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Martin Brassell FRSA
Dr Benjamin Reid

Accounting for Innovation

A pilot study of UK small and medium-sized enterprises and their intangible assets

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Founded in 1904, ACCA has consistently held unique core values: opportunity, diversity, innovation, integrity and accountability. It believes that accountants bring value to economies in all stages of development and seek to develop capacity in the profession and encourage the adoption of global standards. ACCA's core values are aligned to the needs of employers in all sectors and it ensures that through its range of qualifications, it prepares accountants for business. ACCA seeks to open up the profession to people of all backgrounds and remove artificial barriers, innovating its qualifications and delivery to meet the diverse needs of trainee professionals and their employers. More information is available at: **www.accaglobal.com**

Agensi Inovasi Malaysia (AIM)

Agensi Inovasi Malaysia (AIM), a national innovation agency for Malaysia was set up as a statutory body by the Government through an Act of Parliament in 2010 with a mandate to stimulate and develop the innovation eco-system in Malaysia towards achieving Vision 2020.

Nesta

Nesta is an innovation charity with a mission to help people and organisations bring great ideas to life. We are dedicated to supporting ideas that can help improve all our lives, with activities ranging from early–stage investment to in–depth research and practical programmes.

This report presents the results of a pilot project, testing the utility of an Innovation Accounting Tool to help small and medium-sized businesses quantify their investment in intangible assets. The Tool is based on the Malaysian National Corporate Innovation Index.

Accounting for Innovation

A pilot study of UK small and medium-sized enterprises and their intangible assets

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MARTIN BRASSELL FRSA

Martin is an expert in the identification and 'valorisation' of intellectual property (IP) and other intangible assets. He is co-founder and chief executive of Inngot, providers of online tools for identifying, valuing and managing IP targeted specifically at small and medium-sized enterprises. Martin co-authored the 2013 *Banking on IP?* report for the UK Intellectual Property Office; he is currently contributing to a new work on the economics of IP for Oxford University Press.

Martin's IP knowledge was gained in senior roles in small, medium and large multinational companies over a period of 15 years. From 2005 he was an Enterprise Hub Director, supporting a diverse range of high-potential companies. He has hands-on experience of the role IP plays in funding and investment, mergers and acquisitions, collaboration and licensing.

Inngot was established in 2007 to unlock the value in IP and intangibles. In addition to providing online tools, the company provides technology audit and evaluation services and specialises in research activities centred on the measurement and management of intangibles. This included engagement with Nesta to deliver Phase II of the National Corporate Innovation Index ('NCII') for the government of Malaysia (see below).

Martin is co-author with Dr Benjamin Reid of the 2015 report *Innovation, Intangibles and Integrated Reporting: A Pilot Study of Malaysian SMEs*, produced for ACCA.

DR BENJAMIN REID

Benjamin is principal researcher in international innovation at Nesta, the UK's innovation foundation. The team examines new global trends and practices in innovation, with an emphasis on emerging economies such as China, India, Brazil and Malaysia. Nesta aims to build resources and networks for innovation that will help the UK to flourish in a rapidly changing global economy.

Benjamin's primary 2014 project was working with the Malaysian innovation agency, AIM, to develop a toolkit to help Malaysian businesses understand and improve their investments in innovation capacity and capabilities. He has recently completed work scoping the leadership development needs of innovation policymakers in the Pacific Alliance countries.

Before joining Nesta, Benjamin was head of open innovation at the Big Innovation Centre, and a senior researcher at The Work Foundation. He worked on projects ranging from corporate and government open innovation, to youth employment, social media at work, the creative industries, changing employment patterns and design innovation policy. He collaborated on the development of London Creative and Digital Fusion, an EU-funded programme supporting London-based creative and digital SMEs.

Benjamin also worked for nine years as a researcher and lecturer at Henley Business School, teaching people management, innovation and research methods on the School's global MBA and DBA programmes. His research clients at Henley included Ford Motor Company, Petroleum Nasional Berhad (PETRONAS), the Department for Education, the European Commission and the BBC. He holds a PhD from Henley Business School at the University of Reading, which focused on the evaluation of management and leadership development programmes.

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Nesta

AIM

National Corporate Innovation Index™ Accelerating Growth Through Innovation

ALPHA CATALYST CONSULTING

Foreword

Innovation is fundamental to competitiveness and economic growth; it matters to firms of all sizes. Innovation leads to growth and competitive advantage, and it is also of net benefit to the whole economy. Yet return on innovation is extremely difficult to measure even though investment in intangible goods outstrips that in tangibles.

How should this invisible gold be measured? How should it be accounted for and how can firms leverage finance against the invisible? These are not only issues at the firm level but a growing area of concern for governments too. How do governments create policy to support innovation when the latter is so difficult to measure?

Malaysia is a country where one government has taken a very proactive approach. The Malaysian government has supported innovation through the creation of its 'SME Masterplan', launched in 2011 to create globally competitive SMEs by accelerating their growth through productivity gains and innovation.

As a result of this, ACCA was able to work with AIM (Agensi Inovasi Malaysia) and project partners Nesta (the UK foundation for innovation) and Inngot, to roll out the National Corporate Innovation Index, with ACCA's Malaysian SME members. The results of this are detailed in our previous report: *Innovation, Intangibles and Integrated Reporting: A Pilot Study of SMEs* (Brassell and Reid 2015).

Similarly, in the UK, intellectual property and intangible assets are becoming central features of business innovation and growth. The Intellectual Property Office has done a huge amount to educate and inform. ACCA recognises the role of its members in ensuring that businesses are aware of the true value of their assets.

ACCA is therefore delighted to have been able to then take this framework further by rolling it out with our UK members and I would like to pay tribute again to AIM for their support in doing this. The engagement from members demonstrates that the expertise of finance professionals is needed and that ACCA should prepare our own members and students for the challenge.

Datuk Alexandra Chin,
President, ACCA

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Executive summary

SME investments in intangible assets are not captured in their statutory accounts

Intangible assets, particularly intellectual property (IP), are created when companies innovate. These assets are widely acknowledged to be of substantial business value; international studies suggest that up to 80% of listed companies' share prices are no longer supported by the presence of tangible assets on their balance sheets (Brookings Institution 1999).

While small and medium-sized enterprises (SMEs) lack access to a market mechanism for realising this 'hidden' value, the crucial role such businesses are acknowledged to play in driving innovation and economic growth (eg BIS 2013) suggests that they, too, have valuable assets that are not represented in statutory accounts. These assets, especially IP, are integral to productivity and competitiveness; recognising their importance, many governments offer grants and tax incentives to encourage their creation.

Intangibles have become the primary focus for company investment. Building on influential work by Corrado, Hulten and Sichel for the influential US National Bureau of Economic Research (Corrado et al. 2005), the OECD claims that expenditure on intangibles is now outstripping that on 'traditional' tangible assets in many nations (OECD 2013). In the UK, the latest available figures show that the gap between these two investment categories has widened since the recession and is now approaching £40bn annually (£127bn on intangibles as against £88bn on tangibles) (Goodridge et al. 2013).

Previous studies on the contribution of innovation and intangible assets have generally focused on the 'macro-economic' picture. This new ACCA study is based on the recognition that a firm-level understanding of intellectual capital and its contribution to business performance is becoming increasingly important, for a number of reasons:

- There is growing international convergence of the rules governing intangible assets that are acquired or capitalised by businesses.
- Many countries now make generous tax reliefs available on certain categories of intangible asset investment[1] linked to innovation. In addition, new structures are emerging which enable companies to leverage the 'hidden' value of their intangibles, for example by obtaining debt finance[2] or by paying a lower rate of tax on incomes linked to certain forms of IP (Brassell and King 2013).[3]
- New corporate reporting mechanisms, particularly Integrated Reporting (IR), require firms to have a clear understanding of all their 'capitals' and the ability to track movements between them. For IR, intellectual capital is specifically referenced as a value driver.

Accountants have a growing need to understand the nature of the intangible assets their companies and clients own and control, and the role these play in generating value. Many firms are used to viewing intangible assets as technologies and/or research and development outputs, and so may fail to realise how broad this asset class truly is (particularly in design and process development innovation). While the inventory of company-owned intangible assets remains incomplete, it is perhaps not surprising that the investments made in creating them and the returns they generate will, for the most part, be poorly captured both by companies' internal reporting systems and their published accounts.

Solutions are required to fill this 'knowledge gap' so that companies can leverage *all* their sources of capital (whether financial, human, tangible or intangible). This research uses a methodology called the Innovation Accounting Tool, commissioned by ACCA in conjunction with Nesta, creator of the UK's Innovation Index, supported by Inngot, intangible assets specialists and government report authors (e.g. see Brassell and King 2013).

The Innovation Accounting Tool is based on a methodology originally developed for the Malaysian government's Innovation Agency, AIM, for measuring corporate levels of innovation, but has been redeveloped for the SME context. It uses a questionnaire format to look at two areas: inputs and outputs/outcomes.

1 In 2011, 26 OECD countries offered some form of tax incentive for R&D activity, along with many other countries including Brazil, China, India, Russia, Singapore and South Africa. See Köhler et al. 2012. Malaysia offers an attractive 'double' R&D tax credit incentive.

2 Government-supported, IP-backed funding schemes are in place in a number of countries including China, South Korea, Malaysia and Singapore.

3 A 'patent box' or equivalent scheme is in place in many countries. Ireland was the first nation to develop a patent box in 1973, followed by eight nations (Belgium, China, Denmark, France, Luxembourg, Netherlands, Spain and Switzerland) in the mid to late 2000s. See Brassell and King 2013.

By broadening their definition of innovation investment, SMEs can uncover 'hidden' innovation, and better estimate a return on that investment.

- *Inputs* are measured as firm investment in seven identified categories of activity known to be linked to innovation: research and development; software; design; organisational development and business process improvement; training and intellectual capital development; branding, marketing and reputation; and copyright materials.

- *Outputs and outcomes* are measured using a combination of financial figures on new products/services and efficiency savings, and numeric measurements of products and assets created.

While the methodology used is quantitative, with all information provided taking the form of either a financial input or a count, this study is essentially qualitative in ambition, having been geared towards obtaining in-depth insights from a limited number of customers. The Tool was used by a total of 15 participants from a range of activity sectors, including the accountancy profession itself.

The results reveal a number of interesting findings. In particular, the study's use of a three-point scale of difficulty in obtaining information requested by the Tool makes it clearer which areas pose particular quantification challenges for accountants, and point to areas that require improved approaches in order to yield actionable business insights.

