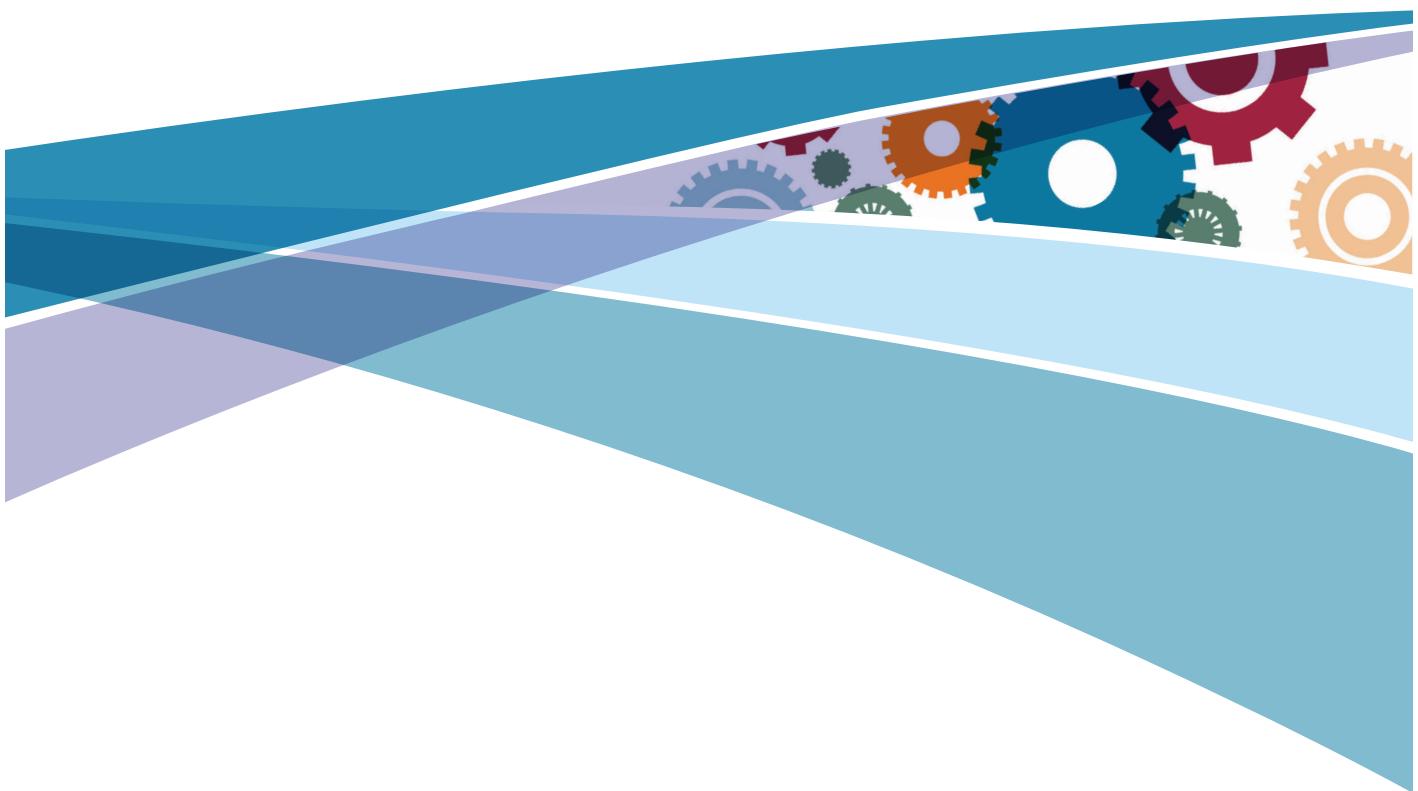




# IP Markets and Enabling Information Ecosystems



Research commissioned by the Intellectual Property Office, and carried out by:

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*Golant Media Ventures.*  
Authors: Patrick Towell, Simone Keunen

This is an independent report commissioned by the Intellectual Property Office (IPO). Findings and opinions are those of the researchers, not necessarily the views of the IPO or the Government.

The IPO would like to thank Juan Mateos-Garcia at World Bank for permission to reproduce their chart within page 9 of this document.

IPO would like to thank all those who took part in the review of the draft report on June 4th, and who commented via email. Their names are acknowledged in the report. We will welcome further input as this important field of work develops.

**ISBN: 978-1-908908-75-9**

IP Markets and Enabling Information Ecosystems

Published by The Intellectual Property Office  
September 2014

1 2 3 4 5 6 7 8 9 10

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## Golant Media Ventures

Innovation for creative and cultural enterprises

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# Abstract

As one follow up action to the report 'Banking on IP' published in late 2013, IPO commissioned Golant Media Ventures to present an initial review of:

- Key characteristics of markets in IP which could support efficient trading;
- Main information needs to give potential and actual traders confidence to monetise assets, through sale or licensing.

The review is intended to develop understanding of what can be done to build the necessary information ecosystem and the value it can deliver in these markets.

# 1 About the authors

## 1.1 Golant Media Ventures ([www.golantmediaventures.com](http://www.golantmediaventures.com))

Golant Media Ventures is an innovation agency specialising in the creative, cultural and digital industries. It helps technology, media, entertainment and cultural enterprises realise their full potential, focussing on making organisations resilient and agile, maximising the value of their intellectual property and other intangible assets and securing the finance to make this happen.

It has funded, secured finance for and managed a range of near-market Research & Development projects, collaborating with many innovative, technology-led SMEs. One of these projects has been spun out into a digital film distribution business, Cinegi Media, recently funded by Ingenious Ventures. Its work with the Royal Shakespeare Company (RSC) on digital and innovation has resulted in them setting up a new service to license its still and moving images.

Other policy work includes mapping future opportunities for the UK's Creative Industries from data-driven innovation – funded by the predecessor of the Knowledge Transfer Network – and creating a blueprint – funded by NESTA and the Arts Council – for exploiting rights in theatre through filmed media.

## 1.2 Patrick Towell ([www.linkedin.com/in/patricktowell](http://www.linkedin.com/in/patricktowell))

Patrick is a strategy consultant turned service designer and media executive. He brings a practical and commercial approach to complex challenges that span business and public policy. He combines an ability to envision future products with a detailed understanding of information and content markets, business affairs and technology. He co-founded Golant Media Ventures where he has led its work on intellectual property, at the RSC and on near-market Research & Development.

He was the architect of three national digital services – local heritage publishing, digital learning content and service directories for parents – for government or its agencies.

## 1.3 Simone Keunen

Simone is an economist and specialises in intellectual property, competition and innovation policy. Simone works at UCL and has worked at the RAND Corporation, PricewaterhouseCoopers, Tilburg University and the Dutch Ministry of Economic Affairs, Agriculture and Innovation. For her work on patent thickets, she won the 2009 Tilburg Law and Economics Innovation, Intellectual Property and Competition Policy Grant.

She received her M.Phil. and M.Sc. in Economics from Tilburg University, and her B.A. in Liberal Arts and Sciences (magna cum laude) from University College Utrecht in the Netherlands.

## 2 Introduction

### 2.1 Background

In November 2013, the report ‘Banking on IP? The role of intellectual property and intangible assets in facilitating business finance’ was published.<sup>1</sup> This report found that “knowledge assets were not appreciated in mainstream UK lending and that IP was therefore a missed opportunity with millions of pounds worth of business assets whose value was not being leveraged at all, or only being leveraged inadvertently”. This report made two main recommendations:

- That a “resource toolkit” be created to help SMEs, lenders and other financiers make more effective use of the value of IP and intangible assets represented within the business; and,
- That government support should build on existing initiatives.

In March 2014, the Intellectual Property Office (IPO) published ‘Banking on IP, An Active Response’ in reaction to the original ‘Banking on IP’ report.<sup>2</sup> The answer is designed to test what can be done to move the business finance system in the direction of intangibles which make up an increasing proportion of business investment.

The actions promised in the response include reviewing IP trading platforms that already operate, and encouraging the development of shared data to support stable and trusted markets. As a step in this process, the IPO commissioned Golant Media Ventures to present an initial review of:

- Key characteristics of markets in IP which could grow to the point where they are efficient and deep enough to support efficient trading;
- Main information requirements to give potential and actual traders confidence in the market, as well as enabling owners of IP to monetise their assets, either through sale or licensing.

The outcome is intended to be an understanding of what can be done to build open data, and the value it can deliver in these markets.

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1 Banking on IP? The role of intellectual property and intangible assets in facilitating business finance. Intellectual Property Office, November 2013. <http://www.ipo.gov.uk/ipresearch-bankingip.pdf>

2 ‘Banking on IP. An Active Response.’ <http://www.ipo.gov.uk/ipresearch-bankingip-2014.pdf> Intellectual Property Office, March 2014.

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## 2.2 Remit of this study

The remit of this study is:

- To create a short synthesis of existing knowledge on IP related markets, and the information infrastructure needed to make the markets work effectively; and,
- to describe an end point in developing IP markets which can be used as a reference point for value, and in which there is a reasonable expectation of being able to trade in ways that are readily understood and accessible to people who want to use them.

The main questions to address are as follows:

- What could or should the characteristics of a market in intangible assets be?
- What information infrastructure could make the market work?
- What data is used to support both the exchange and financial transactions in Intellectual Property?
- Where possible, what are the key factors to underwriting Intellectual Property value?

The time allocated to this study and the breadth of consultation was limited. The aspiration for the process of engaging with stakeholders and the dissemination of the final report is to stimulate conversations and collaborations and to frame future actions by the public and private sectors in this area.

Therefore, the report is structured as:

- A restatement of the ‘problem’ in Sections 3-6 – pulling out requirements on the information ecosystem from the excellent work that has gone before, in language which is perhaps more accessible to those outside the IP arena and especially to information technology and digital professionals;
- A description of the world of possible solutions in Section 7; and
- Recommendations for next steps in Section 8, which require further planning and refinement but which could well form the ‘germs’ of lines of action which would need to carry for some years in order to achieve the desired change.

## 2.3 Wider policy context

Enabling intangible asset markets to work more efficiently and effectively is not an end in itself.

