respondent, as well as facilitating a review of other respondent data.

Second, each thematic bin was considered individually using all data associated with that theme. An open coding process was undertaken to allocate codes to the data based on the research aims namely drivers, constraints, facilitators and emerging themes. This resulted in a list of reorganised coded data within each research theme (Strauss and Corbin, 1998;
Neergaard and Ulhoi, 2007). Third, another level of coding was then undertaken to further condense the data, strengthen the categories, and move towards key themes and narratives (Miles and Huberman, 1994; Glaser and Strauss, 1967; Strauss and Corbin, 1998). The coding process was undertaken for each of the themes although there was some variation depending on the data type, volume and the depth of coding required. The data coding and thematic development process used for the first research question is illustrated in Table 3.16. This focused on identifying the key factors that influenced business model selection. The initial review and coding identified 32 ‘factors of influence’ (indicated in column 1) that were then reduced to 11 themes following a second round of coding. Each theme was then allocated to one of four categories indicating its source. The resultant findings are discussed in Chapter 4.

### Table 3-16 Thematic development process to identify selection influences

<table>
<thead>
<tr>
<th>Research question 1</th>
<th>Theme: Business model change driver</th>
<th>Subtheme: influences on business model selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors of influence (Results of stage 1 coding derived from raw data)</td>
<td>Key themes (Results of stage 2 coding)</td>
<td>Themes by source categories</td>
</tr>
<tr>
<td>Wellbeing</td>
<td>Personal aims and desires</td>
<td>Entrepreneur</td>
</tr>
<tr>
<td>Recognition</td>
<td></td>
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<tr>
<td>Stimulation</td>
<td></td>
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<tr>
<td>Aspiration</td>
<td></td>
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<tr>
<td>Current situation</td>
<td>Personal circumstances and experiences</td>
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<tr>
<td>Life experience</td>
<td></td>
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<tr>
<td>Ethics</td>
<td>Operational-related preferences</td>
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<tr>
<td>Level of freedom</td>
<td></td>
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<tr>
<td>Firm positioning</td>
<td></td>
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<tr>
<td>Game and platform preference</td>
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<tr>
<td>Perception of the IP business model as higher value</td>
<td>Business model and component characteristics</td>
<td>Business model</td>
</tr>
<tr>
<td>Negative perception of the WFH business model</td>
<td></td>
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<tr>
<td>Self-alignment with the IP business model</td>
<td></td>
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<tr>
<td>Operations and finance</td>
<td>Firm strategy alignment</td>
<td>Firm</td>
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<tr>
<td>Value and stability</td>
<td></td>
<td></td>
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<tr>
<td>Decision related tensions</td>
<td></td>
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<tr>
<td>Technology issues</td>
<td>Game and platform type</td>
<td></td>
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<tr>
<td>Game related aspects</td>
<td></td>
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<tr>
<td>Skills and knowledge</td>
<td>Development opportunities</td>
<td></td>
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<tr>
<td>Sales and market</td>
<td></td>
<td></td>
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<tr>
<td>Resource availability and access</td>
<td>Resources</td>
<td></td>
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<tr>
<td>Level of resource reuse and leverage</td>
<td></td>
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<tr>
<td>Misalignment</td>
<td></td>
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<tr>
<td>Finance</td>
<td>Market</td>
<td>External</td>
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<tr>
<td>Market trends</td>
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<tr>
<td>Market access points</td>
<td></td>
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<tr>
<td>Audience</td>
<td></td>
<td></td>
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<tr>
<td>Firm profile</td>
<td></td>
<td></td>
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<tr>
<td>Opportunity – market, platform, licensing, audience</td>
<td></td>
<td></td>
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<tr>
<td>Balance needs of firm and stakeholders</td>
<td>Partners</td>
<td></td>
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<tr>
<td>Performance and collaboration opportunities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access and availability to finance</td>
<td>Resources</td>
<td></td>
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</tbody>
</table>
The second example of data coding and thematic development process is provided in Table 3.17 and illustrates the process undertaken to address research question two, focusing on the factors constraining business model change. This involved an initial review and coding to identify 38 ‘factors of influence’ (indicated in column 1) followed by a second coding round that refined this to 14 themes. The themes were then grouped into five categories namely finance; skills, knowledge and experience; the IP model characteristics; product and platform; and the market. However, the components of the ‘IP business model characteristics’ category were more then moved into one of two other categories, namely ‘Finance’ and ‘Skills, knowledge and experience’ to avoid duplication. The final outputs from this analysis are discussed in Chapter 5.
### Table 3-17 Thematic development process to identify constraints

<table>
<thead>
<tr>
<th>Research question 2</th>
<th>Key themes</th>
<th>Constraint category and description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme: Constraints</strong></td>
<td><strong>Constraining factors</strong>&lt;br&gt;(Results of stage 1 coding derived from raw data)</td>
<td><strong>Constraint category and description</strong>&lt;br&gt;(Results of stage 2 coding)</td>
</tr>
<tr>
<td>High cost of IP&lt;br&gt;Level of marketing finance&lt;br&gt;Funds for firm and product development</td>
<td>Financial requirement</td>
<td>Finance: the level of finance required to undertake IP combined with the availability of appropriate funds either internally or externally.</td>
</tr>
<tr>
<td>Difficulties accessing funds&lt;br&gt; Variety and type of funds available&lt;br&gt;Misalignment between needs and funding</td>
<td>Finance availability</td>
<td></td>
</tr>
<tr>
<td>Lack of profits&lt;br&gt; Lack of revenue</td>
<td>Finance generation and risk</td>
<td></td>
</tr>
<tr>
<td>Limited experience of B2C model&lt;br&gt; Differences in resource management&lt;br&gt; Lack of external brief&lt;br&gt; The need for parallel models</td>
<td>Deficits in management skills, experience and knowledge</td>
<td>Skills, knowledge and experience: deficits in the skills, knowledge and experience required to manage the firm, the IP model logistics, marketing, and customers, and limited access to resources to address this.</td>
</tr>
<tr>
<td>Inexperience with audience development&lt;br&gt; Limited market understanding&lt;br&gt; Limited profile and visibility</td>
<td>Deficits in marketing and audience engagement skills, knowledge and experience</td>
<td></td>
</tr>
<tr>
<td>Value architecture -&lt;br&gt; Value economic issues (e.g. pricing, management of monetisation)</td>
<td>Business model component issues</td>
<td>IP model characteristics&lt;sup&gt;30&lt;/sup&gt; (incorporated into finance, and skills, knowledge and experience)</td>
</tr>
<tr>
<td>Self-management&lt;br&gt; IP model characteristics Management issues from inexperience and knowledge, different skillset</td>
<td>IP management difficulties</td>
<td></td>
</tr>
<tr>
<td>Time to market&lt;br&gt; Unpredictability of game success&lt;br&gt; Level of product modifications and support post-release</td>
<td>Nature of the product</td>
<td>Product and platform: issues with accessing technology for product development, external distribution restrictions, the uncertainty of game-related success and the resources required for post-release support.</td>
</tr>
<tr>
<td>Lack of user focus&lt;br&gt; Perception of game developers externally&lt;br&gt; Platform newness and alignment&lt;br&gt; Lack of fit between firms product and audience demand</td>
<td>Misalignment between firm and market</td>
<td></td>
</tr>
<tr>
<td>Inability to access platform (e.g. platform regulation or restrictions)&lt;br&gt; Lack of technology to develop for platform (e.g. developer’s kit)</td>
<td>Technology and platform access</td>
<td></td>
</tr>
<tr>
<td>High volume of firms for certain platforms and markets&lt;br&gt; Low barriers to entry</td>
<td>Competition</td>
<td>Market: difficulties in achieving a market-focused outlook, customer base and necessary profile in a diverse, fast-moving and competitive market.</td>
</tr>
<tr>
<td>The need to build/retain community alignment with audience needs</td>
<td>Audience engagement</td>
<td></td>
</tr>
<tr>
<td>Lack of track record&lt;br&gt; Difficulties achieving profile in the market</td>
<td>Visibility in the market</td>
<td></td>
</tr>
<tr>
<td>Speed of change in the market&lt;br&gt; Platform technology changes&lt;br&gt; Trends</td>
<td>Market and industry conditions</td>
<td></td>
</tr>
</tbody>
</table>

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<sup>30</sup>The constraints relating to ‘IP model characteristics’ were incorporated into the ‘Finance’ and ‘Skills, knowledge and experience’ categories.
3.4.4 Interpretation

The aim was to interpret the data using a combination of data sorting, comparison, and pattern identification. Initially, data were displayed to sort material, and identify relationships, key themes and differences. Data generated in the earlier stages of analysis were arranged in various tables incorporating data and quotes relative to key research themes. Firm vignettes were also created to illustrate the experiences of the respondent firms and the business model adoption patterns exhibited in the embedded units. For theme 2 (constraints), vignettes were created for each firm to illustrate how and why IP-related constraints arose in their business model change activities. For theme 3 (facilitators), the vignettes described how groups of firms with similar business model change patterns, undertook this process, and the facilitators that supported this. Data were compared and analysed to identify relationships, patterns, commonalities and differences. Data were also compared across the four embedded units exploring relationships and differences between the groups and constructs (Eisenhardt, 1989; Miles and Huberman, 1994). The findings were then reviewed in the context of the literature and with other academics as part of an iterative process to support interpretations and assess plausibility. Finally, the emerging issues that were identified outside of the three research themes were reviewed and some retained in the study while others were identified as being relevant for future exploration.

3.4.5 Conclusion

This phase focused on drawing together all the earlier aspects of data analysis to bring the study to its conclusion. The key aspects of significance were highlighted and presented relative to the research questions. To further verify the findings, discussions were held with representatives from the public, private and academic sectors involved within, and across, the areas of entrepreneurship, business models, and videogame. This involved one-to-one discussions with academics and industry contacts, participation in various UK Research council networks focused on business models or videogames, and a presentation at a conference at the University of Glasgow to an audience of undergraduates, postgraduates and staff involved in videogame-related research at the University of Glasgow, Glasgow Caledonian University, the University of Abertay and the Digital Cultures Research Centre at the University of the West of England. Further information about the verification activities is provided in Section 3.5.2. On completion of the analysis stage, the findings were written up relative to the research questions, ensuring that rich descriptions were incorporated, and that negative data and outliers were acknowledged.
3.5 Limitations of the research design

3.5.1 Data availability and accuracy

Care was taken to ensure that decisions made about the research design were based on a combination of evidence from primary and secondary sources, given the limited data available about the videogame industry, particularly the smaller firms. However, possible inaccuracy issues remained. First, the financial data provided by respondents were sometimes difficult to verify, particularly for the smaller firms given the lack of publicly available financial records. While not a critical factor for this study, given that other firm performance related elements could be considered such as the operating environment, longevity, employee numbers and game releases, the lack of data availability was not ideal and remains a consideration when undertaking studies of this nature. Second, data about the business models and business model change were not easily accessible. This meant that although a variety of sources were used to create the database for recruiting respondents, inaccuracies might have existed. There was also a reliance on respondent recall about their firm’s business model activity, although secondary data were used where possible to verify this. Finally, the adoption of an IP only model by independent videogame developers was in its infancy, therefore successful examples of this model were limited in the respondent group. This was compatible with the exploratory nature of the study and the focus on discovering how and why the change from the WFH business model was taking place. However, further insight could have been gained by focusing on successful adoption of the IP model.

3.5.2 Case study validity and reliability

Three tests of quality relative to exploratory case studies were applied in this study. Yin (2009) describes such tests as construct validity, external validity, and reliability. First, construct validity was important in ensuring that the constructs in use were valid. Triangulation or “converging lines of inquiry” (Yin, 2009:115) is a key way of addressing such validity in case studies and qualitative research (Fielding and Fielding, 1986). Data were therefore triangulated by collecting data from various sources through interviews, observation and documentation analysis. Each source of data provided information in its own right, as well as often supplementing other data. Where contradictions existed, further data sources or clarification were sought. Investigator triangulation was also undertaken via discussions with other academics in the areas of entrepreneurship, business models.
and/or videogames. This included a number of one-to-one discussions and attendance at specific events and networks including the AHRC Creative Territories Network\(^3\) (industry, public sector and academics with a focus on videogame developers), the ESRC Business Model series network\(^2\) (academics with a focus on business models) and Game Think 2015\(^3\) (presentation of initial ideas as part of Game Think to undergraduates, postgraduates and staff). Ongoing discussions were also held with industry professionals. All of this activity was useful to challenge the study findings and identify areas of agreement, discord and interest.

The second issue addressed was that of external validity, which relates to the extent to which findings can be generalised (Yin, 2009). The case-study approach has been criticised for not being generalisable to a wider population as the data are not collected from a representative population. However, findings can be generalisable to theories rather than populations and can therefore be used to develop theory as well as test it (Eisenhardt, 1989). As Yin (2009:15) states: “your goal will be to expand and generalise theories […] and not to enumerate frequencies.” The use of theory is therefore important (Eisenhardt, 1989, 1991) and strengthens external validity. The intention of this study was to contribute to the emerging theoretical ideas about business model change using data grounded in empirical evidence, rather than test existing theory that remains limited and without agreement.

The final case-study quality test applied was that of reliability which relates to whether or not the same findings would be achieved if another researcher followed the same procedures (Yin, 2009). The use of a case-study database and case study protocol supported this reliability and ensured clarity about the study’s activities, supporting documentation and chain of evidence (Eisenhardt, 1989, 1991; Yin, 2009). These elements were incorporated as part of an overall study management system that comprised a research plan to guide the study and a data management system that ensured the secure storage and retrieval of data.

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\(^3\) Creative Territories is a network funded by the Arts and Humanities Research Council focusing on innovation in indie game production contexts and connections. Information available at: http://creativeterritories.derc.org.uk/about/

\(^2\) ESRC Business Models Seminar Series. Programme information available at: https://www.bam.ac.uk/sites/bam.ac.uk/files/Seminar%20Series%20Flyer%20%281%29.pdf

\(^3\) Game Think 2015 was hosted by the University of Glasgow in collaboration with Glasgow Caledonian University, Abertay University and the Digital Cultures Research Centre at UWE. Information available at: https://storify.com/matthewbarr/gamethink-at-the-university-of-glasgow
3.5.3 Data collection methods and the nature of qualitative data

Interview-related bias can arise from both the respondent and the researcher (Cresswell, 2003). Respondent views only represent their individual experiences and may therefore themselves be inaccurate due to the nature of self-report and recall bias (Podsakoff and Organ, 1986). This may have been particularly relevant in this study as only one respondent per firm was interviewed. However, the fact that this respondent was normally the managing director who was responsible for the overall strategy for the firm was positive. Interview-related bias can also arise from the fact that, in a study of this nature, the interaction between respondent and researcher is a given and may influence how respondents engage. Some respondents sought extensive interaction with the researcher including questions about the researcher and the study as well as their opinions. The researcher had to be professional and engage the respondent, while avoiding influencing the direction or the response. The researcher also had to be aware of their own beliefs, assumptions and factors such as gender or the balance of power (Schoenberger, 1991; McDowell, 1992). However, as “the goal in a qualitative study is not to eliminate this influence but to understand it and to use it productively” (Maxwell, 2009:243), the researcher ensured that they reflected throughout to retain awareness of their own sources of bias by using a research diary and research memos (Maxwell, 2009) to support this.

The second issue related to the use of personal observation at interviews and events. Personal observations are beneficial in terms of data collection given the natural context but there are validity threats (Saunders, Lewis and Thornhill, 2009). The method can have limitations relating to researcher input and bias and inaccuracies of data collection and recording. As the method is reliant on the researcher, there can be observer bias as it is wholly the researcher’s perception. It is therefore necessary to triangulate data where possible. Data accuracy can also be an issue given the ‘real-time’ collection and the data volume. A guide was therefore used to ensure that observation data focused on the research questions and key themes. With regards to ethical issues, this was acknowledged but minimal as the observation was not covert and both the interview participants and event attendees were made aware of the researcher’s purpose.

The final issue related to the use of qualitative data. The credibility of qualitative methods is highly dependent on the researcher and can be affected by both their personal situation and their research abilities (Patton, 2002). Data management, especially reduction, was
undertaken carefully to avoid diminishing accuracy. This recognised that qualitative data were diverse and not always known in advance (Miles and Huberman, 1994) and that it was important to provide context and analysis of the data for themes and issues (Cresswell, 2003). Steps were taken to reduce accuracy issues including ensuring the creation of robust case study-related procedures (Yin, 2009) immersion in the field (Marshall and Rossman, 1999), triangulation of multiple sources of data to provide rich robust descriptions (Denzin, 1970; Yin, 2009), and recognition of outliers and negative data (Collis and Hussey, 2003; Miles and Huberman, 1994).

3.6 Conclusion

The aim of this chapter was to present the research design and the methods to implement it. At the outset, the study’s aim was discussed together with a review of the research questions. The philosophical and paradigmatic considerations underlying the study’s design were then presented, highlighting the interpretative paradigm and the underlying constructionist philosophy. The components of the study’s design were then presented. This detailed an exploratory, inductive approach to support understanding of business model change from the experiences of respondents experiencing that change. The rationale for this approach was discussed explaining its paradigmatic alignment, the gaps in the business model change literature and the ‘how and why’ nature of the research questions.

The rationale for a case-study strategy was subsequently discussed, as was the decision to obtain qualitative, longitudinal data from multiple sources. This strategy fitted with the nature of the study and was supported by evidence from the literature relating to the usage of this strategy in business model-related studies. The data collection procedures explained how data were collected from 37 semi-structured interviews with entrepreneurs and industry experts; observations at interviews and 13 industry events in the UK and France; and documentation analysis from various sources. The ethical issues generated by the study were discussed together with an explanation about how these were managed. The four analysis stages were then explained before identifying the study’s limitations and how these were addressed. The next chapter focuses on the findings relating to the first research question namely: “What are the drivers for changing from a WFH business model?”
Chapter 4 Findings: The drivers for changing from a work-for-hire model

“No company wants to do work-for-hire and I know this from speaking to other developers. Everybody would just love to be working on their own IP […] We don’t have to go out and pimp ourselves and work on the streets. We don’t have to do that and get work-for-hire because we work on our own IP. If we want to spend another three weeks making the game better we will spend three weeks making the game better and nobody is there telling us that we need this game out here, you know, and then I don’t need to worry about what is coming next.” (IC22)

4.1 Research aims and chapter format

The WFH business model has been prevalent for independent videogame development firms despite criticisms that the lack of intellectual property ownership in this model diminishes the value for such firms (Hotho, 2013; McGregor, 2013). Various commentators from industry and the public sector have advocated changing to the IP (Christopherson, 2004; TIGA, 2015) but doing so successfully appears limited. The overall aim of this study was to better understand this phenomenon by examining the firm-level experiences of three key aspects of business model change, namely drivers, constraints and facilitators. This chapter explores the first of these and addresses the research question: “What are the drivers for changing from a work-for-hire business model?” The aim was to identify whether or not there was a desire to change from the WFH business model and the rationale for this. This involved understanding how the WFH business model was used and perceived, and the influences on business model choice. The data were derived from interviews, personal observations and documentation data. This chapter begins by defining the business models and how they were used (Section 4.2). The factors influencing business model selection are then discussed (Section 4.3) before focusing on the drivers and rationale for changing from a WFH business model (Section 4.4). The findings are discussed in Section 4.5 before the chapter concludes (Section 4.6).

4.2 Business model definition and usage

This section presents the study findings about how business models were defined, perceived and used. This was important in providing context and clarity given the lack of uniformity about both the ‘business model’ term and the specific models within this
Respondents defined the business model in a variety of ways in the study. In the main, it was equated with financial aspects of the firm with limited perception of the business model as a holistic construct representing the firm and how it achieved value. Respondents viewing the business model in financial terms mentioned the firm’s financial model and/or the games monetisation method. Some respondents took a more outward-looking view that involved a consideration of the market, particularly how to understand and sell to customers. Finally, a group of respondents linked the market and finance aspects, with discussions around how to engage, and obtain finance from, its customers. Examples of the business model definitions provided by respondents are provided in Table 4.1.

**Table 4.1 Business model definitions**

<table>
<thead>
<tr>
<th>Finance</th>
<th>Linking market and finance</th>
<th>Sales and the market</th>
<th>Conceptual</th>
</tr>
</thead>
<tbody>
<tr>
<td>“How do we fund our products, how do we sell our products, how do we get money in, how do we get money back again.” (IC1)</td>
<td>“How business will get to market, earn revenue from that market, and sell to that.” (IC17)</td>
<td>“Relationship between business model and platform.” (IC21)</td>
<td>“It is very much a reflection of where the company is at now and what is the best way to […] exploit the company at that point in terms of it making a revenue. So the business model at the moment would be me doing consultancy, building a slate and liaising with platform holders to generate our income, so I would say that is our business model. Then the business plan reflects an evolution of that business model over time to a projected 3-5 year outcome.” (IC21)</td>
</tr>
<tr>
<td>“How the game is bought, so whether it is free to pay or play to download or some things are free and you download others.” (IC5)</td>
<td>“How to sell product to consumer and linked to F2P monetisation.” (IC18)</td>
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<tr>
<td>“Business model for me is how are you going to make money from the game and it is as simple as that […] it does not apply to your general business.” (IC4)</td>
<td>“How to find and sell products and revenue and profit.” (IC1)</td>
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</tr>
<tr>
<td></td>
<td>“Understand customer... why buying and what value […] The different ways you can make money.” (IC11)</td>
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The evidence of this during the fieldwork emphasised the importance of taking care when using business model-related terminology and in ensuring that the meaning attached to any terms by respondents was always verified.

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34 The evidence of this during the fieldwork emphasised the importance of taking care when using business model-related terminology and in ensuring that the meaning attached to any terms by respondents was always verified.
technology platforms. Videogame development firms were use by their clients in recognition of the development firm’s skills, creativity and complementarity, combined with the client’s need for content and willingness to outsource. It was a common theme among the study data that the WFH model involved the firm as a contractor to a client (games and non-games related) with no intellectual property being owned by the videogame development firm. The involvement of videogame development firms within WFH projects ranged from minimal to highly collaborative and the funding arrangements were varied including fixed fees, revenue share and publicly funded grants. Although the WFH business model did not incorporate intellectual property ownership in games content, there was evidence of intellectual property ownership in non-games content such as technology, community platforms and brands – a deliberate strategy by some firms to address the lack of value gained from games content-related intellectual property.

The Intellectual Property model

The IP model definition was derived from the study data. This reflected a combination of the business model characteristics, namely that the ownership and control of intellectual property was at the model’s core, and the terminology used by respondents such as “own IP”, “original IP”, “product development”, and “self-publishing”. The IP business model was based on the firm’s ownership of intellectual property in the videogame produced. Such intellectual property ownership resulted from videogame development by the firm, a purchase of intellectual property from external organisations, shared intellectual property arising from a collaboration or the acquisition of intellectual property rights as part of the payment for WFH projects undertaken. The IP model afforded the videogame development firm a degree of control over development, distribution and financial return from the game content. This included the ability to ‘go it alone’ with its own distribution to reach the market rather than an alliance with another agent in the value chain, traditionally a publisher. Commercialisation activities such as marketing and distribution were being undertaken both in-house and by subcontractors. Intellectual property included games as an end product as well as games to accompany or promote other products for example, TV programmes, events and promotional campaigns. The IP model was more prevalent than expected particularly its co-existence with the WFH business model in a combination model.
The combination model

The combination model described the co-existence of both the WFH and IP business models within the firm. The combination model allowed the firm to maximise the positives, and offset the negatives, of the individual WFH and IP models. The models were often interdependent with the WFH activities regularly used to support IP activities (particularly by generating finance) and IP related resources (particularly staff) used to support WFH activities. However, the level of WFH and IP activities varied and such activities were not always undertaken simultaneously. There was also variation in resource allocation with some firms prioritising WFH activities, albeit reluctantly in some cases, and IP activities being undertaken on an ad hoc basis depending on resource availability and WFH priorities. Overall, there was a lack of visibility in the study about the prevalence of this combination model due to the issues of data availability and access including examples of respondents minimising the role of, or not mentioning, their WFH activities. \(^{35}\)

4.3 Factors influencing business model selection

Factors influencing business model selection were explored to understand the rationale for the business model being used by the videogame development firms. The factors were identified from the data using the coding and thematic development process detailed in Chapter 3, Section 3.4. Eleven themes were identified across the data derived from four sources of influence namely the entrepreneur, the firm, the external environment and the business model itself. The findings relating to these four sources are now presented in the following sections.

4.3.1 Entrepreneur-related factors

Three recurring themes of influence were apparent at the level of the entrepreneur and were important in determining business model preferences. The themes related to the entrepreneur’s personal aims and desires; personal circumstances and experiences; and operational related preferences. These themes are summarised in Table 4.2 and discussed further in this section.

\(^{35}\) This observation was important for research design activities and emphasised the importance of clarifying the models being used particularly relating to how the data was collected and triangulated (see Chapter 3, Section 3.4).
First, entrepreneurs’ personal aims and desires reflected their goals in relation to factors such as personal wellbeing, recognition, mental stimulation and aspirations. Mental health, achieving work/life balance and stress avoidance among others, were mentioned in relation to emotional and physical wellbeing. Recognition was relevant, with the entrepreneur wishing their firm/game/self to be perceived internally and/or externally in a way that reflected their aspirations. Stimulation was also important both in terms of creativity and inventiveness, but also as an enjoyment factor. The entrepreneurs’ aspirations were relevant in terms of their ‘reason for being’. Success-related factors were an element of this, as was risk. However, the perception of successful ‘outputs’ was not always related to finance performance and some firms with limited financial or games success still rated their activities as successful, referring to factors such as games release, personal development, learning, and relationship development.

The second theme related to entrepreneur’s personal circumstances and experiences, which in the main reflected the influence of their career history and their current situation. Their personal development journey was important, incorporating experience and knowledge gained, employment and entrepreneurial activities, and the level of success or failure experienced. Their perceptions about their current situation also influenced their choices,
with factors such as self-confidence, financial responsibilities, family and health having a bearing on their decisions.

Finally, the entrepreneur’s operational-related preferences described aspects of firm management that had a bearing on model preferences. Ethical issues were very evident in some firms for example, certain monetisation routes were considered unethical and therefore avoided even if they could have generated more revenue, while another firm avoided projects that increased the risk of job-security for staff due to their need to scale up teams and then make people redundant. The level of freedom and control sought by the entrepreneur was relevant in model preference. There were obvious preferences for flexibility and an absence of external control both for projects and financial sources. The positioning of the firm (internally and externally) was important with certain models being perceived more positively than others (for example the WFH business model was viewed as inferior to the IP model). Finally, preferences for game and platform type were evident with the entrepreneur determining this even when there was potentially greater economic return elsewhere.