KEY FINDINGS

- Innovation needs to be defined broadly, beyond conventional research and development activity, in order for companies to appreciate its relevance. 'R&D' was only carried out by one-third of the study sample, whereas design expenditure (when appropriately defined) was identified by nearly half, and process improvements by more than half.

- Each area of innovation investment poses its own challenges for cost identification. In some cases, internal expenditure is the hardest to identify; in others, it is the easiest. On the basis of this sample, larger SMEs do not appear to be any better at identifying inputs and outputs than smaller ones. For both, given the difficulties experienced, it is very likely that relevant investments are occurring that are not being tracked, which implies that the returns are not being properly considered.

- Outputs and outcomes from innovation are generally a little more challenging for companies to track than inputs, though the difference is not large. The biggest area of difficulty relates to efficiency savings, which many companies target, but few can measure well. This particular issue may be linked to the apparent difficulty experienced by some firms in quantifying sales and production volumes (as opposed to sales values).

- Treating innovation-related expense as an investment rather than a 'sunk' cost could make a significant difference to the perceived profitability of knowledge-intensive companies, comparatively few of which are choosing to capitalise intangibles on their balance sheets (in the limited circumstances under which this is permissible).

- Intellectual property rights are conspicuously absent for most of the sample. Although patents, for example, have limited applicability to companies that are not technology-reliant, the scarcity of trademarks (to protect brands) is a point of concern, especially when these represent such a cost-effective way of protecting key intangibles.

Capturing innovation investment, and understanding whether a return is being realised on it, are clearly of importance to individual participants. In fact, the question of innovation performance is so fundamental that it should not be necessary to use a special tool to bring this knowledge to the surface. Now that business information and accounting systems are increasingly cloud-based, updates to ensure that relevant data is obtained and analysed should be easier to introduce and distribute.

ACCA views this conclusion as a springboard for action; it is time to look again at whether management accounting systems are fit for the demands of the 21st century in the way in which they record and measure intangibles. Putting the right information on these value-producing assets in the hands of the accountancy profession – which is best placed to understand and use it – is vital, if the finance function is to be properly equipped to contribute to all stages of corporate decision making and reporting.

1. Introduction

The accountancy profession can make a substantial difference to companies' innovation investment through better measurement and management of intangibles.

1.1 ACCOUNTING FOR INNOVATION

Although there are differences between definitions of 'innovation', it is generally agreed that being innovative involves successfully bringing new ideas to market, in the form of products or services that customers wish to buy. Innovation can be radical and disruptive, gradual and incremental, but it always involves doing something differently in a manner that meets an existing, new or previously unidentified need. In effect, it is the opposite of doing 'more of the same'.

The importance of innovation at the national policy level is recognised and documented in many countries. Also, it is clear that successful companies do innovate, and that their market leadership is attributable to the competitive advantage such activity creates. Nonetheless, it is less clear how an individual business can measure the overall amount of innovation it is conducting, and identify the gains it is realising as a result of not simply doing 'more of the same'.

Accountancy has an important contribution to make in addressing this issue, on a number of levels.

- Firstly, a primary role of the accountancy function is to advise an organisation on how it can trade successfully, profitably and sustainably. Increasing competitiveness is an important dimension in this discussion, which by definition means that accountants must care about innovation.

- Secondly, the practice of accountancy includes 'keeping score' for an organisation – not simply by monitoring trading performance, but also by benchmarking progress against a range of financial and non-financial targets and stakeholder expectations. Strategic investments in innovation are hard to track and manage because many of them are typically absorbed in the profit and loss account rather than being shown on the balance sheet.

- Thirdly, accountants manage assets. The structures and conventions associated with tangible assets are well established and understood, but the same cannot be said for intangibles. Figuratively and literally, these are often invisible; like the investment that creates them, they are usually off-balance sheet. As research summarised in the following section aptly demonstrates, however, intangible assets are the primary output (or outcome) of innovation and the biggest source of 'hidden' value within companies today. This being the case, the accountancy profession needs to develop a better understanding of their contribution, so that a company can optimise the quality and usefulness of its whole asset portfolio.

The Innovation Accounting Tool can make a contribution to all three of these roles by identifying innovation as a legitimate sphere of accountancy interest, providing a means of keeping score and increasing the visibility of the assets that companies are creating. While the Tool is still at an early stage of development, both it and related approaches have the potential to help companies quantify and rate their innovation performance, as this study illustrates.

The Innovation Accounting Tool also seeks to provide results that are meaningful *at the firm level*, connecting individual companies' investments to their own specific returns, to create knowledge that is meaningful and actionable for board members. In this respect, the Tool builds on, but has a different emphasis from, the supporting research literature, which has focused on the relevance of innovation to *national* economic performance.

To provide meaningful firm-specific information, as much relevant data as possible needs to be captured across a range of activity areas where innovation may be happening. The question of data availability is in itself an important and valid focus for research; how far do companies' internal systems and procedures make it possible to assess their innovation performance?

The primary innovation investment categories are: research and development, software, design, organisational development and business process improvement, employer-funded training, and branding/marketing and reputation.

1.2 THE INNOVATION ACCOUNTING TOOL AND THE NATIONAL CORPORATE INNOVATION INDEX

The Innovation Accounting Tool used to compile information for this study of small and medium-sized enterprises (SMEs) and their intangible assets is based on a methodology originally developed by Nesta and Inngot for Agensi Inovasi Malaysia (AIM). This approach forms the basis for that country's National Corporate Innovation Index (NCII), now being rolled out to an audience of large Malaysian companies.

Malaysia's drive to help companies quantify their investment in knowledge assets reflects the extent to which emerging economies have identified the central role played by innovation. In Malaysia's case, the economy has evolved rapidly, from one based almost entirely on natural resources, through a period of growth based on capital investment in tangible assets (particularly expansion of the property market), to a point where knowledge- and technology-based innovation is recognised as a critical ingredient in taking the country to its next stage of development.[4]

This Tool is derived from the main deliverable created for the second of two NCII phases. During the preliminary, investigative phase in 2012–13, specialists from Alpha Catalyst Consulting worked with 14 large Malaysian PLCs to investigate and 'score' their performance under eight innovation-related headings. The method of data collection was qualitative, and each participant received personalised feedback.

A key finding from this Phase I activity was that only one in five Malaysian companies (20%) involved in the pilot were able to quantify their investments in innovation at all. Phase II was therefore commissioned in 2013 to develop quantitative numerical and financial measures for Malaysian companies.

An early conclusion (based on a substantial body of research by Nesta and others[5]) was that the assets most closely linked to innovation would be intangible (i.e. non-physical) in nature. The project therefore commenced with background work by Inngot to identify the different intangible asset reporting and analysis mechanisms that could provide a basis for building a tool, and to determine the types of asset that would need to be captured.

The Tool itself was ultimately 'triangulated' from three viewpoints.

- Firstly, an inventory of substantially all potentially identifiable intangibles was reduced to a list of 34 assets considered most likely to have direct relevance for the innovative capacity and/or performance of individual firms.
- Secondly, a set of questions designed to determine the existence of these assets, characterised as 'fruits of innovation', was formulated and then scrutinised. Owing to the nature of the intangible assets, it was found that the initial set of questions were primarily oriented towards outputs (i.e. indications that innovation may be occurring, but not necessarily the expenditure that was linked to it).
- Thirdly, in order to balance the model, questions were added to ensure that the main investment categories, representing innovation inputs, were adequately covered, and to add financial outcomes to the output measures. This took as its main reference point the research that had formed the original basis for Nesta's Innovation Index, summarised in Chapter 2 below.

1.3 INPUTS, OUTPUTS AND OUTCOMES

The areas of innovation investment, which constitute the primary inputs, were divided into six main categories. These headings have been derived from the body of research summarised in the following chapter, and provide a degree of consistency with reference materials relating to UK company investment.

- *Research and development* were measured to capture costs relating to the types of scientific and technological innovation most frequently associated with 'innovation'. In the commercial context this is, in general, less likely to relate to fundamental science and 'blue sky' thinking than to be done to examine the feasibility of addressing a pre-determined market opportunity and then building a solution to exploit it. Costs of any patent protection were also requested.
- *Software* was defined in such a way as to exclude 'off the shelf' software purchases but to include all forms of

4 The background to NCII is explained in more detail in ACCA 2015.

5 Some key contributions to this body of knowledge are set out in Chapter 2 below.

The four main outcome measures are: improvements in efficiency, income from new products and services, licensing income, and incentives such as R&D tax credits.

custom software, whether developed internally or by a third party.

- *Design* was regarded as encompassing a broad range of design inputs such as product, service and process design, graphic, user interface and Web design, but not branding (captured separately in another category). This was one area in which feedback from the first Malaysian pilot provided helpful insights into definition challenges, enabling these to be addressed (with some success) for the UK version. Costs of any registered design protection were also requested.

- *Organisational development and business process improvement* were assessed to capture the more incremental forms of innovation vital to many companies, including any work on efficiency, effectiveness, quality, change or business strategy programmes, as well as new management information systems and involvement in open innovation initiatives. The Malaysian pilot indicated that this was a difficult area for companies to quantify and some definitions were adapted for the UK exercise. Although capital expenditure on equipment was excluded from this section, costs of adapting any such equipment to suit the company's specific needs was requested.

- *Employer-funded training and intellectual capital development* included internal and external sources, and all forms of learning and skills development plus specialist recruitment of new talent.

- *Branding/marketing and reputation* included expenditure on product launches, rebranding, packaging and market research.

This left copyright materials as the one sector-dependent area, other than software, which is by default protected under copyright law. Copyright assets are known to be very important in certain sectors, but are not necessarily linked to income generation, and might also be captured under branding/marketing and reputation investment, leading to the possibility of double counting. Accordingly, companies were asked to exclude any investment in copyright assets that were not revenue-generative.

The **intangible assets**, which primarily constitute **output volume measures**, were organised into five families:

- registered intellectual property rights, such as patents, trade marks and industrial designs

- copyright materials (where revenue-generating)

- contractual agreements with customers, suppliers, licensees and other third parties

- internal resources such as proprietary processes and trade secrets

- external relationships.

The **financial measures of return**, which in this model are the **outcomes**, were divided into four main areas:

- improvements in efficiency

- incomes associated with new products and services (either new to the firm, or new to the market)

- licensing incomes

- incentives awarded, e.g. R&D tax credits.

Two important decisions were made about project scope:

- It was agreed that the focus would be on determining the *aggregate* effects of innovation, at least for this phase of work, because of the likelihood that establishing the contribution to given outputs made by *individual* investments or assets would require data that would be too granular for many companies to be able to provide.