If the market in intangible assets works more effectively, this encourages investment in, amongst other things, new technology, brands and creative industries. Additionally, this aids commercialisation, thereby supporting economic growth and benefitting society as a whole.<sup>3</sup> Moreover, a study by the World Bank has shown that: "There is an increasing recognition that these intangible or 'intellectual' assets are deeply linked to innovation."<sup>4</sup>

By creating a more liquid intangible asset market, intangible assets can be more easily bought and sold without market friction affecting the intangible asset's price. Thus, when the degree of liquidity in the intangible asset market is higher, trading activity increases in the market. A market may become more liquid if there is less imperfect information and lower transaction costs.

A European Commission report on Patent Valorisation concluded in 2012: "Leaving patents dormant may sometimes not benefit society. It prevents knowledge that adds value to society from being transformed into new products or services for the market. It also prevents people other than the patent holder from valorising the protected invention, at least as long as they are unused before they expire."<sup>5</sup> Thus, more liquid intangible asset markets will enable patents and other intangible assets to be used more often.

However, experts in IP valuation argue that there are areas in the intangible asset market where liquidity is not the problem. Instead, it is the lack of transparency of the transactions which means that, for example, lenders cannot benchmark the value of assets. This lack of transparency can be partially caused, at least in part, by the market being fragmented. For instance, transactions are difficult to trace in the European patent market due to the fact that individual patents are managed by each separate Member State, information on patents is spread across different databases in different public administrations and under different jurisdictions and rules. This implies that it is very difficult to guarantee the accuracy and completeness of information on patents in Europe.<sup>6</sup>

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3 Banking on IP? The role of intellectual property and intangible assets in facilitating business finance. Intellectual Property Office, November 2013. <http://www.ipo.gov.uk/ipresearch-bankingip.pdf> p.20.

4 World Bank, Using intellectual property to raise finance for innovation. 2014, Juan Mateos-Garcia.

5 European Commission, Towards Enhanced Patent Valorisation for Growth and Jobs. December 2012, p.7.

6 European Commission, Towards Enhanced Patent Valorisation for Growth and Jobs. December 2012, p.8.

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Creating more liquid and transparent intangible asset markets is important because the use of intellectual property rights is associated with better creation, transfer and use of knowledge, higher firm productivity, and increases the chance of survival and growth for small firms.<sup>7</sup> In fact, a report by the OECD found that: "Between 2001 and 2011, young firms whose assets were largely intangible (intangible asset intensive firms) generated 47 per cent of all new jobs in Organisation for Economic Co-operation and Development (OECD) countries."<sup>8</sup> The report also found that: "in such countries as Sweden, the United Kingdom, and the United States, investments in them have overtaken those in tangible assets."<sup>9</sup>

In the wider UK economy, the size of this market is significant. In patents alone the 'in-licensing' of technology is running at £6.9bn per year between 2009-12 – representing 40% of business enterprise Research & Development spending<sup>10</sup>. Research suggests that UK investment protected by copyright in 2011 is estimated at £5.8bn for artistic originals and £24.3bn for all software, in total 2% of Gross Domestic Product (GDP)<sup>11</sup>.

By integrating the IP system within the UK economy, innovation and creativity within business is better facilitated.<sup>12</sup> The IPO and government as a whole are not seeking output targets such as the number of patents issued, but instead outcomes such as enhanced innovation, and economic growth. Overall, the aforementioned World Bank report concludes that: "Intangible assets have gained importance as knowledge-intensive innovation activities have become the central drivers of competitive advantage in modern economies."<sup>13</sup>

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7 Intellectual Property Office, Five Year Corporate Strategy 2011-2016 <http://www.ipo.gov.uk/ipostrategy.pdf> p.3.

8 OECD. Supporting Investment in Knowledge Capital, Investment and Innovation. Paris, 2013.

9 [https://innovationpolicyplatform.org/sites/default/files/rdf\\_imported\\_documents/Case\\_Study-IP\\_for\\_Financing.pdf](https://innovationpolicyplatform.org/sites/default/files/rdf_imported_documents/Case_Study-IP_for_Financing.pdf).

10 Innovation, Patenting and Licensing in the UK, Arora Atheye and Huang <http://www.ipo.gov.uk/jpresearch-sipu.pdf>.

11 UK Innovation Index 2014, Goodridge Haskel and Wallis, <http://www.nesta.org.uk/publications/innovation-index-2014>.

12 Intellectual Property Office, Five Year Corporate Strategy 2011-2016, p.4.

13 World Bank, Using intellectual property to raise finance for innovation. 2014, Juan Mateos-Garcia.

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# 3 Scope

## 3.1 Intangibles not just Intellectual Property

This report considers intangible assets rather than just intellectual property. This broader definition is employed because IP is rarely traded or financed without other intangible assets and the value of IP is affected by related intangible assets.

The International Accounting Standards define intangible assets as follows: An asset is a resource controlled by an entity as a result of past events and from which future economic benefits are expected.<sup>14</sup>

In this definition, the three critical attributes of an intangible asset are:

- Control (power to obtain benefits from the asset);
- Future economic benefits (such as revenues or reduced future costs);
- Identifiability, when an asset:<sup>15</sup>
  - Is separable (capable of being separated and sold, transferred, licensed, rented, or exchanged, either individually or together with a related contract) or;
  - Arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

Another definition of intangibles specifies different types of intangible assets, and this definition is employed by the World Bank: “Intangible assets are assets in a firm like software, new knowledge and ideas resulting from research and development [R&D], branding, and know-how about how to organize a business which are not embodied physically in machinery or plant, or financially in stock shares and land titles.”<sup>16</sup>

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14 International Accounting Standards 38 <http://www.iasplus.com/en/standards/ias/ias38>

15 International Accounting Standards 38.12 <http://www.iasplus.com/en/standards/ias/ias38>

16 World Bank, Using intellectual property to raise finance for innovation. 2014, Juan Mateos-Garcia quoting Corrado et al. 2009. Corrado, C.A., C.R. Hulten, and D.E. Sichel, 2009. “Intangible Capital and US Economic Growth.” Review of Income and Wealth, Series 55, No.3.

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Figure 1 depicts the categorisation of intangible assets that we use in this study. Our focus within this range in is on intangible assets that can be traded.

Rights that subsist through law	Rights that subsist through contract	Individual, corporate and network capabilities
<ul style="list-style-type: none"> <li>• Intellectual property</li> <li>• Registered</li> <li>• Unregistered</li> </ul>	<ul style="list-style-type: none"> <li>• Formal relationships</li> <li>• Licenses</li> <li>• IPs assignments (e.g. employment)</li> <li>• Database rights in data</li> <li>• Personal data with compliant permissioning</li> </ul>	<ul style="list-style-type: none"> <li>• Reputation</li> <li>• Goodwill</li> <li>• Tacit know-how</li> <li>• Processes and procedures</li> <li>• Informal relationships</li> <li>• Culture</li> </ul>

Figure 1: Intangible asset categories

Considering this wide range of intangible assets and intellectual property has advantages in that:

- Commonalities across assets types and sectors can be identified and expressed, for example the financing options described in the next Section 3.2;
- Lessons learned or models from one sector operating well can be applied to elsewhere (for example, patents in the pharmaceuticals/biotechnology market or the financing and exploitation of film rights).

However, as we note in Section 8.1 to make in the near term progress and secure some early wins will require focusing on solutions in specific sectors and with specific assets types.

### 3.2 What do we mean by IP/intangible markets operating effectively?

We take ‘effectively’ to mean that it is possible for UK businesses to raise debt and equity finance by leveraging their intellectual property and other intangible assets. An overview of the basic structure of IP-backed debt financing options is shown in Figure 2<sup>17</sup>.

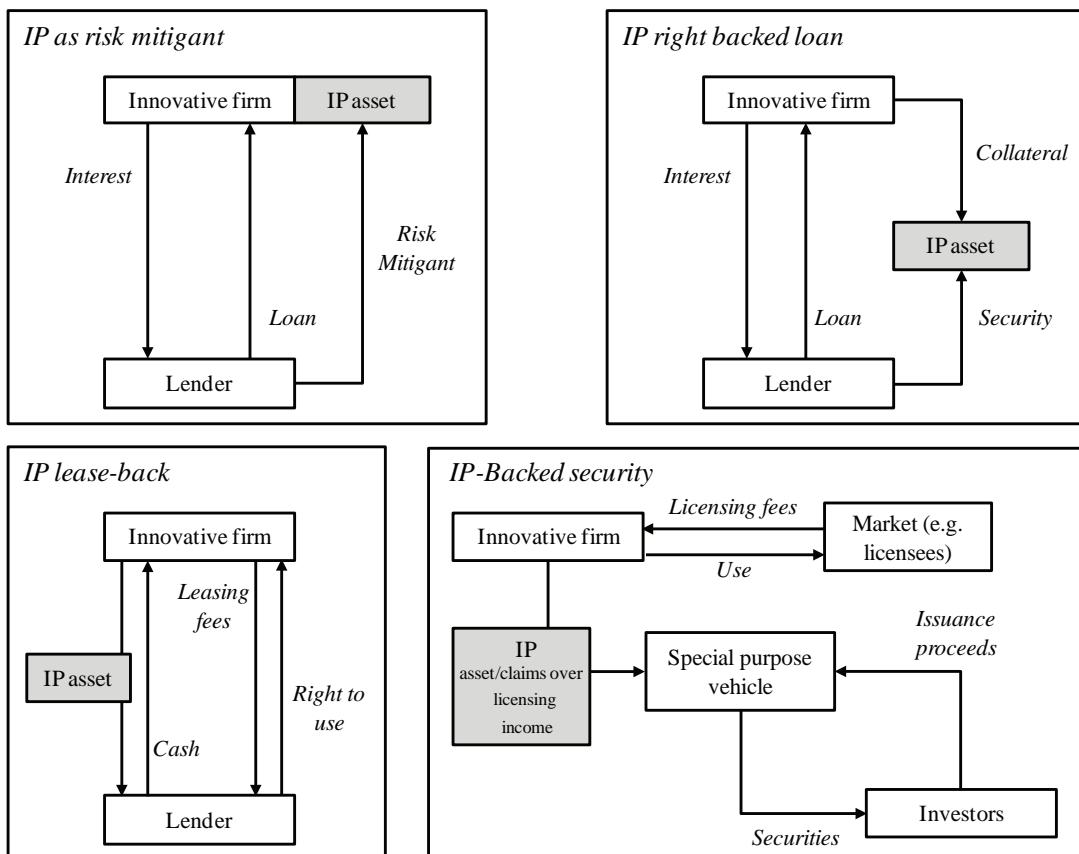


Figure 2: Basic Structure of IP-backed Debt Financing Options

<sup>17</sup> World Bank, “Using Intellectual Property to Raise Finance for Innovation” 2014, p.3 by Juan Mateos-Garcia, based on Munari, F., F. Odasso, and L. Toschi. 2011. “Patent-backed Finance.” In *The Economic Valuation of Patents: Methods and Applications*, ed. F Munari and R Oriani. Cheltenham: Edward Elgar.