### 4.3.2 Firm-related factors

There were four key influences arising from firm related issues namely strategy alignment, the game and platform type, resources, and the level of development opportunities (see Table 4.3).
Table 4-3 Examples of firm-related influences on business model selection

<table>
<thead>
<tr>
<th>Theme</th>
<th>Examples</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm strategy alignment</td>
<td>Operations and finance Value and stability Decision-related tensions Opportunities</td>
<td>“Would always loved to have done more of our own work but I think we have favored the work-for-hire model because it is what we are good at. It is getting to know what your business is good at […] if we are going to do our own stuff then we should be proud of the stuff that we are doing.” (IB1)</td>
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<td></td>
<td></td>
<td>“We have had to take contract work so that we can keep ourselves operational, keep our cash-flow steady but also set aside the profit that we make so that we can eventually hire more people to get our team to the size and to get to the level of expertise that we need to eventually make our own games.” (IB2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Setting out your costs versus your forecast income helps you make the right choices – one of which is balancing WFH and own IP […] Cash is important. Running out of cash is the most common cause of studio failure.” Dunn (2013)</td>
</tr>
<tr>
<td>Game and platform type</td>
<td>Technology issues Game related aspects</td>
<td>“Mobile development tends to require a smaller team so it is easier for a startup to do that […] it is easier just to find mobile contract work […] would never go for console just because we don’t have the capabilities for it. PC development for example tends to be kept towards the more established companies, we are not quite at that point yet.” (IB2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“It was just he technicalities of figuring out how to take the game we already knew on to their platform.” (IC3)</td>
</tr>
<tr>
<td>Resources</td>
<td>Resource availability Resource reuse and leverage Skills, knowledge and expertise Team preferences</td>
<td>“The core of the business has always been that work for “A lot of our guys I would say really value stability above anything else and so they will continue to be really great on the [work-for-hire] and they come in and do a good, solid job, produce some great games but they are not going to be the ones that are in until 11pm on this passion project.” (IC6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“We are quite an adaptable team; yes we have kind of had a crack at everything.” (IC18)</td>
</tr>
<tr>
<td>Development opportunities</td>
<td>Skills and knowledge Sales and market</td>
<td>“If you can manage your contract work so that it is actually developing your core skills it is amazing.” (IC21)</td>
</tr>
</tbody>
</table>

First, the alignment of the business model with the firm’s strategy was relevant. The model was considered in the context of the firm’s objectives, which were in turn influenced by the firm’s confidence and resources. Such strategic thinking was not always apparent and business model selection sometimes appeared opportunistic and ad hoc. There was also consideration given to factors that related to how the firm wanted to operate and be positioned. Key issues include decisions about being creative or commercial, being financially independent or not, and the level of investment and return. Second, game and platform related aspects also influenced model choice. Certain technology platforms offered limited opportunities or sometimes there was a technology mismatch, whilst game-related aspects included perceived quality, cost and the level of ongoing support required. Previous game success (or lack of it) also affected subsequent decisions about the model and components.
The third theme related to resources specifically resource availability, the opportunities for reused and leverage, and the alignment of the business model with the firm’s skills, knowledge, expertise and staff preferences. In terms of resource availability for example, funding availability provided the opportunity to experiment with IP activities and triggered the move to an IP or a combination model. The skills, knowledge and expertise within the firm were both positive and negative influences. For example, deficits in areas such as marketing and management sometimes delayed the adoption of an IP model, whereas expertise and knowledge of specific game and platform types gave the firm confidence in their value proposition and influenced the firm to pursue an IP model. Finally, staff opinions about WFH and IP activities and specific business model components were relevant given the importance of maintaining a high staff morale. For example there was sometimes a reluctant to engage in the free-to-play (F2P) monetisation route due to how negatively it was perceived. The final resource-related issue related to considerations about the model’s potential for development opportunities particularly relative to skills and knowledge, and market development.

### 4.3.3 External-related factors

External factors emerged in relation to three areas namely resources, the market and partners. The three themes are summarised in Table 4.4 and discussed further in this

<table>
<thead>
<tr>
<th>Theme</th>
<th>Examples</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>Market trends</td>
<td>”The industry would benefit from more opportunities to showcase content directly to the media, investors and government, This would provide a different view of the sector and allow different audiences to meet creators and understand the creative process more directly.” (Durrant, 2014)</td>
</tr>
<tr>
<td></td>
<td>Market access points</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firm profile</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Opportunities</td>
<td></td>
</tr>
<tr>
<td>Partners</td>
<td>Balance needs of firm and stakeholders</td>
<td>”I realised that they just weren’t a viable publisher and sure enough shortly after that they went into debt spiral and they then blew up […] it left us with a huge problem […] because they are not going to be buying it at any time soon.” (IC3)</td>
</tr>
<tr>
<td>Resources</td>
<td>Access and availability to finance</td>
<td>”Role of funding is sometimes the key – fork in the road.” (IC8)</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>
First, a variety of market-related factors had influenced business model selection. Market trends that included market size, the rate of change, decline of certain sectors all required flexibility and skills and market access points such as journalists were important. Audience-related factors were notable particularly user acquisition and retention therefore it was necessary to identify the audience, understand their needs, ensure alignment with the product (including spend and demographic), undertake the necessary level of involvement to retain them and provide ongoing support. The positioning and perception of the firm in the marketplace could influence whether or not a certain business model was possible and finally, market entry barriers had been reduced providing the option of ‘failing cheaply.’ Second, partner-related issues were also mentioned as influences as it was important to balance the needs of the firm and the requirements of stakeholders or partners. Partner activities were therefore relevant with activities such as ownership changes, closures and failure to deliver triggering a model change, as did the varying availability of market facilitators such as development kits, support and licences.

Finally, access and availability of external resources was important. This predominantly related to finance although some non-financial resources were also mentioned. Access to appropriate finance at the relevant time was important and the absence of such finds for product and firm development, impacted on various areas such as product quality, the timing of product release, the level of ongoing customer/product support and staff recruitment options. For some firms, it was the securing of external funding that triggered their involvement in IP activities. Respondents mentioned a range of support types and sources, many of which had made a positive contribution to their firm’s development activities. Financial support had been accessed for both product and firm development and included for example, grants, loans, investment, R&D tax credits and publisher advances. Funding sources incorporated public sector bodies such as Scottish Enterprise, Universities (particularly the University of Abertay’s Prototype Fund), publishers (including Microsoft), investment funds, family and friends, and various competitions and awards. Non-financial support was also evident from public, private and educational organisations in the form of startup programmes, mentoring, networks, events and access to professional advisors from finance, legal and marketing organisations.
4.3.4 Business model-related factors

The nature and characteristics of the WFH, IP and combination business models were also highlighted as important influencers of business model selection. Key factors included the negative view of the WFH business model, the perception of IP as a higher value model and the option of adopting a combination model. Data were gathered about the perceptions of each model and were relatively consistent irrespective of the model in use by firms. The findings relating to the perceptions of each model are summarised in Table 4.5.

Table 4-5 Perceived advantages and disadvantages of the WFH business model

<table>
<thead>
<tr>
<th>WFH advantages</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>Finance generation</td>
</tr>
<tr>
<td></td>
<td>“The benefit of work-for-hire is that you basically know what your margins are going to be and you know how much profit you are going to make.” (IB6).</td>
</tr>
<tr>
<td>Skills and knowledge development</td>
<td>Training opportunity</td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
</tr>
<tr>
<td></td>
<td>Knowledge</td>
</tr>
<tr>
<td></td>
<td>Capabilities</td>
</tr>
<tr>
<td></td>
<td>“It is not just a financial decision for us whether we do work-for-hire or whether we do our own stuff, there are relationship building things and reputation building reasons why we would want to take work. […] I would always loved to have done more of our own work but I think we have favored the work-for-hire model because it is what we are good at.” (IB1)</td>
</tr>
<tr>
<td>Leverage opportunities</td>
<td>New partnerships, sectors and projects</td>
</tr>
<tr>
<td></td>
<td>Increased profile</td>
</tr>
<tr>
<td></td>
<td>Finance</td>
</tr>
<tr>
<td></td>
<td>“I mean we don’t see any revenue from it but we will point to it again, and say we can make games of this scope. Obviously we would like a little better budget and there are obviously things that we would like to do better but it was a very good experience for us to be able to do that.” (IB1)</td>
</tr>
<tr>
<td>Client/contractor relationship</td>
<td>Defined brief</td>
</tr>
<tr>
<td></td>
<td>Wider project portfolio</td>
</tr>
<tr>
<td></td>
<td>Development focus</td>
</tr>
<tr>
<td></td>
<td>“When you are working with an external party they are more responsible for the quality […] so you are kind of passing the buck a little bit.” (IB7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WFH disadvantages</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited value</td>
<td>Limited share of finance and recognition</td>
</tr>
<tr>
<td></td>
<td>Inability to reuse</td>
</tr>
<tr>
<td></td>
<td>Limited profitability</td>
</tr>
<tr>
<td></td>
<td>Project unpredictability</td>
</tr>
<tr>
<td></td>
<td>“[Work-for-hire is] Powerful but no value.” (IC3)</td>
</tr>
<tr>
<td></td>
<td>“There is honestly no future in work-for-hire and so you don’t make enough money off of it, you make enough money to cover your bills and a little bit of profit which is great, but equally I could be a plumber and make the same level of profit, you know, for less hassle.” (IC1)</td>
</tr>
<tr>
<td>Negative perception</td>
<td>Within the firm</td>
</tr>
<tr>
<td></td>
<td>From external sources</td>
</tr>
<tr>
<td></td>
<td>“We don’t have to pimp ourselves.” (IC22)</td>
</tr>
<tr>
<td>Operational issues</td>
<td>Management structure</td>
</tr>
<tr>
<td></td>
<td>Project nature</td>
</tr>
<tr>
<td></td>
<td>Client and team management</td>
</tr>
<tr>
<td></td>
<td>“The nature of the freelance work-for-hire business is that it is famine or feast.” (IB1)</td>
</tr>
<tr>
<td></td>
<td>“So it is always bespoke stuff over and over again and so I looked at it and just thought we cannot sustain.” (IC17)</td>
</tr>
<tr>
<td>Finance</td>
<td>Lack of revenue ad profit</td>
</tr>
<tr>
<td></td>
<td>Compromise</td>
</tr>
<tr>
<td></td>
<td>Uncertainty</td>
</tr>
<tr>
<td></td>
<td>Limited margins</td>
</tr>
<tr>
<td></td>
<td>“The big challenges for a startup... is finding contract work at all... when you start up you don’t know that many people and no-one really knows you and so for contract work you take whatever becomes available rather than trying to change a specific kind because you are not going to find it.” (IC17)</td>
</tr>
<tr>
<td>Skills requirements</td>
<td>Deficits in creativity</td>
</tr>
<tr>
<td></td>
<td>Commercial skill</td>
</tr>
<tr>
<td></td>
<td>Securing work</td>
</tr>
<tr>
<td></td>
<td>Project delivery</td>
</tr>
<tr>
<td></td>
<td>“I think the worst sort of contract work is the stuff like you are going through the motions, you are doing stuff which you have done 100 times before but for somebody else who has got no passion in the project you are just doing it to bring money in and that is awful.” (IC21)</td>
</tr>
</tbody>
</table>
WFH business model advantages and disadvantages

The main advantage of the WFH business model was that it provided a “way of raising cash” (Hunt, 2014) and therefore supported both operational activities and the development of intellectual property in the firm. Even in firms with limited revenue and profitability, the finance-related benefits of WFH were mentioned with the evident perception that some income was better than none: “someone else pays the bills” (IC12). Such finance was considered important both for the stability and survival of the firm and, importantly, such finance was viewed as a way of facilitating adoption of the preferred IP model. Financial income was generated from subcontracting, consultancy, beneficial revenue share arrangements, and non-games intellectual property ownership in technology, community platforms and brand. WFH-related profitability varied across firms but there was some notable financial success despite having no games-related intellectual property ownership.

The second advantage of the WFH model was the opportunity for skills and knowledge development gained on projects. WFH activities were considered to be useful for training staff on project-related skills, as well as developing their personal confidence and knowledge. The WFH model also supported management development in operational aspects of the business and the various business model components. The third advantage from using the WFH business model provided a wide range of leverage opportunities. This included the opportunity to attract and develop new partnerships both as clients and collaborators, to try new things both in terms of product development and delivery and working in new sectors, and to leverage the firm’s profile in the market relative to product and firm quality. Economically, the WFH business model had allowed increases to day rates and overall sales, as well as project volume. The final advantage of the WFH business model was that the client took responsibility for defining, managing and delivering the project. This allowed the firm to focus on the development activities that they were familiar with and enjoyed, while helping with resource management and minimising risk.

While there were notable advantages attributed to the WFH business model, there were also a number of perceived disadvantages. First, the WFH business model was considered to be limited in value particularly relating to the return to the firm in terms of finance, firm profile and growth/sustainability. Financially, the project-based nature of the model did not always generate notable amounts or enough profitability to fund growth. In terms of the firm’s profile, publicity was sometimes limited, as the firm’s involvement could not be
disclosed for confidentiality reasons. It was also difficult to achieve sustainability on project-based work due to the unpredictability of project frequency and value.

Second, the perception of the WFH business model, both in-house and external to the firm, was mentioned as a disadvantage. Within the firm, WFH contract-based projects were often less interesting to some team members who perceived such projects as less interesting and creatively challenging than IP activities. For some firms, this had resulted in problems with staff motivation and delivery. Outside of the firm, there was a sense that within the industry the WFH model was perceived as inferior to the IP business model, driven by the fact that the benefits from WFH were mainly finance.

Third, operational-related issues existed in three areas namely management structures, the project-based nature of the work and client management. Servicing an external client required a number of firm activities that some firms did not have the experience or resources to implement. The project-based, temporary nature of the projects often meant that firms had to increase/decrease their team size accordingly. There was a negative view of team scaling from some owners and team members. Finally, the client and team needed to be managed which involved a balancing act in terms of creativity, finance and meeting deadlines. Project delivery required collaboration with the client and managing their expectations both in terms of the budget and (if they had limited games experience) the project itself.

Fourth, finance-related issues were mentioned as a disadvantage despite also being a notable benefit of the WFH business model. The uncertainty around financial income was a disadvantage in terms of the size, frequency and the tight margins of WFH-related contracts and there was limited long-term value relative to growing the firm and achieving scale. Finally, while the WFH business model was viewed positively in terms of some skills development, there were deficits in other skills areas. The sometimes limited requirement for creative skills input and the need for commercial skills (from securing projects through to negotiating deals and delivering projects) were key areas mentioned.

*IP business model advantages and disadvantages*

The advantages and disadvantages of the IP business model were also influencers on business model selection. These are summarised in Table 4.6 and discussed in this section.
Table 4-6 Perceived advantages and disadvantages of the IP model

<table>
<thead>
<tr>
<th>IP model related advantages</th>
<th>Examples</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>Revenue and profit IP asset value</td>
<td>“Well I think if you own the IP, if you own the intellectual property then if that is successful then that adds value. If I am just doing work-for-hire there is no value in the company other than whatever profit we make.” (IC1)</td>
</tr>
<tr>
<td>Autonomy</td>
<td>More opportunities for IP reuse and brand building Control decision making Creative freedom</td>
<td>“I think that doing your own IP you get the kind of control, you get to make it up and you get to feel that it is your idea a wee bit, even if you are like the lowest rung […] you will still have influence and you will get a kind of say and you will still get to shape something that goes out and has your name on it.” (IC2)</td>
</tr>
<tr>
<td>Wider growth and development opportunities</td>
<td>New ideas Skills development Knowledge acquisition Enhanced brand value</td>
<td>“You know that your chances of success are small but there is still a chance and if you do get it right then the rewards are huge […] it is about having pride in something you have created from scratch.” (IC6)</td>
</tr>
<tr>
<td>Alignment with founder’s personal aims and feelings</td>
<td>Self-belief and development Game preferences Creative and enjoyable</td>
<td>“Ultimately each company wants to create their own game.” (IA2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP model related disadvantages</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>Finance requirement and availability Forecasting difficulties</td>
</tr>
<tr>
<td>Project management less rigorous</td>
<td>Lack of external brief Longer time to market Resource management Logistical requirement</td>
</tr>
<tr>
<td>Managing a B2C model</td>
<td>Skills and inexperience Game-related risk</td>
</tr>
</tbody>
</table>

The IP model provided the opportunity to retain more of the financial return from successful games, enhancing the firm’s overall financial and intellectual property value: “I think the value in a company […] is in its ideas” (IC21). There were examples of financial success when intellectual property ownership was evident. However, this was variable in the study and, for the smaller independent videogame development firms, success from an IP model appeared limited. The autonomy afforded by the IP model gave the firm more control of its intellectual property-related commercialisation, decision-making, and creative choices: “Freedom to work on the platform and with small teams […] we felt that was an important part of getting control of the production process again” (IC3). This generated more opportunities to increase the return on the firm/game brand, to reuse content and to build the customer base, as well as creative freedom to pursue the firm’s own ideas. The IP model was also perceived to have better opportunities for overall firm development. This included skills and knowledge development, the ability to pursue new ideas and be innovative, and again the increased recognition and visibility derived from the
freedom to promote their activities. Intellectual property ownership also meant that respondents were able to more widely commercialise its game including brand extensions and intellectual property reuse. Finally there was better alignment for many respondents between the IP model’s characteristics and their own aims and success criteria, with preferences for increased autonomy, enhanced brand value, wider growth and development opportunities and finance. This included a focus on work that was more interesting, creative and technically satisfying, as well as game-types that were preferred by the entrepreneur. The opportunity for self-development, as well as feelings of pride and recognition, were also important.

Within the study, the perception of the IP model was mostly positive and it was preferred to the WFH business model. However, there were some disadvantages mentioned particularly relating to finance and management. First, the level of finance required and the unpredictability of revenue generation meant that the IP model was viewed as risky and unstable. There was often a need for alternative revenue streams to support IP activities in the short term until they were successful. A variety of sources were used to gain such interim finance including investment, grants, WFH-related project revenue and cost-reduction measures. Forecasting financial return was made more difficult by the risk associated with IP activities and the reliance on the uncertainty of success of a ‘hit-driven’ game product.

Second, management issues were apparent in relation to project delivery. Project management was often viewed as less rigorous than if delivering for an external client as the lack of a brief and reporting requirements sometimes resulted in difficulties with project definition, delivery timescales and achieving deadlines. The IP model was also perceived as having a more resource intensive delivery processes and a higher level of associated risk and cost. This model required a different balance of resources and sometimes there were logistical issues within firms that resulted in different internal structures having to be established. Finally, the differences involved in managing a B2C model presented difficulties for respondents in relation to skills and inexperience, and game-related risk. The IP model required respondents to take responsibility for the entire innovation process and there was the perception that the more commercially focused skills were required than with the WFH business model. Skill deficits and inexperience were evident in managing the commercialisation activities particularly in relation to audience management, marketing communication, distribution management and monetisation.
aligning the proposition with the audience and economic return particularly relating to product definition, development, market engagement and monetisation.

Combination model advantages and disadvantages
The availability of a combination model provided firms with a model within which WFH and IP could co-exist. This provided an opportunity to minimise WFH activities while facilitating the adoption of the IP model. The advantages and disadvantages of the combination model therefore influenced model selection. The factors considered reflected issues with the singular WFH and IP business models mentioned earlier in this section. However, additional considerations arose from the fact that both models were being operated. The advantages and disadvantages of the combination model are summarised in Table 4.7 and discussed further in this section

The key advantage of the combination model was that it allowed firms to minimise or change from the WFH business model while adopting the IP business model. The WFH model provided a route for respondents in both startup and incumbent firms to adopt the IP business model and sustain this model and the firm. The second benefit was that the presence of both models allowed IP-related experimentation and development of ideas, skills and knowledge at reduced risk. Finally, the combination model provided the opportunity to stabilise the firm while allowing intellectual property development, something that otherwise proved difficult when the firm was relying on the success of an IP business model alone. The combination business model usually incorporated a diverse portfolio with a mix of WFH and IP projects to spread risk and resources. However, there were disadvantages of the combination model that, in the main, related to the operation of two essentially different models within the one (often small) firm. This resulted in difficulties with management, operational logistics and was a source of tension particularly in relation to the levels of creativity and autonomy relative to the two models
<table>
<thead>
<tr>
<th>Combination business model related advantages</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitates IP model adoption</td>
<td>“Ultimately each company wants to create their own game […] this usually means WFH and own development.” (IA2)</td>
</tr>
<tr>
<td>Model experimentation</td>
<td>“We have a couple of prototypes, some of them were developed in-house solely between work-for-hire projects, whenever people had a bit of downtime we would pick out one of the concepts that we were particularly fond of and prototype it.” (IB2)</td>
</tr>
<tr>
<td>Stability and development</td>
<td>“I like to oscillate between them because they are both satisfying in certain ways and they both have challenges that the others don’t […] creative original work is incredibly draining, and at the end of an original creative project it is actually nice to step back on to a work-for-hire project where somebody is just telling you what they want and you just do it because you don’t have to think nearly as hard.” (IB4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Combination business model related disadvantages</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistical requirements</td>
<td>“Work-for-hire is the priority but in the spare time, IP is nudged along.” (IC1)</td>
</tr>
<tr>
<td></td>
<td>“We have got to feed the machine and that takes energy and time away from the creativity that you would have otherwise and so you are out chashing deals rather than dreaming up the next big thing and you have got to have that on balance and that is probably the big thing and that will be fairly common.” (IB5)</td>
</tr>
<tr>
<td>Management</td>
<td>“It is too much of a temptation to break through that ring fence and go and grab someone when you have got a problem or okay we are buyers, the original IP is running late, it is not making any money and we need to reduce costs, take some more off that team and put them on the work-for-hire team.” (IC6)</td>
</tr>
<tr>
<td>Source of tension</td>
<td>“Now I really recognise them for what they are which is that they are two different businesses and that is the problem. You need different skills for each one.” (IB4)</td>
</tr>
<tr>
<td></td>
<td>“These people [those working on IP] were the chosen ones, they were special, and they were somehow better than everyone else […] oh it was awful, horrible.” (IC3)</td>
</tr>
</tbody>
</table>

First, one of the disadvantages of the combination model related to the different management requirements of the two models. The IP model was often a B2C model while the WFH model was a B2B model therefore there were variations at the business model component level regarding the value proposition, architecture and economic. There were also operational issues mentioned relating to resource prioritisation as well as the organisational structure of the firm. Second, balancing resources for WFH and IP activities was a key issue with WFH activities often being prioritised given the need to deliver to an external client. In those instances, IP activities were often undertaken on an
ad hoc basis when resources permitted. This often resulted in resources being moved from IP to WFH projects to meet deadlines and generate revenue (Romano, 2013). Some firms had found it necessary to reorganise their structure to create boundaries between the teams allocated to WFH and IP projects, whereas other firms had avoided such delineation of resources and opted for more fluidity and/or resource sharing: “Own IP needs its own space and its own focus and there needs to be a different type of person as well working there” (IB5).

Finally, a number of key tensions were apparent that related to the perception of the WFH and IP models. Managing team preferences within the one firm and model was difficult, particularly when the less favored WFH activity was given priority. The tension between commercial and creative aims was mentioned with the former often linked to the WFH model and the latter to the IP model. This tension was evident across the data and extended into the view of game quality, investment in new ideas and the goodwill within the team towards firm activities:

“Trying to get the team to understand what they need to deliver in order, not just to make original games, but to make original games in a commercially, sustainable way because that […] is nigh-on impossible […]. That is a huge challenge because on the one hand you want to create the kind of environment where people can feel creative, feel empowered and feel that they can do their best work and that in a lot of ways means removing the commercial pressures from them but at the same time if the result of that is that they are not meeting the commercial requirement, then that is a really difficult one.” (IB4)

This section has presented the findings relating to the influences on business model choice. It has also illustrated how the three models were used and perceived. The next section will discuss such findings in the context of the first research question: “What are the drivers for changing from a work-for-hire business model?”

### 4.4 Drivers for change

The findings confirmed that there was a strong desire to for change from, minimise or completely avoid the WFH model. A strong driver of this was the perception of the IP model as a more beneficial model, the negative perception of the WFH model relative to the IP model, and the option of adopting a combined model that brought together the WFH and IP models and allowed IP activities to be undertaken, albeit in a hybrid form.
First, the preference for the IP model was a strong driver for moving away from WFH:

“I am far more interested in long-term making our own stuff, and partly I think that is just being part of a creative team and only working on other people’s stuff is a bit lame.” (IC19)

The IP model was perceived as being of higher value, providing a superior route to firm growth and sustainability. The assumption was that intellectual property ownership provided the firm with a more beneficial share of the financial return for its efforts particularly in the longer term. Importantly, financial success was only one influencer and other non-financial benefits were perceived highly, for example, autonomy and control, more visible brand value, growth and development opportunities:

“Well I think if you own the IP, [...] then if that is successful then that adds value. If I am just doing work-for-hire, there is no value in the company other than whatever profit we make.” (IC1)

The IP model characteristics were aligned with the entrepreneur’s aims and self-image and there was evidently a latent desire for the IP model because of this: “Ultimately each company wants to create their own game” (IA2). Various trends had resulted in the increased expectation that videogame development firms could adopt this IP model. Such trends included the perceived opportunities for self-publishing, lower barriers to entry, improved access to technology and the increased demand for games-related content (particularly mobile). However, such assumptions were not always appropriate for the firm and a myriad of factors remained that constrained the adoption, sustainability and financial success of the IP model, not least of which were the demands of implementing and maintaining an IP model (these are further addressed in Chapter 5).

The second factor driving the desire to change from, minimise or avoid WFH was that the WFH model was regularly perceived as inferior to the IP model. “There are lots of downsides. The main one is that generally you don’t share in the upsides if it is successful” (IB4). Despite the WFH model’s prevalence and benefits, this negative perception of WFH was apparent: “A lot of people look down their nose at work-for-hire” (IB6), with evidence of it used as a differentiator for recruitment purposes: “Fortunately we don't need to do work-for-hire” (Hamilton, 2014). The key disadvantages related to the lack of long-term value, the negativity association with WFH activities, management difficulties and some financial and skills issues. The WFH-related benefits were often not acknowledged by respondents, even when it was apparent that the WFH model was critical for their firm’s
survival. Indeed, the fact that finance was a key driver behind the WFH model’s adoption, sometimes resulted in the entrepreneur feeling compromised as they were adopting WFH out of necessity rather than a willingness to do so: “IP creation is the key thing needed by developers but to do this, firms need work-for-hire” (IA3).

In general, the WFH model was viewed more positively by respondents when WFH projects involved the videogame development firm in a more collaborative manner, required more creative input from the firm, provided a learning opportunity for staff or the return in terms of the firm’s profile or financial gains were high. Indeed, the WFH model were perceived more favorably when it delivered value more akin to the respondents’ IP-related preferences. This illustrated the importance of the wider value considerations and that the characteristics of the IP business model were important influencers and drivers, rather than solely intellectual property ownership.

“If the game does really well then we will share in that success and so there is great motivation. We are much closer to our clients than we ever used to be and we have broken down that ‘us and them’ relationship which always was a major headache [they are] screwing you and you are screwing them and it is just counter-productive and you don’t make good stuff that way. We are starting to see more and more of our [work-for-hire] clients taking that kind of approach. There is a shift of power now. If they want the skills that will enable them to deliver the goods then, unfortunately, if they don’t have them in-house, then they have got to outsource them and you cannot screw someone that you are going to be in a relationship with for three or four years.” (IB5)

The final driver for changing from a WFH model related to the option of undertaking a combination model. The co-existence of both models provided an opportunity to minimise the use of the WHF model and facilitate adoption of the IP model. There were clear interdependencies between both models given their complementarity. The combination model provided a way of addressing a firm’s deficits in their IP activities (for example as a contingency model to revert to when the IP only model failed) and supporting transition to an IP model only (although this was minimal in the study). For those firms with a negative perception of WFH, this negativity reduced when WFH activities were within a combination model, perhaps because IP activities were still possible. Indeed once firms had experienced the benefits of WFH in the combination model; they appeared to delay transitioning to an IP-only model. The prevalence of the combination model illustrated the difficulties in avoiding WFH while demonstrating the benefits that WFH could provide particularly for firm development and survival. Given these factors, although the high
level of combination model usage was unexpected, and sometimes hidden by respondents, it was understandable.