- In all cases, the emphasis was placed on capturing revenue (or, in the case of efficiency benefits, cost savings) rather than profit. Although the concept of 'Return on Innovation' might suggest an emphasis on profit, such data was considered too likely to be influenced by factors not related to innovation. The use of revenue figures also improved comparability with existing benchmark data.

An advantage of a UK SME study is that sector-level in-country data is available for benchmarking innovation investments.

1.4 ACCA'S RESEARCH OBJECTIVES

The NCII initiative has a number of characteristics that make it of particular interest to ACCA. ACCA has a long-standing interest in the role of intangible assets in small and medium-sized enterprises, which was first researched in detail in 2006 (Martin and Hartley 2006); the topics raised have featured in subsequent reports (including ACCA/IP Institute/ESRC 2007). There are also synergies between the analytical approach introduced by NCII and the introduction of Integrated Reporting, which is currently being incorporated within ACCA's course programme.

ACCA's engagement enabled the principles of NCII to be explored in June/July 2014 with a small, non-corporate group of Malaysian participants, in order to obtain some preliminary answers to the following questions.

- How far does the introduction of NCII support the principles behind Integrated Reporting (IR)?
- How much information on intangible assets can SMEs and mid-market companies identify?
- Which types of data are most time-consuming or difficult for them to find?
- What conclusions might be drawn in relation to the need for greater intangible asset awareness in professional development?

The results of this exercise are documented in a previous ACCA report, *Innovation, Intangibles and Integrated Reporting* (Brassell and Reid 2015). Its preliminary findings contributed to the formal launch of NCII by Malaysia's Prime Minister, Dato Sri' Mohd Najib bin Tun Abdul Razak, at the 2014 Innovating Malaysia conference.

The Innovation Accounting Tool used for the UK pilot study, which was conducted between July and October 2015, is very similar to its Malaysian forerunner, but incorporates some refinements summarised in Chapter 4, section 4.4 below. Studying the UK offers the advantage that benchmarking data on company investments is available from the same country (albeit from a few years earlier).

Since the first research question has already been answered, the research team (from ACCA, Nesta and Inngot) decided to replace it with a new question which resonates with ACCA's long-term policy interest in the ability of SMEs to access growth funding, and acknowledges the recent progress made in intellectual property-backed financing[6]: *How can the information gathered on intangible asset investment be leveraged to assist companies with their own funding strategies?*

6 See Chapter 3, section 3.5 for further details.

2. Frameworks for investigating innovation investment

The Innovation Accounting Tool draws on research, guidance, regulation and practice that have been established over several decades with the aim of quantifying the importance and/or contribution of intangible assets to supporting company performance.

2.1 INTRODUCTION

The Innovation Accounting Tool draws on research, guidance, regulation and practice that have been established over several decades with the aim of quantifying the importance and/or contribution of intangible assets to supporting company performance. In order to explain the basis for the inputs and outputs being measured by the Tool, this chapter provides an overview of the background, some of which is explained in more detail in an earlier ACCA report (Brassell and Reid 2015), with updates reflecting changes to UK accounting practice.

In considering the approaches that have been taken to innovation and intangibles measurement, five strands are of particular note:

i) the 'growth accounting' approach primarily associated with US economist Robert Solow in the 1950s (e.g. Solow 1957)

ii) the 'investment in knowledge' school of economic thought, led by researchers Carol Corrado, Charles Hulten and Daniel Sichel (key papers include Corrado et al. 2005; 2006)

iii) the body of research work conducted by Nesta to explain and quantify the relationship between intangible asset investment, innovation and growth, specifically its 'Innovation Index'

iv) the international accounting standards applied to business intangible assets, particularly IAS 38 and IFRS 3; more of these practices are now percolating into SME accounting with the addition of FRS 102 to UK GAAP

v) shifts in accountancy practice towards broader measurements, particularly integrated reporting (the most relevant aspects are summarised below).

2.2 GROWTH ACCOUNTING

Growth accounting takes an economic approach to the question of determining the relative contribution that different elements make to the growth of an economy. It separates the importance of labour, capital investment and natural resources from other potential elements when considering the expansion of a specific economy.

Growth accounting made visible what was missing from previously common measures or factors used to understand growth. By starting with overall output – or growth in output – and subtracting the contribution that could be attributed to having more workers or more raw materials, it became clear that some countries had a 'residual' percentage of economic growth. Growth accounting attributes this missing element to the improvement in the productivity of assets (including labour and capital) through, for example, technological change and better ways of working.

Subsequent study has focused on the constituent parts of this residual percentage, and on the fact that it seems to be an increasingly important factor in explaining growth in developed countries (and therefore of particular interest to countries such as Malaysia, which are seeking to align their economies more closely with those of Europe and the US).

This school of thought was the first to bring intangible asset investment under the spotlight, with a strong initial focus on software and information technology (prompted by the now-famous 1987 quote from Solow that 'the IT revolution can be seen everywhere except in the productivity statistics' (Solow 1987).

Current research into national investments in intangible assets shows that these are now closely linked with growth across all developed economies (Corrado et al. 2013) and have continued to grow in importance in recent years (Hulten 2013).

2.3 INVESTMENT IN KNOWLEDGE

Starting from growth accounting principles, researchers Carol Corrado, Charles Hulten and Daniel Sichel, working respectively in the Federal Reserve, the National Bureau of Economic Research and the Conference Board, developed a model for the range of 'intangible' assets that potentially contribute to economic growth. These include not only research and development but also software and IT, and process improvements through, for example, investments in management consultancy.

Their key finding was that, for the US, a potential explanation for the remainder of economic growth referred to above lay in the range of 'intangible' asset investments US firms were making, calculated at over $1trillion annually, which rivalled expenditure for more traditional tangible assets. They classed this range of investments as being those that an economy can make in *knowledge*, and in doing things better: that is, investments in innovation.

A further, very important, associated finding was that the types of decision being made for expenditure on software and other identifiable intangible assets were motivated by the expectation of long-term benefit in just the same way as investments in tangible assets. Corrado et al. (2005) concluded that there was, in effect, no real difference between tangible and intangible spending, other than that the costs relating to such investments would be found wholly or mostly within the profit and loss account rather than on the balance sheet, where amortisation and/or depreciation would normally be applied.

Current research into national investments in intangible assets shows that these are now closely linked with growth across all developed economies (Corrado et al. 2013) and have continued to grow in importance in recent years (Hulten 2013). The most recent research has also examined how the balance of investments in intangible assets has changed over time for developed economies such as the UK, and now exceeds tangible assets by approximately one-third (OECD 2013).

2.4 NESTA RESEARCH

The above developments in growth accounting and accounting for intangibles have proceeded at a national level – investigating the sources of growth for countries. The previous Innovation Index work of Nesta (for recent figures see Goodridge et al. 2014) has also focused on the macro-economic picture, in this instance in the UK.

The Innovation Index was first produced in pilot form in 2009. It was based on a major review of the drivers for economic growth, finding that between 1990 and 2007, traditional measures (improvements in labour quality and tangible capital investment) were responsible for less than one-third of it. The remaining two-thirds were accounted for by investment in innovation and broader associated 'total factor productivity' benefits.

Other Nesta research (Nesta 2009) has examined the relationship between firm growth and innovation, focusing particularly on companies that are recognisably 'innovators' (in their products or processes) and companies exhibiting high levels of growth (defined as more than 20% workforce expansion over three consecutive years). This established that innovative firms grew almost twice as fast, on average, as those that were failing to innovate.

Nesta has also established a clear connection between investment in intangible assets and subsequent innovation and company growth. One recent work stream of particular interest for this study confirms that appropriate government action can facilitate investment in intangible assets (and thereby trigger high-growth 'episodes'), and that these positive growth effects relate to all types of intangible investment by firms, not just research and development (Sena et al. 2013).

The management accounting systems of most UK SMEs are unlikely to be set up to automatically track intangible investments and outcomes, but new UK GAAP rules allow much more flexibility.

2.5 INTERNATIONAL AND UK ACCOUNTING STANDARDS

Under standard accounting procedures,[7] it is not generally permissible to treat research expenditure as an investment, and development expenditure can only be capitalised if it meets a range of tests showing that it contributes to company income and profitability. As a result, many companies have very few intangibles on the balance sheet, and where they do, this is indicative of the presence of expenditure rather than (necessarily) identifiable assets.

When a company is merged or acquired, the international standards that apply to large companies[8] require an assessment of tangible and identifiable intangible asset value to be made, with unidentifiable assets and the premium paid over and above asset value to be attributed to goodwill. Although still subject to tests and limitations, this process generally finds substantial amounts of intangible asset value; research conducted by Inngot for the NCII Phase II project, based on analysis published by KPMG and Deloitte, shows that identified intangibles typically account for 30% to 40% of the total price paid (Deloitte and Touche 2007; KPMG 2010).

This has a number of implications for the Innovation Accounting Tool.

- Companies are unlikely to have an inventory of intangible assets in the same way that they might be expected to have a detailed listing of tangible assets (which will underpin entries found on the balance sheet).
- It is unlikely that companies will be able to identify internally generated intangible assets, or attribute cost or value to them, on the basis of their balance sheet (the main exception being where the assets have been acquired).
- Finding investments attributable to the creation of intangible outputs is likely to require study of several different parts of the profit and loss account (such as departmental payroll, external supplier payments, marketing expenditure and legal fees).
- Although the assets in question may not be evident in company accounts, their value would become evident were the business to be sold (i.e. the value is present, but hidden).

In the past, UK SMEs have generally been permitted to use merger accounting rather than acquisition accounting when buying other small businesses, meaning that the balance sheets of the two companies are essentially combined with no re-examination of the underlying assets. They have also been able to allocate an indefinite lifespan to acquired goodwill. Both are now changing with the introduction of the new Financial Reporting Standard 102 ('FRS 102'), being incorporated into UK GAAP.

The change when buying or merging companies is that acquisition accounting must be used in nearly all cases (bar group reorganisations). In addition, acquisition accounting rules are being updated: any excess paid over and above the fair value of the fixed assets and liabilities can no longer simply be characterised as 'goodwill'. Instead, it needs to be broken down into goodwill and identifiable intangible assets, in a very similar manner to that set out in IFRS 3 (with some minor wording differences). This means that the sources of intangible value that have never previously appeared on an acquired company's balance sheet will need to be identified and quantified.