### 3.3 Focus on SMEs and High Growth Firms (HGFs)

This report focuses on the role of SMEs in the intangible asset market.

This focus originates from the respective focus on SMEs in the preceding reports: ‘Banking on IP? The role of intellectual property and intangible assets in facilitating business finance’<sup>18</sup> and the ‘Banking on IP. An Active Response’.<sup>19</sup> Moreover, in its five year corporate strategy publication for 2011-2016, the Intellectual Property Office specifies that one of their key initiatives is to ‘remove barriers to access IP systems, particularly for SMEs.’<sup>20</sup>

This focus on SMEs is justified for two reasons. Compared to larger companies, these smaller type firms are less likely to have the capability and financial resources to deal with the transaction costs and problems presented in the intangible asset market. In other words, larger firms have a great capability to protect, trade in and raise finance against their intangible assets and intellectual property. Secondly, in most OECD countries, SMEs generate between 60 to 70 percent of jobs<sup>21</sup> and SMEs are a significant source of economic growth in the UK.<sup>22</sup>

However, we need to be aware a firm just qualifying as an SME does not mean that it will automatically be ‘High Growth’ and thereby generate new jobs or economic growth. Nor in the context of intellectual property rights and intangible assets does it necessarily mean that it will be innovative or IP-rich. We are mindful that – as a recent NESTA working paper points out<sup>23</sup> – it is a subset of SMEs that will have these benefits and characteristics.

### 3.4 Logical not technical architecture

The technical infrastructure which enables the capture, storage and exchange of such information is outside the scope of this report. We describe here at a logical level the architecture of the information required.

Once an information ‘blueprint’ or master plan is created, its technical implementation will be distributed across a variety of actors in the market. To continue the building analogy, how they build their own ‘houses’ doesn’t matter as long as the individual buildings can be connected together with common services (as with telecoms and energy in the real world).

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18 Banking on IP? The role of intellectual property and intangible assets in facilitating business finance. Intellectual Property Office, November 2013. <http://www.ipo.gov.uk/ipresearch-bankingip.pdf>

19 ‘Banking on IP. An Active Response.’ <http://www.ipo.gov.uk/ipresearch-bankingip-2014.pdf> Intellectual Property Office, March 2014.

20 Intellectual Property Office, Five Year Corporate Strategy. Intellectual Property Office. <http://www.ipo.gov.uk/ipostrategy.pdf>

21 Small Businesses, Job Creation and Growth: Facts, Obstacles and Best Practices. Organization for Economic Development and Cooperation (OECD). <http://www.oecd.org/industry/smes/2090740.pdf>

22 Digital Opportunity, A review of Intellectual Property and Growth. Prof. Ian Hargreaves. May 2011. <http://www.ipo.gov.uk/preview-finalreport.pdf>

23 Increasing ‘The Vital 6 Percent’: Designing Effective Public Policy to Support High Growth Firms, NESTA Working Paper 14/01, [http://www.nesta.org.uk/sites/default/files/working\\_paper\\_-\\_increasing\\_the\\_vital\\_6\\_percent.pdf](http://www.nesta.org.uk/sites/default/files/working_paper_-_increasing_the_vital_6_percent.pdf)

## 4 Approach

The approach of this study has been to:

- use design thinking;
- use systems thinking;
- model the ecosystem in the order ‘people’, ‘verbs’, ‘nouns’ and ‘adjectives’;
- reference existing standards wherever possible; and,
- borrow models from outside the world of IP.

Design thinking involves:

- Creating user personas and scenarios;
- Creating goals for different users, stakeholders etc. at different levels of abstraction (immediate value up to societal benefit); and
- Co-creation – using deliberative research methods rather than just ‘consulting’ others.

Systems thinking involves:

- Modelling markets and the ecosystems of communities and systems that underpin them as socio-technical systems; and
- Recognising that people are not logical in the way they adopt technologies and new ways of working and organising themselves.

Modelling the ecosystem in the right order (a way to create information architectures for markets spanning multiple value chains) involves:

1. People first – users (investors, creators and holders of IP, traders in IP, creators of derivative financial or information products – eg insurances), beneficiaries, regulators, other stakeholders – the actors that define the ecosystem;
2. Verbs before nouns – defining the key interactions, the key transactions of information and value, understanding the main flows of information, goods, services and money;
3. Then do the ‘nouns’ – a simple ontology of the key classes of objects e.g. pieces of intellectual property, rights in them held by ‘actors’, related information objects;
4. Then do the adjectives – identify and facet the key attributes of the objects, but in a way that is driven by an information needs analysis of the actors at specific stages in processes focused on achieving.

## 5 Goals

Every design process needs some initial goals, even if the process refines them. Figure 3: recasts the brief in terms of a hierarchy of design goals.

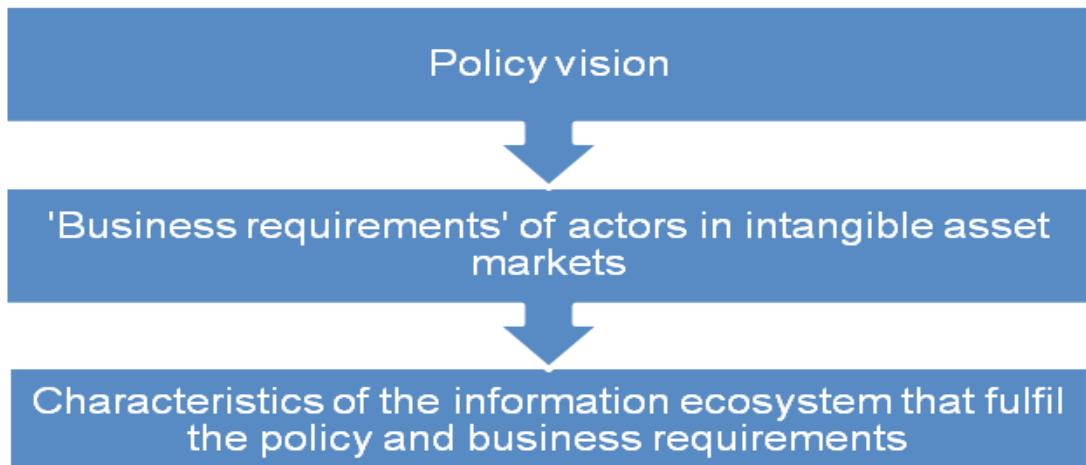


Figure 3: Goals for policy vision, business requirements and information ecosystem

The practical conditions needed for markets to work can be described in terms of the following policy requirements, taken as a given:

- potential and actual traders having confidence in the market;
- markets being stable;
- owners of intangible assets are enabled to monetise their assets, either through sale or licensing;
- the markets have grown to the point where they are deep enough to support efficient trading;
- actors can trade in ways which are readily understood; and,
- markets are accessible to people who want to use them.

The information infrastructure needed to make the markets work effectively can be described in terms of a set of characteristics of an information ecosystem which encompasses:

- The actors within that ecosystem and the relationships between them;
- The information both required and generated by transactions and interactions between them; and,
- Ways of facilitating the sharing and exchange of such information, through interoperability and a hybrid of open data and commercial information and analysis services.

# 6 Market context

## 6.1 Standardization

Standardization is arguably one of the most important and yet at the same time most hidden underpinnings of the modern world. Standards address everything from screw threads to railway gauges, financial reporting formats to e-learning content description. Specifications of ‘how to do things’ become standards if they are backed by consensus from their communities of use, often delineated by market segments.

The adoption of standards enables heterogeneous sets of actors in different positions in a value chain, and in roles varying from public administrations through companies to individuals, to collaborate. Although they are not on their own sufficient to enable markets, they are often necessary for a market to move beyond community of experts and early adopters. For example, they alone may not provide sufficient economic incentives.

We distinguish information standards from professional standards. Information standards on their own are insufficient because practices in creating and interpreting information need to be assured. Information and professional standards can be developed in tandem. For example, language and concepts used in developing capacity in lenders and SMEs within a ‘toolkit’ could be included in information standards that result in their incorporation into information systems and services that in turn support changes to professional practice.

It is beyond the scope of this study to identify individual standards bodies or standards across the whole range of disciplines which the intangible asset market touches. However, it is worth noting that standards exist and there is significant standardization activity in the areas of:

- Accounting and financial reporting;<sup>24</sup>
- Trading in financial derivatives;<sup>25</sup> and,
- E-Business.<sup>26</sup>

One standard that is worthy of specific note is the Legal Entity Identifier (LEI) – a new data standard that identifies legal entities using a consistent and globally unique identifier (rather than a name) that is linked to each legal entity. The identifiers and data within the LEIs system will be free to use without any IP restrictions. The G20 initiated the construction of a global LEI system which is currently implemented and regulators in some countries are requiring corporate entities to have an LEI.

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24 For example, a standard from International Accounting Standards Board for the valuation of intangible assets: <http://www.ifrs.org/IFRSs/IFRS-technical-summaries/Documents/IAS38-English.pdf>

25 For example, as recently mandated by the European Union: [http://ec.europa.eu/internal\\_market/financial-markets/derivatives/index\\_en.htm](http://ec.europa.eu/internal_market/financial-markets/derivatives/index_en.htm)

26 For example, standards on how to model e-business processes from the International Standards Organisation (ISO): [http://www.iso.org/iso/home/store/catalogue\\_tc/catalogue\\_detail.htm?csnumber=43837](http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=43837)

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The LEIs are issued by Local Operating Units that are overseen by a Central Operating Unit, which will coordinate their work and the data in the system. This means that each country is responsible for the detail of when, and how, LEIs will be implemented. A Regulatory Oversight Committee comprising of government financial regulators will oversee the whole system.