4.5 Discussion

The four factors influencing business model selection were the entrepreneur, the firm, the external environment and the business model itself.

The entrepreneur was key in determining business model preferences with influences apparent in terms of the entrepreneur’s personal aims and desires, their personal circumstances and experiences, and their operational related preferences. At the firm level, four influences were apparent relating to strategy alignment, the game and platform type, resources, and the level of development opportunities, while external factors of influence related to resources, the market and partners, including the removal of constraints (similar to those identified by McGrath (2010), which lowered barriers to market entry, and the costs of technology access and development. The characteristics of the business models were important particularly the perception of the IP model being of higher value than WFH model. The option of adopting a combination model was also important as this allowed the IP model to be undertaken with support from WFH to balance resources and risk. This combination of factors influenced the selection of the business model and its subsequent evolution: “The business model is not a process, but it is shaped by individual-, group-, organization-, and environmental-level processes and events” (George and Bock 2011:196).

The desire to change from the WFH model existed.

There was a desire to change from, minimise or avoid the WFH model in favor of the IP model. However, the WFH model remained prevalent due to a number of factors that influenced business model selection and usually resulted in the WFH model being selected out of necessity as a source of finance and/or a route to adopting an IP model. The entrepreneur’s preferences were key drivers for change and business model selection, given their role and power within the firm (Khanagha, Volberda and Oshri, 2014; McGrath, 2010). However, such preferences were often curtailed or facilitated by the other influencers at the level of the firm (resources and capabilities), the business models (perception of value) and the environment (market and technology), resulting in a complex combination that led to change and to the model selected.
The drivers for change related to the perceived value of the WFH, IP and combination models.

The IP model was perceived as the higher value model and, despite the WFH model’s benefits, the latter was underrated. There was a notable reluctance to admit to WFH-related involvement, and in some cases to admit the role that WFH activities played in the business. This reluctance was evident across all the data although it was perhaps more apparent in those firms that had yet to establish a track record, whereas those respondents that had been in the industry longer were more pragmatic about its use. However, an interesting aspect was that the perceived advantages and disadvantages of both models appeared to change after respondents had implemented them. Similar to earlier studies, the post-implementation perception of IP was not always as positive. Despite the IP model being perceived as more creative and innovative, there was a higher degree of management and control required than expected (Hotho and Champion, 2011). Similarly, the perception of the WFH model’s value appeared to improve after respondents had implemented it, particularly if they had also experienced an IP model. Indeed, those respondents that had implemented a combination model retained the WFH even after IP success. Perhaps by experiencing both models, respondents were better able to assess the value of each model, and, in turn, reassess their own preferences: “A business model cannot be assessed in the abstract: its suitability can only be determined against a particular business environment or context” (Teece, 2010:191).

The WFH model was used to support IP activities and the firm as a whole.

The rationale for adopting the WFH model related to income generation although there were additional benefits that supported the firm’s growth and survival. The WFH model generated revenue and value from activities that included exploiting know-how (both in-house and with clients), licensing-out intellectual property from non-games activities and broadening the client portfolio. Respondents tended to retain the WFH model even when IP activities were successful in order to mitigate risk, support firm development, broaden the customer base and generate finance. The use of WFH activities to support IP activities and the wider firm was similar to the findings in the high technology industry where contract-based work is used to support product development (Connell and Probert, 2010). There was also similarity in the lack of recognition given to the subcontractor model, although this appeared to be stronger in the videogame industry than the high technology study. The negative views of WFH seemed unbalanced relative to the benefits that the model provided. Indeed some firms had built substantial, profitable, stable businesses on
the WFH model and were among the most financially successful of those in the study. This reflected those studies that illustrated that business model change was not always required (Andries, Debackere and van Looy, 2013; Kaplan, Sensoy and Stromberg, 2009). The driver for the perceived opportunities generated by the IP model had resulted in some entrepreneurs adopting and experimenting with the IP model. However the success of such adoption could not be fully determined during the study given that some firms were still involved in early stage IP-related activities with unknown outcomes.

The evident preference for the IP model in the industry was reflected in this study.
The IP model was considered to be a higher value business model than the WFH model. The perceived value of the former was broader than finance, with the entrepreneur’s preferences and self-identity being of notable importance particularly, for example, in relation to autonomy around decision-making, creative freedom and game-related preferences. This positive perception and pursuit of the IP model reflected earlier studies on videogame development firms (Hotho, 2015; Hotho and Champion, 2011), the preference for the IP model (Christopherson, 2004) and the importance given to value in the business model literature (Teece, 2010; Amit and Zott, 2001). Within the creative industries, financial aspects can sometimes be secondary to other factors such as creativity, reputation and brand value (Bilton, 2007) and this was evident from respondents in this study. However, the value sought from the IP model was difficult to achieve unless there was notable investment, games success and/or the firm had the ability to sustain the IP model. Sometimes even when the IP model had been successfully adopted, the expectations of management and staff were not necessarily matched by the value and satisfaction generated by the model (Hotho and Champion, 2011).

The importance of the entrepreneur in the business model design and selection process, and as a driver for change was evident.
The important role of the entrepreneur in the study reflected the literature indicating the relevance of the entrepreneur’s willingness and ability to influence business model choice and design, and to drive selection and change (Cavalcante, Kestin and Ulhoi, 2011). The pursuit of higher value and improved firm performance were evident as influencers of business model change, although the drivers were broader than financial performance alone. Those respondents that perceived the WFH model to be lacking in value had sought alternative sources of value including intellectual property in non-games-content in technology (for example, middleware, databases), consumer-related platforms and brands;
selling higher value services in non-game sectors; and seeking larger financial and more collaborative contracts. There is an opportunity to further investigation the linkages between the entrepreneur and aspects of business model change, particularly business model design and firm performance improvement (Zott and Amit, 2007, 2008; Redis, 2009; Andries and Debackere, 2006).

The WFH model had benefits but they were undervalued.
WFH activities, either as a singular model or in a combination model, were often undertaken to generate finance for the firm and reduce their risk, reflecting the findings of McGregor (2015). While accepting the limitations of the study (particularly the focus on the smaller independent firms, the limited games release of some firms, and the relatively early stage of others) there did appear to be more, consistent, sustainable financial success with the WFH and combination models rather than the IP model alone. In some instances, WFH activities, particularly the financial revenue, had been critical for firm survival. However, such success and other WFH-related benefits, were often overlooked or undervalued relative to the IP model: “Success may not only be found in watching the market and valuing the market share obtained by a self-created product or service” (Hannay, 2015:23). Support initiatives appeared to focus on IP-related activities particularly intellectual property development and retention, rather than IP-related commercialisation activities (such as marketing or customer engagement), or WFH activities. There was some similarity here to the issues identified by Connell and Probert (2010:3) in their evaluation of contract-based firms where they indicated that: “standard UK policy thinking about technology innovation has been too narrow, tending to ignore firms built around customer contracts”.

The WFH model was viewed more positively when projects more closely resembled the perceived benefits of the IP model. This meant that while financial revenue and profitability were important, respondent views of the WFH model became more positive when WFH project characteristics were more similar to those associated with IP activities such as high levels of involvement, freedom, opportunity and reward. Such characteristics related to levels of decision-making responsibility, creative freedom and collaboration, as well as the existence of opportunities for learning and development for management and staff, and the level of public recognition that could be gained from the project. The relationship between WFH project characteristics and the levels of positivity about the WFH model is summarised in Figure 4.1, illustrating that as the level of freedom,
opportunity and reward offered by WFH projects increased, the perception of this model improved.

Figure 4-1 The changing perception of the work-for-hire model relative to project characteristics

<table>
<thead>
<tr>
<th>Levels of involvement, freedom, opportunity and reward in WFH project</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW</td>
</tr>
</tbody>
</table>

* Project characteristics
  - Involvement in decision-making
  - Creative freedom and level of input from videogame development firm
  - Collaborative development process
  - Level of learning and development
  - Finance generation
  - Public recognition and raised profile

| LOW | Levels of positivity about the WFH model* | HIGH |

* Represented by entrepreneur and staff satisfaction, the willingness of the team to work on WFH activities and the likeliness of the WFH model being retained.

**Definitional issues**

While definitional issues were not the main focus of this study, the issues that arose relative to business models are worth noting for future research. The lack of clarity about the business model concept was evident from respondents and industry data. The business model itself was not perceived as holistic and was regularly linked to value economic aspects, particularly monetisation models. This reflected the definitional issues and terminology-related misunderstandings that were evident in the academic literature (for example Teece, 2010; Klang, Wallnofer and Hacklin, 2014; Foss and Saebi, 2017; Morris, Schindelhutte and Allen, 2005) as well as a tendency to equate the business model to its component parts (Linder and Cantrell, 2000) particularly revenue models (DaSilva and Trkman, 2013). This highlights the importance of clarifying that the terminology used is being understood whether within a research project or in an industry support initiative.

The findings in this chapter contribute to the literature relating to business model change drivers (Foss and Saebi, 2017; Doz and Kosonen, 2010). However, the findings also contribute to industry-related discussions about the value and appropriateness of the IP
model while raising issues about the relatively poor perception of the WFH model and the neglected consideration of the combination model. The key observations are as follows:

- **Intellectual Property ownership and finance is not enough for the successful adoption of an IP model.** It is unrealistic to expect firms to adopt an IP only model in a successful, sustainable way without a combination of other support factors.

- **The benefits of the WFH model could be more positively positioned.** There is the opportunity to promote more positively the WFH business model, create a better understanding of its role in the firm, and provide support to firms undertaking WFH. The negative perception may be rooted in the self-image of the entrepreneurs and their desire to make their own IP and games. However, the negative view of WFH could be detrimental to how growth possibilities are viewed and how firm support is provided.

- **An understanding of the need for exploration and exploitation activities, and the reality of the WFH and the IP models.**

- **Other sources of value may be more appropriate for independent videogame development firms rather than focusing only an IP or a WFH model.** Innovation, change and value creation can take place at the level of the business model component and/or by combining both the WFH and IP models in different ways. This could provide a route for the firm to consider broader options for building value into the firm, rather than only viewing it as a choice between IP and WFH or associating success only with the IP model.

### 4.6 Conclusion

This chapter presented the findings for the first research question: “What are the drivers for changing from a WFH model?” The aim was to identify whether or not there was a desire to change from the WFH model and the rationale for this. This involved illustrating how the WFH model was used and perceived, understanding the influences on business model selection and identifying the drivers for change.

There was a desire to change from, minimise or avoid the WFH model in favor of the IP model. The WFH model provided finance and other notable benefits to the firm but in the
main, it was perceived as a route to adopting an IP model. The entrepreneur’s preference for the IP model was evident. However, various factors restricted or facilitated this preference and sometimes resulted in the adoption of the WFH model. The of the WFH model was prevalent due to a number of influences on business model selection that existed internally and externally, and at the level of the entrepreneur, firm, business model and external environment.

The key factor driving the change from a WFH business model was the entrepreneur’s preference for the higher value encapsulated in the IP business model. Such value was not always financially related but rather related to the characteristics of the IP model that were more aligned with the entrepreneur’s preferences. Change was triggered by the preference for the IP model, the negative perception of the WFH model and the option to undertake a combination model. Where the IP model alone was not possible, a combination model was used. Firm resources, such as finance and external developments relating to market and technology opportunities, were relevant as they created the environment for commercialising their intellectual property. However, it was evident that the desire for the IP model was key.

The findings presented in this chapter illustrated the desire to change from, minimise or avoid a WFH model although the preferred IP model was not always possible. The next chapter focuses on the second theme of this study, namely the constraints on adopting the IP model and provides insight into why the model is not more prevalent.
Chapter 5 Findings: The factors constraining business model change

“The modern business model that a lot of indie game developers are using is much more [about] making things for the people who are playing, which is really, really different in terms of its mind-set, in terms of how you approach it, in terms of your aims and in terms of the way you build it. All sorts of things have to change in order to make that work.” (IB4)

5.1 Research aims and chapter format

This chapter presents the findings relating to the constraints faced by firms when changing business models. Having confirmed the desire to change from a WFH model to an IP model, and identified the associated drivers, the relatively limited number of independent videogame development firms doing so indicated that a number of difficulties might exist. The factors constraining business model change is the second theme addressed in this thesis, contributing to the overall understanding of why more independent videogame development firms are not changing from the WFH model. This issue forms the basis for the second research question: “What are the constraints on changing to an IP business model?” This involved identifying the types and source of the constraints, and how they influenced business model change. This was explored through the experiences of videogame development firms that had changed from, minimised or avoided the WFH model in favor of either an IP only model or IP in combination with a WFH model. The data were derived from all of the data sources detailed in the research design in Chapter 3 namely interviews with entrepreneurs and industry experts, observations at events and interviews and documentation. This chapter begins by identifying the multiple levels of constraints in Section 5.2 and then moves on to illustrate the nature and influence of such constraints in Section 5.3. The findings are then discussed in Section 5.4 before the conclusions are presented in Section 5.5.

5.2 Constraints on adopting and sustaining an IP model

This section discusses the key constraints that were found to influence the ability of videogame development firms to adopt and sustain an IP business model. The findings are based on the analysis of data collected from interviews, personal observations and documentation as detailed in Chapter 3, Section 3.4. Four constraint-related themes were identified, namely finance; skills, knowledge and experience; product and platform; and the market. Such constraints were evident in relation to both adopting and sustaining the
IP model but the degree of influence at the two different stages was variable. To illustrate the differing levels of influence, the terms low, medium and high were used to indicate the relative importance given to the constraint in the data. Such descriptors were based on triangulation of the study data incorporating how the constraint was referred to, the volume of data generated in relation to the constraint, and the perceived strength of the constraint in terms of its influence on hindering the firm from adoption and/or sustaining the IP model. A summary of the four key constraints and their influence level at adoption or sustaining the IP model is contained in Table 5.1.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-themes</th>
<th>Level of influence on IP model adoption</th>
<th>Level of influence on sustaining the IP model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>Financial requirement</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Finance availability</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Finance generation and risk</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Skills, knowledge and experience</td>
<td>Deficits in management skills, experience and knowledge</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Deficits in marketing and audience engagement skills, knowledge and experience</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Product and platform</td>
<td>Nature of the product</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Misalignment between firm and market</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Market</td>
<td>Competition</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Audience engagement</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Visibility in the market</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Market and industry conditions</td>
<td>Moderate</td>
<td>High</td>
</tr>
</tbody>
</table>

Each of the four constraint themes will now be discussed, together with the associated subthemes and the perceived level of influence of the constraint.

5.2.1 Finance

“Do you know what, honestly, this has been a really boring answer but the biggest thing is money. It is how do we fund this?” (IC1)

The most notable challenge for firms adopting an IP model was finance particularly the lack of stability that finance-related issues created. Difficulties relating to the IP model included the level of finance required to adopt and sustain the model, finance accessibility,
difficulties with revenue generation and the level of risk. These factors are summarised in Table 5.2 and discussed further in this section.

### Table 5.2 Finance-related constraints

<table>
<thead>
<tr>
<th>Constraint theme</th>
<th>Level of influence on IP model adoption</th>
<th>Level of influence on sustaining the IP model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial requirement</strong></td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>“We would not be able to deliver […] without partnering with someone and to partner with someone we would need some sort of reputation […] so yes building up a portfolio and building a war chest are kind of crucial to us getting to move on to a new IP.” (IC19)</td>
<td>“Our prototype fund money ran out very rapidly at the same time so we would not have been able to update it or anything like that.” (IC5)</td>
<td></td>
</tr>
<tr>
<td>“When you are doing your own IP you just cannot afford to spend that much because you are never going to recoup it, so we suddenly found ourselves in a position where we had […] staff all earning very high, […] work-for-hire salaries and wanted to move to another model and we just couldn’t do it.” (IC6)</td>
<td>“If we wanted to push it over that final step then we would have to invest quite a bit more time and money into it, even once it is ready […] we have to do paper marketing and there is a certain amount of buying customers through marketing.” (IB1)</td>
<td></td>
</tr>
<tr>
<td>“Our prototype fund money ran out very rapidly at the same time so we would not have been able to update it or anything like that.” (IC5)</td>
<td>“That [marketing and publicity] costs a fair bit of money, like probably five times what I am expecting […] there is just way more than I thought were out there because I never really looked.” (IC4)</td>
<td></td>
</tr>
<tr>
<td><strong>Finance availability</strong></td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>“Doing your own IP, yes if you have got an alternative revenue stream.” (IC7)</td>
<td>“The problem we face now is that we no longer have the cash reserves that are required to invest in original IP ourselves so we either need somebody else to fund that […] or we need to save up.” (IC3)</td>
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<tr>
<td>“It is the same thing every time, it is just lack of time and money and so when the time comes to roll the dice and the situation doesn’t look good enough then we can’t afford to take it forward.” (IC10)</td>
<td>“We finished it about a year ago and it has simply been sitting on a shelf waiting on us to develop it further […] It was quite interesting actually, we finished the prototype and we ran out of prototype fund money, we wanted to continue the development but we did not have any cash.” (IB2)</td>
<td></td>
</tr>
<tr>
<td>“I had only ever released one game and they wanted more experience, so it was quite difficult and when I tried to get more funding for IP somebody told me that I was too young and not proven enough.” (IC5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Finance generation and risk</strong></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>“If people are doing their own IP in the hope of getting rich then no it is not worth it because the chances are that you will not.” (IC7)</td>
<td>“A point of no return in a couple of months’ time whereby if a few things don’t line up you know we are not doing it anymore […] I can get paid double what I make now for working less hours and working for somebody else.” (IC1)</td>
<td></td>
</tr>
<tr>
<td>“Publicity doesn’t equal financial success […] monetising is difficult.” (IA4)</td>
<td>“In order to get there we have to be sustainable and we have to make money and that is the bit that everyone struggles with.” (IC11)</td>
<td></td>
</tr>
<tr>
<td>“I have had to balance with the practicalities of running the business, you know I have a wife, mortgage and in the end the books have got to balance. As much as we would like our own games it is taking a gamble on a revenue stream […] and we would have very little ideas as to how big that revenue stream is likely to be.” (IB1)</td>
<td>“We found it incredibly hard to generate any sort of commercial traction in the original game space.” (IB4)</td>
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</table>
First, the finance required to undertake IP activities was perceived as substantial but difficult to estimate prior to involvement in such activities. Finance was required for all aspects of the development and commercialisation process. The costs of marketing and distribution were of particular concern as were those costs associated with post-launch activities including product-related modifications and consumer support. Such activities, traditionally undertaken by the publisher, were both new and costly for some firms particularly those associated with market research, user acquisition and community building:

“No marketing spend is always a challenge and it is always difficult for a small company with a limited budget because you spend most of your budget on development [...] that is probably the gap where a publisher has its uses, the marketing expertise basically, but they also have a bigger budget.” (IC20)

Second, the availability and accessibility of finance to undertake both IP-related development and for cash flow was an issue: “People with purse strings can’t get their head around digital content, never mind games” (Livingstone, 2013). This finance issue was apparent both when the firm operated an IP model alone or within a combination model, and both at the IP model adoption and sustaining stages. There were also difficulties sometimes in aligning the firm and its activities with the funding criteria, particularly publishing-related activities such as product revisions post-launch, marketing costs, analytics, and ongoing customer support:

“It is not their [public sector agency] fault but they are kind of like, ‘there is not much that we can do for you if you don’t plan on hiring lots of people, you don’t plan on being a growth company and you are just going to make stuff’, and that is no use to us and that is just so wrong, so wrong, on so many levels.” (IC1)

Limited funding availability had differing impacts on firms. Some respondents were happy to seek external investment, using their relationships and networks to leverage this, including examples of new funding routes such as crowd funding.36 However, other respondents commented on the difficulties in accessing finance and in obtaining external

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36 For example, Revolution Software who combined crowdfunding with game revenue sales and a publisher advance to support their intellectual property activities. They used the crowdfunding campaign to generate interest, investing in community management to facilitate interaction with potential funders. This resulted in finance and a core audience, raised the firm’s profile, built internal confidence in the game, and facilitated consumer feedback (Carmody, 2014).
investment in particular: “As soon as I finished my pitch I knew I was not going to get any money, they were not interested in games.” (IC1)

Finally, generating revenue and profit was difficult, as was managing the associated risk and uncertainty of the IP model. There were some examples of firms that had achieved financial success from the IP model. However, specific financial figures were difficult to obtain unless they were publicly available in the case of larger firms. The risk profile of the IP model also created difficulties in generating and forecasting revenue for some respondents. “I would be quite happy just to get my money back so that I could roll the dice again doing another one but, to be honest, we have not got our money back yet” (I1).

Overall, very few respondents were generating substantial revenue from an IP model irrespective of whether this was the firm’s only model or that the IP model was being undertaken with the WFH model: “We were never able to get the IP that we created into a successful market position. Without the commercial success the game and the IP had no value” (IC3). This lack of financial success often meant that there was the need for alternative revenue streams to support the IP model in the short term until it was successful.

5.2.2 Skills, knowledge and experience

“[The] problem with bringing all the resources and requirements together in order to create and commercialise, [is that] skills that were previously the domain of the publisher are now being required of developers.” (IA2)

Skills, knowledge and experience deficits were viewed as constraining factors on adopting and sustaining the IP model. Such deficits were particularly evident in relation to management, marketing and audience engagement and although were relatively low at adoption, they were critical to sustaining the IP model. The lack of IP related experience and knowledge was a constraint. The IP model required the management of product commercialisation aspects as well as product development. The IP model requires the (often small) firm to combine a complicated product (given its entertainment-based ‘hit’ nature, time to market, and the uncertainty of commercial success) and the logistics of managing the product through development to post-release alongside managing the firm and its portfolio: “To sustain an IP model, finance is not enough – experience is needed too” (Fileccia, 2013). A notable issue was the need to manage two models, resulting in difficulties with prioritising resources, logistics management, team management and firm
structural issues. A summary of the key constraints relating to the skills, knowledge and experience issues relative to adopting and sustaining the IP model is provided in Table 5.3 and further discussed in this section.

### Table 5-3 Skills, knowledge and experience deficits as constraints

<table>
<thead>
<tr>
<th>Constraint theme</th>
<th>Level of influence on IP model adoption</th>
<th>Level of influence on sustaining the IP model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficits in management</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>&quot;The biggest challenge probably is actually getting the publishing side of things, we have really not done that and just trying to figure out exactly all the right things to do here.” (IC12)</td>
<td>&quot;Firms don’t necessarily have the capabilities to manage and implement a focus on IP. Projects overrun, firm moves from small to big very quickly and the burn rate can be 20-30k per month.&quot; (IA3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;When you are working on your own property it is quite easy to get carried away and continually add features to the game or make changes.” (IB6)</td>
</tr>
<tr>
<td>Deficits in marketing and audience engagement</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>&quot;The real problem was that we did not know how to market it […] we are makers first and foremost, we are not marketers.” (IC2)</td>
<td>&quot;To make it successful you have got to push it, push it and push it and I think that is where we have probably got that bit wrong. It is not actually about developing the product; it is about what you do with it afterwards.” (IC20)</td>
</tr>
<tr>
<td></td>
<td>&quot;[The IP model] is completely different sell in that you have got to start thinking alright, so who is our target market, how do we reach them, […] there is so much to learn.” (IB3)</td>
<td>&quot;You go oh no this is a great idea and we will get it out there […] but you have to have some kind of alternative strategy as to how you are going to achieve it rather than just, oh I don’t know, some people will play it and it will be fine.” (IC25)</td>
</tr>
<tr>
<td></td>
<td>&quot;We were never going to be able to self-publish because we did not have the marketing muscle and experience to be able to do it ourselves.” (IC3)</td>
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</tr>
</tbody>
</table>

### Deficits in management

The first type of constraints relating to skills, knowledge and experience were deficits in management activities such as strategy, planning and operations. Delivering the IP model was perceived as being more resource intensive than WFH activities, and achieving the balance of resource management for both development and commercial delivery was time-consuming. Many of the issues arose due to the newness of the IP model to the firm, the need for more commercial skills that covered the entire innovation process, and the requirement to deliver a B2C model.

First, the management of project delivery in the IP model was often viewed as less rigorous than that when delivering for an external client. The lack of an externally defined brief and reporting schedule was an issue, particularly in relation to project management, and often resulted in issues with project definition, delivery timescales and meeting deadlines. Some firms had tried to address the lack of a brief by implementing an internal
project brief system similar to that employed with external clients. However, the lack of external direction remained an issue for many respondents.

Second, there was a perceived need for more a different type of skillset. The most frequently mentioned related to commercially focused skills. This, in the main, related to the B2C nature of the IP model, and the associated requirements for skills, knowledge and experience in logistics management, resource prioritisation and sometimes restructuring issues for the firm. These constraints were often referred to in commercial terms, for example the need to be ‘business-like’ and the ability to ‘make money’. Videogame development firms were sometimes viewed as being overly focused on internal issues and the creative aspects of the game and business, rather than market-facing, prompting criticism about their commercial and business management skills. Such criticisms were mentioned more in the context of start-up firms, although they were also apparent in more established firms: “Don’t start a games company because you want to make your own games, start a games company because you want to run a company that happens to make games” (IB2). Outside of the commercially related skills, some respondents mentioned the lack of appropriate staff skills as a constraint to the IP model. Issues mentioned related to the lack of available personnel or inappropriate personnel, both situations that created an inadequate skillset. This deficit created constraints in scaling up projects, undertaking IP-related activities and justifying spend on resources or particular technologies: “In hindsight I now recognise that we did not have the caliber of staff that we needed to do two original projects simultaneously.” (IC3)

Finally, there were management difficulties in implementing both the IP and WFH models together, given the differing characteristics of each model. This included team related difficulties and tensions arising from staff perception of each model and their own role and activities therein:

“The work-for-hire team is about getting it done and getting it paid and the IP team is making it as good as you possibly can and it is really hard to hold both of those cultures within one business at the same time because they are just contradictory […] it always created problems because people would be working on work-for-hire projects, just get it out, get it good enough and ship it and they would get into that mindset and you would take them and say, right, make this great and they just couldn’t, it was just too much of a mind-shift.” (IC3)
Deficits in marketing and audience engagement

The second type of skills, knowledge and experience-related constraints were associated with marketing and audience engagement. The IP model required the management of IP creation and commercialisation of and there was therefore an increased need for respondents to understand the market and how to deliver to it. Marketing and audience engagement activities were perceived as key factors in both adopting and sustaining the IP model, and any constraints therein were viewed as notable limitations.