For development costs, FRS 102 preserves the option (previously available under SSAP 13, which it replaces), of either amortising qualifying costs of new products and services over a suitable period, or expensing these costs during the year in which they are incurred. Now, however, if an asset's lifespan cannot be determined reliably, a 'default' figure of five years must be used. This is much shorter than the period available under previous UK GAAP, under which it would have been customary to amortise some assets over a much longer period (up to 20 years). Also, under FRS 102, the concept of an indefinite life for goodwill falls away and a lifespan has to be specified for amortisation purposes.

These changes mean that the analysis and reporting of intangible assets will be of growing importance for accountants working for or with small, as well as large, companies.

7 The International Accounting Standard containing the relevant intangible asset treatment is IAS 38.

8 The International Financial Reporting Standard relating to 'business combinations' is IFRS 3.

The Innovation Accounting Tool can assist implementation of the ACCA-backed Integrated Reporting framework, as both look to measure flows of value through a business.

2.6 INTEGRATED REPORTING

Clearly, it is important for accounting statements to be based on factual, externally evidenced transactions when attributing value to assets. In addition, management teams must be properly equipped to focus on the elements that drive growth and value within their businesses, and be able to articulate them to shareholders and investors. In this regard, there is a convergence of interest between advocates of better-integrated approaches to management accounting and policy initiatives seeking to drive greater awareness of the role and importance of innovation within firms.

Integrated reporting (IR), which now features as an element of ACCA's qualification, is a new framework launched by the International Integrated Reporting Council (IIRC) in December 2013. Its framework document (IIRC 2013) describes the role of IR as its ability to 'explain how an organisation creates value over time' by actively considering the connectivity and interdependencies between the 'capitals' that the organisation uses or effects. In essence, its proponents advocate more 'joined-up thinking', taking the view that there are six distinct areas of capital within companies,[9] and that understanding these 'stocks and flows' is essential for allocating capital efficiently and productively, thereby improving financial stability and sustainability.

Clearly, there is a difference in scope between IR and the Innovation Accounting Tool; the first of these is intended to capture the whole process of value creation, whereas the latter deliberately excludes value that is generated by doing 'more of the same thing' – in itself a perfectly legitimate business activity, but not one that conforms to the definition of innovation. Nevertheless, mapping IR and NCII principles against each other was an important step in ACCA's decision to support the Innovation Accounting Tool approach. The many synergies that exist between the two reporting methods have been mapped out in a previous report (Brassell and Reid 2015), and these strongly suggest that an organisation that successfully deploys this Tool would be much better placed to introduce IR.

2.7 SUMMARY

The combination of the five strands set out above – growth accounting, investment in knowledge, existing indices and supporting research, statutory accounting, and integrated reporting – provides a strong intellectual bedrock on which to develop a tool for understanding the 'hidden' innovation in intangibles that is driving growth in economies.

The literature also confirms a number of specific principles that feature in the Innovation Accounting Tool approach:

- The need to focus on investments that are off-balance sheet, with an associated requirement for support for definition and identification.
- The need for a broad spread of investments to be taken into account (rather than a focus on research and development).
- The legitimacy of applying treatments that view costs associated with creating intangible assets as if they were investments for the longer term (as is in fact the case).
- The importance of assisting companies in identifying areas of expenditure that represent movement between different forms of capital, in order to accommodate new company reporting practices now gathering momentum.

9 The Integrated Reporting Framework document sets these out as Financial Capital, Manufactured Capital, Intellectual Capital, Human Capital, Social and Relationship Capital, and Natural Capital.

3. Intangible assets and innovation incentives

For accountants in economies that were originally built on tangible assets, whose reporting systems were based on the principle of value creation via machinery and automation, intangible assets pose a number of challenges.

3.1 INTRODUCTION

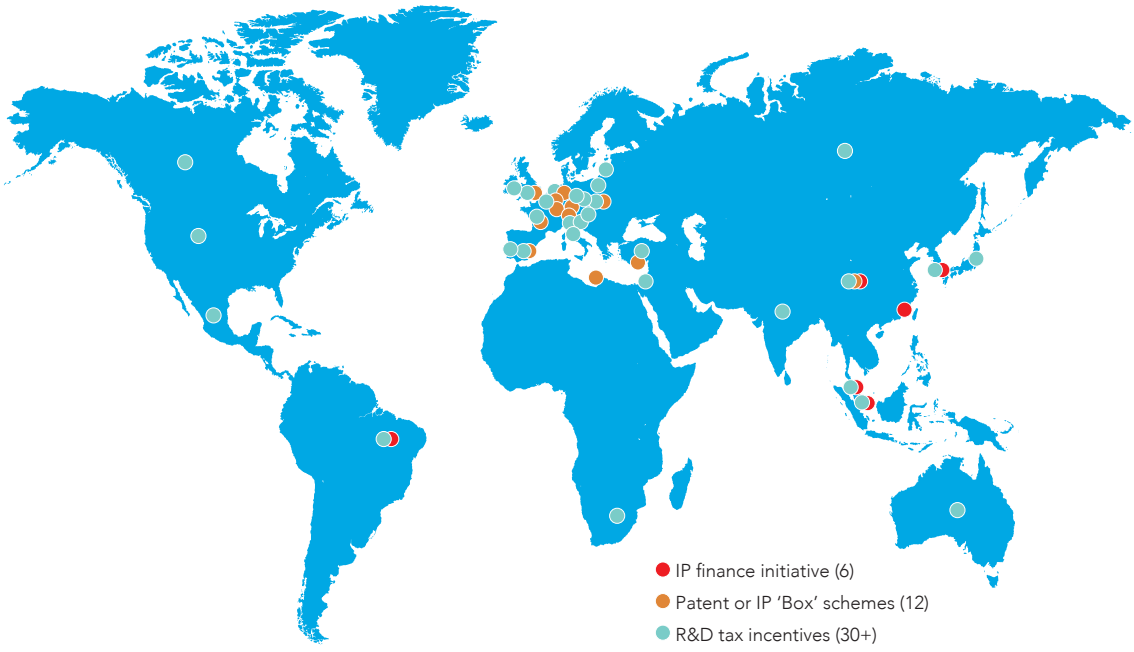
For accountants in economies that were originally built on tangible assets, whose reporting systems were based on the principle of value creation via machinery and automation, intangible assets pose a number of challenges. A central problem, explained in the previous chapter, is that such assets will only appear on a company's balance sheet under limited circumstances – either as a development cost, or as the result of an acquisition.

As long as much of the investment that creates intangible assets remains essentially invisible, because it is treated as an expense in the profit and loss account, it will be difficult to demonstrate the value being added through innovation. The importance of the Innovation Accounting Tool is that it helps to pinpoint the relevant costs, and enables them to be judged on their performance as an investment rather than simply as expenditure.

Even though financial management and reporting systems are not, in general, set up to cope well with intangible assets, such assets (particularly intellectual property) are an increasingly important feature in the accountancy landscape, and one of the reasons for this is the tax treatments they can facilitate. This will be evident from the three key areas summarised below, relating to offshoring, R&D tax credits and concessionary 'patent box' tax rates.

As a separate but related area, the 'thinness' of the balance sheets often associated with growth SMEs has necessitated new approaches to the provision of finance, for both development funding and working capital. One such approach relates to an increased reliance on IP owned by companies; the current position of IP and finance as these affect UK businesses is set out below.

Figure 3.1: Global distribution of intangibles-related tax incentives



Many, but not all, European countries have some form of R&D tax credit scheme and the evidence generally suggests that these have proved to be successful in encouraging companies to relocate.

3.2 INTANGIBLE ASSETS AND GENERAL TAXATION

Over the past 30 years, corporation tax rates have reduced substantially. The international average stood at nearly 50% in the early 1980s (Atkinson 2009) but has since fallen dramatically; in the UK, the basic rate is now just 20% and soon to be 17%. Governments now use general corporate tax strategy (as well as the special tax measures set out below) as a competitive weapon, increasing the attractiveness of their countries to foreign investors.

Since intangibles are highly mobile, many multinational corporations (and some fast-growing smaller businesses) have chosen to exploit tax rules by 'offshoring' these assets in a creative and sometimes controversial manner. There are generally two motivations at work, the first being to lower the effective rate of tax that a company pays, and the second being to obtain greater reliefs for innovation expenditure by driving up the deductions that can be claimed against investments.

By centralising core intangible assets, firms can maintain a trading presence in many countries but turn these outposts into what are essentially support operations and pay local tax at a level that reflects the limited value each operation then contributes. There are costs involved in moving intangibles as their transfer is a taxable event, but once moved, the returns associated with them can be realised in a favourable jurisdiction, which can make a significant difference to profits – especially where these do not need to be 'repatriated' elsewhere.

A typical structure involves licensing of the core assets to the trading entities. These assets can be drawn from many of the investment categories identifiable using the Innovation Accounting Tool, such as software, designs, branding, processes and business methods as well as the types of 'harder' IP assets typically associated with conventional R&D activity (such as patents). This strategy reduces the tax burden at both ends, with the trading company often able to present the royalty payment to the offshore entity as a legitimate business expense. In certain countries, such as Luxembourg, favourable tax treatment is given to incomes generated through licensing, which makes this way of working especially attractive.

For many SMEs returning modest profits, and especially those with high growth aspirations that are continually re-investing these profits in order to innovate, corporation tax is, however, likely to drive behaviour to a lesser degree than tax incentives which can contribute cash.

3.3 RESEARCH AND DEVELOPMENT TAX CREDITS

First introduced in 1981, incentives relating to companies' research and development work (R&D) are now provided by over 30 countries (Deloitte Touche Tohmatsu 2014). These address innovation inputs and are generally regarded as a legitimate policy tool because they recognise that investment outcomes are uncertain, and that not all the benefits of even successful R&D will flow to the firm responsible for it. For SMEs, these incentives include potentially substantial cash refunds.

There is a high degree of commonality among national interpretations of what constitutes eligible R&D, though there are variations in the means of calculating the benefit, and in some cases restrictions on the types of activity that can be conducted and the use to which the resulting assets must be put. In the UK, a key criterion is that the R&D should be directed at resolving some kind of 'scientific or technological uncertainty'.

Many, but not all, European countries have some form of R&D tax credit scheme and the evidence generally suggests that these have proved to be successful in encouraging companies to relocate (studies include Bloom et al. 2002). Most use the principle of 'super-deductions' to calculate the amount that can be reclaimed, which means that the tax benefit can be based on an amount significantly greater than the actual innovation expenditure. Currently in the UK this stands at 225% for small companies and 130% for large ones, but other countries are even more generous. In China, for example, certain types of company can not only claim 150% super-deductions on R&D (subject to conditions) but also enjoy a reduced corporation tax of 15% rather than 25% if they have High and New Technology Status.