Another is the RICS standard for the valuation of businesses and intangible assets.<sup>27</sup>

Finally, the Creative Content Coalition's work on creative works and the exploitation of the rights in them<sup>28</sup> is being used by some rights exchanges, for example the UK's Copyright Hub.

## 6.2 Tax incentives to facilitate IP valuation

A number of tax incentives to facilitate IP valuation exist in the UK. For instance, R&D tax relief was introduced to encourage companies to increase the amount of R&D activity they undertake. Until April 2013, only SMEs could access a cash credit for their eligible R&D. However, the recent introduction of R&D Expenditure Credit addresses this. As a taxable, flat-rate credit, it has been positioned as having enough hallmarks of a grant, to allow it to be accounted for 'above the line' and in the accounts, where it is more visible to those with the power to increase R&D investment. It is also payable in cash in certain circumstances.<sup>29</sup>

Another example of a tax incentive is the Patent Box, which enables companies to apply a lower rate of Corporation Tax to profits earned after 1 April 2013 from patented inventions and certain other innovations. The relief will be phased in from 1 April 2013 and the lower rate of Corporation Tax to be applied will be 10%. This tax relief is applicable to a company based on a number of criteria the company, the patents and the application of the patents.<sup>30</sup>

There are other tax incentives as well, including tax breaks for start-up companies such as the Seed Enterprise Investment Scheme (SEIS).<sup>31</sup>

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27 RICS Valuation Professional Group, RICS Valuation, Professional Standards, Nov. 2013, [www.rics.org](http://www.rics.org)

28 For example, from the Linked Content Coalition managed by the European Publishers Council: <http://www.linkedcontentcoalition.org/#!lccframe/c4nz>

29 IP Insight, Intellectual Property Office, April 2014. [http://www.ipo.gov.uk/ipinsight-201404-4.htm/](http://www.ipo.gov.uk/ipinsight-201404-4.htm)

30 HMRC, The Patent Box, April 2014 <http://www.hmrc.gov.uk/ct/forms-rates/claims/patent-box.htm>

31 HMRC, SEIS, May 2014 <http://www.hmrc.gov.uk/seedeis/>

### 6.3 Recommendations for building IP capabilities in SMEs and lenders

The Banking on IP report presented a number of recommendations to create networks for SMEs and high street bankers to raise awareness for IP markets.<sup>32</sup>

Specifically:

- IP and intangibles must be identified during the financing process:
  - Tools to identify and describe the actual assets need to be embedded within the lending process;
  - This helps boosting IP awareness amongst the business community as a whole.
- IP markets and IP financing could be facilitated through infrastructure improvements:
  - Emergence of more transparent and accessible market places where they can be traded;
  - This requires the cooperation of official registries and the establishment of administrative protocols.
- On-going management of IP and intangibles should also be supported.

The toolkit proposed by the report ‘Banking on IP, The role of intellectual property and intangible assets in facilitating business finance’ needs to include measures to inform and encourage SMEs to adopt appropriate management practices.

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<sup>32</sup> Banking on IP? The role of intellectual property and intangible assets in facilitating business finance. Intellectual Property Office, November 2013. <http://www.ipo.gov.uk/ipresearch-bankingip.pdf>. pp.216-218.

# 7 Blueprint

## 7.1 Structure of intangible assets market

We take the primary market to be made up of three segments:

- a. Development and protection of;
- b. Trading in and financing of;
- c. Exploitation through products and services of intangible assets.

We take the secondary market to be:

- d. Services providing information about and analysis of activities in the primary market.

This four-way segmentation is depicted below.

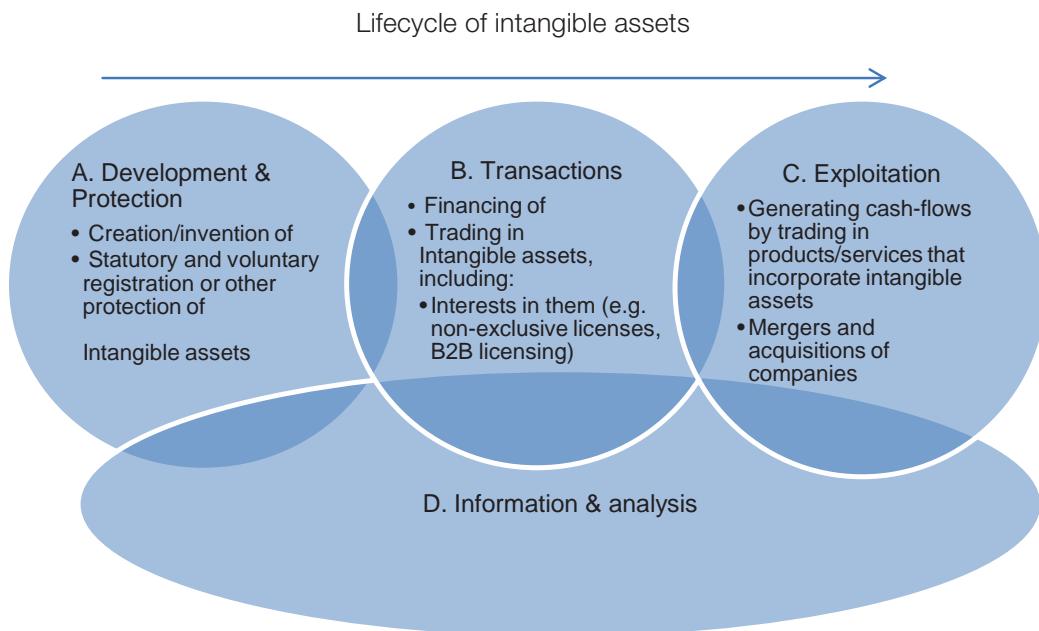


Figure 4: The intangible asset market structure

Examinations of the intangible asset and intellectual property markets tend to under-emphasise the segment represented here by **C Exploitation**, because in many cases there is no explicit trading in or financing of intangible assets themselves and it is the realm of general industrial policy and business practice.

## 7.2 The innovation lifecycle

Focusing on the intangible assets, and intellectual property in particular, there is a lifecycle that flows from development and protection, through transactions relating to the assets to their ultimate exploitation within products and services.

This is not as linear as it appears, although if the intangible assets are ultimately to be monetised the ‘general flow’ needs to be in this direction.

For example, a creation or invention will go through stages of maturity from idea, through proof of concept and prototype, to initial production version, and more mature products and services. Each stage may require the development of, or acquisition of, rights to additional intangible assets. A single intangible asset may be involved in multiple transactions. In most cases, multiple intangible assets will be involved. In many cases, multiple parties with different kinds of interests may be involved.

Each stage may also require financing, whether this is directly used to create new or secure the rights to existing intangible assets, or instead to develop and bring to market products and services in which they are embedded. There is a lot of structure in the overlap between **B Transactions** and **C Exploitation**.

**A Development & Protection** includes statutory and voluntary registration or other protection of intangible assets that can be executed by different parties, such as public authorities, industry bodies, open data providers and commercial services.

In terms of financing, **C Exploitation** is the realm of the business plan. Although business plans may assert that intangible assets including intellectual property underpin revenues, provide strategic advantage and lower risk, there is a lack of consistent approaches to attributing value to those assets within an enterprise as a whole.

We include mergers and acquisitions here because often the only way to monetise or borrow against IP and other intangibles is to wrap them up into a corporate structure. While the licensing of intellectual property assets can sometimes be used solely to move profits between jurisdictions to reduce tax liabilities, there are legitimate and proper uses of it within corporate structures and between businesses within the same group.

Finally, **C Exploitation** is not the end of the road. As a result of the wheels hitting the road, of having paying customers for products and services in which previously developed intangible assets are embedded, other ideas, inventions or creative works may be developed, either extending those products and services or introducing new products and service to the same customers.

### 7.3 Actors in intangibles markets

There are a number of actors with different roles in the intangible asset market. Some of these are represented in Figure 5 which follows the same market structure as is described in 7.1 Structure of intangible assets market.

A. Development & protection	B. Transactions	C. Exploitation
1. Organisations developing and licensing IAs/IP	1-9 per A	1-9 per A
2. Creatives, inventors & entrepreneurs	10. Equity financiers	18. Sales channels e.g. distributors, licensees, retailers, publishers
3. Support staff & management	11. Alternative financiers	19. Suppliers
4. Specialist research & development providers	12. Grant aid providers	20. Other partners
5. Professional advisors	13. Corporates	21. Customers
6. Technology transfer offices	14. Banks and other debt financiers	
7. Registries	15. Trading platforms and other brokers	
8. Tax authorities	16. Insurance providers	
9. Members of the Public	17. Investment banks	
D. Information & Analysis		
22. Information Aggregators	26. Academia	29. Ratings Agencies
23. Information Assurers	27. Analysts	30. Publishers & Journalists Registries
24. Business Intelligence Services	28. Public administrations	31. Business Recovery Services
25. Trade bodies		

Figure 5: Roles in the intangible asset market

### *Development and protection*

Creatives, inventors and entrepreneurs are the principal actors in the development of intangible assets. They may be working within an organisation, or be developing ideas and innovations independently.

Other staff within organisations, whether support or leadership and management, although they are not directly involved in research and development or creative development, will be providing support to these processes.

It is common to secure the services of specialists in a number of disciplines (for example, particular software development or bioinformatics) to contribute to the development or evaluation of intangible assets. This may be done under contract, whereby all rights are bought out, or on some kind of shared risk and ownership basis where the specialist retains an interest in the intangible assets created. The specialist may also be contributing some pre-existing background intellectual property.