First, respondents regularly mentioned marketing-related skills, knowledge and experience deficits as constraints. However, although the term ‘marketing’ was used, respondents were often referring to marketing communication activities such as PR, networking, brand building and social media management. Other marketing-related deficits related to product distribution issues such as channel identification and management and monetisation. There were also some difficulties relating to aligning the value proposition with the audience and economic return. A lack of experience and knowledge had led to issues for some respondents in linking product definition and development with market engagement and monetisation. However, not all respondents viewed marketing-related deficits as constraints, but rather as learning opportunities that they addressed:

“We have really been very comfortable self-publishing, very comfortable doing marketing, we have always recognised the importance of marketing and what has now become user acquisition […] we have always been open to the challenges of doing it yourself and we have also experienced some of the success of when that kind of works, but yes I think going forward the biggest barrier really is that you get into this mentality.” (IB5)

Second, the IP model required engagement with an essentially consumer audience. This was often a challenge for respondents. The skills and knowledge required to engage with the audience and build a community were perceived as difficult, time consuming and costly. Such engagement required the respondents and their team to identify, understand, engage and sustain an end user community for the game, something that had not previously been required of the developer but a very important part of sustaining the IP model.

“The kind of things that are really important is [sic] the ability to build our relationship with the players of the game rather than the financiers of the game and that is a huge difference from where we have been because we have spent many, many years building good relationships with the people who finance games […] investors and all of those people and not really building a relationship with the people who ultimately play these games. Nowadays you just cannot do that.” (IB4)
5.2.3 Product and platform

“The main [difficulty] is trying to get the team to understand what they need to deliver in order, not just to make original games, but to make original games in a commercially, sustainable way […] it is an order of magnitude more difficult to make an original game that is commercially sustainable than just to make a good original game.” (IB4)

A number of game, platform and technology related issues were mentioned as constraints including the nature of the product (for example unpredictability of success, development time, and post-release modification), misalignment between the firm and the market demand, and technology and platform access. Such constraints made the IP model difficult to adopt but were more notable in sustaining the model due to limited financial success. A summary of the key issues is provided in Table 5.4 and examined in this section.

Table 5.4 Product and platform-related constraints

<table>
<thead>
<tr>
<th>Constraint theme</th>
<th>Level of influence on IP model adoption</th>
<th>Level of influence on sustaining the IP model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature of the product</strong></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>“If you start your own IP then you have absolutely no idea. You can make a rough projection but you just have no idea of whether your product is going to stick or not.” (IB6)</td>
<td>“No one size fits all – even what works for the first game may not work for the second.” (IA4)</td>
<td></td>
</tr>
<tr>
<td>“You need to have a really thick skin if you are going to do original IP because it is your baby and you have put a lot into it and these people are going around calling it ugly and that is not nice […] we have to prepare for failure as well as success and so it is a different thing I think.” (IB5)</td>
<td>“People loved the game, got great reviews from users and the press but commercially we have not done well.” (IC1)</td>
<td></td>
</tr>
<tr>
<td><strong>Misalignment between firm and market</strong></td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>“People that come out of the universities naturally just think that they can make whatever game they want and that would make them money and actually those two things are completely different because artistically you might want to express yourself but the only value is for you.” (IB3)</td>
<td>“It is really hard to maintain the motivation when you get to a point where you are creating stuff that you are happy with and it is coming out to universal apathy.” (IC3)</td>
<td></td>
</tr>
<tr>
<td>“We make games that we are interested in, we put them out and we just have to see really what other people are interested in.” (IB8)</td>
<td>“I see over and over again companies making the same mistake […] making a game that we want to play, have you done your market research, oh no I think that everybody will want to play this and then six months later they have gone […] this negative experience I think is going to hurt us further down the line.” (IC7)</td>
<td></td>
</tr>
<tr>
<td><strong>Technology and platform access</strong></td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>“Mobile is the cheapest platform to develop for because it is slightly smaller in scope and so you can take only four months to develop a game […] which means that the risk of failure is slightly lessened.” (IB2)</td>
<td>“We cannot do physical distribution basically and Steam has the monopoly on digital distribution on PC so it is not like you can choose to go somewhere else if you want to make the amount of money we need.” (IC2)</td>
<td></td>
</tr>
</tbody>
</table>
Nature of the product

The characteristics of videogames are recognised as problematic in terms of commercialisation. The duration of development and the unpredictable nature of success have implications for resource investment relative to the return. Predicting game success remains a risky venture. In the WFH model, products are developed for business clients, to a brief with the assurance of financial return and a commitment to deadlines. Within an IP model, this is not the case. The firm has to take on the risk as well as find the resources to develop and commercialise the product, while ensuring that a pipeline of products is developed. If it fails, the consequences can be substantial and if it is successful, there is no guarantee that it can be replicated. Critical acclaim is not enough for financial success with several firms illustrating examples of successful games in terms of awards and critical acclaim but lacking revenue and profitability. Game-related products have a number of characteristics that can create uncertainty, particularly the time required to develop and release a game the unpredictability of product success: “Some [games] return virtually nothing and others will return two or three [times]” (IC6), and consumer preferences: “The vast majority of people don’t want to pay for games” (IC1). If a firm is focusing on producing a game under an IP model, it is the firm in the main that is taking on the risk and assessing the balance of investment against potential return. The firm has to support the product through the creation and development stage into the market and post-release. For some firms, weighing up the risk associated with resource investment against the difficulties of predicting the return was difficult, particularly the associated logistics required to ensure cash flow, timely revenue generation and payment management: “Critically we did really well but commercially not so well” (IC1).

Misalignment between firm and market

Aligning the aims of the videogame development firm with the audience needs was challenging. Some firms focused on developing games based on internal game preferences, while others took their lead from the market. There was some criticism of developers developing games that were more creative-push than market-demand: “Games development is based on what the owner/teams feel rather than what the market might want. It is not about opportunity” (IA1). Aligning the game with the platform and a paying audience was a difficult aspect and impacted on the firm’s ability to sustain an IP model:
“We thought [game] was going to be a big thing for us, but we were doing that without an audience […] I think the delightful naivety of lots of game developers, including ourselves […] is that without doubt you just forget that, you go oh no this is a great idea and we will get it out there […] but you have to have some kind of alternative strategy as to how you are going to achieve it rather than just, oh I don’t know some people will play it and it will be fine.” (IC25)

Technology and platform access

Two aspects of technology and platform related issues were mentioned as constraints although both were becoming less apparent. Both were considerations when adopting the IP model although more relevant when sustaining it. First, platform regulation was an important consideration as it influenced access to particular platforms. This impacted on the game type and distribution options for firms. Second, the availability of technology for game development was sometimes an issue, for example developer kits for specific platforms and middleware (development tools). Traditionally, development tools were expensive for small developers. However, the growth in the mobile platform and the volume of independent videogame developers, had led to wider access and affordability (Manning, 2013). Some developers had developed their own tools and others had received tools for free (Brammall, 2013) while smaller, more specific middleware products, had been developed combining middleware systems and cloud service options (Barratt, 2013).

5.2.4 The market

“It is that triumvirate between the quality of the product, the audience and the connector […] that can connect the appropriate content to an appreciative audience. When you have got that working it really creates the magic […] if you have got a good game that is not well marketed then nobody is going to care. If you have got a well marketed game that is not good then it will burn brightly and then fade away but it is only when you have got all three elements in the right combination that you can actually create something that creates proper value for the long-term.” (IC3)

Various market-related constraints were identified that related to the level of competition, audience related issues, marketing communications and industry and market conditions. These are summarised in Table 5.5 and discussed further in this section. There were also issues relating to finance and skills knowledge and experience. However, these have been addressed the earlier sections.
### Table 5-5 Market-related constraints

<table>
<thead>
<tr>
<th>Constraint theme</th>
<th>Level of influence on IP model adoption</th>
<th>Level of influence on sustaining the IP model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Competition</strong></td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>“We were all really happy a couple of years ago when essentially the barriers to entry dropped, we thought oh this is great we will be able to make our own games ourselves, what we did not think was that there was every other person in the world who wasn’t a games developer but would also be able to make their own games.” (IB7)</td>
<td>“I think everyone is in agreement that it is getting more difficult and getting more expensive and that is essentially proportional to the number of titles out there in the marketplace that you are competing against.” (IB1)</td>
<td></td>
</tr>
<tr>
<td><strong>The need for customer engagement</strong></td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>“We know we can make games but I have no idea if we can sell the games or not and so it is a big thing of raising awareness in the product, showing it is development, building up a community and getting people to want to buy the game before it has even been released. It is pretty much the only way a small developer and a small title can actually make any kind of impression and it is difficult to do and it is a lot of time and effort.” (IC10)</td>
<td>“The kind of things that are really important is the ability to build our relationship with the players of the game rather than the financiers of the game and that is a huge difference from where we have been because we have spent many, many years building good relationships with the people who finance games [...] investors and all of those people and not really building a relationship with the people who ultimately play these games. Nowadays you just cannot do that.” (IB4)</td>
<td></td>
</tr>
<tr>
<td><strong>Visibility in the market</strong></td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>“There is nothing stopping anybody making a game and releasing it... the trouble is being found, discoverability.” (IC1)</td>
<td>“The big problem on mobile is getting awareness, you can have the best game in the world but because there are another million games or apps out there you have got to make sure that people know that yours is there. Now the only real way to do that is by chucking a million dollars per day at the marketing budget and most of us don’t have that money.” (IB6)</td>
<td></td>
</tr>
<tr>
<td>“Found it really hard to get into game-specific media [...] they said, well that is not really our sort of thing, that kind of thing, so that was quite difficult.” (IC5)</td>
<td>“We have tried things like [...] social media, we have tried placing, tried reviews, tried magazines, you know we have done some traditional PR and it is just not really got us anywhere.” (IC11)</td>
<td></td>
</tr>
<tr>
<td><strong>Market and industry conditions</strong></td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>“You have got no control over if Apple will feature you or not feature you. If they do feature you, you have no control over how long they will do it for, where they will put you, how big your thing will be, in fact you have no control over your look. I guess a lot of people find that frustrating.” (IC1)</td>
<td>“I think the main reason for that is how far the market has changed [...] all the ways of working that we have been using successfully for many years are actually becoming rapidly outdated, kind of like being left with a manufacturing facility where all your machinery has been superseded by computer controlled equipment where you have still been using manual equipment.” (IB4)</td>
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</table>

### Competition

Market conditions were a consideration, particularly the level of competition and changes in technology. The publisher had traditionally buffered videogame development firms from the market within a WFH model. However, in the IP model, firms had more exposure to the consumer and the market conditions. The lower barriers to market, while providing
developers with access to the market, also meant an increase in suppliers. The level of this did vary depending on the game and platform, but for those respondents involved in mobile and app development, the level of competition challenging in the IP model particularly in terms of sustaining the model.

The need for audience engagement

Audience engagement was a notable challenge for firms given the need to identify, understand, reach and sustain a customer base. As mentioned in relation to marketing skills, the IP business model was essentially a move for developers from a B2B model to a B2C model and with this came a need for the firm to engage with end user consumers:

“It has been less about any kind of traditional marketing model and far more about listening to the audience, changing the game, adapting the game to what they are asking for and then if people want it they will buy it.” (IC25)

Visibility in the market

The profile of the firm and game was perceived as a barrier for some respondents. It was less of a constraint at adoption of the IP model but very relevant in sustaining an IP model. The lack of profile was a negative for some firms in terms of buyers and games media, given the requirement for publicity and engagement by consumers:

“As a relatively unknown independent with no real history behind us, we don’t have a community surrounding our games so to launch a game of ours we would be facing an uphill marketing struggle.” (IB1)

Market and industry conditions

The speed of change within the industry was recognised as a difficulty. Changing market and technology conditions required the respondents to be aware of such changes and adapt to this. Within the IP model, the responsibility of responding to such change was more often with the videogame development firm whereas in the WFH model the publisher was mostly responsible for this response: “There were lots of lessons to learn from that but one of the other things about moving things quickly, is that the market moves really, really fast” (IC12).
5.3 The nature of constraints

The constraints mentioned in Section 5.2 had emerged from the entrepreneur, the firm, the business model and the external environment with varying degrees of influence. When adopting an IP model the most notable constraints were at the firm level, while sustaining the IP model was more constrained by factors relating to the business model, the firm and the external environment. The results are summarised in Table 5.6 and discussed further in this section.

**Table 5-6 Source and influence of constraints relative to adopting and sustaining the IP model**

<table>
<thead>
<tr>
<th>Constraint Level</th>
<th>IP model adoption – level of influence</th>
<th>Sustaining the IP model – level of influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneur</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Business model</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Firm</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>External</td>
<td>Moderate</td>
<td>High</td>
</tr>
</tbody>
</table>

Entrepreneur-related constraints were considered minimal at adoption, and moderate in sustaining the IP model. Entrepreneur respondents were intent on adopting an IP model and did not perceive themselves as hindering the adoption. This was supported by the fact that such respondents tended to self-align with the IP model’s characteristics in terms of aims, self-perception, and aspirations. However, other sources have indicated that firm owners can be perceived as a constraint, mentioning inadequate commercial ability, lack of entrepreneurial attitude, too little focus on market needs, and a lack of marketing skills (Durrant, 2013; Mullen and Mason, 2012; Hothro, 2013).

“They don’t look at the studio as a business and have a focus on making a game only. Running a business is a byproduct – many are just games focused... games graduates that can’t get jobs in the big studios and therefore reluctantly set up, graduates who want to have their own business but have no business skills, and existing businesses who are still on work-for-hire models.” (IA1)

At the firm level, constraints were high when adopting and sustaining the IP model. A wide range of constraining factors were evident within the firm and were of more concern to respondents than constraints emerging from the entrepreneur, the external environment or the business model itself. The implementation of the IP model was the sole responsibility of the firm and it brought a number of new responsibilities and logistical requirements. Challenges existed in relation to finance, skills, reputation, and product/platform issues:
“And so people had got so used to being a work-for-hire studio that they were well in for the kind of 9-5 [...] I think they were expecting that to continue no matter how hard you explained to say no look when you are working on original games it is an order of magnitude and more difficult than work-for- hire.” (IC3)

External related constraints were evident but perceived as less controllable. They were viewed as moderate to high influence at IP model adoption and sustainability respectively. Finally, the IP business model itself presented barriers that were moderate at adoption and high when sustaining the model. This often related to the newness and/or characteristics of the IP model. Firms often lacked the necessary familiarity, knowledge and experience to deal with this new model despite a willingness to address this. The IP model within a combination model presented issues relating to managing and sustaining the IP model rather than adopting it. This was challenging given the need to manage two models and the contrasting characteristics of the WFH and IP models. There were also business model component related issues as summarised in Table 5.7.

<table>
<thead>
<tr>
<th>Constraint theme</th>
<th>Value Proposition</th>
<th>Value Architecture</th>
<th>Value Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>Availability</td>
<td>Finance level and availability</td>
<td>Ethical issues – perception of monetisation methods and the relation to gameplay. Audience alignment with price. Finance (e.g. costs, revenue, pricing, cost of user acquisition, payment logistics).</td>
</tr>
</tbody>
</table>
| Skills, knowledge and experience | Deficits in key areas  
Need for self-management | Deficits relating to marketing skills, management skills and distribution to consumers. | Lack of experience of monetisation models |
| Product and platform | Product/market alignment  
Technology access for development | Game and technology related issues | Lack of experience of monetisation models |
| Market           | Firm/market misalignment | Audience identification, engagement, acquisition, and development. Competition. Partner issues. Firm profile/track record | Costs of user acquisition  
Aligning audience and price point |

The value proposition presented minimal barriers and for a limited number of firms. In general, games development was not perceived as difficult but there were some skills and experience deficits, difficulties in aligning product/market/firm aims, and limited resources for game creation. The value architecture component presented more challenges, requiring the firm to be outward looking, understand the market and align the external requirements with internal aims. Key issues related to deficits in knowledge, experience and skills,
partner performance, and game/platform issues. The newness of the self-publishing activity was not a barrier in itself. Instead, it was viewed as something that could be overcome either via learning and/or collaborative partners. Finally, there were differences at the level of the value economic business component due to difficulties in understanding the monetisation options and process, managing the financial issues, and undertaking audience-related issues. Underlying all of this was the need to balance internal stakeholders’ ethical views with market trends and financial revenue. The ethical/morality issue was very evident in the reluctance of some firms to engage with F2P and in-app combination despite the potential revenue.

Constraints were viewed as difficulties to be overcome rather than preventative, particularly at the point of adoption. The strong preference for the IP model over the WFH model resulted in evident experimentation by respondents in their drive to ‘find a way’ to achieve it. However, sustaining the IP model was more difficult than adopting it. Respondents in the main recognised the existence of constraints and there was evidence of such constraints being addressed using internal resources but also by mobilising external resources and capabilities as required. Overall, there was a high level of experimentation at the level of the firm, which was actively welcomed by respondents and in keeping with their inherent attitude of ‘learning-by-doing’.

Some firms could afford to do such experimentation if the associated risk and cost was relatively low (for example impact on employees, reputation and track record), or their financial resources were high. However, in those firms where this was not the case, the time and costs involved were problematic. For example one firm had not incorporated a suitable monetisation model into the game at the development stage, therefore when it was a became a success, retrospective changes had to be made to take advantage of this unexpected interest and maximise the financial return. The product’s success generated other benefits although revenue was lost due to the respondent’s inexperience and lack of knowledge.
5.4 Discussion

Four key types of constraint were identified from within and outside of the firm namely finance; skills, knowledge and experience; the market; and product/platform.

The identified constraints impacted both on the firm’s ability to change to an IP model and to sustain it. Not all constraints were specific to the change process and included influences relating to the characteristics of the IP model itself. Such influences affected the choice of model, the ability to adopt the preferred model, and the firm’s ability to sustain this model over time. The findings highlighted that changing business models was about more than just model adoption, but that sustaining the model after change was important too (Linder and Cantrell, 2000). Constraints had varying degrees of influence on the firm’s ability to change from, avoid or minimise the WFH business model. Constraints affected the final composition of the adopted model (either a singular or combination format), the timing of the model change (startup or incumbent), and the type of model type (novel or reconfiguration).

Constraints emerged from four sources, namely the entrepreneur, the firm, the external environment and the business model itself.

Constraints from the entrepreneur were mentioned as minimal as there was considerable self-alignment between the entrepreneur and the IP model, and therefore a strong desire to achieve IP. Moderate to high constraints were evident in the external environment particularly relating to identifying, understanding and servicing the market. Key factors were the market, partners and audience engagement, as were the levels of support availability and ease of access. Constraints were also apparent at the level of the business model with barriers relating to the IP model characteristics and the newness of the model. Finally, firm-level constraints presented the main issue for respondents with issues relating to resources, reputation, marketing and the product/platform.

The influence of industry and business model-related characteristics was important for context.

The nature of the game product and the importance of platform and middleware related issues, such as accessibility, functionality and portability (De Prato et al., 2010), could also influence the product and market success. Given the small size of firms, the level of investment and risk was a consideration and this was also embodied in the type of game and platform:
“The unpredictability of consumers’ reactions to new game designs (especially those that enable new forms of gameplay), and increasing product complexity, create significant uncertainty.” (Tschang, 2007:1001)

The need for audience engagement with the game was also important. This varied depending on the game, platform, consumer demographic and the strategy of the firm. However, such engagement was the responsibility of the videogame development firm rather than the publisher/distributor in the WFH model, therefore skills and finance were important to support this engagement activity.

Focusing on the relationship with customers was important when designing business models (Brettel, Stresse and Flatten, 2012: Teece, 2010) as was adapting to the market to capture value (Schneckenberg et al., 2016). Within the videogame industry, a lack of engagement by firms with their customer base could impact on the firm’s ability to spot opportunities, address consumer needs and identity problems (Burger-Helmchen and Cohendet, 2011). A range of activities are needed to achieve customer engagement:

“Brand, festivals, exhibits, shows and other organized events support integration with the customer community” (Burger-Helmchen and Cohendet, 2011: 338), and activities such as crowdfunding have provided a platform for firms to interact with consumers, facilitate co-creation and generate benefits wider than finance generation (Nucciarelli et al., 2017).

Reconfiguration and cognition-related issues were important but not overly evident as constraints given the preferred status of the IP model.

The respondent entrepreneurs were pre-disposed to the IP model and the adoption of this model was considered to be an issue of timing and business model composition, rather than considering that an IP model was not possible. However, some respondents were more considered about changing to an IP only model. Such respondents had based their firm’s development around the WFH model and had experienced financial success, growth and relative stability. The firm’s success, size and benefits from the WFH model appeared to be influencing factors in assessing the level of reconfiguration required (Chesbrough, 2010), and considering this against the status quo. Where the IP only model was not possible, some respondents used the combined model of WFH and IP to ensure IP activities were undertaken, while minimising WFH activities. Managing different business models simultaneously can be an important part of the business model change process:
“the organisation’s culture must find ways to embrace the new model, while maintaining the effectiveness of the current business model until the new one is ready to take over completely.” (Chesbrough, 2010: 362)

However, the management of both the WFH and IP models proved difficult for some respondents, particularly those within smaller videogame development firms and with limited resources. Some of these difficulties also related to the perceived levels of creativity associated with these models (notably less in the WFH model than in the IP model) and the need to balance creativity and rationality (Tschang, 2007).

**Adopting an IP only model was possible at the firm’s inception but sustaining the model was more difficult.**

Despite constraints, it was possible to adopt an IP model when starting up if the firm had finance available and/or restricted its costs/overheads. However, retaining an IP only model became more difficult after adoption and more constraints were evident particularly those in the external environment.

**Constraints were viewed as difficulties to be overcome rather than preventative, particularly at the point of business model adoption.**

Respondents’ attitude to constraints was, in general, to experiment and ‘find a way’ (McGrath, 2009; George and Bock, 2011; Chesbrough, 2010). Constraints were often viewed as challenges and problems to be solved, similarly to the findings by Amit and Zott (2015:346): “the importance of viewing constraints not only as challenges and potential sources of failure, but also as opportunities for designing innovative solutions”. This attitude was fuelled by a strong preference for the IP model (Hotho and Champion, 2010) rather than the WFH model, although sustaining the IP model created more issues. This strength of attachment to IP, and its association with higher value, reflected the findings by Hotho (2013:93) who identified that for developers there was a “[…] willingness to risk it all or to keep trying in ever new reconfiguration.” Those constraints that did curtail IP adoption were important, but limited, and related mainly to the lack of finance and certain skill deficits that were attributable to the newness and focus of the IP model. However, even where these deficits delayed the adoption of the IP model in the short term, the constraints were not viewed as preventative but rather as issues to be overcome over a longer time period. Constraints were more evident in sustaining and generating success from the IP model rather than at initial adoption with more difficult barriers when: (i)
sustaining the IP model alone; (ii) transitioning to an IP only model; or (iii) generating economic success from IP–related activities.

Respondents recognised that constraints existed and took action to address them. Where possible, constraints were addressed using internal resources in the main, although mobilising external resources and capabilities was undertaken if required. There was little evidence of capability myopia (Johnston, 2009), with firms often acknowledging the need for, and weaknesses in, their resources and capabilities. Overall, there was a high level of experimentation by respondents and an evident focus ‘learning-by-doing’ and ‘try it and see’ (Sosna, Rodriguez and Velamuri, 2010). However, the level of experimentation was moderated by various factors including risk and finance availability; some respondents experimented as the associated risk and cost were relatively low or their financial resources were high, while other respondents limited such activities as the time and costs involved in experimentation were problematic.

The findings in this chapter contribute to the limited academic literature about the constraints on business model change (for example Chesbrough, 2010; Zott and Amit, 2013; Froud et al., 2009). They are also relevant to industry-related discussions about the difficulties in adopting an IP model. Some considerations include:

- **Independent videogame development firms can adopt the IP business model but sustaining this model is difficult.** Owning and developing intellectual property was possible for firms even when resources were limited. However, for respondents to sustain the IP model successfully (whether alone or in a combination form), a range of resources, capabilities and external factors were necessary to ensure that the IP was commercialised and supported post-development.

- **An IP only model was adopted despite constraints, although sustaining this model was more difficult.** Successfully sustaining an IP model required finance, games success and/or cost minimising in the main, as well as support in other areas such as successful audience engagement and relevant skills.

- **The risk, investment and difficulties involved in the IP model made it less viable for small, resource-strapped firms.** The IP only model may not be appropriate for small,
independent, videogame development firms even if they are able to adopt the mode, as sustaining the model could create problems.

5.5 Conclusion

This chapter presented the findings related to the second research question, “What are the constraints on changing to an IP business model?” The aim was to better understand why more videogame development firms had not changed to an IP model given the opportunities, support from industry and policy makers, and the perceived higher value of the IP model relative to the WFH model. This involved identifying the types of constraints associated with the IP model, and the level of influence that such constraints had on adopting and sustaining the model.

Four types of constraints were identified namely finance; skills, knowledge and experience; product and platform; and the market. The most notable of these were finance and the market, although all of the factors were usually interlinked and had some bearing on the firm’s ability to adopt the IP model. Such constraints emerged at the level of the entrepreneur, the external environment, the firm and the business model itself. Firm-related constraints were the most notable when adopting the IP model, while all four levels were relevant when sustaining the IP model.

The constraints impacted on both startup and incumbent firms, and when the IP model was being adopted or sustained. It was possible to adopt the IP model alone when supported by finance or overhead minimisation. However, there were more notable constraints when sustaining and generating financial success from this model. Similarly, adoption of the IP model in a combination format, encountered minimal barriers at adoption but constraints were evident in the lack of notable success with IP activities and the limited transition to an IP model alone.

Constraints were viewed as challenges rather than preventative due to the strong desire for the IP model. Constraints that did prevent firms adopting an IP model were limited but important. These related in the main to finance and skills. Respondents had a high level of awareness about the issues facing the firm plus a willingness to address such constraints through knowledge acquisition and experimentation.
Having discussed the factors constraining independent videogame development firms from changing to an IP model, the next chapter examines how some such firms have achieved the IP model via a variety of different routes and various facilitators.
Chapter 6 Findings: Facilitators supporting change to an IP model

“It is fine doing work-for-hire at some point, but ultimately you are just working for someone else.” (IC20)

6.1 Research aims and chapter format

This final findings chapter presents the results derived from examining how firms have changed from, minimised or avoided a WFH model, and the factors that have facilitated this. It addresses the third research question: “How do firms change from a WFH business model?” Despite the difficulties that existed in changing from the WFH model, some respondents have done so and achieved an IP model. This chapter examines such respondents in more detail, highlighting how the IP model has been adopted and the factors that have supported this. Findings are presented from the examination of four different routes taken by 25 independent videogame development firms to adopt the IP model. Such routes involved changing from, minimising or avoiding the WFH model in favor of the IP model. These groups represent the four embedded units described in the case design in Chapter 3, Section 3.2.2. The chapter begins by presenting the business model change routes and the characteristics of the firms that have followed these routes (Section 6.2). The business model change facilitators, and their relative influence, are then identified in Section 6.3, before the chapter findings are discussed in Section 6.4. The chapter concludes in Section 6.5.

6.2 Business model change patterns

The business model change patterns of 25 firms were examined to identify how the firms had changed from, avoided or minimised the use of the WFH business model in favor of the IP model. The data were derived from interviews, observations and documentation analysis relating to 25 independent videogame development firms\(^\text{37}\) that had involvement with the IP model during their lifetime. The business models of the firms were identified at two points namely firm inception and 2014 (the year in which the study’s fieldwork occurred). Most of the firms had started with either a WFH or IP model only, but at the time of interview, a combination model was most prevalent. The change patterns of the 25 firms are provided in Table 6.1.