Several countries – including China, South Korea, Malaysia, Singapore and Brazil – have taken concrete steps to help companies leverage their intangible assets to obtain finance.

3.4 SPECIALIST IP TAX INCENTIVES

'Patent box', 'IP box' and 'innovation box'[10] are terms used in different countries to refer to special tax treatments associated with innovation **outputs**. These schemes generally work by providing a lower rate of tax on qualifying profits. Such reliefs were first introduced in Ireland in 1973 (though largely withdrawn there in 2010), and a number of countries, including the UK, now provide them (the current UK scheme is due to be closed to new entrants in 2016, but similar rules have now been finalised for a new one).

The main economic argument in favour of these reliefs is that they encourage companies not only to innovate but also to commercialise the innovation (so providing real benefits to society). Clearly, they also address the question of where companies should conduct such research (either by encouraging them to move or, equally importantly, encouraging them to stay).

Some territories focus this relief entirely on patents. This is intended to reflect the particularly acute risks of failure and benefit 'spillover' in patent-dependent industries such as pharmaceuticals (successful products tend to encourage the creation of 'copycats' that are intentionally engineered to circumvent the patent protection, illustrating how difficult it can be for companies to harvest all the benefits of the investment they make), and may also assist in providing increased incentives for investment. Some international schemes are much wider ranging and also take into account design activity and software development (for example).

Tax benefits available under existing schemes range from the 0% and 2% tax rates available in Malta and Cyprus, through 10% in the UK, to 15.5% in France (this appears less generous, but is less than half the standard French rate of corporation tax which would otherwise be payable).

Although most patent boxes have been introduced too recently to determine their effects on innovation, the Mirlees Review from the Institute of Fiscal Studies has shown that, in principle, reducing taxes related to mobile assets such as R&D (where companies have a choice of where to create them) may enable a higher tax rate to be justified and successfully levied on fixed, immobile assets such as infrastructure (Griffith and Miller 2011).

3.5 INTANGIBLE ASSETS AND BUSINESS FINANCE

The topic of intangible assets and finance has recently been explored in detail in a report for the UK Intellectual Property Office (Brassell and King 2013). This in turn was prompted by statistical insights into the levels of investment being made in non-physical assets of all types.

The heightened interest in IP and intangibles apparent among lenders is linked to two realisations.

- Firstly, tangible assets are simply no longer present as a source of collateral in many contemporary businesses. Collateral matters because selling it can provide a 'secondary exit route' should a borrower default on repayment. The problem that banks and others face is that the collateral value of intangibles is at best uncertain and at worst, non-existent; those transparent markets that lend confidence to the valuation of physical property are simply not present, even in the case of identifiable, legally enforceable IP rights.

- Secondly, it follows that if tangible assets are not there, other things must be responsible for driving value and cash creation within businesses. These are generally intangibles, though they do not have to be IP rights. They are just as likely to be proprietary processes, business/service models or trade secrets; their success may be dependent on customer relationships, unique design features or clever software. These assets are usually internally generated, as a result of the types of investment that the Innovation Accounting Tool is intended to track.

Several countries have taken concrete steps to help companies leverage the intangibles they have, for the purposes of obtaining finance. These governments (principally China, South Korea, Malaysia, Singapore and Brazil) have concluded that the best incentive for banks to lend against such assets is provision of a government-backed guarantee covering some or all of

10 The term 'box' simply refers to the box that needs to be completed on a tax return.

New IP-backed finance schemes are emerging, offering UK SMEs options to borrow against intangible assets.

the value assigned to them. Levels of guarantee range from 50% in Malaysia to 80% in Singapore (and an effective 100% underwriting for some Chinese schemes).

In the UK, certain types of intellectual property have been usable in the financing context for some time. Where there is an asset with an identifiable income stream in the creative sector (particularly music, film and publishing), banks have been able to overlook balance sheet deficiencies and effectively lend against these cash flows provided that they appear to be predictable. These are the revenue-generative copyright materials that the Innovation Accounting Tool captures.

Lender interest in intangibles is now extending to software and technology assets. Assisted by UK and European schemes, at least two UK lenders (namely Santander (with its Breakthrough Fund) and Clydesdale Bank (with its new Emerging Technologies Unit)) are already using funding of this nature to lend to IP-rich technology-dependent SMEs, In both cases the lending is essentially unsecured in nature but is justified by the existence of defensible competitive advantage.

IP is also being leveraged in other funding contexts. For some years it has been possible to use IP directly as security for pension-backed lending (and deals have happened with large and small enterprises that make use of IP assets for this purpose). More recently, Lombard Technology Services (part of RBS) has been using sale and license-back to fund companies owning business-critical software.

Equity investors, interested in barriers to entry and freedom to operate, and in a position to benefit from value appreciation, have long recognised the importance of IP and technology assets. Coupled with renewed interest now evident from the insurance sector, there is a realistic possibility that many more companies will soon be able to harness the investment they have made in intangible assets through access to more favourable debt financing terms.

3.6 SUMMARY

The relevance of IP and intangibles for the finance and accounting function within companies is undoubtedly on the rise. Investment in intangible assets already has a direct link with companies' abilities to reduce their tax bills (and in the case of many SMEs, to recoup cash directly from the taxman). With certain types of intangible asset also now attracting designated tax reliefs of their own, and with connections between IP and the availability of growth capital now becoming increasingly common, the approaches contained in the Innovation Accounting Tool are a timely addition to the accountant's armoury.

4. Methodology

This 2015 UK pilot of the Innovation Accounting Tool follows a 2014 trial with Malaysian SMEs.

4.1 INTRODUCTION

As set out in Chapter 1, the Innovation Accounting Tool methodology has been constructed in two stages. Originally developed as a mechanism for measuring corporate innovation in Malaysia, the approach was simplified before being piloted with SMEs in Malaysia in 2014. For this UK study, further adjustments, based on lessons learned in the previous two exercises, have been made to the methodology, with the main aim of improving clarity and usability.

The ambition in creating this Tool is to apply a set of questions that are easily understood and answered, universally across all businesses, so that findings can be acted on. To achieve this aim, it is necessary to draw a distinction between activities that are present but not readily quantifiable, and activities that are simply not happening. It is also necessary to understand whether other factors (such as concerns over confidentiality) might affect the receptiveness of accountancy practitioners to the concept of using a Tool and thus hamper them in deriving maximum benefit from it.

Accordingly, the present study has been constructed with the aim of determining not only how much innovation is being conducted within a company, but also how easy it is for the accountancy function to obtain an overview of this activity. While it is not possible to reach definite conclusions on the question of receptiveness, not least because some participants were using the Tool on behalf of client companies, the presence or absence of certain data items indicates where some sensitivities lie.

In its original format as NCII, the small participant set and availability of consulting support meant that the measurement approach could be piloted in a very 'hands-on' manner, and this depth of engagement was helpful in getting early, comprehensive feedback on whether the set of questions was presented in an intelligible manner, as well as the degree of difficulty likely to be incurred in finding answers. By comparison, the Innovation Accounting Tool would not be scalable on such a labour-intensive basis. For both the previous Malaysian SME exercise and for the UK study, the emphasis has been placed on providing standardised guidance on the operation of the Tool, with remote e-mail or telephone-based support being provided in case of difficulty.

In the current version of the Tool, all the information provided is quantitative, consisting either of a volume measurement or a financial figure. The question headings are structured so as to help users move quickly through sections that they do not consider relevant, making the time required for completion more manageable, and each question is accompanied by a three-point scale of difficulty.

4.2 PARTICIPANT RECRUITMENT

The researchers aimed to recruit a small group of participating companies (up to a maximum of 20) whose responses would provide case studies. Ideally, these would be drawn from a range of sectors and would vary in size and turnover, while all meeting the standard EU definition of a small or medium-sized enterprise.[11]

In all, firm interest in the pilot study (to the point where the Tool was issued) was expressed by 22 ACCA members, who were recruited from three sources:

- a mailing selection identified from responses to ACCA's Global Economic Conditions Survey (GECS) indicating relevance of innovation and willingness to participate in research; this led to the self-identification of 10 potential participants
- a more general announcement to ACCA members, which led to self-identification of a further six potential participants
- targeted approaches to individual members expressing interest in innovation measurement, generating the other six potential participants.

11 To qualify under European Union definitions, a company must be engaged in economic activity, have fewer than 250 employees, have a turnover not exceeding €50m or a balance sheet total not exceeding €43m. It should also be 'autonomous'. The definition is explained in European Commission (2003).

15 UK SMEs from a range of sectors took part in the UK pilot of the Innovation Accounting Tool.

Recruitment was supported by publication of two blogs on the Nesta and ACCA websites highlighting the importance of intangible asset measurement in the context of introducing revised UK GAAP rules and developments in intangibles-backed finance.

Sixteen questionnaires (double the sample size used for the Malaysian pilot study) were received in time to be analysed as part of the study, a response rate of over 70% (compared with under 40% in Malaysia). One of these was not usable for the pilot because the information supplied was minimal (with no outputs included); the remaining 15 form the basis for the findings contained in Chapter 5 below.

Of the six companies that expressed an initial interest, two withdrew from the study after receiving the questionnaire – one on the grounds of limited time, and the other for reasons of confidentiality. In addition, the responses received indicated that some of those who did complete the Tool had preferred to withhold certain items of data for reasons of perceived commercial sensitivity.

As well as the Tool file, each participant was supplied with a short explanation of the Tool's operation as an accompanying PDF file. This provided clarification on the use of estimated figures, explained the baseline financial data sought and how the selection and rating elements should be used.

4.3 PARTICIPANT PROFILE

The first two methods of participant recruitment described above precluded proactive selection of any particular sector(s). Reflecting the small and medium-sized firm population in general, the majority were from companies offering services rather than physical products. Some of the ACCA members responded on behalf of the companies directly employing them (including four cases where accountancy firms chose to analyse their own businesses), while others in accountancy practices responded on behalf of client companies. The segmentation shown here relates to the company whose information was entered into the Innovation Accounting Tool.