A range of professional advisors may be involved in the research and development stage, including lawyers, accountants and trademark or patent agents. Depending on the innovation process used, this may extend beyond matters of protection and licensing in of third party intellectual property. Part of the bundle of intangible assets created may be business or other financial models, legal agreements or frameworks and options for corporate structures and tax treatments that contribute to the overall value of the core inventions and creations. In-licensing and R&D purchase is a substantial activity in the UK. For instance, data from the Survey of Innovation and Patent Use of 2009-2012<sup>33</sup> has shown that estimated expenditures on in-licensing and R&D purchase amount to almost £7 billion.

A number of different bodies ranging from statutory patent and trademark registries through collection societies to industry-led registries fulfil the function of registration of intellectual property rights or other intangible assets. This forms part of an overall approach to protection, which will typically also rely on maintaining trade secrets through confidentiality.

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33 IPO, "Innovation, patenting, and licensing in the UK: Evidence from the SIPU survey", 2013. <http://www.ipo.gov.uk/ipresearch-sipu.pdf>

### *Transactions*

We take transactions to encompass both trading in intangible assets (sale, licensing, exchange etc.) and financing and other resourcing. As set out in more detail in section 3.2, financing includes the financing of the development of such assets or leveraging the assets, to raise money for other purposes.

Resourcing applies to situations where expertise is contributed without payment. This is just a special case of trading where an interest in existing or future intangible assets (or corporate structures set up to economically benefit from them) is exchanged for services.

Many or all of the actors (1-9) involved in development and protection will be involved in such transactions.

Where financing is concerned, many solutions for innovative businesses end up being hybrid, combining equity and debt finance, from traditional providers such as venture capitalists, business angels and banks as well as alternative providers such as pension-led funders and crowd funding, with grant aid and tax incentives.

Remembering that the technology and creative industries sectors fall firmly within those likely to be rich in intellectual property and other intangible assets, the range of sources of grant aid is wider than in some sectors. Providers include the UK's Technology Strategy Board, a number of different technology, media and culture initiatives from the European Commission, lottery funds and grant-in-aid disbursed by bodies such as the Arts Council of England and Creative England as well as more general growth and economic development support funds.

Whilst it is possible for actors with interests in intangible assets to find other parties with whom to trade those interests and to execute such transactions on a peer-to-peer and ad hoc basis, the effort required and associated transaction costs may often outweigh or significantly detract from the benefit of the transaction. This is where trading platforms or IP brokers who aggregate supply and demand for intellectual property can play a role. A report by the World Intellectual Property Organization from 2000 found that about 500 patent brokers are active in the United States alone.<sup>34</sup> Considering this fact, we have opted to include only a few illustrative brokers and trade platforms in Figure 6 below.<sup>35</sup>

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34 World Intellectual Property Organization. "Intellectual Property Policies for the Twenty-First Century: The Japanese Experience in Wealth Creation". Hisamitsu Arai, 2000, WIPO Publication No.834 (E) <http://www.wipo.int/freepublications/en/intproperty/834/>

35 more are described Banking on IP in pp154-160

Organisation	Location	Service	Types of intangible assets traded
Asia IPEX	Hong Kong, China	Free online platform and database showcasing global IP	IP: patents, copyrights, trademarks and registered designs
ICAP IP (also known as ICAP Ocean Tomo LLC)	Los Angeles, California, U.S.A.	IP brokerage and patent auction firm, matching buyers and sellers on multiple transaction platforms	Patents and other IP assets.
IPXI	Chicago, Illinois, U.S.A.	Financial exchange that facilitates non-exclusive licensing and trading of IP	Private licensing of technology is transformed into Unit License Right contracts and traded on the secondary market created by IPXI
Red Chalk Group	Chicago, Illinois U.S.A.	Patent brokerage that specialises in patent sales, purchases and licensing programs.	Patents
Tynax	Redwood City, California, U.S.A.	Patent brokerage representing buyers or sellers in a variety of transactions, particularly high-tech	Patents

Figure 6: Illustrative selection of intangible asset trading platforms and brokers

Trading involves an exchange of value, but also comes with risk. The ability to mitigate those risks itself has economic value. Hence, as trading volumes and market values increase, the potential rises for derivative products such as insurance. Insurers lower risk to other parties through their expertise in evaluating it, and the requirements they may put on parties before they are prepared to underwrite something. They may in some cases have certain rights to step in.

Most sub-sectors of the intangible asset market do not have a mature insurance market associated with them. Many intellectual property insurance products focus on underwriting the legal costs of defending and pursuing claims in cases of infringement. Few providers underwrite the actual value of an asset. This kind of risk transfer is often required to enable a lender to treat intangible assets as collateral.<sup>36</sup> One such provider across multiple intellectual property and intangible asset sectors is M•CAM.<sup>37</sup>

Intellectual Capital Merchant banks, such as Ocean Tomo, can assist in turning bundles of intangible assets into collateral through securitisation.<sup>38</sup>

### *Exploitation*

We take **C Exploitation** to be the realm of generation of cashflows through the sale of products and services in which intangible assets are embedded.

Licensing intangible assets, including intellectual property to other organisations, or pooling such assets in joint ventures, we take to be within **B Transactions**, along with other activities where the focus of the transactions is on trading interests in such assets.

Included in **C Exploitation** are services, such as entertainment, that, as part of what they do, license intellectual property to consumers. This is because the licensing is a necessary part of the service, but the proposition will comprise a range of services including delivery of product such as digital content, functionality such as personalisation and account management, support (both digital and human mediated); and communications such as channel or platform branding and information.

Put another way, the value proposition the consumer buys is, in their mind, not a licence but a service. The example given is an entertainment service through which the consumer gets to enjoy creative content on a device of their choice easily paid for, and obtained with a degree of certainty about the quality and appropriateness to them of that content.

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36 As an example, in the film sector, completion bonds make it possible for the future revenues from distribution contracts for a film to be used as collateral for debt financiers such as banks but also lower risk for industry players financing against rights to exploit a film in the future. The provider of the bond acts as a broker for insurers, providing the specialist insight required to evaluate and manage risk in that sector. Unlike with some other intangible asset classes, the completion bond provider does have considerable rights to step in order to ensure that the end product does fulfil its contractual requirements and thus release the advance payments of licence fees due from distributors due under the distribution contracts with them. In the insurance sector as a whole, film is a niche and there are relatively few players providing these services, with Film Finances having 60% of both the US and international markets. <http://www.screendaily.com/features/bonds-put-safety-first/5063306.article>

37 <http://www.m-cam.com>

38 [http://www.wipo.int/sme/en/ip\\_business/finance/securitization.htm](http://www.wipo.int/sme/en/ip_business/finance/securitization.htm)

Intangible assets, including intellectual property, can play differing roles within a product or service. They can, amongst other things:

- be used to hold up or stop competitors from developing or marketing a particular innovation at a given moment in time, thereby creating scarcity;
- be at the core of the offering, the innovation or bundle of innovations without which that offering wouldn't exist such as a new kind of motor for a vacuum cleaner;
- be delivered via the offering, such as creative works like film, music, TV, games in the entertainment service example above;
- encompass the offering as a whole such as a mobile application or creative work such as an eBook;
- enable the offering to be delivered, such as legal agreements, process models or agreements for outsourced customer services;
- enhance value to the owner of the offering, such as data and derived analytics of use of a service; and
- facilitate the marketing and sales of the offering, such as customer and prospect databases, branding, quality marks, communications, etc.

It must be noted that these properties don't always apply to each intangible asset type. For instance, although in theory copyright can be used to restrict use, there is a move in many copyright industries to encourage use, reuse and recover value (in increasingly automated ways) from publication, use or enjoyment of such works wherever this may be. This requires copyright works and/or associated information describing them to have rights embedded in them or at least unambiguously referenced in such a way that this cannot be discarded.

Most products and services contain a variety of intangible assets in a range of roles. In the innovation lifecycle that we describe in section 6.2, as an idea progresses through to a ready-to-market product, new intangible assets are created in layers around the original idea.

These assets will range across all the categories presented in Figure 1: Intangible asset categories, often including copyright and design rights in sensorial aspects of the offering; copyright and trademarks in branding and communications around the offering; copyright, database rights and potentially patents in software and underlying processes, and database rights and compliant privacy permissioning over personal and behavioural data.

However, it is at this stage that individual, corporate and 'network' capabilities come to the fore in importance, being required to actually create, deliver, sell, support etc. the offering. A trading organisation will typically sit within a networked ecosystem of suppliers, sales channels, other partners and end customers. Those relationships may be governed by formal legal agreements but regardless, they will deliver value on the basis of the quality of informal working relationship between the parties and individuals concerned.

The structure of the ‘channel’ that sits between an organisation and ultimate customers and beneficiaries, whether marketing and selling, or delivering the service, varies widely between and often within vertical sectors. Within the media world alone, such intermediaries include distributors, publishers, TV platforms, broadcasters, games consoles, sales agents (licensing brokers), aggregators and online and high street retailers.

The formal relationships may confer rights on a trading organisation to use content, or use a brand, or to have access to a platform. However, this will rarely sit purely on its own, and there will tend to be an element of relationship extending capability.

Organisational strategy, product strategy and marketing, sales and customer service strategies will often be driven by business intelligence. This market research can be organically created or bought in.

Some will be more generically about the performance of businesses as a whole, or particular categories of offering, or the characteristics of particular markets. This may inform the value put upon or decisions about the future development, licensing in or acquisition of intangible assets, including intellectual property. This may also inform valuations and the attribution of value put upon intangible assets which are components of an overall offering.

Some will be specially related to the absolute and comparative financial performance of certain classes of intangible assets which are identifiable and separable, such as the performance of films at different stages of their release.

## 7.4 Illustrative scenarios

### *Imaging software company developing product*

A software company is developing a new tool for manipulating images. The underlying invention can be applied to many different types of dataset. The resulting software application could be launched in multiple vertical markets. Different vertical markets require different value propositions, different features, different pricing models and different channels to market. Different verticals may attract different licensees of the technology, or acquirers of, or investors in the company.

Creatives, inventors and entrepreneurs together with support staff and management and professional advisors need to direct and focus both the research and development and market making efforts, given limited resources. This needs to be based on research of the potential value of their invention and its different exploitation routes, via their own applications, or its licensing to third parties for inclusion in their own products and services.