\(^{37}\) Respondent profiles are contained in Chapter 3, Section 3.3.5.
Four groups of firms were identified relative to their business model adoption and change routes and whether the IP model had been achieved via changing from, minimising or avoiding the WFH model. The four groups and their business model activities are illustrated in Table 6.2. Two groups had adopted the IP model at the outset and retained this model post inception in the form of an IP model alone or as a combined model with WFH (Group A and B respectively). The third group started with an IP model and then added a WFH model to create a combination model (group C). The final group started with a WFH model and acquired an IP model to create a combination model (Group D), with one firm subsequently reverting to WFH. The findings relating to each group are now discussed in Sections 6.2.1 to 6.2.4.

Table 6-2 Business model adoption and changes by respondent firms

<table>
<thead>
<tr>
<th>Embedded unit</th>
<th>Business model adoption_routes from inception to 2014</th>
<th>Usage of the WFH model</th>
<th>Number of firms</th>
<th>Respondent identifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Soloists</td>
<td>IP model adopted at inception and retained</td>
<td>Avoid WFH</td>
<td>6</td>
<td>2, 4, 5, 11, 22, 23</td>
</tr>
<tr>
<td>B: Balancers</td>
<td>Combination model of WFH and IP adopted at inception and retained</td>
<td>Minimise WFH - WFH model adopted with IP at inception and retained</td>
<td>5</td>
<td>3, 8, 9, 14, 21</td>
</tr>
<tr>
<td>C: Retrenchers</td>
<td>IP model adopted at inception and then WFH model added to change to a combination model</td>
<td>Minimise WFH - WFH model avoided at inception but then added</td>
<td>8</td>
<td>1, 6, 7, 13, 18, 19, 20, 24</td>
</tr>
<tr>
<td>D: Evolvers</td>
<td>WFH model adopted at inception and then IP model added to change to combination model (and then reversion to WFH for 1 respondent)</td>
<td>Minimise WFH - WFH only model at inception and then IP model added</td>
<td>6</td>
<td>10, 12, 15, 16, 17, 25</td>
</tr>
</tbody>
</table>
6.2.1 Group A: Soloists (IP model from inception)

The six firms within Group A had avoided using the WFH model. These firms had been established between 2005 and 2013 and all were founded by videogame or IT graduates. There was diversity in firm size and financials but this did not necessarily relate to firm longevity. The firms had 42 employees between them but four firms had fewer than three employees each. Size was not age dependent, for example one firm that had been established for five years had only one employee, while one firm of less than three years had ten employees. Financial figures were not available for the early stage firms that had not yet released games or generated revenue. The older firm had turnovers of six figures and over a million. The platforms used were mostly mobile or tablet, although only firms over five years old had released IP-related games. Several firms were keeping costs and overheads to a minimum by working part-time, not having office space and minimising staff costs or other overheads.

“The biggest value is your own IP because if you get your own IP out there you can keep 100% and it adds tangibility, it adds something to your company and so they might not buy you for your company, but they might just buy you for that IP.” (IC22)

For all entrepreneurs, the IP model was the underlying goal influenced by factors at the level of the entrepreneur, the firm and the external environment. The entrepreneur’s personal feelings (for example pride, satisfaction, self-positioning), view of proprietary games (for example more creative and cool), preference for autonomy, and aim of building value (both financially and through leverage of content reuse) were apparent. At the firm level, the positive perception of the IP model by the staff was that it was more creative and interesting. The key facilitator for adopting and retaining the IP model only was the availability of financial resources. These were derived from external sources (for example investment and product development grants) and internal sources (for example, from product sales, commissions, and directors’ investment).

“We did have sub-plans at the start where we did work-for-hire and things like that to kind of keep the pot going and that kind of stuff but really from the perspective of our investors they believe in their own IP model […] and so they are kind of like, we think that you should work on your own thing and just try it.” (IC2)

“It has funded itself […] is doing reasonably well. Not enough to support me day to day but I got funding from [external public sector agency] and some other bits and pieces of funding.” (IC23)
However, finance in itself was not enough to succeed at the IP model. Finance usually had to be combined with other elements that reduced IP-related risk such as team skills and experience, the founder’s connections, audience engagement, and the firm’s track record and reputation. For example, one firm changed from an IP model to a combination model to generate more finance, became involved in a very financially successful WFH project because of their skillset, and were then able to return to an IP only model due to such success.

All of the firms in this category intended to remain with an IP only model. However, the ability of the early stage firms was difficult to anticipate as several such firms were operating on low overheads with support funding and had not yet released games. Of the remaining firms, all had released games and were maintaining the IP model supported by firm-related resources in the main. There was no obvious aversion to adopting a WFH model or a combination model, with several respondents acknowledging the WFH model benefits.

In summary, the main observations from the Soloist group were as follows:

- **Firms that started with an IP model had a combination of internal and external facilitators, although the most important was the availability of finance and/or limited costs and risk.** The founder had a strong underlying desire to adopt the IP model, facilitated by internal resources (skills and finance) and/or circumstances that presented low overheads and risk reduction (such as co-ownership of other firms, limited/no costs for premises or staff) and a market opportunity (game platform or type).

- **Finance alone was not enough to succeed with an IP model only.** Sustaining an IP model alone presented different challenges from starting up with this model. There was a need for appropriate skills, product success (in either WFH or IP activities), limited costs and a profile/track record that helped firm positioning. However, such sustainability was difficult to gauge given the early stage of firm activity with some firms having limited games release and limited financial success.

- **Sustaining an IP model was more challenging but difficult to quantify.** The IP model was in the main sustained by the availability of finance and/or cost minimisation due to the early stage of the firm. However, the relatively early stage IP activities of the firms
and/or their limited games release meant that sustainability of the model was difficult to assess.

• The most financially successful firm used its WFH activities to leverage success in the IP model. The firm that started with an IP model by minimising costs and working part-time, added the WFH model to leverage skills, contacts, finance and knowledge. This was notably successful and allowed the firm to revert to an IP only model.

• There was limited aversion to adopting a WFH model in the future. The wider benefits of the WFH model outside of finance were acknowledged after the respondent had experienced them. Firms in this group did not display an unwillingness to adopt a WFH model in the future. This may have been due to the fact that they have already undertaken IP activities and therefore felt successful, and/or that WFH activities were undertaken through choice rather than necessity.

6.2.2 Group B: Balancers (combination model from inception)

Five firms had started up using both the WFH and IP models and had retained this combination model. IP activities in a combination format were preferable to not doing IP at all. Such firms had been established between 2000 and 2013. One firm had been founded by graduates but the remaining firm founders were mainly ex-employees or previous founders of games, IT or media firms. The firms had 41 employees between them (reaching 66 at one point) with three firms having less than four employees. Firm size was not age dependent as the oldest firm had only six employees. Financial figures were not provided for most firms but one firm was generating a turnover of over £1 million per annum. The balance of WFH and IP related activity within each firm differed in terms of resources. WFH activities included games and non-games projects, while IP projects involved both internal and outsourced publishing. However, IP-based game releases were limited in terms of volume and success.

All five firms preferred the IP model, perceiving it as providing more creative and technical satisfaction, higher autonomy, an enhanced reputation, better community engagement, and financial return. However, as this model was not possible at inception for the five firms, they had adopted a combination model. This combined model provided the firms with the advantages of both WFH and IP activities and gave the respondents the
flexibility to react to the market and the rate of change. However, there were issues with having to manage two models, given their differing characteristics and perception within the firms as described in Chapter 4. The inclusion of the IP model was facilitated by external finance and support, good publisher relationships, market opportunities, access to developer licences and game success.

There was evidence of WFH projects being strategically selected by some respondents to ensure that such projects aligned with the firm and provided added value such as time and finance to facilitate IP activities, learning opportunities, skills development, network extension, and product/service portfolio extension. However, while some respondents recognised the benefits of the WFH model, other respondents viewed WFH activities as a failure or ‘sellout’, perceiving the WFH model as lacking in creativity or value contribution:

“I have not got the balance right yet […] you need to be able to go, oh yes I can do the service work but also balance doing my own work, which is where […] the sustainable money is […] I hate service work, I hate it with a passion. I like the work but the work isn’t the hard bit, the hard bit is getting paid, the hard bit is dealing with clients just generally, even good clients.” (IC8)

All of the respondents in this category wanted to retain an IP model in the future, given the perceived benefits of IP, and they were using a combination model meantime. However the willingness, or ability, to change to an IP only model in the future was difficult to assess given the lack of examples of transition to such a model. Even where there was evidence of successful IP activity, the firms had retained a combination model to capture the WFH-related benefits and recognise the IP-related difficulties relating to skills, contacts, track record, experience and knowledge of the business model components. This included one firm that had succeeded with IP activities:

“I think the work-for-hire will be something that I would hope to entirely drop […] I would never close the door but I would hope to be in a position where we can hand pick the stuff which basically advances the company in its development and ways which are being paid for. Actually, a very good way of getting new members of staff up to speed on certain things by that model, but I am hoping by year three, I am very much hoping that our original IP is funding the business in a major way.” (IC21)
The main observations emerging from the Balancers group were as follows:

- *The IP model in a combination model was preferable at inception than having no IP activities.* Respondents would have preferred to adopt an IP only model but resource restrictions prevented this. However, rather than delay IP adoption, both models were undertaken. The inclusion of an IP model was facilitated by similar factors to those in the Soloist group, namely external finance and support, relationships, market opportunity, game success and access to development kit technology.

- *The combination model was a key facilitator in adopting an IP model.* The coexistence of the WFH and IP models allowed IP activities to be undertaken while minimising WFH. However, there were difficulties arising from managing two different models particularly given the negative perception of the WFH model.

- *Transition to an IP only model from combination was not evident.* This included those respondent firms that had successful IP activities and/or finance available. Difficulties related to a combination of the risk and issues involved in changing models, an appreciation of the benefits derived from having a combination model, and the fact that substantial success was required from IP activities in order to provide the stability and resources to move to an IP only model. A less negative view of WFH activities was apparent from some respondents after the benefits of the WFH model had been experienced.

### 6.2.3 Group C: Re-trenchers (IP model to a combination model)

Eight firms started with an IP only model and then added WFH activities to create a combination model. The firms in this group were established between 2003 and 2013, with five of these firms less than three years old. The founders were a mix of graduates (games and IT) and employees (ex-games). The firms employed 58 people with the majority of firms having seven or less employees. The turnover of the firms ranged from £100k to £1million. However, limited detailed financial figures were available either publicly or from the firm. Most firms had released IP-based games, but there had been limited financial success for the majority of firms despite some games receiving various industry awards and critical acclaim.
“I think, I suppose we had been around the block. I had worked with publishers as well as developers and so I was fairly pragmatic in terms of how we get to where we are going, but yes I think the long-term ambition still is that we want to have our own games but also there are different ways to get there and they are all valid routes. It is getting there that counts, not that necessarily you have chosen one route over another.” (IC6)

The founders’ strong preferences for the IP model, combined with the relevant resources (usually finance and skills), facilitated adoption of an IP model from inception. The drivers behind the preference for the IP model included the respondents’ desire for creative freedom, development autonomy, creation of the proprietary games, and the opportunity to leverage more return from intellectual property, relationships and the firm/game brand. Respondents had access to finance (for example multiple firm ownership, investment) and/or risk-reduction alternatives (for example limited overheads and minimising costs):

“We were faced with the opportunity of trying to find a job in the job market, presumably both in games and we thought, well why not give it a stab ourselves […] I would not say that we necessarily rushed in completely unprepared but we ended up stumbling across bits and problems that we had not anticipated.” (IC19)

Such internal factors were usually combined with positive external conditions including game success, market conditions (particularly low barriers to entry) and the availability of funding (investment, grants, contracts). This allowed some respondents to experiment with an IP model from the outset:

“At that point it was just really important to have a game in the market, well reviewed, well received, selling and generating some income that we could then use as a stepping stone to take the next move.” (IC6)

The firm’s transition to a combination model was triggered by financial needs in the main, relating to IP related difficulties and/or the presence of notable WFH-related opportunities. WFH project selection for some firms was strategic and based on relevance to the firm’s aims, perceived time to market (with a preference for short) and audience size. Overall, the addition of the WFH model was to sustain and grow the firm in a way that was not possible with the IP model at that time.

“Will this [the IP model] thing make us enough money to firstly build a studio and the answer was clearly no. It probably made enough money for us to keep a couple of people working on the next game, but we did not want to go from one game to the next […]. Time ran out and so I think we were like six months in and we were okay we are going to have to pick up some contracting work.” (IC6)
"It was quite a dark time. We did manage to obviously dust ourselves off and figure things out [...]. We are going to make this work godammit. I shall not be told no until I fall flat on my face." (IC19)

Both the WFH and the IP models were used simultaneously and ad hoc within the combination model. Intellectual property had also been developed in other non-game content areas to build value into the firm, for example technology infrastructure, audience platforms and brand identity.

"So at the moment, we are doing a work-for-hire right now and whoever is paying us they get top priority, I mean that is the way that it kind of has to be, you know you are only as good as your last product so whoever is paying us gets top priority ... but in between and so after 5am, one Saturday morning, when one has a spare hour and we have researched the points, messed about a bit, we are looking at our own original idea for the next thing.” (IC1)

The respondents representing this group of firms had diverse views about the future models for their firms, with the IP model remaining the aim. One respondent was unsure about continuing their firm, another respondent was considering a WFH only model, a third respondent preferred to retain the combination model as it allowed IP activities to continue, and the final respondent planned to form separate firms dedicated to either the WFH or the IP model. A firms’ inability to maintain an IP model was affected by a number of factors including firm-related uncertainties, the nature of the product (hit characteristics, development time, gauging success), and funding limitations. Such factors contributed to a lack of stability and disadvantaged the firm. Additionally, the use of the WFH model had allowed respondents to become more familiar with the WFH-related benefits and therefore reassessing changing from a combination model to an IP only model. This resembled those considerations of respondents that had used a combination model from the outset:

"There is something quite special about work-for-hire. It has got this kind of collaboration which I am really into, I like working with people from different sectors and I think it really helps you to kind of analyse what you do and to really up your game on different levels, whereas if you are just in the games world and you are just doing original IP, I think long-term that is too risky for me [...]. It is not a sustainable business model [...] . I think that we need to innovate as much as possible and a great way to do that is to collaborate, and work-for-hire offers you those.” (IC18)
In summary, the main observations from the Retrencher group were as follow:

- *The desire to adopt the IP model from inception was critical and the key driver for respondents.* The entrepreneurs’ desire for the IP model, plus a ‘try-and-see’ attitude, meant that firms in this group adopted the IP model at inception despite inadequate resources and capabilities. Undertaking IP activities from the firm’s inception was the key objective and this was facilitated by the fact that such early stage firms could limit risk and overheads. However, this IP only model proved not to be sustainable and WFH activities were added to create a combination model. The WFH model provided revenue and stability until these failings were addressed. However, once adopted, the benefits of the WFH model were noticed. This resulted in some firms considering a combination model in the longer term while incorporating value-building activities such as developing non-content intellectual property.

- *The availability of finance was not enough in itself to maintain an IP model on its own.* The IP model required a different type of management and was more of a B2C than a B2B model. There were difficulties aligning the aims of the entrepreneur and the firm with the game, audience and financial return particularly in the longer term.

- *The use of the combination model made it more attractive to respondents in the long-term.* The combination model was a contingency model that allowed IP activities to continue despite difficulties. However, after experiencing the combination model, respondents acknowledged both the IP model-related difficulties and the WFH-related benefits. The combination model was therefore more attractive than initially anticipated.

### 6.2.4 Group D: Evolvers (WFH model to a combination model)

Six firms started with a WFH model and then added the IP model to create a combination model. Such firms were established between 2001 and 20011, employed 39 staff (although this had reached 45 in previous years), had annual turnovers ranging from £100k to over £10m, and had varied platform expertise. Market and technology conditions at inception had been less favorable to IP adoption for some of the older firms. No firms changed to an IP only model within the period of time studied, although one firm subsequently discontinued its IP activities and reverted to the WFH model. The rationale for adopting a
WFH model at the outset was predominantly to generate revenue, support the respondents to start the firm and/or to support IP activities in the medium to longer term:

“There has also been a freedom of it working from day one instead of having to raise finance, to then wait a year before you start generating revenue which is the problem with those transitioning from work-for-hire is that they have got this long drought before income kicks in.” (IC16)

WFH projects included games and non-games activities and were often facilitated by the founder’s knowledge, experience and contacts, aligning with their skills in the short term. WFH related finance and workflow was used to support staff development, knowledge acquisition, increase the firm’s profile and broaden the project portfolio.

“We were going to be working for hire and did not want to think about anything else until we got our feet on the ground and things were nice and stable and all the rest of it […], realising that the games industry had moved in that way and how do we make sure that we were ready to go there, and so in the meantime it was to make sure this thing paid the mortgage and so let’s get on with it.” (IC25)

However, the WFH model was viewed as less valuable in the longer term given the lack of ownership and control associated with the model. These deficits had resulted in respondents pursuing more value enhancing activities, for example, intellectual property in non-games products such as technology, brand or community platforms, as well as higher value WFH projects.

The IP model was subsequently added to create a combination model. The driver for this change was the underlying aim to understand IP activities, similar to the desire shown by firms in the other three groups. However, respondents in this Evolvers group had decided to delay IP model adoption in the short-term until additional finance was available.

“Work-for-hire is something where the margins get tighter and tighter every year […] I would like to pay people here more than they get paid and I would like to earn more for myself than I do, and one of the things that I thought would actually allow that to happen would actually be if you started your own IP.” (IC12)

“It [WFH] is pretty unsustainable and not scalable but in percentage terms you are sort of really profitable […] I decided this isn’t right, like the company is not structured well enough to cope with this, I cannot really see how it can scale sustainably, […] so it is always bespoke stuff over and over again and so I looked at it and just thought we cannot sustain.” (IC17)
While finance was the underlying facilitator for adoption of the IP model, additional factors influenced this decision at the level of the entrepreneur, the firm and the external environment. Externally, reduced barriers to entry, increased market opportunity, and inadequate publishers were all mentioned as triggers. At the firm level, the preferences, skills and experience of the team were important due to the need for alignment between such capabilities and the game/platform/market. Finally, there was consideration of risk, level of autonomy, a reluctance to focus on WFH activities, and a willingness to experiment (‘try-and-see’) with the IP model.

Changing to a combination model provided a useful hybrid for respondents, essentially reducing risk while the firm experimented with IP activities. The WFH model provided the firm with relative stability via finance and regular workflow, as well as supporting staff development in skills and experience, and enhancing the firm’s profile by building a good portfolio of projects. In turn, the IP model provided a way of building longer-term value into the firm. One firm subsequently stopped its IP activities and reverted to the WFH model. The firm’s success with WFH activities meant that operating both the WFH and IP models diluted their focus and resources. However, although the firm stopped their involvement in games-related content intellectual property, they had developed intellectual property in non-games-content areas that the firm intended to leverage and commercialise, thereby diluting any WFH model-related risk.

In terms of future activities, the combination model provided firms with a short to medium term solution until an IP only model could be adopted. However, there was no clear indication that firms would transition to an IP only model unless there was notable IP-related game success. There was recognition that while WFH activities remained dominant, additional value would have to be developed in areas other than games-content, for example in technology, infrastructure, brand, community and/or leveraging better contractual relationships.

In summary, the key observations from this group were as follows:

- **The drive to start a firm was important and the WFH model facilitated this.** The WFH model was viewed as a route to establishing a firm rather than wait until resources were available for IP. Founder skills and experiences supported this. Market and technology related conditions were also less favorable to adopting the IP model at firm inception.
• Resource availability triggered the adoption of an IP model in conjunction with a WFH model, but the ability to do so was linked to other supporting factors. The IP model was added when financial resources and time were available and when there were supportive factors at the level of the entrepreneur, the firm and the external environment. After the IP model was adopted, the combination model was viewed as a useful hybrid model, recognising the benefits of both models and supporting the firm towards its longer-term aim of an IP model alone. Respondents therefore remained with this model even after successful IP activities. Respondents also recognised, in the main, that increased value was needed from the model, for example in non-content intellectual property, technology and/or leveraging better contractual arrangements for WFH activities.

• There was no transition to an IP only model by the firms in this group. Respondents associated changing models with risk and instability, unless there was notable finance and IP-related game success. The combination model provided a useful route to generate resource and experiment with the IP model, despite the challenges that dual model management presented.

• The firm reverting to a WFH model only did so after a combination of IP-related difficulties and WFH-related success. The notable success of its WFH activities persuaded the firm to focus on the WFH model.

• Respondents in this group did not have a notable aversion to the WFH model. Respondents were pragmatic about using the WFH model to achieve stability, reduce risk and facilitate adoption of the IP model post-inception when conditions were more favorable.

• The use of the WFH model or combination model was necessary for certain firms. The WFH model provided notable financial success as well as support for experimenting and/or transitioning to an IP model alone.

6.3 Facilitators

Five key facilitators for adopting the IP model were identified, from analysis of the groups, namely finance, WFH activities, the entrepreneur’s attitude to the IP model, firm resources
and capabilities, and external factors. All factors were relevant but the role of the entrepreneur was key, and internal facilitators appeared to be more relevant than those derived externally. The facilitators derived from the findings, relative to the embedded unit, are summarised in Table 6.3 and discussed further in this section.

Table 6.3 Business model patterns, rationale and facilitators by embedded units

<table>
<thead>
<tr>
<th>Group and business model pattern</th>
<th>Rationale for model at inception (relative to IP model)</th>
<th>Rationale for current model</th>
<th>Facilitators for adopting the IP model</th>
</tr>
</thead>
</table>
| A: Soloists IP model retained from inception. | Desire to start with the IP model and: (i) had resources or (ii) were willing to limit overheads and ‘make do’. | • Combination of finance, relevant skills and market success. | • **Owner attitude** – strong desire for the IP model.  
• **Finance availability** - investment, game success, multiple firm ownership.  
• **Cost limitation** - low overheads, early stage  
• **Resources and capabilities** - skills, positive profile, and willingness to learn.  
• **External factors** - market opportunity, product success. |
| B: Balancers Combination model from inception. | Desire to start up with IP model but unable to do so therefore were willing to add the WFH model. | • IP model preference but unable to do so.  
• Allows IP model to be undertaken.  
• WFH model benefits counter IP model deficits.  
• Platform to transition to IP model alone. | • **Owner attitude** – strong desire for the IP model at startup, willingness to include the WFH model.  
• **Finance availability** – investment, game success, WFH revenue.  
• **Combination model** – WFH model provided resources and reduced risk.  
• **Resources and capabilities** - skills, contacts, track record, experience, knowledge.  
• **External** - support, relationships, market opportunities, developers licence. |
| C: Retrenchers IP model to combination (added WFH model). | Desire to use IP model from firm inception and unwilling to do WFH activities and ability to minimise overheads. | • Desire to continue with the IP model but limited resources.  
• Notable WFH opportunity.  
• Allows IP activities and WFH benefits. | • **Owner attitude** – strong desire for IP model, minimise overheads, reject WFH activities.  
• **Finance availability** - investment, game success, support, multiple firm owner.  
• **Combination model** – WFH finance, benefits, alternative value sources.  
• **Cost limitation** - low overheads, limited risk, alternative income, early stage.  
• **External** - game success, market opportunities. |
| D: Evolvers WFH to combination (added IP model). | Desire to have IP model but preference for WFH activities to facilitate startup and address resource/risk. | • Provides firm stability and growth while reducing IP model related risk.  
• Supports transition to an IP model.  
• Alternative value generation from non-games content IP. | • **Owner attitude** – desire for IP model but not necessary at startup.  
• **Combination model** - WFH success, finance, skills and stability to adopt IP.  
• **Resources and capabilities** – alignment with IP requirements, finance, opportunity.  
• **External**: reduced barriers to entry, market opportunity. |
First, finance was the main facilitator. Finance-related factors were evident including finance availability, the level of finance required and risk, and the availability of alternative resources. Finance was key to supporting IP model adoption, and even more so in sustaining the IP model, given the high cost and support required for audience identification and engagement. Finance was a key trigger and facilitator for adopting an IP model; although other factors affected the firms’ ability to do so such as skills availability, contact networks, track record and experience, knowledge of the various business model components and having a notable game success.

Second, the role of WFH activities was important. The combination model of WFH and IP was a notable facilitator for firms. It resembled a holding position for the firm prior to adopting an IP model and was used: (i) at the firm’s inception as a way of spreading risk and allowing IP activities to be undertaken from the outset; (ii) as a development stage following a WFH model; and (iii) as a contingency model for failings with the IP model in singular form. In this study, IP model adoption was mainly supported by WFH model-related benefits and/or limited overheads.

Third, the attitude of the entrepreneur was an important facilitator. Those respondents that wanted to adopt the IP model rather than wait or combine it with WFH model, tried to progress with an IP model even if inadequately resourced to do so. Other respondents chose to retain the WFH model and develop the firm before taking on the risk of the IP model. The entrepreneur’s attitude to constraints was also relevant. Where constraints were viewed as challenges, there was notable activity to address them, including managing uncertainty, increasing knowledge, undertaking exploration and exploitation, retaining flexibility, and experimentation.

Fourth, the firm resources and capabilities were relevant. Existing resources and capabilities were important in allowing the IP model to be considered. These constraints, and their level of influence, varied across firms but there were some common themes relating to skills, experience and knowledge, networks, time, and finance. When required (and possible) external resources and capabilities were also mobilised.

Finally, external factors were facilitators in that they affected the context within which the IP model would be operationalised. These included the market opportunity, distribution
technology, developer kit or the demand for context. However, despite the obvious importance of these external factors to the success of the IP model, respondents did not view such constraints as particularly strong or prohibitive.

The key differences across the groups related to the differing respondents’ attitude towards the format and timing of the IP model adoption, the entrepreneur’s experience and self-image, and their relative longevity in the industry. The commonalities across the four groups related to the difficulties that existed in adopting the IP model without investment or minimising costs/risk, the increased difficulties in sustaining or transitioning to an IP model alone, and the important role of the entrepreneur in determining the business model design and the requirement for change. There was also strong evidence across the groups of high levels of initiative, learning and experimentation by respondents. The personal attitude of the entrepreneur (or management team) was key to such activities and their support of experimentation, attitude to knowledge acquisition, and perception of value and success, all contributed to how constraints were perceived in the firm.

Respondents were often able to recognise when difficulties arose, could identify the actions required, and had attempted to address such issues by mobilising internal or external resources (albeit not always successfully). Internally, existing knowledge, skills and experience were used to support ‘learning by doing’ and knowledge acquisition, while externally, resources and capabilities were accessed via contact networks, personnel recruitment, access to experts, and support initiatives for mentoring or finance. There were numerous examples of the respondent entrepreneurs and their staff teaching themselves, learning-by-doing, and acquiring knowledge. Such self-development related to various topics but included business management issues (for example managing two models, understanding distribution routes and identifying monetisation channels), marketing communications (for example, promotional videos and other PR activities), audience understanding and engagement (for example, reviewing secondary material, talking to peers, attending events to meet consumers).

6.4 Discussion

Four routes were evident to change from, minimise or avoid the WFH model.