The specific activities of the firms are summarised in the order in which their responses were received and processed. Each has been provided with a letter code in the interests of confidentiality. They represented the following activities (turnover figures have been rounded and descriptions kept at a general level):

- Company A – digital healthcare, turnover £700,000
- Company B – property letting/serviced offices, turnover >£1.5m
- Company C – tax consultancy, turnover £100,000
- Company D – wealth management start-up, turnover £30,000
- Company E – software as a service, turnover > £2m
- Company F – conveyor belt manufacture, turnover >£5m
- Company G – accountancy practice, turnover >£4m
- Company H – accountancy practice, turnover £400,000
- Company I – design, turnover > £3m
- Company J – accountancy/tax practice, turnover not disclosed
- Company K – online learning provider, turnover >£1m
- Company L – technology programme management, turnover >£1m
- Company M – digital hardware technology, turnover >£1m
- Company N – manufacturing services, turnover >£20m
- Company O – accountancy practice, turnover >£10m

The turnover distribution offered a good spread of sample companies, as shown in Figure 4.1. There was also a variety of employee numbers, summarised in Figure 4.2, and a mix of broad sectors (defined on the basis of the descriptions provided), shown in Figure 4.3.

The sample companies offered a good spread of SMEs by turnover, employee numbers and broad sector characterisation.

Figure 4.1: Spread of participating companies by turnover band

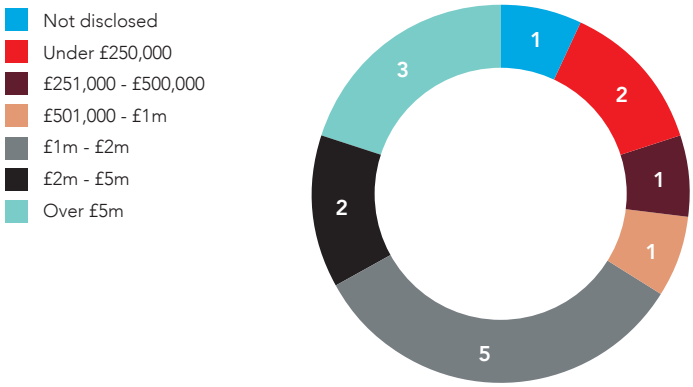


Figure 4.2: Spread of participating companies by number of employees

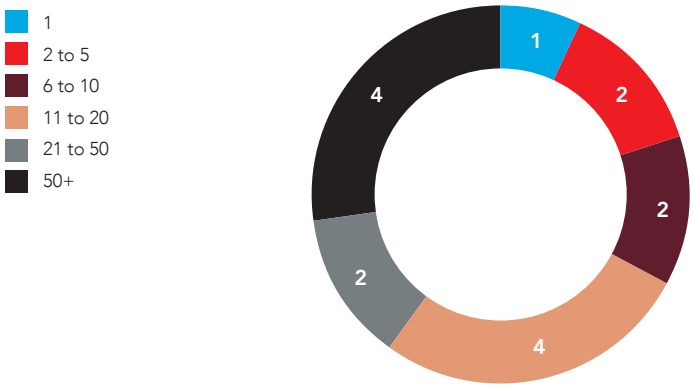
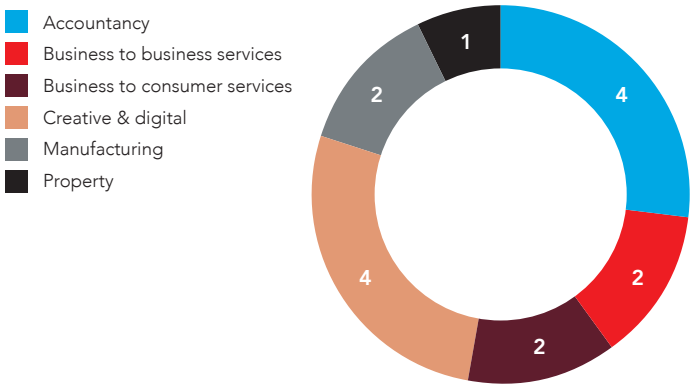


Figure 4.3: Spread of participating companies by general activity sector



The Innovation Accounting Tool supports SMEs in recording data on expenditure inputs, operational outputs and financial outcomes.

4.4 STUDY DESIGN

The basic structure of the Tool used for the pilot followed the approach used successfully for the previous Malaysian pilot exercise. This involved three sets of questions relating to expenditure inputs, operational outputs and financial outcomes, arranged over two tabs of an Excel workbook, an application selected owing to its familiarity.

Various sections of each worksheet were intentionally constrained in order to facilitate user navigation and standardise the responses provided. From prior experience, two elements were considered particularly important: the use of closed questions and of drop-down lists.

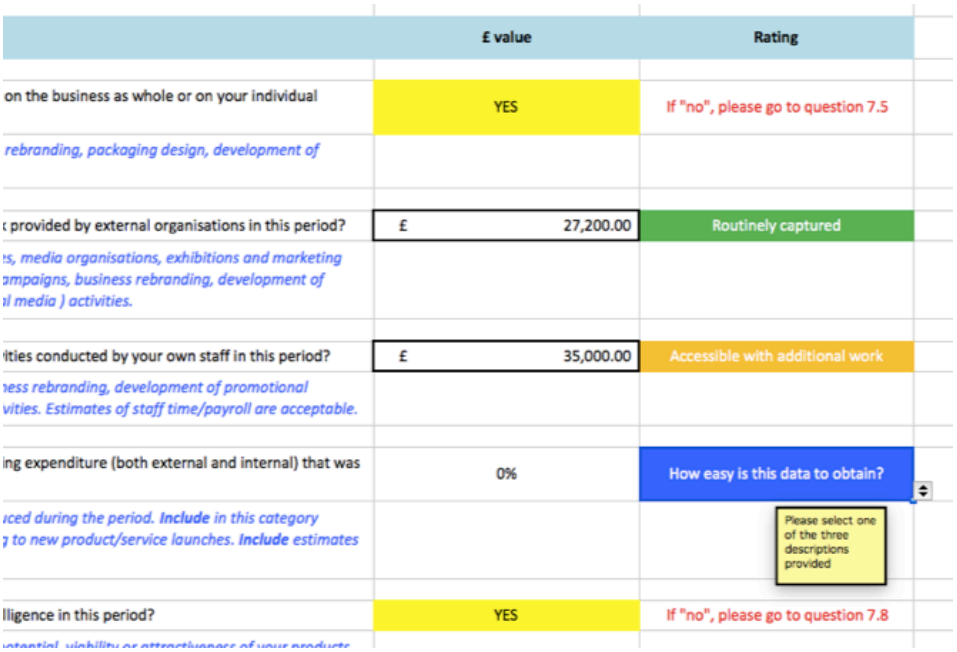
- 'Yes/No' (i.e. closed) qualification questions were used to determine whether a given section needed to be answered. Prior use of a similar format in Malaysia had confirmed that certain input sections, for example, were likely to be relevant to the majority of respondents (such as branding/ marketing and training) whereas others, while still important, would not always be present (such as software development and design).

- Drop-down lists were used to indicate the degree of difficulty experienced in obtaining an answer to a relevant question (or to explain why no answer was provided). These boxes were positioned next to each question, defaulted to blue ('How easy is this data to obtain?') and providing three selection options: 'Routinely captured' (green), 'Accessible with additional work' (amber) and 'Not recorded/not accessible' (red).

On the input worksheet, some refinements were introduced for the UK study to improve user 'baselining' and clarify areas where responses in the Malaysian pilot suggested that more data could have been relevant than was in fact provided. The main changes on the baseline data section were to request profitability information in a clearer manner, and introduce specific questions to reveal movements in any tangible and intangible assets featured on the participant's balance sheet.

Other input changes related mainly to the descriptions given alongside the investment categories set out below. Particular focus was placed on the sections dealing with design and organisational and process development, which appeared to be effective in encouraging a higher level of completion, as set out in Chapter 5 below. Although not relevant in very many cases, the clarification made to the questions on copyright may also have been of assistance in encouraging the provision of more data.

Figure 4.4: Extract from the Tool showing the use of qualification questions and selection boxes



Following feedback from the 2014 Malaysia pilot, the outputs and outcomes measures were extended and improved for this UK pilot.

The full list of input sections used for the UK study was as follows.

- A baseline set of questions on financial performance for the previous two years, to provide context on the business's size and trajectory (total turnover, total expenses, gross profit, net profit, tangible and intangible additions to the balance sheet).
- Research and development (external/internal spend, which could be completed for each element separately or as a combined R&D figure, plus patenting spend).
- Software (external/internal spend plus investment in databases).
- Design (external/internal spend plus investment in design registration).
- Organisational development and business process improvement (external/internal spend plus investment in open innovation activities and any customisation of capital equipment purchases).
- Employer-funded training and intellectual capital development (external/internal spend plus an estimate of the proportion of 'routine' training and any investment in specialist recruitment to build the company's skills base).
- Branding/marketing and reputation (external/internal spend plus an estimate of the proportion of 'new product' spend; external/internal market research spend plus any investment in trade marks).
- Copyright, but only where copyright materials contributed directly to company incomes (external/internal spend only).

On outputs and outcomes, the results of the previous Malaysian study had suggested that companies experience greater difficulties in completing these sections than those concerning inputs (expenditure). Accordingly, the changes to questions in the financial outcome measurement section were more extensive, with greater emphasis being placed on setting out the differences between products and services that are branded and proprietary, products and services that are new to market, and products and services that may have been available for some time but are nevertheless unique (and so likely to be an outcome of historical innovation investment). In addition, because the topic of intangibles financing had been added to the pilot objectives, further yes/no questions were inserted to determine whether any intellectual property rights were in place in relation to proprietary and unique products and services.

A further area of special focus was on efficiency savings, which economic research has generally characterised as being likely to be a result of 'incremental' forms of innovation. There was evidence from the Malaysian study that companies were targeting efficiency savings, but none had been able to quantify what had been achieved. As well as rephrasing the efficiency savings question itself, some extra data capture points were added to the output section to see whether these savings could be quantified indirectly, for example by comparing product/service sales volumes with the corresponding output volumes (i.e. total sold vs. total produced).

The Innovation Accounting Tool outcome/output worksheet was divided into two distinct categories:

- financial measurements of existing and new branded/proprietary goods sales, unique products/services on offer, new customer sales, licensing income, grants, tax reliefs and efficiency savings (all with yes/no qualifying questions for speed of completion)
- quantitative measurements of product sales and production outputs, product range, new product and process/technology introductions, the development pipeline, online promotional activity, supplier and partner development, employee turnover and IP rights ownership.

Each participating SME received a tailored feedback report detailing their innovation investment profile in up to ten sections.