Negotiations with potential licensees, strategic partners and investors need to be informed by reliable and understandable data relating to the kind of innovation and the domains of application. Decisions over which aspects of the overall offering to protect with trademark and patent registrations, and to what depth and in what jurisdictions, need to be made in the light of the potential value to them, and to potential future licensees, investors and acquirers.

### *Media distribution company raising finance to launch*

A digital media distribution company has developed the blueprint for the model of a new way of distributing entertainment over the Internet. Although none of the technical developments are novel enough to be patentable, the combination of technologies for this particular application is novel and through the use of consumer technologies and open systems approaches, are deployable at much lower costs than existing proprietary systems.

The model has been developed through sweat equity, the financing of an affiliate company and two sources of grant aid, one direct from an agency of the European Commission and one channelled through a UK public body, and even some limited bank finance, which was secured on the strength of the management team, R&D assets on the balance sheet and matched public funding.

To launch, further finance is required, with equity interested in early stage being the only practical option. The business model and investor briefing describes the overall business model, but also identifies the key elements of intellectual property and other intangible assets involved in the business. Negotiations with financiers over valuation rely heavily on listing all the intangible assets involved and documenting how they were created, what they cost to create, how they are protected, how the company can continue to derive economic benefit from them, and what their replacement cost would be if starting again from scratch.

### 7.5 Barriers to achieving desired end state

Barriers to efficient and effective intangible asset markets include:<sup>39</sup>

- Lack of accurate and reliable valuation;
- Jurisdictional variations;
- Extensive due diligence;
- High administration costs;
- Unpredictable cashflows:
  - Subject to fashion (whims of consumers, market etc);
  - Risks of litigation; and,
- Inextricability from creators/inventors.

A model of barriers from a recent European study is included in Figure 7.<sup>40</sup>

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39 Taken from [www.linklaters.com/pdfs/publications/ipsecuritisation.pdf](http://www.linklaters.com/pdfs/publications/ipsecuritisation.pdf)

40 European Commission, Towards Enhanced Patent Valorisation for Growth and Jobs. December 2012, p.8

<b>Low transparency on the patent market (2.2.1)</b>	<b>Insufficient awareness of business opportunities (2.2.2)</b>	<b>High transaction costs of trading patents (2.2.3)</b>	<b>Difficult access to funding to commercialise patents (2.2.4)</b>
What is available for a transaction?	Insufficient use of IPR exchange platforms	Partner identification	Financing the stages from patented invention to market introduction
Who is its current owner?	Quality service providers hard to identify	Negotiation of agreement	
Which country is it granted for?	Open innovation resistance	Diverse valuation models Patent language	

Figure 7: The Obstacles that have a Negative Impact on Patent Valorisation

Appendix B depicts some of the barriers in the intangible asset market and attempts to assert potential causal relationships between them. A more thorough ‘root cause analysis’ would provide a way of prioritising which barriers to address first, from which could be derived a roadmap of actions to put in place the required information ecosystem.

## 7.6 Business requirements of various actors

### *Building efficiency*

Intangible assets need to be transferred in various ways from one entity or natural person to another. This requires both the intangible assets and the parties to the transaction to be unambiguously identified.

The market can only operate efficiently if it is possible to match two transactions involving an asset and know that the asset is the same in both cases (this is the reductive case, more than 2 transactions and more than 2 assets follows from this one case).

### *Enabling consistent valuation*

Trading in intangible assets requires the valuation of the assets to be acceptable to both parties. The actual value realised in the trade needs to be recorded. Bundles of assets may be worth more (or less) than the sum of their parts.

Factors affecting valuation of intangible assets include:

- Future cashflows (revenues c.f. investments) from business trading in products or services using the assets;

- Market transfer value, benchmarked from trading intangible assets or derivatives of them;
- Strategic value, even though an asset may not be used for business trading, but rather for blocking and/or risk mitigation;
- Contexts of creation/development and potential use: for example, the surrounding capabilities (or lack of them) in developing and licensing or acquiring organisations;
- Goodwill;
- Guard against patent trolls; and,
- Associated risks including validity.

Confidence in valuations is required. Common valuation methods and consistent and defensible ratings of the above factors will contribute to such confidence. This requires reliable, structured data of sufficient quantity and quality to be derived from transactions. This requires a certain volume of trading and also perceived transparency and clarity about the transactions concerned.

In order to assess whether an intangible asset has material or significant value (and does not have significant negative value i.e. liability), the many risk factors need to be described and evaluated in a consistent way. Risks include those that relate to other potential conflicting intellectual property registrations or other innovations, whether registered or not, that may render an innovation obsolete.

To enable value comparisons across sectors and valuation by reference to similar innovations in other application areas, one needs clear and unambiguous descriptions of intangible assets that span different sectors. One could, for instance, standardize the definition on patent families.

However, one has to recognise that by their very nature intellectual property assets are novel. Whilst comparisons can be made, evaluating the quality or worth of genuinely new ideas using only a programmatically applied analysis of existing ones would be an error in believing the map made to date did indeed represent the full richness of the territory of both innovations and their realms of application.

### *Building capability*

Individuals working in the intangibles market with multiple different backgrounds need to communicate more and better. They need to use common language to describe the whole ecosystem and parts within it.

Financial actors, e.g. high street banks, venture capitalists and angel investors, should know the intangible asset market, and how it works. If employees at financial service institutions know how to evaluate intangibles, then businesses that rely on intangible assets can convince them how much their intangible assets are worth.

Intangible asset rightsholders need to be able to easily manage the business and legal as well as technical and creative aspects of building, retaining and protecting a portfolio of assets.

### *Building confidence and volumes*

The intangible assets market needs to be liquid. It is argued that this can be achieved through greater productisation (standard licence structures and pricing), insurance and other derivative products and greater understanding of this asset class through education.

For example, in the case of high value, one-off transactions, trust can be established between parties through due diligence, professional advisors on both sides and bespoke legal agreements. Increasing volumes of trading and making lower value transactions economically viable require the whole process to be streamlined and systematised. In the trading of financial instruments this is achieved through regulation so previously ad hoc elements of a transaction are codified in standard ways, non-compliance with which is backed by sanctions and liabilities.

In order to have confidence that transactions are valid, what is being offered is as described and unencumbered, the descriptions of intangible assets and the interests that various organisations have in them, and any potential impairments must be kept up to date and be easily associated with an asset. Such changes and transactions relating to an asset should be easily traceable.

The adoption of common professional standards by public and private sector practitioners valuing intangible assets will contribute to greater confidence between the parties that the price of an asset is ‘fair’. Other asset classes apply a mixture of voluntary professional codes and statutory backing to the application of certain parts of these codes in specific situations.

More valuation practitioners, trained to the level of these professional standards, could arguably make such advice more readily available and affordable to transacting parties, through greater supply and competition. Finally, a new generation of information and analytics services could democratise access to and make interpretable market data to less specialised professionals outside the inner circle of intangible asset valuation experts.

## 7.7 Structure of the secondary information and analysis market

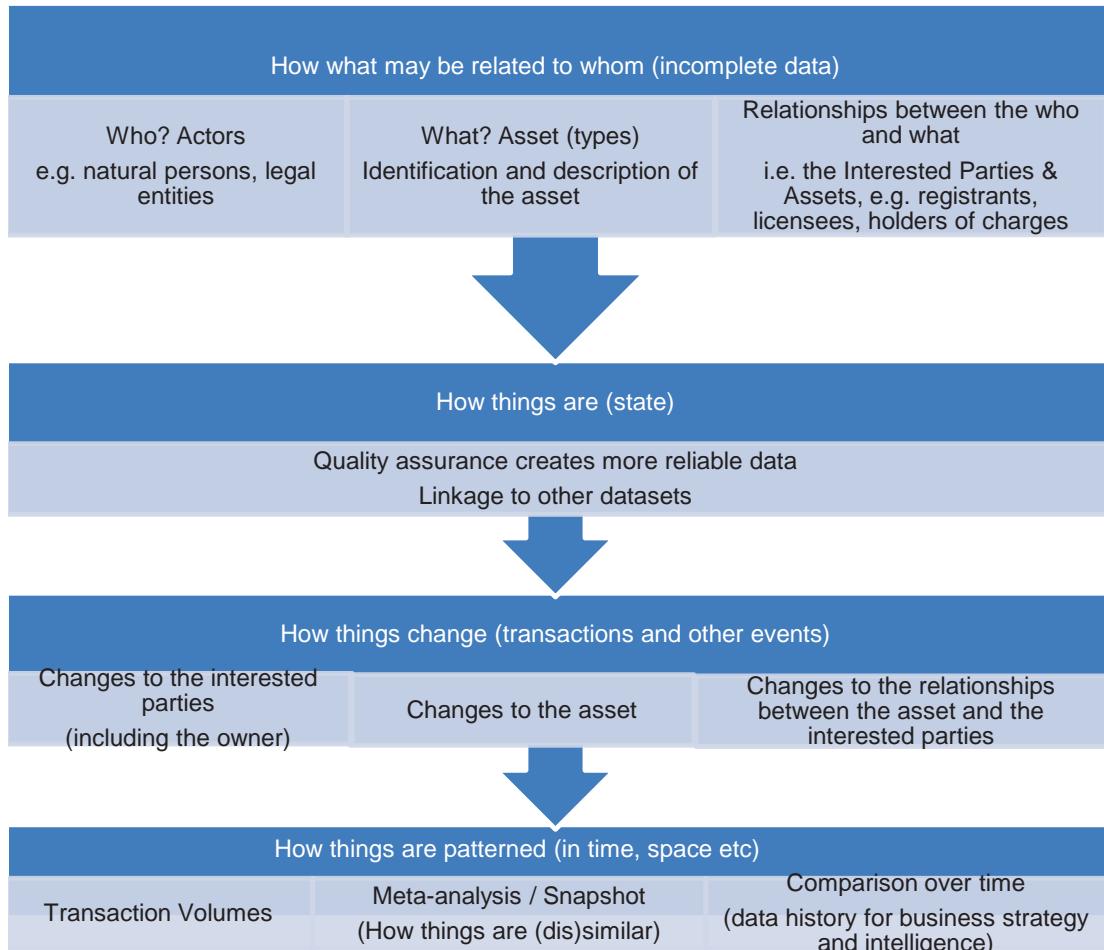


Figure 8: Value Chain for information and analytics service

Figure 8 shows a way of modelling the value chain for information and analytics services associated with the intangible asset market. As with many other information value chains, there is a flow from low-value data, through information with various levels of assurance to high-order ‘knowledge’ of the domain.