All of the respondents wished to adopt an IP model but their ability to do so was influenced by various constraints and facilitators. This was reflected in differences in the
model compositions (i.e. whether a singular or combination format), timing of adoption (startup or incumbent) and the change processes involved (novel or reconfigured). Four different groups of firms were identified: Soloists that avoided the WFH model by adopting and retaining an IP model from inception; Retrenchers that avoided the WFH model at inception by minimising costs but had to (reluctantly) change to a combination model; Balancers that minimised WFH model use by adopting and retaining a combination model and allowing IP activities to be undertaken while benefiting from WFH activities; and Evolver firms that had deliberately started with a WFH model to establish the firm and achieve stability before evolving into a combination model when circumstances were correct.

Respondents operating an IP only model had retained it from inception although not all of those that started with this model, retained it.

Within this study, those firms operating an IP only model adopted this model at inception. However, their relatively early stage of adoption, limited games releases and limited financials made longer-term sustainability of the model within the firms difficult to ascertain. Those respondent firms that had adopted the IP model within a combination model had not transitioned to an IP only model in this study. The one exception was a firm that started with an IP model, reverted to a WFH model triggered by a notable financial opportunity, and then reverted to an IP model. Even firms that had achieved success in IP activities within the combination model had not changed to an IP only model. Reasons for this included the sustainability and risk involved in the IP model given the notable resources, capabilities, and game success required. However, there was also a re-evaluation of the perception of the model once respondents had experienced both WFH and IP. For example, some respondents with a combination model viewed WFH activities more favorably afterwards and reassessed the suitability of doing an IP model alone. Similarly, the IP model was sometimes perceived as less beneficial than expected, reflecting the findings by Hotho (2013):

“The prospect of IP work as a motivator to get staff through a route of WFH proved not sufficient to sustain staff motivation, (nor did IP work deliver on the promise for higher sense of esteem) when it actually took place.” (Hotho, 2013:101)

There were minimal differences between startup and incumbent firms as the entrepreneur’s attitude and firm resources were more important than stage of the lifecycle.
The entrepreneur’s perception of the firm’s ability and willingness to adopt the IP model was the key determinant of the business model route adopted. The IP model was preferred and, if possible, adopted. However, if the IP model was not feasible on its own, then a WFH or combination model was undertaken. Irrespective of the model adopted, respondent’s perception of the models continued to evolve relative to what best suited the firm.

The routes to business model change were not necessarily linear or structured.

The move from a WFH model, whether singular or combination, was iterative, ad hoc, opportunistic and not always driven by the strategic aims of the firm. There was a notable level of fluidity, in terms of firms’ movement, between models of differing values, and between singular and multiple models. This fluidity was closely linked to the entrepreneur’s preferences for a particular business model and the rapidity required to change. There was a high level of experimentation and ‘try-and-see’ attitude, as well as moving forward based on the resources available to the firm and ‘making do’. This attitude towards experimentation resembled the causation vs. effectuation approach (Sarasvathy, 2001) and would be useful to use to explore this further. With regards to the evolution of the business model, as has been suggested in the literature, business models may evolve as the firm moves along the life cycle (Andries and Debackere, 2007). However, amongst the firms in the study there was no evident link between firm longevity and the business model adopted except that cognitively, those with more experience and track record, appeared more content with delaying the adoption of an IP model.

All respondents were aiming for the IP model therefore the end objective was predetermined at the outset.

This dominant focus on the IP model meant that the definition of the intended business model design was more pre-determined and less discovery-driven or ‘wait-and-see’. The concept of a “business model life cycle involving periods of specification, refinement, adaption, revision and reformation (Morris, Schindehutte and Allen, 2005:733) was evident in some firms. However the routes undertaken to achieve the IP model varied in terms of the level of experimentation and structural activity (McGrath, 2010; Morris, Schindehutte and Allen, 2005) with routes shaped by a number of facilitators, constraints, and reassessment of the IP model as the end goal. This is some ways reflected the fact that: “An entrepreneur may be able to intuit a new model but not be able to rationalise and articulate it fully; so experimentation and learning is likely to be required” (Chesbrough,
This assessment and learning was applied when considering each of the WFH and IP models and there was evidence of entrepreneurs changing their perceptions of the models after experiencing them. For many of the respondents in this study, the IP model was their overall aim despite not understanding all of the aspects that it entailed. Through experiencing, and gaining knowledge about, the IP and other models, respondents were able to further assess the suitability of the models for the firm. For some respondents, this resulted in a more positive appreciation of the WFH model and a more risk-averse approach to the IP model, again reflecting the work of Hotho (2013) and Hotho and Champion (2011) where the perception of the IP model after adoption was less advantageous than originally perceived.

There was a notable desire to undertake the IP model and five facilitators were evident in supporting this.

The facilitators for undertaking an IP model were finance-related factors, the availability of the WFH and combination models, the entrepreneur/stakeholders’ attitude to the IP model, the firm’s resources and capabilities and various external factors. All factors were interlinked but the key elements were the role of the entrepreneur, the capabilities within the firm and the option of using a combination model. The entrepreneur’s perception of models and their relevance helped to determine the direction of the firm. There was a willingness to experiment and adapt with high levels of knowledge acquisition and learning by doing, and an evident ‘try and see’ attitude (Chesbrough, 2010; McGrath, 2010). The entrepreneur's/management team’s ability to lead the firm and manage the models in an uncertain market, indicated flexibility, coping strategies and ambidexterity (Bock et al., 2012; Demil and Lecocq, 2010; Markides 2013; Doz and Kosnen, 2010; Remneland-Wikhamn et al., 2016). The willingness to experiment was a key facilitator, with respondents seeking to adapt their activities as difficulties emerged. Some of the entrepreneurship cognition literature may be of relevance in exploring how the entrepreneur perceives the business model change process, how such perceptions change over time and how they in turn inform the process (Cacciotti and Hayton, 2015; Dew et al., 2015; Chesbrough, 2010; Haynie, Shepherd and Patzelt, 2012).

The use of the combination model allowed startup and incumbent firms to incorporate IP activities despite risk and resource difficulties.

Respondents used the combination business model to undertake IP activities and progress towards the higher value IP model, while using WFH to minimise IP-related difficulties.
The use of two models, ‘a parallel approach’, has been evident in firms and used to mitigate risk and generate alternative options and opportunities (Bucherer, Eisert and Gassmann, 2012; Masanell and Tarzijan, 2012). The combination model in this study provided a route to learning and experimentation for respondents (McGrath 2010; Sosna, Trevyno-Rodriguez and Velamuri, 2010; Baden-Fuller and Morgan 2010). However, the management of multiple models can present difficulties and the ability of the firm to handle both models is an important factor:

“Business model innovation requires a ‘bimodal’ capability – the ability to innovate a new business model while simultaneously executing the existing business model logic.” (Velu, Smart and Philips, 2015:4)

Study respondents were able to manage aspects of both the WFH and IP models but a number of difficulties and tensions were evident. Further examination of the use of parallel models, and the ambidexterity of firms, may prove useful in understanding such difficulties and how these can be overcome. Hotho (2013) identified that videogame development firms’ preference of IP over WFH, and an associated ‘either-or’ approach, “precludes them from developing as ambidextrous organisations” (Hotho, 2013:100), although more recent research undertaken in the Swedish videogame industry, suggested that there was evidence that such firms were able deal with both exploration and exploitation activities (Remneland-Wikhamn et al., 2016). The use of parallel models is gaining attention in the literature (for example Avesa, Furnari and Haefliger, 2015; Velu, Smart and Philips, 2015) and there is scope for further research in this area.

*The facilitators for successful IP model adoption were different from those required to sustain the IP model.*

Adopting and sustaining an IP only model required a combination of resources and capabilities. Attitude and finance-related factors particularly finance availability (whether via income or cost limitation) were key for adoption. However, other constraining factors affected the firm’s ability to incorporate an IP only model including skills availability, contacts, the firm’s track record and experience, knowledge of the various business model components or a notable game success. However, even where the IP model was adopted, it was not always sustainable as the latter required a wider combination of external and internal factors particularly finance, market and game success.
The findings in this chapter contribute to the academic literature relating to how business model change happens and the facilitators for such change (Chesbrough, 2010; Doz and Kosonen, 2008; Mason and Leek, 2008; Teece, 2010), particularly the role of the entrepreneur, capabilities and the use of parallel models. For industry and practitioners, the key considerations are as follows:

• *The use of a combined model incorporating WFH and IP has a number of benefits.* The effect on firm value, capabilities and firm stability can be beneficial. However, the management of such a combined model is difficult and requires a number of capabilities and resources.

• *The entrepreneur has a key role in determining and facilitating business model design and change.* The entrepreneur’s vision, capability and ability to reconfigure assets are important factors.

• *Value generation can be achieved via models other than an IP only model.* The WFH and combination models provided a range of benefits that were often underrated until respondents had experienced them.

### 6.5 Conclusion

This chapter presented the findings related to research question 3: “How do firms change from a WFH business model?” It examined how 25 independent videogame firms changed from, avoided or minimised their use of the WFH business model in favor of the IP business model. All of the respondents wished to adopt an IP model but their ability to do so was influenced by various constraints and facilitators. Four different adoption routes were examined and differences were identified in model composition (singular or combination format), the timing of model adoption (startup and post-startup) and the level of change required (IP model retention or change).

Those firms that had avoided WFH activities had achieved this by adopting an IP only model at inception. This adoption was facilitated mostly by the availability of finance for the firm and/or the firm’s ability to minimise costs due to the relatively early stage of the firm. However, limited games releases and limited finance made longer-term sustainability of the IP model difficult to ascertain. The combination model was used to
minimise WFH activities, reduce the risk of the IP model, provide a platform to change to an IP model and act as a contingency model when the IP only model failed. However, successful IP activities within a combination model did not necessarily lead to the firm transitioning to an IP only model, as the WFH model continued to be used in this combination form. The WFH model provided a number of benefits, particularly firm stability and there was some indication that the stigma of the WFH model reduced when there was IP-related success, even if within a combination model. Finally, five facilitating factors were identified namely finance, the option of alternative business models, the entrepreneur’s attitude, resources and capabilities, and external factors. These emerged from the firm, entrepreneur and external environment, were usually interlinked and had varying degrees of impact depending on whether the IP model was being adopted or sustained.

This chapter concludes the presentation of the findings relating to the three research questions focusing on drivers for, constraints on, and facilitators of an IP business model. The next chapter concludes the study and brings together the findings, discusses the contribution made by the study and highlights areas for future research.
Chapter 7 Conclusion

7.1 Introduction

The aim of this study was to explore the drivers for, constraints on and facilitators for business model change in small entrepreneurial firms. The study was situated in the videogame industry and focused on independent videogame development firms and their experiences of changing from a WFH model in favor of an IP model. Three research questions were addressed: (i) What are the drivers for changing from a work-for-hire business model? (ii) What are the constraints on changing to an IP business model?; and (iii) How do firms change from a WFH business model? This concluding chapter summarises the study’s findings and the contribution made to the business model change literature, the videogame literature, and the videogame industry itself. Each of the research questions is addressed in Sections 7.2, 7.3 and 7.4 respectively and draws on the empirical data from Chapters 4, 5 and 6. The contribution to the videogame industry, and the implications for policy makers, industry organisations and practitioners therein, are discussed in Section 7.5. Suggestions for future research are contained in Section 7.6 and the chapter’s conclusion is presented in Section 7.7.

7.2 Business model change - findings and contribution

The study findings contribute to the growing literature on business model change and provide a deeper understanding of how and why such change happens. The study brought together three critical components of the business change process namely drivers, constraints and facilitators, and examined them in the context of small firms. This approach allowed change to be understood from the perspective of the entrepreneurs initiating such changes. The empirical approach and use of longitudinal data, recognised gaps in the literature, and provided an insight into the business model adoption routes taken by firms. This allowed examination of different business model routes and generated a better understanding about the issues and how they emerged. The findings also contribute to the research on videogame development firms, providing firm-related case study data. The empirical data generated will inform industry policymakers, organisations and practitioners. The study findings relative to the drivers of, constraints on, and facilitators for business model change in the context of the WFH and IP models are illustrated in Figure 7.1 and are now discussed in the remainder of this section.
Figure 7.1 The drivers for, constraints on, and facilitators of business model change

**Influences & Drivers for change**

**Internal**
- Entrepreneur (personal aims, experience and operational preferences).
- Business Model (characteristics, combination model option).
- Firm (strategic alignment, game/platform, resources, development opportunities).

**External**
- Market
- Partners
- Resources

**Constraints on changing to an IP model**

**Constraints**
- Finance (requirements, availability, generation, risk).
- Skills, Knowledge and Experience (deficits in management, marketing and audience development).
- Product and Platform (nature, misalignment, access).
- Market (competition, visibility, engagement, conditions).

**Facilitators for changing from/minimising/avoiding the WFH model**

- Entrepreneur – attitude to the IP model, level of initiative and willingness to experiment.
- Finance – availability and cost minimisation.
- Resource and capabilities – skills, knowledge, profile, networks.
- External - market opportunity, product success.
- Business model – use of WFH activities and the combination model.
7.2.1 Drivers for changing from a WFH model

The first research question examined business model change drivers (Doz and Kosonen, 2010; Foss and Saebi, 2017; Achtenhagen, Melin and Naldi, 2013), examining the type and source of such drivers in a small entrepreneurial firm, including the role of the entrepreneur (Amit and Zott, 2015; Zott and Amit, 2007). The research question: “What are the drivers for changing from a work-for-hire business model?” was explored to understand the level of desire to change from the WFH model and the rationale for doing so. The aim was to identify how the WFH and IP models were perceived and the factors that influenced business model selection and adoption.

The desire to change from, minimise or avoid the WFH model in favor of an IP model was confirmed. However, despite the entrepreneur’s underlying preference for an IP model, a combination of influencing factors at the level of the firm, external environment and business model itself meant that the resultant model was often at odds with the preferred model. The drive for change was heavily influenced by the relative perceptions of the WFH and IP model characteristics. The IP model was perceived as a higher value model incorporating financial aspects, but as importantly, one that aligned with the entrepreneurs’ preference for self-determination particularly creative freedom, autonomy, game quality and positioning. The WFH and combination models were prevalent and provided higher financial values but were, in general, less favored than the IP model. The preference for an IP model was evident in both startup and incumbent firms, reflecting the importance to respondents of being identified with games originating from within the firm. This preference is not new, although its identification as a strong driver is important in understanding the rationale for business model choice in certain firms. These ties to the IP model did appear to lessen in firms that had notable WFH success and/or a broader portfolio (e.g. other activities generating value). However, even where an entrepreneur was less driven by this IP preference, they remained aware that staff might prefer IP activities and that this had implications for staff recruitment and contentment.

It was evident that respondents were pursuing the IP model for its perceived higher value. However the fact that value was often viewed as being broader than finance highlighted that other considerations such as project autonomy, recognition, and creative freedom were important and had an influence of the preference for, and therefore selection of the IP model. While IP ownership was a route for firms to achieve financial value, the was more
widely perceived as a means to access the non-financial benefits such as management autonomy, creative freedom, the origination of internally defined games and firm profile. If another business model could have provided such factors, as in those cases where WFH projects satisfied such aims, then the IP model and ownership was less of an issue. This does not negate the potential of successful IP activities to generate notable economic value, be more attractive to investors, and generate more advantageous benefits in the longer term. However it does highlight that IP ownership is only important if it can be successfully commercially exploited.

The option to adopt a combination model, where both the IP and WFH models coexisted in the firm, was also important as a driver for change. This provided a hybrid ‘meta-model’ that allowed IP activities to be undertaken while retaining the WFH model-related benefits that allowed the firm to operate. The use of the IP model in a combination model format resulted in a higher use of the IP model in the study than was expected. The role of the WFH model and the combination model were important in supporting IP activities, but were but often under-acknowledged. The use of a WFH model alone, or as part of a combination model, facilitated IP activities. However, in this study, despite the prevalent use of the WFH model and its associated benefits, WFH model usage was often underreported by respondents, including by those that had been successful with the WFH model.

The findings relating to the first research question contribute to the business model change literature as follows:

(i) **The importance of internal influences on driving change**

Within the literature, a combination of internal and external factors was evident as a driver of business model change and design (Aspara et al., 2013). There has been a focus on external drivers for change and the need to respond to such changes to survive, develop and remain competitive (Teece, 2010; Chesbrough, 2010; Ojala, 2015; Casadesus-Masanell and Zhu, 2013; Magretta, 2002; Saebi, Lien and Foss, 2016; Doz and Kosonen, 2010; Casadesus-Masanell and Ricart, 2010) particularly for startups (De Reuver, Bouwman and MacInnes, 2009; Mathar and Brettel, 2014). External drivers were evident in the study, for example the removal of constraints (McGrath, 2010) particularly in relation to market and technology. However internal influences were more influential for respondents in driving business model change.
(ii) **The entrepreneur is a crucial influencer for change**

The entrepreneur was identified as a critical driver for business model change, often responsible for initiating such change, and was a key influencer in business model design. This related to the decision-making power of the entrepreneur within the firm and the entrepreneur’s strong attachment to a specific business model. The findings supported the literature suggesting the importance of the entrepreneur in business model research (Khanagha, Volberda and Oshri, 2014; McGrath, 2010), and the role that the entrepreneur has in business model choice and design, and in driving selection and change (Cavalcante, Kestin and Ulhoi, 2011; Zott and Amit, 2007, 2008; Redis, 2009; Andries and Debackere, 2006).

(iii) **Business model characteristics can be drivers for change**

The entrepreneur’s perception of the business model and associated value was also crucial in driving change. The pursuit of the IP model for higher value and improved firm performance was key. However such value was broader than finance, with the entrepreneur’s preferences and self-identity being of notable importance particularly, for example, in relation to the autonomy around decision-making, having creative freedom and game-related preferences. Within the creative industries, financial aspects can sometimes be secondary to other factors such as creativity, reputation and brand value (Bilton, 2007) and this was evident from respondents in this study. This positive perception and pursuit of the IP model reflected earlier studies on videogame development firms (Hotho, 2015; Hotho and Champion, 2011), the preference for the IP model (Christopherson, 2004) and the importance given to value in the business model literature (Teece, 2010; Amit and Zott, 2001).

(iv) **The evaluation and assessment of business models does not cease on adoption**

Experiencing and acquiring knowledge about a business model is important. Respondents’ perception of the IP and WFH models appeared to change after they had been experienced. Sometimes, even when the IP model had been successfully adopted, the expectations of management and staff were not necessarily met by the value and satisfaction generated by the IP model (Hotho and Champion, 2011). Similarly, the perception of the WFH model’s value appeared to improve where there was increased experience of WFH, financial success and a broader portfolio with other value generating activities, Indeed, those respondents that had implemented a combination model, retained the WFH model, even after IP success. Perhaps by actually experiencing the models, respondents were better able
to assess the value of each model and, in turn, reassess their own preferences: “A business model cannot be assessed in the abstract: its suitability can only be determined against a particular business environment or context” (Teece, 2010:191). The combined model of IP and WFH allowed both models to be experienced while reducing some of the risk. While the management of a combination model created difficulties, the opportunity to adopt such a model was an important driver in changing from WFH as it allowed IP activities to be undertaken while retaining WFH-related benefits that allowed the firm to operate.

7.2.2 Constraints on changing to an IP model

The second theme of the study focused on the factors that can hinder change. A number of constraints have been identified in the literature. However, there is limited consolidation and no overarching theoretical or empirical approach (for example Chesbrough, 2010; Zott and Amit, 2013; Froud et al., 2009; Sinfield et al., 2012). In the context of videogame development firms, the second research question therefore addressed: “What are the constraints on changing to an IP business model?” The focus was on understanding why the IP model was not more widely adopted, given the support from industry and policy makers, and its perceived higher value of the IP model relative to the WFH model.

The findings highlighted four key constraints to adopting an IP model namely finance; skills, knowledge and experience; product/platform; and the market. Finance was often perceived as the most important constraint but all factors were often interlinked. Some industry-related constraints illustrated the importance of context in business model change and how the nature of the firms, the business model and the industry itself influenced the change to an IP model. For example the complexities and risk of the videogame product, the small size of the development firm, the need for a high level of consumer engagement, the perception (and ability to manage) exploitation and exploration activities, and the overt focus on an IP model were all evident contextual factors. Constraints emerged from four sources with varying degrees of perceived influence namely the entrepreneur (minimal influence), business model (moderate influence), external environment (moderate influence), and the firm (high influence).

Constraints affected whether or not the IP model could be adopted, the form that such adoption would take, when the adoption could be undertaken, and how well the model could be it sustained over time. Constraints were not always strong at IP adoption
(whether alone or in a combination model) and usually related to finance availability, with some respondents using cost minimising activities to undertake IP while others had access to development funding. However, when trying to sustain the IP model, and/or transition from a combination model to an IP only model, constraints were more problematic, recognising the need for a wider range of supporting factors such as resources, capabilities, product success were required.

Overall, the respondents viewed constraints as ‘challenges-to-be-overcome’, rather than preventative. This attitude was an important influencer on how constraints were perceived, discussed and addressed. The presence of constraints presented challenges to firms but there was an awareness of this and a willingness to respond to achieve an IP model. Overall, there was a high level of learning and experimentation within firms to address constraints. Constraints that did prevent the adoption of an IP only model were limited but important and mainly related to financial and skills issues, and the newness of the IP model itself.

The findings relating to the second research question contribute to the business model change literature as follows:

(i) **Both internal and external factors were constraints**
Constraints were identified relative to the entrepreneur, the firm, the business model and the external environment and were evident not just at adoption but also when sustaining the model after change (Linder and Cantrell, 2000). There was limited evidence among respondents of a reluctance to change to IP for reasons related to risk, uncertainty or lack of knowledge (Johnson, Christensen and Kagermann, 2008; Chesbrough, 2010; Bouchikhi and Kimberley, 2003; Wernerfelt, 1984; McGregor, 2013) or a dominant logic about the role of the firm in the world (Chesbrough, 2010; Bouchikhi and Kimberly, 2003; Chesbrough and Rosenbloom, 2002). Instead, the strong desire to undertake the IP model, and a lack of awareness about what implementing the model would involve, meant that constraints relating to the entrepreneur were minimum. Some respondents altered how they pursued the IP model, reacting to resource and risk-related issues, rather than stop pursuing this model. Those respondents with more experience, or where the firm had a sizeable team and financial stability, were more likely to undertake a WFH model or a combination model in the short-term if IP was not possible. This reflected the reluctance to change as it involved moving away from the traditional configuration (Amit and Zott,
2001) and conflicting with the existing firm operations and asset base (Chesbrough, 2010). However, this differed from the literature in that it did not preclude the continued drive for an IP model, but rather affected the business model change path undertaken. Respondents often reassessed the IP model after adoption, particularly where the reality of both models had been experienced and, in the main, the benefits of WFH were more evident, as were IP-related difficulties (Hotho, 2013). The findings highlighted that changing business models was about more than just model adoption, and that sustaining the model after change was important too (Linder and Cantrell, 2000; Sinfield et al., 2012).

(ii) The preference for a particular business model is a strong driver
Reconfiguration and cognition-related issues were important but not overly evident as constraints, given the preferred status of the IP model. The respondents were pre-disposed to the IP model, and the change to this model from the WFH model was more about the timing and the business model composition, than whether it would happen. However, some respondent that had developed their firms around the WFH model and experienced financial success, growth and relative stability, were more considered about the change to an IP model. The size of the firms and their relative success could have been important factors in this, determining the extent to which reconfiguration was required (Chesbrough, 2010), although cognition barriers were less evident. Where a combination model was used, there were various difficulties relating to managing the model. Managing different business models simultaneously can be part of the change process: “the organisation’s culture must find ways to embrace the new model, while maintaining the effectiveness of the current business model until the new one is ready to take over completely.” (Chesbrough, 2010:362). However, the respondents’ ability to manage two very different models, and the associated exploration and exploitation activities (Hotho, 2013; Tschang, 2007) was difficult.

(iii) The perception of constraints is important
Constraints were viewed as challenges rather than as preventative. Constraints, in the main, were viewed as problems to be solved (Amit and Zott, 2015) and there was little evidence of capability myopia (Johnston, 2009), with firms often acknowledging the need for, and internal weaknesses in, resources and capabilities. There was an awareness of constraints, and a perception of them as ‘difficulties to be overcome’, with a willingness to respond and a ‘try it and see’ approach. This awareness and associated action was enabled by the entrepreneur’s attitude and the ability, at the firm level, to reconfigure, show flexibility,
learn-by-doing and engage in experimentation (Morris et al., 2006; Chesbrough, 2010; Sosna, Trevinyo-Rodriguez and Velamuri, 2010; McGrath, 2009; George and Bock, 2011; Chesbrough, 2010).

(iv) **The industry context is an important consideration**

It is important to consider the wider context of the firm, particularly the videogame industry and the characteristics of the WFH and IP models. The characteristics of the videogame industry, and the firms therein, were the source of some constraints (De Prato et al., 2010). This included the nature of the game product and (De Prato et al., 2010; McGregor, 2013; Tschang, 2007), the need to manage both creative and rational aspects within a creative industry firm (Tschang, 2007; Lampel, Lant and Shamsie, 2000; Dobson, 2006) and the ability to undertake both exploration and exploitation activities (Hotho, 2013). The characteristics of the business models were also the source of constraints provided with limitations emerging from each model both alone and in a combination form.

7.2.3 **Facilitators supporting change from a WFH model**

The final theme of this study was how business model change happened, and the facilitators that supported this (Chesbrough, 2010; Doz and Kosonen, 2008; Mason and Leek, 2008; Teece, 2010). The third research question: “*How do firms change from a WFH business model?*” examined the adoption patterns of the IP model and the facilitators supporting its adoption. This focused on the different routes taken by 25 independent videogame development firms to change from, minimise or avoid the WFH model in favor of the IP model. The routes incorporated IP in singular and combination forms, and adoption occurred in startup and incumbent firms.

Four different firm types and routes were identified: Soloists that avoided the WFH model by adopting and retaining an IP only model from inception; Retrencher firms avoided the WFH model at inception by minimising costs but then had to change to a combination model and incorporate WFH activities; Balancer firms that adopted a combined model of WFH and IP models at inception, allowing IP activities to be undertaken, minimising risk and obtaining benefits from WFH activities; and Evolver firms that had deliberately started with a WFH model only in order to establish the firm and achieve stability before transitioning to a combination model that incorporated an IP model when circumstances
better suited the firm. The routes taken to adopt the IP model were not necessarily linear or structured, but rather iterative, ad hoc, opportunistic and not always driven by the strategic aims of the firm. The combination model was prevalent and was employed to minimise risk, provide a business model transition platform and used as a contingency when the IP model failed.

Adopting and sustaining an IP only model was facilitated by a combination of factors at the level of the firm, entrepreneur and external environment and were usually interlinked and with varying degrees of impact. Five facilitators were evident namely finance related factors, the WFH and combination models, the entrepreneur’s or stakeholder’s IP model and constraints, firm resources and capabilities, and external factors. There was a notable desire to undertake the IP model but adopting such a model was difficult without financial availability or limiting overheads. IP only models were achieved in firms that had started with this model, although their relatively early stage of adoption and limited games releases made sustainability difficult to ascertain. No respondent firms had transitioned to an IP only model from the WFH or combination models, and successful IP activities within a combination model had not necessarily lead to the transition to an IP only model. This may have related to the time period of this study. However, it may also have been a risk reduction measure used by firms when they realised the benefits of the WFH model, had less need to prove their IP abilities and/or realised that sustaining an IP only model required notable resources, capabilities and game success.