4.5 FOLLOW-UP AND EVALUATION

An initial batch of seven participants completed the survey in July/August 2015 and returned the questionnaire within the requested time of three weeks. The remainder of the participant responses were received over the following six to eight weeks. A report was then prepared for each participant on the basis of the answers provided. Each of the first five sections had a standard format:

i) an introduction setting out the study's focus on innovation and intangible assets

ii) a section on the connection between innovation investment and policy

iii) a summary of the basic principles underlying the Tool's approach and its relationship to the original National Corporate Innovation Index project

iv) an overview of the inputs and outputs used and reasons for their selection

v) an explanation of the data processing applied to the information provided.

The final five sections were specific to the company or organisation completing the questionnaire and provided commentary on:

vi) data availability – the extent to which the company had been willing and able to supply the information requested, indicating areas where there appeared to be a mismatch between inputs and outputs (e.g. suggesting investment was present, but not accounted for within the response)

vii) innovation inputs – setting out the mix of input elements and drawing conclusions on the basis of the company's expenditure profile, with benchmarking provided against UK sector data and a calculation to show the amended cost of the expenditure when amortised over its likely useful life

viii) innovation outputs – drawing conclusions about investment returns on the basis of the information the company was able to provide

ix) return on innovation – providing a calculation where the participant had been able to supply sufficient information for this to be possible

x) assets as collateral – summarising the presence or absence of identifiable intangibles with potential to be leveraged in the context of financial context.

Although section vi) could be completed for all participants, the level of detail that could be provided in sections vii) – x) was dependent to a considerable extent on the participants' ability to provide the necessary data. This is examined in the following chapter.

5. Findings

This pilot study with UK SMEs is primarily aimed at understanding how UK SMEs can effectively deploy the Innovation Accounting Tool – not a survey of the intangible assets they own.

5.1 INTRODUCTION

As indicated in Chapter 4, from an ACCA viewpoint, the primary objective of the UK Innovation Accounting Tool study is not to understand how much innovation investment participants are making, or what returns are being obtained by them individually. It is directed at understanding what innovation-related data it is possible for firms to identify, which areas are most problematic, and what lessons might be drawn for professional development. For this study, the potential for leveraging this investment in the financing context is also under consideration.

Accordingly, while some observations on individual results are included, the main focus of this chapter is on determining what patterns exist within the data, and what conclusions can be drawn from these findings. In some areas there is clear evidence of innovation investment and returns; in others there appears to be a strong likelihood that innovation is occurring, but that it is not currently tracked or quantified. There are also some cases where companies are reluctant to supply information and these sensitivities are also of interest.

The final chapter of this study considers the relationship between these conclusions and potential professional development needs.

5.2 INFORMATION SUPPLIED

Base financial data

The trading information requested for this section was provided in full by 13 of the 15 respondents (one of which, company D, had only commenced trading in the previous 12 months so no prior year comparative data was available). This is as anticipated, since all the requested fields are capable of being populated directly from standard statutory accounting formats.

The least complete entries were all received from accountancy practices, for different reasons. Company J declined to provide data on turnover or net profit but did provide the other items requested where relevant, while Companies H and O rounded the figures to the nearest £100,000 (in the case of Company H) and the nearest £1m (in the case of Company O). (See Chapter 4, section 4.3 for an anonymised list of participants and their activities.)

All but three of the companies had made additions to their tangible assets during the previous 12 months, indicating the presence of at least some 'traditional' investment. The largest amount in this category, running into millions of pounds, was invested by Company B, which was as expected given its involvement in the property market. However, substantial amounts were recorded in this category by others, including amounts of around £200,000 in the case of both manufacturing companies (and one accountancy practice – Company O).

Capitalisation of intangible assets is of direct relevance to the study, as the act of identifying intangible asset expenditure as investment should indicate the presence of systems to track it.[12] Of the 15 participating companies, only five had made any intangible asset additions to their balance sheets over the most recent 12 months. One of these was a recent start-up, Company D; two others had not capitalised any intangible assets for the preceding year, and of the two that had done so previously, one was a nominal £1 figure.

Although it is generally assumed that incentives to capitalise intangibles are greater for companies that would otherwise have 'thin' balance sheets, no particular correlation was evident in the sample, as the amount of tangible asset investment was substantially greater than that in intangibles in four of the five cases. Furthermore, Companies I, K and M, which are active in the B2B services and creative and digital categories, had not capitalised any intangible assets over the past two years. Nonetheless, it is interesting to note that three of the five companies featuring on-balance sheet intangibles were actively investing in 'conventional' research and development activity during the period, and all three had successfully claimed tax credits relating to this activity.

12 The rules governing capitalisation of intangible assets are summarised in Chapter 2, section 2.5 above.

The two areas of innovation-linked investment most frequently reported were branding/marketing and training.

Innovation inputs

Figure 5.1 shows the split of companies (across the sample of 15 respondents) considering each kind of intangible asset to be relevant to their activities. This illustrates the importance of taking a broader definition of innovation than simply conventional R&D – which was only relevant for one-third of respondents (Companies A, E, F, I and M).

The two areas of innovation-linked investment most frequently reported were branding/marketing and training.

- The prevalence of marketing expenditure is not surprising as it is necessary for most companies to attract business (the average spend was £55,000 across the 13 participants that considered it relevant). The number making investment in new product marketing and promotion was smaller, at 62% (8 of the 13 companies reported expenditure in this area). Where new product investment was relevant, the average amount spent on it was 51% of the total.
- The training figure is encouraging, suggesting a commitment to professional development, but the amount spent is significantly less than for marketing, with an average of under £18,000 per firm across the 12 companies considering it relevant (though this includes one company that did not provide a figure for its investment). When asked to estimate the proportion of this training that was 'routine' rather than directed at any new activities, the proportion was 30% overall (and was 75% or more in three cases), suggesting that a more accurate average investment in training connected with innovation would be around £12,500.

Almost half of participating companies (7/15) identified design as being relevant to their business – which may be partially attributable to the additional effort invested in providing clear illustrations of what the heading was intended to cover, compared with the previous version of the Tool – and organisational development expenditure was recognised by over half the sample. The definition applied to software (which is only intended to cover software that is customised for, or developed by, the company) is responsible for the modest number of respondents (five) identifying this area as relevant.

Figure 5.2 shows the total number of innovation input areas considered relevant on a company-by-company basis.

Figure 5.1: Percentage of companies considering each innovation relevant to their business

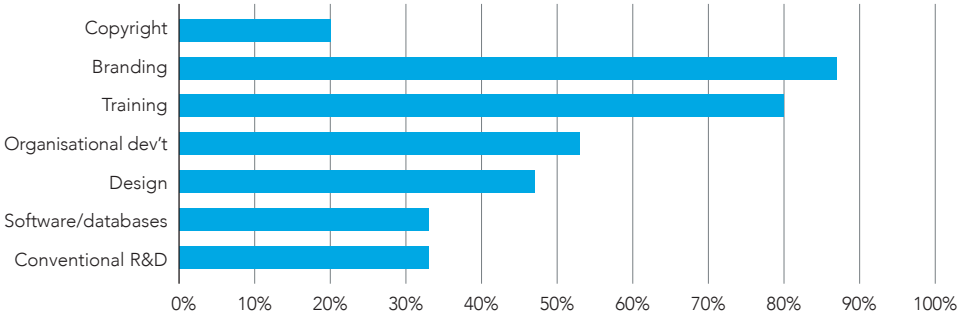
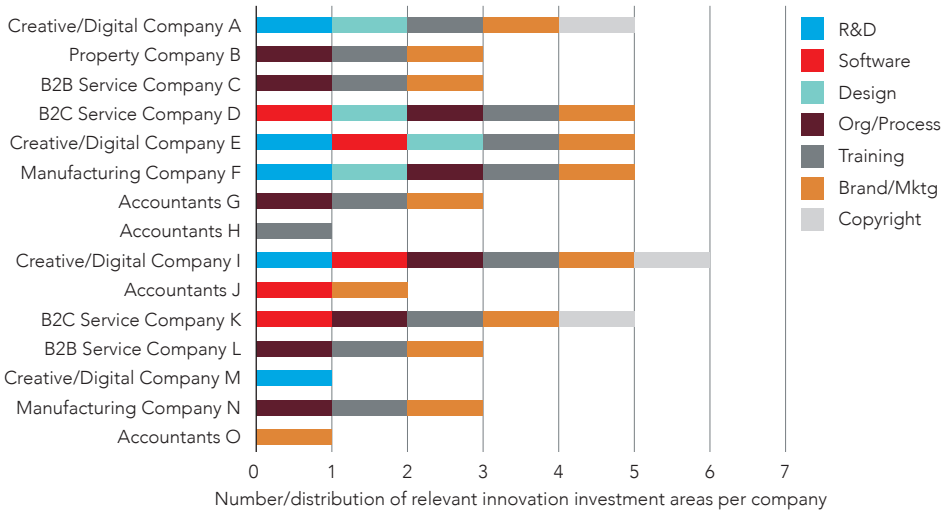


Figure 5.2: Innovation input breakdown by company



Only 3 of the 15 companies in the sample identified fewer than two innovation outputs which they could measure.

Innovation outputs/outcomes

The first set of output questions in the Tool asks companies to select and quantify, in financial terms, the innovation outcomes relevant to their business (their ability to source performance data for each of these items is considered separately below). These questions cover the extent to which their products are proprietary (i.e. regarded as being distinctive of and particular to their company), and separately, how far these are unique in the marketplace. Data on new products and new customers is requested, as well as four other areas in which financial benefit might be linked to innovation.

The responses across the 15 participants are summarised in Figure 5.3, and the breakdown for each individual company is shown in Figure 5.4. The second of these also indicates the answer to two accompanying questions on how far the products or services are protected by IP rights.

As can be seen from this breakdown, companies B, H and O only identified one relevant output area, and company J identified none at all. Three of these were accountancy practices, which (for understandable reasons) clearly did not consider their services to be proprietary or unique, had not launched any new products, and would not be likely to be eligible for grants or R&D tax credits. Not all indicated that they had gained new customers.