Statutory intellectual property rights registers and corporate information reporting lie in the initial data layer. The quality assurance of the information when created is variable. However accurate it may be at creation, with no obligation to maintain its accuracy between events that require reporting, it at best represents a snapshot of state at a particular time.

Tracking changes is driven by an array of information that is thrown off from transactions and other events.

Higher order analytics is not just a question of greater processing power to capture patterns, but also an understanding of how to turn information into decision support which is meaningful enough to its users that it can be used to inform business and regulatory decisions. Decision support needs to provide enough context so that users can understand more of the ‘why’ of ‘what’ has happened or will happen<sup>41</sup>. Some solution providers such as Aistemos are piloting new solutions for the patents market and sharing some of their findings<sup>42</sup> from this. See recommendations in Section 8.4 regarding Business Intelligence.

## 7.8 High-level information model

Every provider of information and analytics services or trading platform will have their own proprietary information models. In order to create interoperability between multiple actors and systems, there needs to be a kind of ‘meta’ information model that sits above all of these and which provides abstractions which enable each separate implementation to be mapped to the canonical ‘meta’ model.

Getting the fundamental objects within the model, and the relationships between them right, is a prerequisite to more sophisticated automation, representation of real world knowledge and transactions within systems and interoperability. Paper prototyping systems, by running real world scenarios through and describing, updating and transferring information by hand, are the best way to achieve testing whether they are ‘right’.

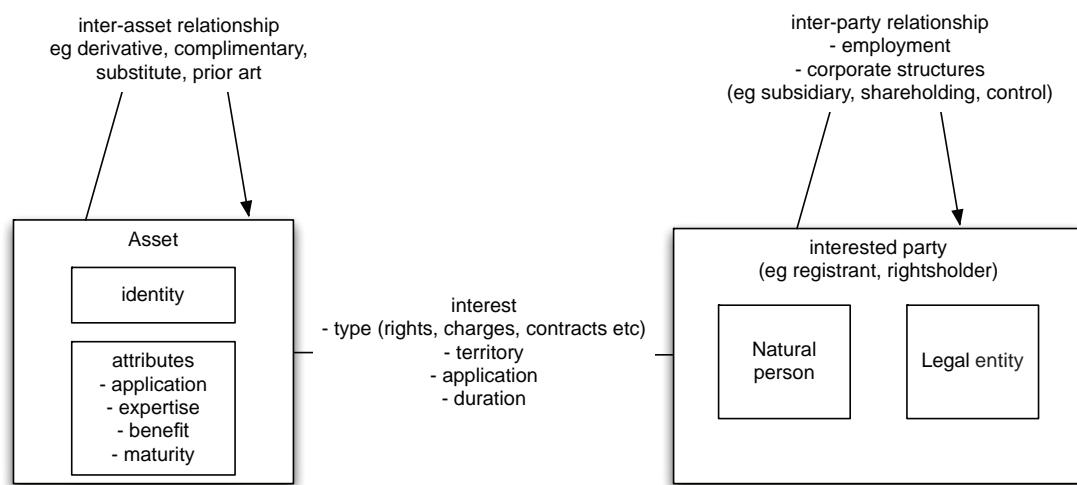


Figure 9: Asset and interested party relationships

Identifying intangible assets and the actors who have an interest in them is a basic first step. Being able to, in addition, describe an interest that exists completes what is required for a ‘registration’, ‘charge’ etc. Inter-asset relationships provide the means to represent bundles of rights, derived works, prior art for a patent etc. Inter-party relationships enable the complexities of corporate structures, for example, to be represented. This is illustrated in Figure 9.

41 For recommendations about the development of ‘business intelligence’ solutions see Section 7.4.

42 <http://www.iam-magazine.com/issues/Article.ashx?g=14be6336-679e-4c46-a6c6-9b826413a66d>

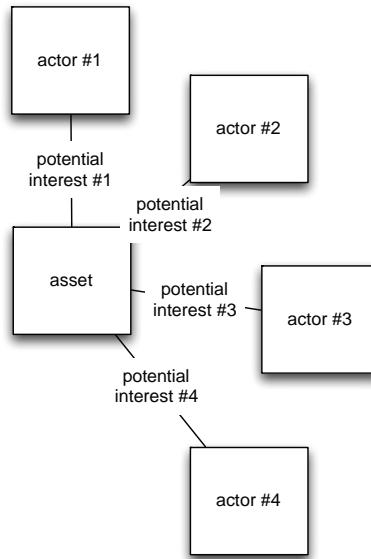


Figure 10: The set of potential interests in an asset

The state of an asset in terms of its registrations, encumbrances etc. can be represented by multiple relationships between it and a number of parties. The descriptions of interest can include qualifiers that represent certainty over the accuracy of the interest, or that an interest may only be potential, for example, as a result of litigation in progress. The basic schema for this is shown in Figure 10.

Changes to the state of an asset need to reflect changes to interests or the interested parties, as shown in Figure 11.

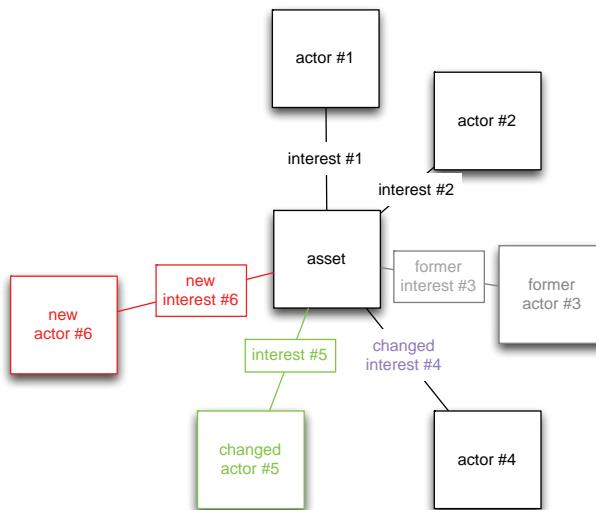


Figure 11: Changes to interests in an asset

Transactions will generally need to be represented as a change of state for one or more intangible assets together with some compensation between two sets of parties, as shown in Figure 12.

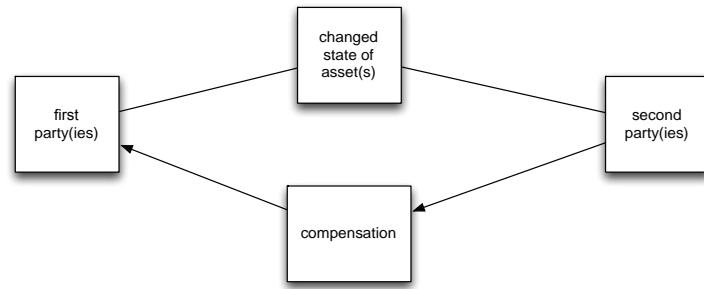


Figure 12: Schema for a transaction

Whilst there are many more objects and relationships between them to model, these are the primitives on which any market-wide data sharing will need to be built.

# 8 Recommendations

## 8.1 Focus on specific verticals and asset classes

We note in Section 3.1, that this study and report consider a wide range of intangible assets that include Intellectual Property rather than sector-specific ‘point’ solutions.

However, whole market or cross-market solutions are difficult to achieve and will grow out of proven working models operating with particular classes of asset in particular sectors.

Work after this study will need to focus on actions that realise solutions in specific areas. This applies to the remainder of the recommendations included here.

Initiatives that can be built on include:

- the Copyright Hub<sup>43</sup> using existing data standards, identifiers and communication protocols developed by the Linked Content Coalition<sup>44</sup> with technical implementation being led by the Connected Digital Economy Catapult<sup>45</sup>;
- the ACID Marketplace<sup>46</sup> by Anti-Copying in Design which builds on their Design Databank<sup>47</sup> and secure communication service IP Tracker<sup>48</sup> to enable owners of design rights to record them and communicate information revealing such designs in a trackable way.

## 8.2 Supporting the development of an interoperability framework for intangibles

The range of UK government and public bodies addressing innovation policy, including the Intellectual Property Office, Department for Business Innovation and Skills, Technology Strategy Board, Office of Science and Technology, should encourage and support the development and adoption of standards in this area.

The purpose of these standards should be to enable interoperability between different actors, services and systems – across different segments of the intangibles market, different parts of the value chain and between the public, third and private sectors. They should be managed within an overall Interoperability Framework for intangibles to ensure that they ‘hang together’ and achieve their purpose.

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43 <http://www.copyrighthub.co.uk/about>

44 <http://www.linkedcontentcoalition.org/>

45 [https://cde.catapult.org.uk/blog/-/asset\\_publisher/ZGWrkR5DvRqj/blog/team-weekly-update-11-the-copyright-hub-and-open-calls](https://cde.catapult.org.uk/blog/-/asset_publisher/ZGWrkR5DvRqj/blog/team-weekly-update-11-the-copyright-hub-and-open-calls)

46 <http://www.acid.uk.com/acid-marketplace-305.html>

47 <http://www.acid.uk.com/acid-design-databank.html>

48 <http://acidiptracker.co.uk/acid-ip-tracker/>

Potential actions include:

- Mapping existing and planned standards against the information architecture required to enable effective intangible asset markets;
- Encouraging stakeholders including statutory and non-statutory registries, trading and brokerage platforms and information and analytics providers to take part in standardisation activities even where they compete;
- Ensure that open data published by the IPO adheres to relevant standards and encourage other relevant parts of government to do the same;
- Create more standards as the intangible asset markets are developing;
- Identify the best industry consortia and de jure standards bodies (such as BSi and ISO) to develop specifications and standards in the areas of information, quality and professional practice;
- Provide funding and encourage other funders to support the simultaneous development, testing and formalisation of information standards; and,
- Dedicating the time of its staff and advisors in priority standards development, testing and formalisation activities.