The inherent difficulties with adopting an IP model meant that respondents continued to use WFH activities in both singular and combination model format. The combination model provided WFH model benefits while supporting IP activities, and the use of the combination model moderated the deficiencies in both models. The WFH provided resources and the stability to adopt the IP model and had resulted in the combination model being prevalent. Having experienced the WFH model, there appeared to be less movement towards an IP only model, perhaps recognising the need for finance, sustained game success, exposure to risk and other factors, that such a move entailed. The acknowledgement of the WFH-related benefits therefore often meant that respondents retained this model even where they had achieved success with IP activities.

The findings relating to the third research question contribute to the business model change literature as follows:
(i) Business model change was not always linear and strategic

The move from the WFH model in its various forms was iterative, ad hoc, opportunistic and not always driven by the strategic aims of the firm. This supported the suggestion that business models need to be “frequently adjusted to new challenges” (Komorowski and Delaere, 2016:117) with various ‘trial and error’ type activities to moderate for market conditions and internal factors (Blank, 2013; Sosna, Trevinyo-Rodriguez and Velamuri, 2010). The routes identified in this study were more similar in nature to those described as experimental (McGrath, 2010; Mason and Leek, 2008; Ojala, 2016; Chesbrough, 2010). The strong drive towards the IP model meant that much of the experimentation related to finding the best route to achieve this model (Morris et al., 2006; Andries and Debackere, 2007; George and Bock, 2011), with the entrepreneur being key drivers. However, various respondents changed their original goal of only doing IP, as they gained in knowledge, experience and the realities of the models in-house. This reflected the literature that suggests that, as the business model is not always known at the start, particularly in turbulent markets: “an entrepreneur may be able to intuit a new model but not be able to rationalize and articulate it fully” (Chesbrough, 2010:187). The business model may therefore keep changing as the entrepreneur acquires knowledge and experiences and makes readjustment as required (Andries and Debackere, 2007; Sosna, Trevinyo-Rodriguez and Velamuri, 2010; McGrath, 2010; Linder and Cantrell, 2000).

(ii) A combination of factors facilitated change but the entrepreneur was critical

Adopting and sustaining an IP only model was facilitated by a combination of five factors at the level of the firm, entrepreneur and external environment, usually interlinked and with varying degrees of impact. These reflected the literature relating to the person’s attitude and ability to make the change, the role of experimentation activities, and the use of parallel models. There was willingness among respondents to experiment and adapt, with high levels of knowledge acquisition and learning by doing, and an evident ‘try and see’ attitude (Chesbrough, 2010; McGrath, 2010; Cavalcante, Kestin and Ulhoi, 2011). The entrepreneur’s (and management team’s) ability to lead the firm and manage, sometimes multiple, models in an uncertain market, indicated some existence of flexibility, coping strategies and ambidexterity (Bock et al., 2012; Demil and Lecocq, 2010; Markides, 2013; Doz and Kosner, 2010; Remneland-Wikhamn et al., 2016). However sustaining an IP only model required a complex combination of resources and capabilities.
(iii) The use of a portfolio of business models was a key facilitator

The use of the combination model was prevalent, allowing startup and incumbent firms to incorporate IP activities despite risk and resource issues (McGregor, 2013). The use of multiple models has been evident in firms to mitigate against risk and generate options (Bucherer, Eisert and Gassmann, 2012; Masanell and Tarzijan, 2012; Teece, 2010). Respondents in this study used the combination model to reduce risk but also to allow their firms to experiment with the desired IP model to gain the value that they sought. Parallel models were used when the preferred model was not possible (or not known) because this combined model provided benefits in the short term that facilitated the firm’s existence. This reflected some of the themes from the work undertaken in different industries such as high tech and automotive (Willemstein, van der Valk and Meeus, 2007; Connell and Probert, 2010; Aversa, Furnari and Haefliger, 2015). While the combination model was difficult to manage, it allowed both IP and WFH models to be undertaken while moderating the deficiencies in each model (Connell and Probert, 2010; Velu and Stiles, 2013). The combination model also provided an opportunity to experiment, learn and assess the suitability of the WFH and IP models relative to the firm (Chesbrough, 2010; Teece, 2010; Sosna, Trevinyo-Rodriguez and Velamuri, 2010). In the study, respondents were able to manage both the WFH and IP models but a number of difficulties and tensions were evident due, in part, to the characteristics of these business models and how they were perceived within the videogame industry (Hotho, 2013; Remneland-Wikhamn et al., 2016).

7.3 Business models and the videogame industry – contribution and implications

The study contributed empirical evidence about the experiences of videogame development firms with the WFH and IP models. First the strong views about IP and WFH were key determinants in business model design and change decisions. The preference for the IP model was evident and supported earlier studies that highlighted this (Hotho, 2013; McGregor, 2013; Hotho and Champion, 2010): “Success may not only be found in watching the market and valuing the market share obtained by a self-created product or service” (Hannay, 2015:23). Support initiatives also appeared to focus on IP-related activities, particularly intellectual property development and retention, rather than IP-related commercialisation activities such as marketing or customer engagement, or WFH activities. There was some similarity here to the issues identified by Connell and Probert,
where policy makers were less interested in subcontractor-related activities than IP-related activities. Despite the benefits generated by the WFH model alone and in combination, the model was considered to be inferior to the IP model. The exception was when the nature of the WFH project generated benefits similar to those sought from IP activities such as involvement, freedom, opportunity and reward. Interestingly, when respondents had experienced both models, their perception appeared to change, supporting earlier work by Hotho and Champion (2011) and Hotho (2013) where the post-implementation perception of IP was not always positive. Perhaps by experiencing models, respondents were better able to assess the value of each model and, in turn, reassess their own preferences: “A business model cannot be assessed in the abstract: its suitability can only be determined against a particular business environment or context” (Teece, 2010:191).

Second, respondents viewed value in more than in economic terms. The perceived value of the IP model was broader than finance with the entrepreneur’s preferences and self-identity being of notable importance, particularly in relation to the level of autonomy around decision-making, creative freedom and game-related preferences. This positive perception and pursuit of the IP model reflected earlier studies on videogame development firms (Hotho, 2015; Hotho and Champion, 2011), the preference for the IP model (Christopherson, 2004) and the importance given to value in the business model literature (Teece, 2010). Within the creative industries, financial aspects can sometimes be secondary to other factors such as creativity, reputation and brand value (Bilton, 2007) and this was evident from respondents in this study. Understanding the broader value perspective both for the firm and its customer base could help to identify more innovative ways of capturing value and build these into the firm’s strategy and business model. A broader approach can help to avoid overly focusing on the IP model videogame development firms: “this predominance [for IP in managers’ and employees mindsets] can challenge the sustainability of the businesses” (Hotho, 2013:98).

Third, the use of the WFH and combination models was prevalent but overlooked and underrated. Value from the IP model was difficult to achieve unless there was notable investment, games success and/or the firm had the ability to sustain the IP model, therefore respondents often used WFH activities in a combination model to support IP, generate finance for the firm and reduce risk, reflecting the findings of McGregor (2015).
(i) Implications for practitioners

For practitioners, the implications of the study findings are: (i) while there is a desire to change from, minimise or avoid the WFH model, the IP model may not always be appropriate despite being preferred, (ii) value and success can be achieved from a non IP only model, and (iii) knowledge of the issues involved in adopting and sustaining the IP model can be useful in changing to this model. First, the IP model is difficult to sustain even where IP ownership and finance have been secured. Intellectual property ownership and the availability of finance are not sufficient for the successful adoption of the IP model. It may be helpful for firm owners/management teams to consider the constraints (i.e. finance; skills, knowledge and experience; the market; and product/platform) and the impact such factors can have. The IP model requires a range of commercialisation and customer support activities that cannot be overlooked and the IP model may not be appropriate for small, resource-strapped firms in the absence of support given activities required to sustain the model.

Second, firm value and success can be achieved without an IP only model. The IP model has been preferred in the main as it embodies the entrepreneur’s preferences and is perceived as more creative than WFH. However, intellectual property ownership in games content is not required for financial success. There is an opportunity to look more widely than the singularity of each model and create a business model with component parts that recognises the wider value requirement being sought by firm and the value required by the customer base. Using the business model framework, the firm can reassess the various components therein and design a model that best suits their strategy, preferences and context.

Third, understanding the practicalities of changing to an IP model are necessary to ensure practitioners have insight into the issues involved. The realities of the WFH and IP models are often unclear without the firm’s management and staff having experienced these. This can lead to disproportionately positive views of IP, and negative views of WFH, distort the firm’s objectives and activities, and create a sense of disillusionment and underachievement. A better understanding of the need for both exploration and exploitation activities, and the reality of the advantages and disadvantages of the IP and WFH models, would be useful.
Implications for policy makers and industry organisations

For policy makers and industry organisations providing guidance to practitioners, the study findings contribute to discussions about: (i) the support provision for business model change activities; (ii) reassessing the appropriateness of the IP model; (iii) the undervaluing of the WFH and combination models; and (iv) data related issues.

First, supporting intellectual property ownership and product development funding are not sufficient to sustain an IP model. The IP model is difficult for small videogame development firms to adopt, even when finance and IP ownership have been secured. However, it is difficult to sustain this model. There was some evidence that even when the IP model was adopted, firm activities focused on product development, rather than commercialisation activities, with limited games release and a lack of financial success even when games had been released. While product development funding is important in allowing research and development activity to be undertaken, the lack of post-development support may be detrimental to commercialisation-related activities, the IP model, and the firm’s stability. Supporting IP development activities (unless for solely R&D or skills development purposes) may not be beneficial unless the wider exploitation activities involved in commercializing and customer support are also supported.

Second, the IP model may not be appropriate for a number of videogame development firms, and other opportunities to build value into the firm may be more worthwhile. Innovation, change and value creation can be undertaken at the level of the business model component and/or by combining both the WFH and IP models in different ways. This could provide a route to consider broader options for building value into the firm, rather than only viewing it as a choice between IP and WFH, or associating success with only the IP model. The perception of the IP and WFH models is a key part of this. Supporting firms to define, understand and gain value from their business model could help management teams to reassess their value options and identify options for change.

Third, the benefits and value from the WFH and combination models are often overlooked. WFH activities were often viewed less favorably than proprietary IP despite the benefits generated by the former, some of which were crucial in the firm’s survival. This perception could be detrimental to how growth opportunities for firms are viewed and may influence the support provision available. There is the opportunity to promote more positively the WFH business model and create a better understanding of (and support for) its role in the
firm and in supporting IP activities. Identification of how firms can be supported with WFH or the combination models may be useful and recognises that these model formats provides a route for resource and capability development, as well as a reduced-risk route to undertaking IP.

Finally, there were some issues relating to the lack of clarity about both the business model concept and firm-related data. The perception of business models from respondents and the industry was diverse and usually confused with component parts such as revenue, rather than a route to value creation, distribution and capture. Clarity around the use of terminology and raising awareness about the use of the business model as a planning tool for strategic purposes may be helpful. The accuracy and availability of firm-related data were also issues for research purposes, particularly relating to the limited publicly available data. This is a constraint on understanding the industry and decision-making related to it. There has been increasing recognition by the public and private sectors of data-related issues and an initiative such as the NESTA/UKIE Games map is a positive development in this regard. However, more work is required to ensure the availability of accurate data that can provide a robust data platform upon which to base decisions about firm and industry development.

7.4 Future Research

(i) The role of entrepreneur in business model change.

The entrepreneur was an important component of influencing the business model design and selection process, and was very evident as an influencing driver for business model change (Cavalcante, Kestin and Ulhoi, 2011). There is justification for further research examining business models in the context of entrepreneurship and small firms (Morris, Shinduhette and Allen, 2005; Morris et al., 2006; George and Bock, 2011) and the opportunity to explore linkages between the entrepreneur and aspects of business model change, particularly business model design and firm performance (Zott and Amit, 2007, 2008; Redis, 2009; Andries and Debackere, 2006; Foss and Saebi, 2017). Continued examination of how factors combine to influence the selection, adoption and sustaining of business models is relevant but could bring together different theoretical frameworks to do so (Gassmann, Frankenberger and Sauer, 2016). A range of resources, capabilities and other factors were evident as considerations about business model change particularly in terms of constraints and facilitators. Business model selection and design can be linked to
dynamic capabilities (Teece, 2010) and would provide an opportunity to build on the dynamics capabilities literature (Helfat et al., 2009). For example, exploring business model change as a dynamic capability (Saebi, 2015) rather than a “knowledge-driven process” (Bock et al., 2012:300), and linking this with the resource based view, entrepreneurship and resources, and knowledge (Barney, Wright and Ketchen, 2001). The cognition-related literature may also be useful to examine adaptability and how an entrepreneur’s perception of models changes and then informs the process of further change (Cacciotti and Hayton, 2015; Dew et al., 2015; Chesbrough, 2010; Haynie, Shepherd and Patzelt, 2012).

Various ethical and morality issues also emerged in the study as considerations by respondents when designing business models. These included the perception of the effect of certain monetisation methods on consumers (where akin to encouraging gambling), staff welfare (a reluctance to destabilise the team through pursuing risky strategies or projects requiring high levels of recruitment followed by redundancies) and the importance of positioning the firm as having integrity. Ethical-related considerations have not been overly evident in the literature but would be worth considering as influences on decisions about business model change, given the importance and influence of the entrepreneur.

(ii) The role of parallel models
The role of parallel models or business model portfolios in business model change has started to attract researchers’ attention and is useful for further examination particularly linking business model configurations and complementarities to business model performance (Aversa, Furnari and Haefliger, 2015). There has been some limited research about the coexistence of business models (Sabatier, Mangematin and Rouselle, 2010; Markides and Charitou, 2004; Casadesus-Masanell and Tarzijan, 2012) and identified gaps relating to how the firm’s business model ‘configuration’ can be examined as a way of understanding performance. It is suggested that such an approach is particularly relevant in technology-based environments (Casadesus-Masanell and Tarzijan, 2012) therefore; this may be worth exploring further within the context of the videogame industry. The nature of complementarities also has potential for further research (Furnari, 2015) as the parallel approach reveals that synergies can be beneficial for performance when the models are complementary, while recognising the difficulties of managing such a parallel approach (Velu, Smart and Philips, 2015).
(iii) Organisational ambidexterity

Linked to the use of parallel models is the organisational ambidexterity theory literature, particularly relating to exploration and exploitation activities (March and Olsen, 1985; Raisch and Birkinshaw, 2008; Raisch et al., 2009) and the ability of the firm to handle these two activities. Organisational ambidexterity may be useful in exploring how such parallel models are, and can best be, managed using the WFH and IP business models as units of analysis (Winterhalter, Zeschky and Gassmann, 2015; Khanagha, Volberda and Oshri, 2014). Using an ambidexterity lens may also help to explain the connections between business model change and organisational resilience (Buliga, Scheiner and Voigt, 2016). The videogame industry provides a good opportunity to explore ambidexterity. A recent study undertaken in the Swedish videogame industry (Remneland-Wikhamn et al., 2016) explored ambidextrous capabilities and how they were developed within a videogame firm while earlier studies by Hotho and Champion (2010, 2011) highlighted how closely the WFH and IP models were linked to exploitation and exploration activities, suggesting the overt preference for the IP model resulted in an “either-or approach” to WFH and IP models and prevented the development of ambidexterity (Hotho and Champion, 2010:100).

(iv) Business model and value perception in the videogame industry

The differing perceptions of the value attributed to the WFH and IP models illustrated that financial return was not always the main representation of value for respondents, even where the financial potential was substantial. Factors such as creativity, autonomy and self-identity, among others, were mentioned as important. This wider perception of value is an important consideration for future research given that it is a key driver for business model design and change, and a key influencer on post-adoption model perception. The strong preference for the IP model in this study arose from the respondents’ perception of this model as having a higher value that WFH with factors such as creativity and autonomy contributing to this. Such value was a key contributor to respondents pursing the IP model, irrespective of the activities involved. This almost myopic drive towards the IP model was similar to the observations from Hotho (2013:93): “their [entrepreneurs] willingness to risk it all or to keep tying in ever new reconfigurations.” However, despite the perceived higher value of the IP model, such perceptions were not always maintained post-adoption, causing a reassessment of the model. Similarly, the WFH model, while underrated, and perceived more negatively compared to the IP model, provided a range of benefits and value to the firm. Indeed, the acknowledged lack of the model’s value in some aspects, prompted some
respondents to evaluate new opportunities within the business model components and to create alternative sources of value including the development of non-games intellectual property, the provision of higher-value services to games and non-games sectors, and the creation of products for non-games sectors among others. Taking a broader approach to the perception of value, and its influence on business model design and change, could prove more beneficial than the ‘either WFH or IP’ approach to business model adoption decisions which has been apparent in this study.

7.5 Conclusion

This chapter provided a conclusion to the study. The research aims and objectives were restated, followed by a summation of the study’s approach and how it contributed to existing knowledge. Each of the three research questions was then addressed incorporating a summary of the findings for each and the resultant contribution to the literature.

First, there was a desire to change from, minimise or avoid a WFH model. This was driven by the negative perception of the WFH model, the option to adopt a combined WFH and IP model, and the alignment between the entrepreneur’s personal preferences for the IP model. The preferred model was not always the adopted model but rather determined by four levels of influence namely the entrepreneur, the firm, the external environment and the characteristics of the business model itself. Second, the constraints on adopting an IP model were identified as finance; skills, knowledge and experience; product and platform; and the market. Such constraints impacted on both startup and incumbent firms and on adoption and sustaining the IP model. Adoption of the IP only model was possible if finance was available but sustaining the IP model was difficult and this was reflected in the prevalence of the combined model of IP and WFH. Constraints were viewed as challenges rather than preventative due to the strong desire for the IP model and there was an evident recognition of constraints and the willingness to address these through learning and experimentation. Third, the routes adopted by firms to change from, minimise or avoid the WFH model were discussed and the facilitators that supported this. Using the experiences of 25 firms and four different IP adoption routes, five facilitators were identified namely finance, the option of alternative models, the entrepreneur’s attitude, resources and capabilities, and external factors. These emerged from the firm, entrepreneur and external environment, were usually interlinked and with varying degrees of impact depending on whether the IP model was being adopted or sustained.
The study’s contribution to the videogame industry, both in terms of academic literature and industry-related policy, was then presented followed by the implications for policymakers, industry organisations and practitioners. Finally, the chapter concluded with suggestions for future research relating to business model change.
## Appendices

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Appendix 1: Familiarisation workshop

1. Workshop aim

To gain an insight into the videogame innovation process from inception to commercialisation and familiarise with the relevant terminology, processes and structure.

2. Format and duration

A one-day workshop delivered over 2 x 0.5 days on 7-8 November 2013.

3. Themes

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<td>1. Games development</td>
<td>To understand the key stages in videogame development and the associated issues</td>
<td>• Stages of the game development process&lt;br&gt;• Key considerations relative to:&lt;br&gt;− Platform&lt;br&gt;− Technology strategy&lt;br&gt;− Product strategy&lt;br&gt;− Revenue models&lt;br&gt;• Differences in business models</td>
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<td>2. Games commercialisation</td>
<td>To understand the commercialisation process and the associated issues</td>
<td>• The commercialisation process and influences&lt;br&gt;• Options and issues relative to:&lt;br&gt;− Distribution platform&lt;br&gt;− Revenue&lt;br&gt;− Customer engagement</td>
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<td>3. Independent videogame development firms</td>
<td>To understand firms and identify relevant issues for data collection</td>
<td>• Firm characteristics&lt;br&gt;• Data access and availability&lt;br&gt;• Examples of firms with differing models</td>
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4. Intended output

- Increased knowledge about the videogame development and commercialisation process.
- Awareness of issues facing independent videogame development firms in achieving growth and sustainability.
- Increased knowledge about the industry context including terminology, ecosystem, and the role of videogame development firms therein.
- Information to inform the research design relative to key themes and potential respondents.
- Identification of relevant industry data issues.
- Identification of information sources about firms and their experiences of business model issues.
Appendix 2: Data management plan

1. Data collection

Primary data will be collected in this study to address the gap in firm-level data relative to the videogame industry in Scotland. This will involve interviews with approximately 40 participants by the researcher. Such participants will be owners and/or executive team members of videogame development firms in Scotland, and industry experts. Semi-structured interviews will be undertaken to collect qualitative data from such participants. The interview data will be augmented by existing, relevant, contextual (predominantly secondary) data from a range of academic, public and private sector sources to avoid duplication and facilitate reuse as far as possible.

The aim is to understand the experiences of the participants as they wish to express it, gain a deeper understanding of how and why they have adopted certain business models, and discover things that are difficult to directly observe. The semi-structured format of the interview allows the participant to talk about things that were not anticipated and allows the issues discussed at the interviews to change as new data are revealed. Each interview will be undertaken, where possible, face-to-face at the participant’s premises, and will last for approximately 60 minutes. If the participant is unable to meet face-to-face, then a telephone or Skype interview will be undertaken instead. At the interview, notes will be taken in a fieldwork diary and, if the participant agrees in advance, an audio recording will be made.

2. Data format and management

The data obtained from participants will be held in digital format and hard copy as follows: (i) interview data recorded on a portable digital recorder with an inbuilt USB stick; (ii) written notes taken by the researcher at the interview and contained in a purpose-specific field-note book including researcher observations, memos, and general comments; and (iii) electronic and hard copy versions of the interview transcripts created from the digital recording of the interview with the participant.

Interview data will be transcribed in accordance with a standard transcription template created by the researcher to ensure consistency in the style, layout and editing. It will include the following elements as advised by the UK Data Service: a unique identifier, a name or number; a uniform and consistent layout throughout the data collection; a document header or cover sheet with interview or event details such as date, place, interviewer name and interviewee details; speaker tags to indicate the question/answer sequence or turn-taking in a conversation; line breaks between turn-takes; page numbers; and pseudonyms to anonymise personal identifying information (http://ukdataservice.ac.uk/manage-data/format/transcription.aspx). Where data in the interview transcripts requires to be anonymised, a log will be created of all replacements; aggregations or removals and unedited versions of the transcripts will be retained by the researcher.

3. Data security, storage and disposal

Hard copy and electronic data will be generated in the study. This will be held securely and restricted appropriately. Hard copies will be stored in lockable cabinets, which will only be accessible by the researcher, and electronic records will be stored on secure drives. During the study, the University server will provide the main storage and backup facility, which
will be accessed on-site, and through secure remote-access (http://www.strath.ac.uk/it/filestore.) Where portable devices are used for confidential data, these will be encrypted. The recommendation from the University of Strathclyde’s IT department is to use TrueCrypt software (http://www.truecrypt.org/downloads) which will be installed on all workstations and laptops that are used. Access will be gained using the TrueCrypt software device plus a password.

A UK-based subcontractor will be used to transcribe the interviews. A non-disclosure agreement will be signed by the subcontractor prior to the data being transmitted and handled. All files will be encrypted before transfer. If personal data are contained within the interview, a Data Processing agreement will be put in place, which will set out the terms of the service between both parties, and act as an undertaking from the subcontractor that it will comply with Data Protection law. The researcher will pseudo-anonymise interview transcripts as necessary. In such cases, a log will be created of all replacements, aggregations or removals. This will be stored separately from the pseudo-anonymised data files. Unedited versions of the transcripts will be retained by the researcher.

4. Ethical considerations

The data that will be collected may include a combination of personal data confidential data and/or sensitive personal data. Any personal data will be processed in accordance with the provisions of the Data Protection Act 1998. Any published, disseminated or shared data will be anonymised and participants will not be identifiable. Participants have the right to withdraw at any time without prejudice and without providing a reason. However, any anonymised data cannot be withdrawn

5. Data ownership and intellectual property

The ownership and intellectual property in the data resides with the researcher.

6. Data sharing

Data may be reused at a future time, in different projects by the researcher and/or others. Only anonymised data would be shared. If the researcher collaborates with other researchers, a data sharing agreement would be put in place to outline the roles and responsibilities of each party. As the researcher is funded by the UK Economic and Social Research Council (ESRC), it is suggested that the anonymised interview transcripts are submitted to the ESRC/UK Data Service. Such data may be downloaded by other researchers under the UKDS terms, which regulate the usage of such data for specific purposes after user registration and user agreement to certain conditions. These are accessible at http://ukdataservice.ac.uk/manage-data/legal-ethical/obligations/guidance-for-recs.aspx

7. Data retention and disposal

On completion of the study, data will be stored indefinitely but securely by the researcher. This will include personal data relating to participants as the participants have a value as individuals given the small size of the industry, the lack of data about the industry, and the unique experience of such participants. Their identities are worth preserving and the ability to relate the participant’s experience to the person, who made it, is an important factor in the study. The researcher’s retention strategy is based on the ‘historical and research value’ that this unique personal data provides and is aligned with Principle 5 of the Data
Protection Act: Retaining personal data: (http://ico.org.uk/for_organisations/data_protection/the_guide/information_standards/principle_5) The researcher will review the data at the end of a five-year period after submission of the Ph.D. thesis and decide whether to retain or dispose of such data. If data is no longer required, they will be disposed of appropriately. Confidential data including personal data will be disposed of securely including shredding of hard copy material, and permanent deletion of electronic data.
Appendix 3: Interview protocol for industry experts

<table>
<thead>
<tr>
<th>Name and title</th>
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<tbody>
<tr>
<td>Organisation</td>
<td></td>
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<tr>
<td>Main activities</td>
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<tr>
<td>Address</td>
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<td>Telephone</td>
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<td>Interview date and time</td>
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<td>Interview duration</td>
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<tr>
<td>Method</td>
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<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
</tbody>
</table>

1. **Introduction**
   - Study aims
   - Clarification of any questions from participant
   - Respondent details (as per table above)

2. **Independent videogame development firms**
   - Involvement/ perception
   - Key issues in growth/sustainability
   - Current issues

3. **Business models**
   - Types and usage
   - Issues for firms
   - Change issues – difficulties and support

4. **Data**
   - Sources, access and availability
   - Terminology/categorisation
   - Suggestions for contacts, case studies

5. **Conclusion**
   - Thank participant for time and input
   - Explain subsequent steps in the study.
   - Confirm that the participant can contact researcher if they have any questions.
   - Confirm whether it is suitable to have further contact
   - Ask for suggestions about other possible participants.
Appendix 4: Interview protocol for entrepreneurs (stage 1)

<table>
<thead>
<tr>
<th>Name and title</th>
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<tbody>
<tr>
<td>Company</td>
<td></td>
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<tr>
<td>Year established</td>
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<td>Address</td>
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<td>Telephone</td>
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<td>Interview date and time</td>
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<td>Interview duration</td>
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<td>Method</td>
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<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
</tbody>
</table>

1. **Introduction**
   - Study aims
   - Confirmation of consent.
   - Clarification of any questions from participant
   - Respondent details (as per table above)

2. **Business model type and rationale for selection**
   2.1 **Work-for-hire**
      - Terminology/definition
      - Involvement in WFH (% of activity, resources and revenue)
      - Rationale for WFH
      - Perception of WFH activities
      - WFH client and project type
   2.2 **Non work-for-hire**
      - Terminology/definition
      - Level of involvement (% activity, resources and revenue)
      - Rationale for non-WFH activities.
      - Perception of non WFH activities
      - Activity – product/service information (description, platform), client/project type, platforms.