Figure 13 represents a potential roadmap for standardization activities. The component ‘Business Strategy and Financing Management’ is the realm of standardization covering the scope of **C Exploitation** of Figure 7.1 Structure of intangible assets market. The codification of keys aspects of business plans is the subject of much accounting and corporate finance and strategy practice. Further work would be required to identify which elements within this must address the needs of intangible asset market development.

Many of these standards are not specifically information standards, but are more generic ‘professional’ standards. Consultees strongly felt that information standards alone were necessary but not sufficient – very much in line with our assertion that the ‘system’ being changed is a socio-technical system of people, organisations and information systems. Therefore professional standards – including the quality standards around the creation of information and its interpretation – are also necessary to achieve the end goals of:

- Effective communication – a piece of knowledge held by one person or collection of people or organisation can be communicated to others and its essential meaning be correctly understood by its recipient(s);
- Well-founded representation of real world state by data systems – in other words, if data held within one or more systems asserts that something be true in the real world (for example entity X has right Y in asset Z) then this is true – or at least risks that it may not be true are recorded and apparent.

Crowd-funding platforms present an interesting case in how to standardise the information and processes around business planning and early stage venture finance. Examining this and consulting with them should form part of the next phase of work.

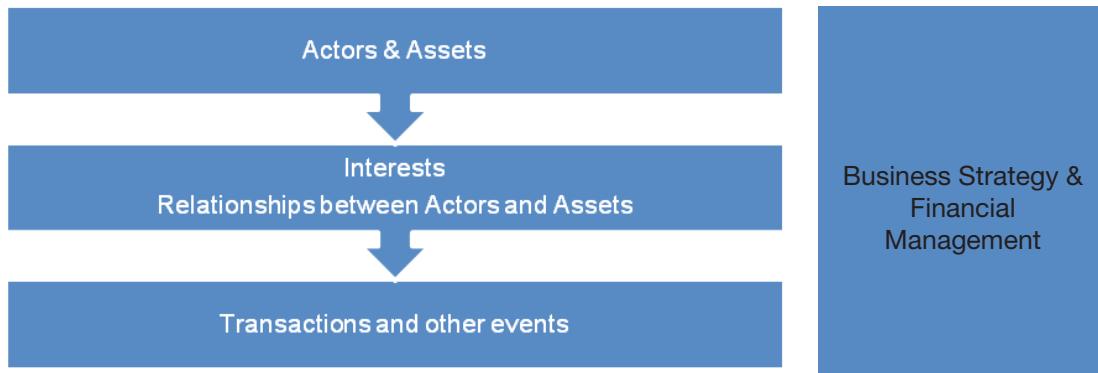


Figure 13: A potential standardisation roadmap for intangible asset markets

One specific immediate recommendation is that LEIs and/or other legal entity identifiers that may be locally unique rather than globally unique should be associated with all interactions with public administrations involving intellectual property.

Five examples of touchpoints with government or its agencies involving intellectual property or intangible assets where this could be required or encouraged are:

- Statutory registers for intellectual property rights;
- Companies House records of charges over intangible assets;
- Proceedings and judgements within the formal legal system;
- HMRC when claiming tax relief; and,
- Public funders funding innovation, technology, economic development etc.

### 8.3 Agile development of data sharing and aggregation

Whilst standardization is important, the creation and adoption of standards – especially those requiring international consensus and suitability – is slow.

We recommend that collaborations between public, private and non-profit sector organisations and open innovation and agile approaches be encouraged and supported to:

- link together data from heterogeneous sources, both private and public sector, both open and proprietary;
- develop and trial products and services around these datasets, getting feedback from real users in key roles; and
- take approaches from the copyright industries in high volume, low value transactions and apply them to trading in other intangible asset types.

Because having certainty over which entities or natural persons have title in or rights over assets is a pre-requisite for all other transactions, this should be the focus of initial efforts. With trademarks and patents, the formal registers are the place to start this, following on with licensing and litigation actions which affect title. Incentives and regulations that improve the quality of this information by requiring registration of changes to title, as with recent development with US patents<sup>49</sup> and recent recommendations from the European Commission Expert Group on Patent Aggregation should be considered.

### 8.4 Business intelligence services for intangibles market actors

By ‘business intelligence’ we mean presentations of information which support making decisions so that actions undertaken as a result achieve a desired goal.

Requirements on any particular business intelligence solution include its users (and their worldview), the class of potential goals and the kind of decisions they will be required to make. Attributes of any particular business intelligence solution include the information included, how it is interlinked and structured, how this information is presented and how users can interact with this information.

We recommend that initiatives that design and test business intelligence solutions relating to the intangibles market be supported and encouraged. The users would be the key actors identified in this report. It is necessary to focus on making solutions usable by people who are not IP experts, although they may be finance, business, innovation or regulatory professionals.

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49 <http://www.gpo.gov/fdsys/pkg/FR-2014-01-24/pdf/2014-01195.pdf>

The decisions would be around the following key business processes relating to intangible assets:

- putting up for sale – which assets, pricing, scope of rights granted;
- procuring rights – identifying potential suppliers, potential assets/rights;
- the transaction of selling/buying – including negotiation;
- abating risk and collateralisation (see Section 7.5);
- lending and funding.

### 8.5 Information services to support risk abatement and collateralisation

Others have concluded and some providers/sectors demonstrate that products that lower risks associated with intangible assets enable these assets to be treated as collateral.

We recommend that discussions with and between existing and potential future providers of such risk abatement products together with traditional and alternative lenders be facilitated to build some consensus around:

- The shape of these products so that asset owners and lenders understand the categories of offering available for each asset class and options within those;
- The business intelligence solutions that these products require in order to be underwritten and credible;
- How they can share information between them in order to enable the market and support the creation of such business intelligence solutions and yet still have competition driving innovation.

## Appendix A – consultees

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Martin Brassell, Inngot

Ben Brown, Arts Council

Matthew Brown, Technology Strategy Board

Stewart Coleman, Open Data Institute

Chris Haley, NESTA

Roya Ghafele, Oxfirst Ltd

Steve Harris, Aistemos

Thomas Hoehn, Imperial College

Richard Hooper, The Copyright Hub

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Frances Lowe, PRS

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Marcus Malek, Aistemos

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Deirdre Moynihan, Morrison Foerster

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Gerard Pannekoek, IPXI

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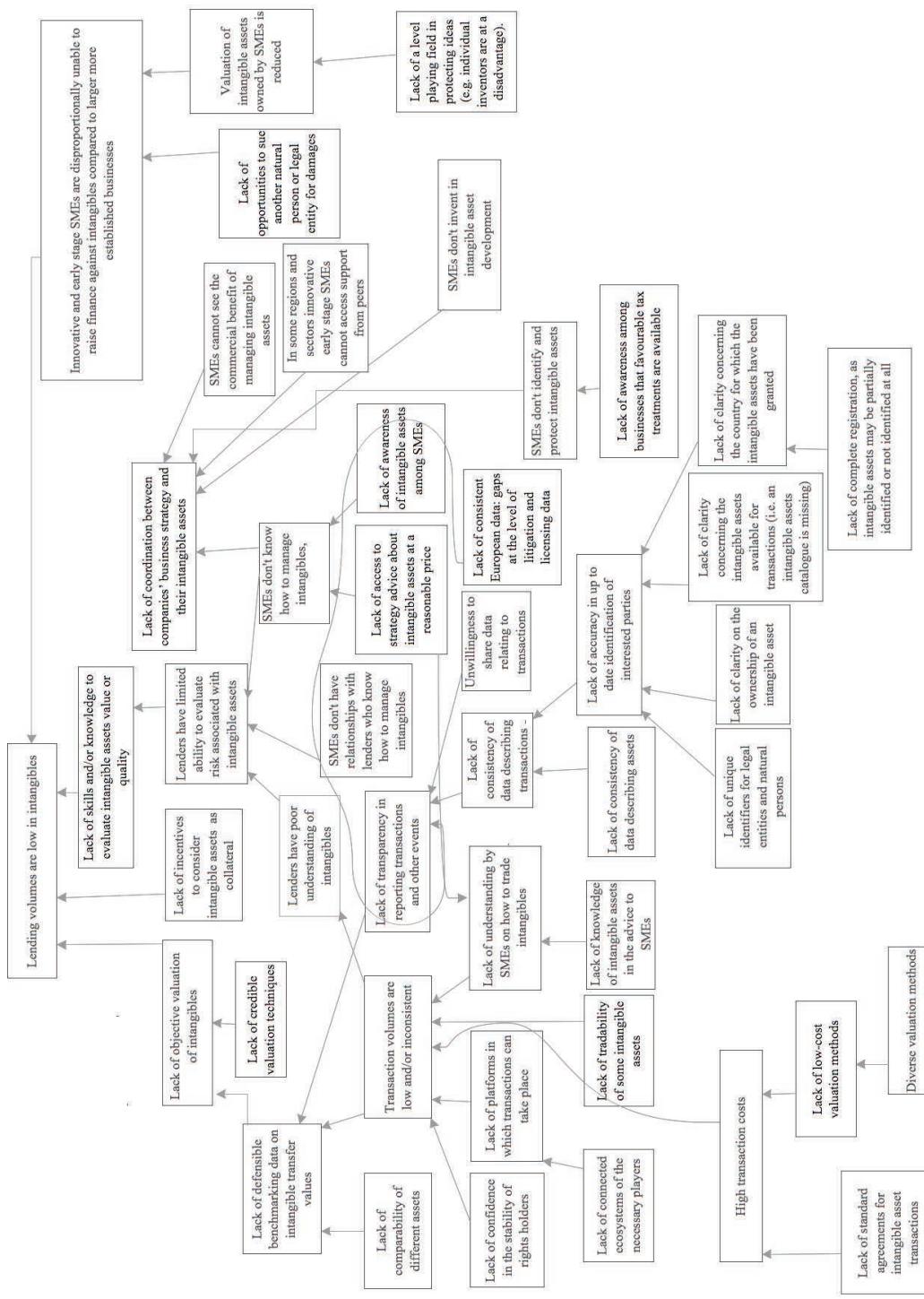
Chris Taggart, Open Corporates

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Chris West, Grant Thornton

Chris Yapp, Futurologist

## Appendix B – root cause analysis of barriers







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