3. **Business model transition.**
   - Type of new model.
   - Rationale for changing BM (influences)
   - Barriers to adoption.
   - Facilitators for adoption.

4. **Company overview**
   - Background to firm (establishment, founder histories)
   - Firm activities (games types/platforms, employees, finances, development).
   - Positioning

5. **Conclusion**
   - Thank participant for time and input
   - Explain subsequent steps in the study.
   - Confirm that the participant can contact researcher if they have any questions.
   - Confirm whether it is suitable to have further contact
   - Ask for suggestions about other possible participants.
Appendix 5: Participant information for entrepreneurs (stage 1) – University of Strathclyde

Name of department: Management Science, Strathclyde Business School, University of Strathclyde
Researcher: Helen Mullen, BA (Hons), MRes, Doctoral student funded by the Economic and Social Research Council (ESRC)
Title of the study: “Business model change: a case study of independent videogame development firms and their experiences of the transition from the ‘work-for-hire’ model.”

Introduction

Thank you for agreeing to be interviewed as part of this research project. I really appreciate your input. This document provides confirmation about a range of issues related to the project and your participation within it.

I am a doctoral student and this research project forms the basis of my thesis for submission for a Ph.D. It is supervised by Dr. Jillian MacBryde of the Department of Management Science, University of Strathclyde, Glasgow, UK and Professor Colin Mason of the Adam Smith Business School, Glasgow University, Glasgow, UK.

The aim of the study

The project focuses on innovation in the business models used by companies. I am examining this in the context of the videogame industry, with a focus on independent videogame development companies and their use of work-for-hire and non work-for-hire models.

I am aiming to better understand the business models that are being used by such companies, and the factors influencing their selection and implementation.

The outputs of the project will highlight the business models being used in this sector and provide insight into the critical success factors, barriers and enablers that have relevance when identifying and implementing a new business model. It is hoped that this will be of interest to firms, policy makers, the videogame industry, and academia.

Your participation

I appreciate your voluntary participation in this project and confirm that no payment is being made. Please note that you have the right to decline to answer and/or withdraw from the project at any time without having to give a reason and without consequence.

You have been asked to participate in this study as you/your company are/is involved in the development of videogame and are considered to be independent in terms of your legal structure.

Your participation involves a telephone interview of approximately 30 minutes duration with Helen Mullen. Notes are taken during this interview and, if you agree, a recording is created. During this interview you will be asked if you consent to be contacted at a later date to discuss participation in the next stage of the study. You have the right to decline to do so without any detrimental effect.
The data that you provide during the interview will be analysed and used in a confidential manner (i) to inform the report that I will submit for my PhD in 2015 and (ii) to give presentations and develop articles for publication about the results.

A summary of the final results will be provided to participants after the PhD award has been secured. This is anticipated in 2015. In the interim, should any preliminary results be publicly shared, all of the study participants will be notified and a link provided to enable access to such information.

**Confidentiality and anonymity**

Your confidentiality is important to me. You will not be identified by name or organisation in any publications or discussions in relation to any data gathered from the interview. Subsequent use of records and data will be subject to standard data use policies, which protect the anonymity of individuals and organisations. The University of Strathclyde is registered with the Information Commissioner’s Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998.

Thank you for reading this information and if you have any questions, at any time, please do not hesitate to contact me.

**Researcher contact details:**

Helen Mullen, The Department of Management Science, The University of Strathclyde, 40 George Street, 8th Floor, Glasgow, G1 1QE. Email: Helen.Mullen@strath.ac.uk; Telephone: 44(0)141 548 4361 (EXT. 3612)

**Chief Investigator details:**

Dr. Jillian MacBryde, The Department of Management Science, The University of Strathclyde, 40 George Street, 8th Floor, Glasgow G1 1QE. Email: Jillian.MacBryde@strath.ac.uk; Telephone: +44 (0)141 548 4549 (EXT. 4549)

**What happens next?**

If you are happy to be involved in this project, you will be asked to sign a consent form to confirm this.

**Ethics committee**

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact: Secretary to the University Ethics Committee, Research & Knowledge Exchange Services, University of Strathclyde, Graham Hills Building, 50 George Street, Glasgow, G1 1QE. Telephone: 0141 548 3707; Email: ethics@strath.ac.uk
Appendix 6: Participant consent form for entrepreneurs (stage 1) – University of Strathclyde

Name of department: Management Science, Strathclyde Business School, University of Strathclyde

Researcher: Helen Mullen, BA (Hons), MRes, Doctoral student funded by the Economic and Social Research Council (ESRC)

Title of the study: “Business model change: a case study of independent videogame development firms and their experiences of the transition from the ‘work-for-hire’ model.”

- I confirm that I have read and understood the information sheet for the above project and the researcher has answered any queries to my satisfaction.
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, without having to give a reason and without any consequences.
- I understand that I can withdraw my data from the study at any time.
- I understand that any information recorded in the investigation will remain confidential and no information that identifies me will be made publicly available.
- I consent to being a participant in the project
- I consent to being audio recorded as part of the project. Please indicate Yes/No

(PRINT NAME)

Signature of Participant: Date:
Appendix 7: Observation guide for events

1. **Contextual data**

<table>
<thead>
<tr>
<th>Event title</th>
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<tbody>
<tr>
<td>Event date, time and duration</td>
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<tr>
<td>Event location (city)</td>
</tr>
<tr>
<td>Event location (setting)</td>
</tr>
<tr>
<td>Event hosts</td>
</tr>
<tr>
<td>Agenda/key themes</td>
</tr>
<tr>
<td>Audience characteristics</td>
</tr>
</tbody>
</table>

2. **Observations by theme**

- Business models and drivers
- Business model change constraints
- Business model change facilitators

3. **Reflections**

- Personal comments about event – relevance, outputs
- Actions required
Appendix 8: Event template

1. Event overview

<table>
<thead>
<tr>
<th>Data reference</th>
<th>Event detail (title, host, theme, audience)</th>
<th>Timescale and location</th>
<th>Rationale for inclusion</th>
<th>Output (e.g. documentation, contacts)</th>
<th>Contribution to study by research theme</th>
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2. Summary of data relating to research themes
   - Business models and drivers
   - Business model change constraints
   - Business model change facilitators

3. Emerging themes

4. Observations

5. Additional comments
Appendix 9: Participant information for entrepreneurs (stage 2) – University of Strathclyde

Name of department: Management Science, Strathclyde Business School, University of Strathclyde

Researcher: Helen Mullen, BA (Hons), MRes, Doctoral student funded by the Economic and Social Research Council (ESRC)

Title of the study: “Business model change: a case study of independent videogame development firms and their experiences of the transition from the ‘work-for-hire’ model.”

Introduction

This document provides confirmation about a range of issues related to the project and your participation within it should you decide to be involved.

I am a doctoral student funded by the Economic and Social Research Council (ESRC). This research project forms the basis of my thesis for submission for a Ph.D. It is supervised by Dr. Jillian MacBryde of the Department of Management Science, University of Strathclyde, Glasgow, UK and Professor Colin Mason of the Adam Smith Business School, Glasgow University, Glasgow, UK.

The aim of the study

The project focuses on innovation in the business models used by companies. I am examining this in the context of the videogame industry, with a focus on independent videogame development companies and their use of work-for-hire and non work-for-hire models.

I am aiming to better understand the business models that are being used by such companies, and the factors influencing their selection and implementation.

The outputs of the project will highlight the business models being used in the videogame sector and provide insight into the critical success factors, barriers and enablers that have relevance when identifying and implementing a new business model. It is hoped that this will be of interest to firms, policy makers, the videogame industry, and academia.

Your participation

Your participation involves an interview with Helen Mullen. This may take approximately 60 minutes. Notes are taken during this interview and, if you agree, a recording is created.

The data that you provide during the interview will be analysed and used to (i) inform the report that I will submit for my Ph.D.; (ii) create presentations and publications that will allow dissemination of the results from the project; and (iii) develop future research ideas and projects either alone or in collaboration with others. Any data that are published or shared will be anonymised and will not identify you.

I appreciate your voluntary participation in this project and confirm that no payment is being made.
Data management

The data will be held securely and restricted appropriately. Hard copies will be stored in lockable cabinets which will only be accessible by the researcher, and electronic records will be stored on secure drives. During the study, the University server will provide the main storage and backup facility which will be accessed on-site and through secure remote-access (http://www.strath.ac.uk/it/filestore). Where portable devices are used for confidential data, these will be encrypted.

Any personal data will be processed in accordance with the provisions of the Data Protection Act 1998. Any published, disseminated or shared data will be anonymised and participants will not be identifiable. Participants have the right to withdraw at any time without prejudice and without providing a reason. However, any anonymised data cannot be withdrawn. Data may be reused at a future time, in different projects by the researcher and/or others. Only anonymised data would be shared. If the researcher collaborates with other researchers, a data sharing agreement would be put in place to outline the roles and responsibilities of each party.

On completion of the study, data will be stored indefinitely but securely by the researcher. The researcher will review the data at the end of a five year period after submission of the Ph.D. thesis and decide whether to retain or dispose of such data. If data is no longer required, they will be disposed of appropriately. Confidential data including personal data will be disposed of securely including shredding of hard copy material, and permanent deletion of electronic data.

Researcher contact details

Helen Mullen, The Department of Management Science, The University of Strathclyde, 40 George Street, 8th Floor, Glasgow, G1 1QE. Email: Helen.Mullen@strath.ac.uk; Telephone: 44(0)141 548 4361 (EXT. 3612)

Chief Investigator details

Dr. Jillian MacBryde, The Department of Management Science, The University of Strathclyde, 40 George Street, 8th Floor, Glasgow G1 1QE. Email: Jillian.MacBryde@strath.ac.uk; Telephone: +44 (0)141 548 4549 (EXT. 4549)

What happens next?

If you are happy to be involved in this project, you will be given a consent form to confirm this.

Ethics committee

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact: Secretary to the University Ethics Committee, Research & Knowledge Exchange Services, University of Strathclyde, Graham Hills Building, 50 George Street, Glasgow, G1 1QE; Telephone: 0141 548 3707; Email: ethics@strath.ac.uk
Appendix 10: Participant consent for entrepreneurs (stage 2) – University of Strathclyde

Name of department: Management Science, Strathclyde Business School, University of Strathclyde
Researcher: Helen Mullen, BA (Hons), MRes, Doctoral student funded by the Economic and Social Research Council (ESRC)
Title of the study: “Business model change: a case study of independent videogame development firms and their experiences of the transition from the ‘work-for-hire’ model.”

- I confirm that I have read and understood the information sheet for the above project and the researcher has answered any queries to my satisfaction.

- I understand that my participation is voluntary and that I am free to withdraw my data from the project at any time, without having to give a reason and without any consequence, but that the anonymised data (i.e. with all personal data removed) cannot be withdrawn.

- I understand that any information I provide will be handled in line with Data Protection requirements and remain confidential. Only anonymised data will be published.

- I consent that my anonymised data may be shared by the researcher for this or future projects.

- I consent to my data being retained confidentially by the researcher after the study.

- I consent to being audio recorded as part of the project. Yes/No (Please delete as appropriate)

- I consent to being a participant in the project.

<table>
<thead>
<tr>
<th>Participant Name (Please print name)</th>
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<tbody>
<tr>
<td>Participant's Signature:</td>
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<tr>
<td>Date:</td>
<td></td>
</tr>
<tr>
<td>Researcher Name: HELEN MULLEN</td>
<td></td>
</tr>
<tr>
<td>Signature of Researcher:</td>
<td></td>
</tr>
<tr>
<td>Date:</td>
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</table>

Please sign and date this form and return to Helen Mullen (helen.mullen@strath.ac.uk). A copy of the final document will be sent to you before the interview. Thank you for participating.
Ladies and gentlemen, we work in an industry which suffers from a lack of research and hard data. The size of the games industry in the UK is not yet clear, the number, type and genre of releases from UK companies is not captured and attempts to put the games sector in context with the wider creative industries has had… dubious results. To that end, the SGN has been working with a Scottish researcher for the last several months, to help her work exploring the evolution of Scotland’s games industry. Helen Mullen is a PhD researcher at Glasgow University. She is doing some research for her PhD about the business models used by video games development firms, particularly the influences on, and challenges of, successful adoption of work-for-hire and/or original game development. She plans to share the results with the industry next year.

She is currently contacting owners/directors of companies throughout Scotland. She’s already spoken to several, but she needs a really good broad spread of companies, young and old. If you are able to spare an hour to meet her, it would be hugely useful. All information is treated in confidence (even SGN doesn’t see it) and any data that is subsequently published is anonymised to ensure that no companies or individuals are identifiable. If you have not yet spoken to Helen, would like to take part, or need more information, please contact Helen directly: h.mullen.1@research.gla.ac.uk

Do PLEASE help her out ladies and gentlemen. This is an amazing opportunity to generate some research of real value to the games sector, which has never been captured before.
Appendix 12: Participant information for entrepreneurs (stage 2) – University of Glasgow

1. Study title and Researcher Details

Title of the study: “Business model change: a case study of independent videogame development firms and their experiences of the transition from the ‘work-for-hire’ model.”

Department: Adam Smith Business School, College of Social Sciences

Researcher: Helen Mullen, BA (Hons), MRes, Doctoral Researcher funded by the Economic and Social Research Council (ESRC)

2. Introduction

This document provides confirmation about a range of issues related to the project and your participation within it should you decide to be involved.

I am a doctoral student funded by the Economic and Social Research Council (ESRC). This research project forms the basis of my thesis for submission for a Ph.D. It is supervised by Professor Colin Mason of the Adam Smith Business School, Glasgow University, Glasgow, UK

3. What is the purpose of the study?

The project focuses on innovation in the business models used by companies. I am examining this in the context of the videogame industry, with a focus on independent videogame development companies and their use of work-for-hire and non work-for-hire models. I am aiming to better understand the business models that are being used by such companies, and the factors influencing their selection and implementation.

The outputs of the project will highlight the business models being used in the videogame sector and provide insight into the critical success factors, barriers and enablers that have relevance when identifying and implementing a new business model. It is hoped that this will be of interest to firms, policy makers, the videogame industry, and academia.

4. Your participation

Your participation involves an interview with Helen Mullen. This may take approximately 60 minutes. Notes are taken during this interview and, if you agree, a recording is created. The data that you provide during the interview will be analysed and used to (i) inform the report that I will submit for my Ph.D.; (ii) create presentations and publications that will allow dissemination of the results from the project; and (iii) develop future research ideas and projects either alone or in collaboration with others. Any data that are published or shared will be anonymised and will not identify you. I appreciate your voluntary participation in this project and confirm that no payment is being made.
5. **Data management**

The data will be held securely and restricted appropriately. Hard copies will be stored in lockable cabinets which will only be accessible by the researcher, and electronic records will be stored on secure drives. During the study, the University server will provide the main storage and backup facility which will be accessed on-site and through secure remote-access. Where portable devices are used for confidential data, these will be encrypted.

Any personal data will be processed in accordance with the provisions of the Data Protection Act 1998. Any published, disseminated or shared data will be anonymised and participants will not be identifiable. Participants have the right to withdraw at any time without prejudice and without providing a reason. However, any anonymised data cannot be withdrawn.

Data may be reused at a future time, in different projects by the researcher and/or others. Only anonymised data would be shared. If the researcher collaborates with other researchers, a data sharing agreement would be put in place to outline the roles and responsibilities of each party.

On completion of the study, data will be stored indefinitely but securely by the researcher. The researcher will review the data at the end of a five year period after submission of the Ph.D. thesis and decide whether to retain or dispose of such data. If data is no longer required, they will be disposed of appropriately. Confidential data including personal data will be disposed of securely including shredding of hard copy material, and permanent deletion of electronic data.

6. **Researcher contact details**

Helen Mullen, Adam Smith Business School, The University of Glasgow, Gilbert Scott Building, University Avenue, Glasgow, G12 8QQ. Email: h.mullen.1@research.glasgow.ac.uk; Telephone: 0141 330 3993 (Main switchboard)

7. **Chief Investigator details**

Professor Colin Mason, Professor of Entrepreneurship (Management) Adam Smith Business School, The University of Glasgow, Gilbert Scott Building, University Avenue, Glasgow, G12 8QQ. Email: Colin.Mason@glasgow.ac.uk Telephone: 0141 330 2728

8. **What happens next?**

If you are happy to be involved in this project, you will be given a consent form to confirm this.

9. **Ethics contact**

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact the College of Social Sciences Ethics Officer, Dr Muir Houston, and email: Muir.Houston@glasgow.ac.uk
Appendix 13: Participant consent for entrepreneurs (stage 2) – University of Glasgow

Title of the study: “Business model change: a case study of independent videogame development firms and their experiences of the transition from the ‘work-for-hire’ model.”

Department: Adam Smith Business School, College of Social Sciences
Researcher: Helen Mullen, BA (Hons), MRes, Doctoral Researcher funded by the Economic and Social Research Council (ESRC)

- I confirm that I have read and understood the information sheet for the above project and the researcher has answered any queries to my satisfaction.

- I understand that my participation is voluntary and that I am free to withdraw my data from the project at any time, without having to give a reason and without any consequence, but that the anonymised data (i.e. with all personal data removed) cannot be withdrawn.

- I understand that any information I provide will be handled in line with Data Protection requirements and remain confidential. Only anonymised data will be published.

- I consent that my anonymised data may be shared by the researcher for this or future projects.

- I consent to my data being retained confidentially by the researcher after the study.

- I consent to being audio recorded as part of the project. Yes/No (Please delete as appropriate)

- I consent to being a participant in the project.

<table>
<thead>
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<th>Participant Name (Please print name)</th>
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<td>Participant’s Signature:</td>
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<td>Date:</td>
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</tbody>
</table>

Researcher Name: HELEN MULLEN

| Signature of Researcher: |  |
| Date:                  |  |

Please sign and date this form and return to Helen Mullen (h.mullen.1@research.glasgow.ac.uk). A copy of the final document will be sent to you. Thank you for participating.
Appendix 14: Interview protocol for entrepreneurs (stage 2)

<table>
<thead>
<tr>
<th>Name and title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td></td>
</tr>
<tr>
<td>Year established</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Interview date and time</td>
<td></td>
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<tr>
<td>Interview duration</td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
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<tr>
<td>Reference</td>
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</tbody>
</table>

1. **Introduction**
   - Study aims.
   - Interview format
   - Confirmation of consent.
   - Clarification of any questions from participant.

2. **Firm Overview**
   - Participant title and role in the firm
   - Establishment timescale
   - Legal format
   - Rationale for startup
   - Opportunity/gap
   - Founders – history/skillset/current role
   - Company positioning – their description
   - Usage of ‘Games developer’ and ‘Indie’
   - Game type and platform
   - Employees – from inception to now
   - Turnover and profit – from inception to now
   - Is there a business plan? How is the vision and direction decided?
   - External stakeholders
   - Management team (evolution)

3. **Business model selection**
   - Definition of business model
   - Description of firm business model
   - The selection process?
   - Selection rationale and any drivers for change where apt

4. **Business Model implementation**

4.1 **Value Proposition**
   - How is the product or service selected – games/services/platform
   - Games volume – released and in development
   - Organisation process and resources
   - Funding sources/level
   - Defining what’s ‘right’ - internal and external guidance
   - What has helped with the development of the proposition?
   - What have you had to learn?
   - What has been difficult? How has this been resolved
4.2 **Value Architecture**
- What distribution platform is used? Rationale?
- How does it operate and what’s involved for the firm?
- What have you had to learn to pursue an IP model?
- What has helped with the pursuit of an IP model?
- What has been difficult with pursuing IP? How has this been resolved?

4.3 **Value Economic**
- What are your revenue sources and divisions?
- What is the rationale for the revenue model you have adopted?
- What is your sales volume (examples of different games)
- What is the turnover and profit on the IP games?
- What have you had to learn about this revenue model?
- What has helped to acquire this knowledge?
- What has been difficult? How has this been resolved?

5. **Transition to IP**
- What had to change to do IP? (Prompts team, advisors, contacts, studio, finance, skills)
- What were the main challenges with the move to IP? How were these overcome?
- Activities undertaken
- Resource related issues (requirements, gaps, issues)
- Capability related issues (requirements, gaps, issues)
- Other factors arising
- What has helped to implement an IP model? How was this support accessed?
- How does IP compare to WFH?
- What are the key advantages and disadvantages?

6. **IP outputs**
- Benefits
- Downside
- Impact on company performance? (Prompt – finance, employees, games volume, games type, quality, stability)?
- What would success look like to you in terms of this IP model?

7. **Conclusion**
- Thank participant for time and input
- Explain subsequent steps in the study.
- Confirm that the participant can contact researcher if they have any questions.
- Confirm whether it is suitable to have further contact
- Ask for suggestions about other possible participants.
Appendix 15: Non-disclosure agreement for external transcription services

Dear [Transcriber]

Agreement for provision of services

I, Helen Mullen, residing at [Researcher address] refer to the agreement between me and you, [Transcriber], residing at [Transcriber address] (“you”), for the provision by you of the Services described below (the “Agreement”). The Agreement is subject to the terms set out in this letter.

| Services: | Provision of transcripts from digital recordings of research interviews undertaken by Helen Mullen as part of her PhD. |

This letter applies to all Confidential Information disclosed on, prior to, or after the date of this letter. For the purposes of this letter, “Confidential Information” means i) information disclosed by me to you for use in or in connection with the provision of the Services or which is otherwise discovered by you in connection with the Services; and ii) the Outputs (as defined below) and all information in them.

1. You shall treat all Confidential Information as confidential and use the Confidential Information only for providing the Services to me under the Agreement and you shall not disclose, publish or use the Confidential Information for any other purpose without my prior written consent.

2. This Agreement shall not apply to any Confidential Information which:-
   a. at the date of this letter is in the public domain or subsequently comes into the public domain unless that arises through your fault and/or in breach of this Agreement;
   b. was already known to you on the date of disclosure, provided that such prior knowledge can be substantiated and proved by documentation, and was not previously acquired by you under an obligation of confidence;
   c. properly and lawfully becomes available to you from a third party who lawfully acquired it and is under no obligation restricting its disclosure;
   d. was independently developed by you without access to the Confidential Information; or
   e. is required to be disclosed by law.

3. You hereby i) absolutely and irrevocably assign to me, as legal and beneficial owner with full title guarantee, with effect from the date of their creation, the whole right, title and interest in and to all information, data, software and materials identified, created or
first reduced to practice or writing in the course of the Services and all Intellectual Property therein (the “Outputs”) together with the right to sue for damages and all other available remedies for infringement pertaining thereto; and ii) waive any and all moral rights in the Outputs to which you are now or may at any time in the future be entitled under the Copyright, Designs and Patents Act 1998 or any similar provisions of law in any jurisdiction. Upon my request, you will do all acts and things and shall execute all documents that I may consider necessary to vest title to the Outputs in me. For the purposes of this letter “Intellectual Property” means any patents, trademarks, registered designs, copyright, unregistered design right, database right or semiconductor topography right, rights in and to trade or business names, know-how or confidential information, and any similar or analogous rights or forms of protection in any part of the world.

4. You shall comply with all applicable requirements under the Data Protection Act 1998 (the “DPA”) and where you are Processing Personal Data as a Data Processor for me, you shall i) Process the Personal Data only in accordance with my instructions; ii) implement appropriate technical (e.g. encryption) and organisational (e.g. ensuring encryption is applied) measures to protect the Personal Data against unauthorised or unlawful Processing and against accidental destruction, damage, alteration or disclosure; and iii) take reasonable steps to ensure the reliability of any staff and agents you have who may have access to the Personal Data and your and their compliance with this clause. For the purposes of this letter, the terms “Data Processor”, Personal Data”, “Process” and “Processing” shall have the meaning given to them under the DPA.

5. The Agreement shall in all respect be construed and interpreted in accordance with, and governed by, the law of Scotland and you and I submit to the exclusive jurisdiction of the Scottish courts.

By signing and returning the enclosed copy of this letter you agree to be bound by the above terms. Please confirm your acceptance of the terms of this letter by signing the enclosed copy of this letter and returning it to me.

Yours sincerely

Helen Mullen

I, [Transcriber], hereby accept and agree to the terms and conditions in this letter.

_______________________________ (signature)

_______________________________ (print full name)

_______________________________ (date)
Appendix 16: Mind Map example

This appendix provides an example of a mind map that was generated during data analysis. It is based on the review of a transcript from an interview with an entrepreneur respondent during stage 2 of data collection.

Key to mind map:
(i) The use of ' [...] ' on the maps indicates where the original text has been omitted or replaced by modified text to protect the respondent's anonymity.
(ii) The numbers within the circles indicate the transcript page from which data was taken.
WFH early stage then WFH and PIP

Ex-games employees started as group

Games and non game sector

Model Journey

WFH

PIP

Always the intention
Publisher partner
Helped by experience and WFH contacts
Content focused but IP in other places

Finance

Own game revenue small

Turnover over [...] + profitable

Aim

Not production - for others
Branding/positioning for clients
Games and apps

Founder BG

Ltd sales/mgt experience
No interest in business
Games + non games

Legal Status

Ltd

Split co in 2 in [...] [Date]

Employees

[Variation + timescale]

- [Variation + timescale]

Positioning

Unique place in market
More product business than service
Interactive entertainment

Platform

Mobile

Games

Game and non game sector

12 PIP release = 1

WFH

Ex-games employees started as group

Helped by experience and WFH contacts
Content focused but IP in other places

Always the intention

Publisher partner

Games and non games

Focus at start up on using contracts, skills and experience

Suited skillset and experience

Games and non games

WFH
Barriers

**Financial**
- Level of finance for PIP
- Lack of financial investment
- Too much IP in development that is not profitable
- Resources to produce games

**Competition**
- For publisher

**Distribution**
- Reliance on publisher

**Audience**
- Engagement of customer (and different types)

**Skills and knowledge**
- Inexperience of PIP activity and publishing

**Portfolio performance**
- Unpredictable product success
- Unpredictable workflow
- Overreliance on a small number of games
- ‘Hit focused’ nature of games
- Game quality and related skills

**Balancing 2 models**
- Resource issues
- Range of difficulties
- Difference in models re service and product
- Need WFH work
- “Mouths to feed”
BM perception

- No BP previously but now required for investment

Business plan

- How business will get to the market and earn revenue

Skills

- Awareness of issues
- Skills and experience in WFH helped with PIP
- Range of skills and experience provided flexibility in operation
- Evidence of reuse of skills

Resources

- Reality of resource requirements
- Value of previous experience plus trust and knowledge
- Business coach used
- In house skills evident

Learning

- Acquired knowledge from various sources eg publisher, business coach
- Acknowledged naivety
- Notable learning from doing
- Lack of knowledge not a deterrent as can learn
- Self teaching, resilience, curiosity

Perception of success

- Stable pipeline to allow better structure
- Make interesting and fun things
- Lead new way
- Enjoyment

Indie

- Doesn't mean anything
- Not much focus on this
- Games co set up to make own product
- Companies doing WFH but still describe as indie
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