Figure 5.3: Percentage of companies considering each financial output area relevant to their business

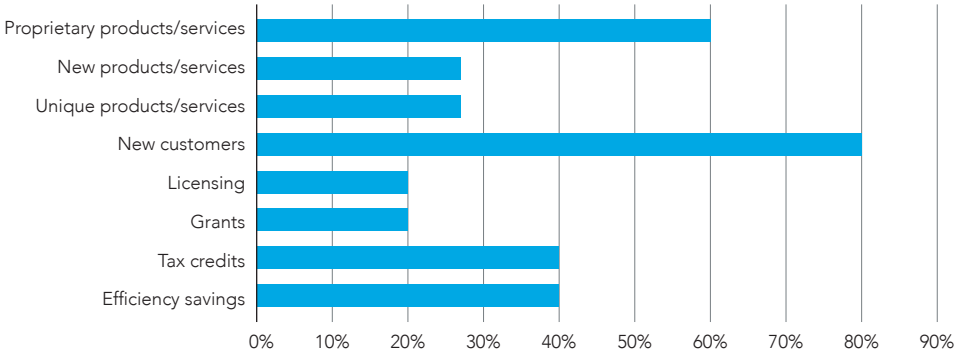
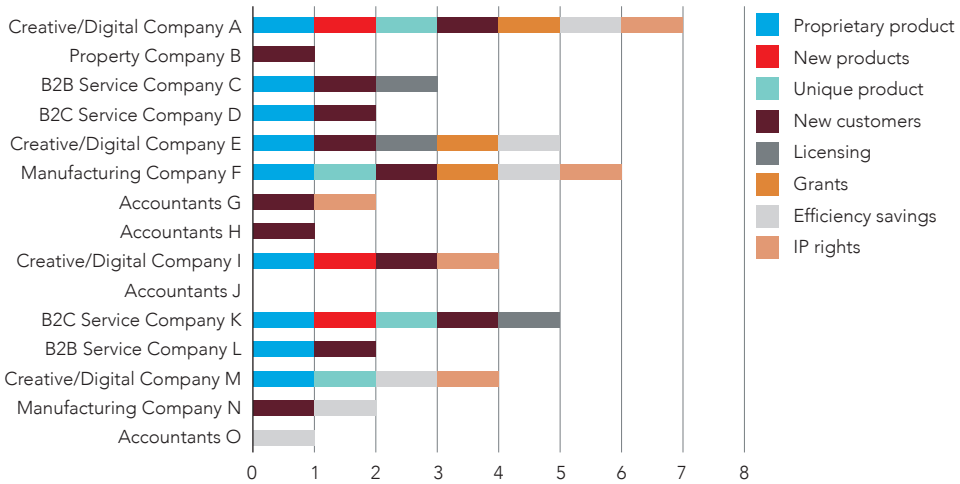


Figure 5.4: Innovation output breakdown by company



Few SMEs involved in the pilot had launched more than 1 new product or service in the previous 12 months.

The second set of output questions is purely quantitative, aimed at understanding the product/service pipeline, the relationship between new and existing products, the supplier and partner networks, staffing numbers and movements and the presence of registered IP rights. Here, the information provided was patchy, with several respondents either unwilling or unable to provide sales and output volume data (the likelihood of each of these reasons is explored separately below). Even so, sufficient data was provided on existing product ranges, new product launches, products in preparation, supplier and partner networks to enable the distributions shown at Figures 5.5–5.7 to be calculated. It appears likely that supplier and partner information is easier to find because suppliers can be identified from purchase ledgers, while partners are generally fewer in number and known to the business (though one organisation stated that it had 84 partners).

Figure 5.5: Number of product/service ranges being offered by participants

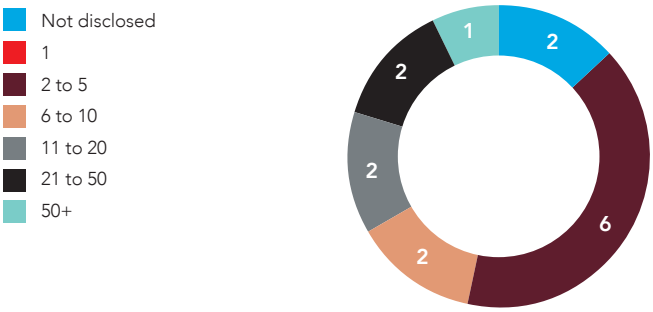


Figure 5.6: Number of new products/services launched in the last 12 months, compared with number of products/services in preparation

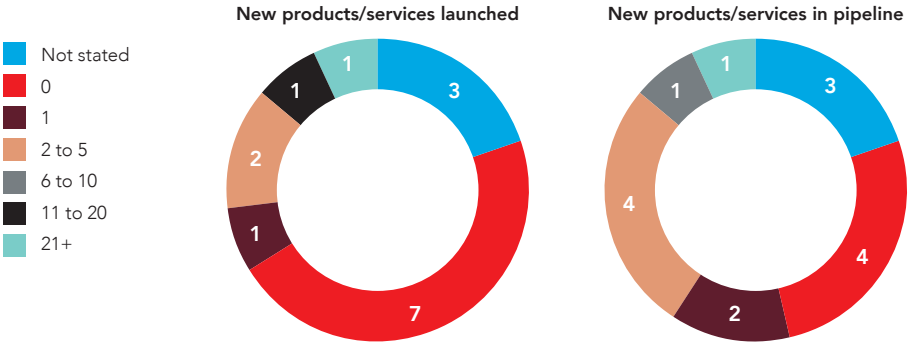
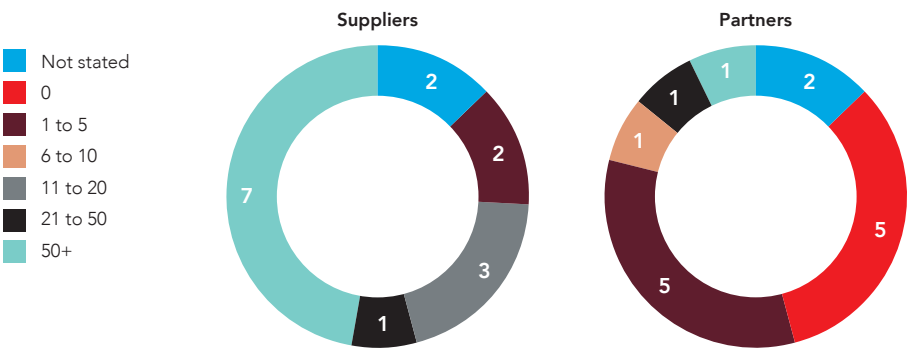


Figure 5.7: Distribution of supplier and partner quantities (shown by number of companies returning information on each range)



The pilot SMEs found it much easier to report *external* branding and training expenditure, but *internal* design and organisational development were more likely to be found.

5.3 INPUT/OUTPUT ANALYSIS

Inputs

In designing the Innovation Accounting Tool with separate entry fields for internal and external areas of expenditure, the original intention was to recognise that the sources for the required information would probably be different (with internal expense being principally a payroll allocation and external expense being identified via the purchase ledger). It transpires that, as a result, some interesting differences emerge in the ease of reporting these two areas of expense.

Figures 5.8 and 5.9 show the variances between internal and external cost identification,[13] and it is apparent that the difficulty varies depending on the area of investment being studied. For training and branding/marketing, for example, it is evident that external information is much easier for companies to find. In organisational development and design, however, the picture is much less clear-cut, potentially because many process-related costs are likely to be internal, and the broad definition of design used for the Tool captures a range of activities that would not necessarily involve the use of an agency.

Figures 5.8 and 5.9 are based on the selections made by participants characterising the degree of difficulty they experienced in obtaining information. Nonetheless, it was not necessarily the case that fields marked in red were left blank, or fields marked in green were always populated. Companies A, D and E used green to indicate their confidence that the accurate amount of expenditure associated with one or two specific questions was nil (and therefore did not provide a figure) while companies A, B and K also chose to enter figures in some cases where they also marked the field in red.

While it is likely that this use of the 'red' status indicates that the information provided is an estimate, this suggests that further guidance could usefully be provided on the use of these indicators of difficulty. Even so, it is encouraging that in the case of the inputs, the number of times where participants omitted to indicate the degree of difficulty at all (by leaving the default blue setting) was low, with less than 10 individual relevant fields left 'un-coded' across all respondents.

Figure 5.8: Difficulty of obtaining internal expense information, where relevant

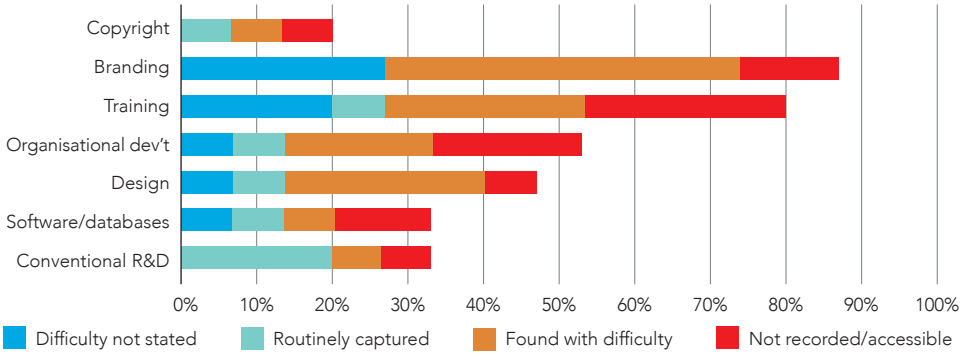
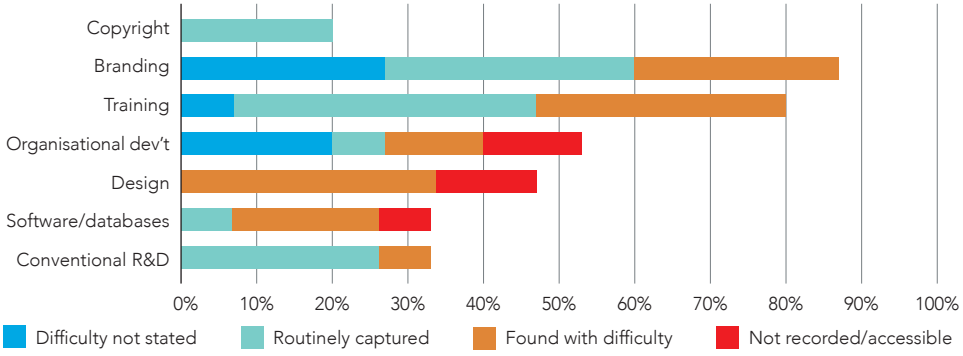


Figure 5.9: Difficulty of obtaining external expense information, where relevant



13 To improve comparability, these charts are baselined to reflect the total number of cases in which either internal or external investment was present.

No Malaysian nor UK respondents routinely quantified efficiency savings, though some UK SMEs were able to make estimates.

Outputs

One of the key findings shared by both the original NCII Phase II development and the Malaysian SME pilot was that companies generally found it easier to identify innovation inputs than outputs.

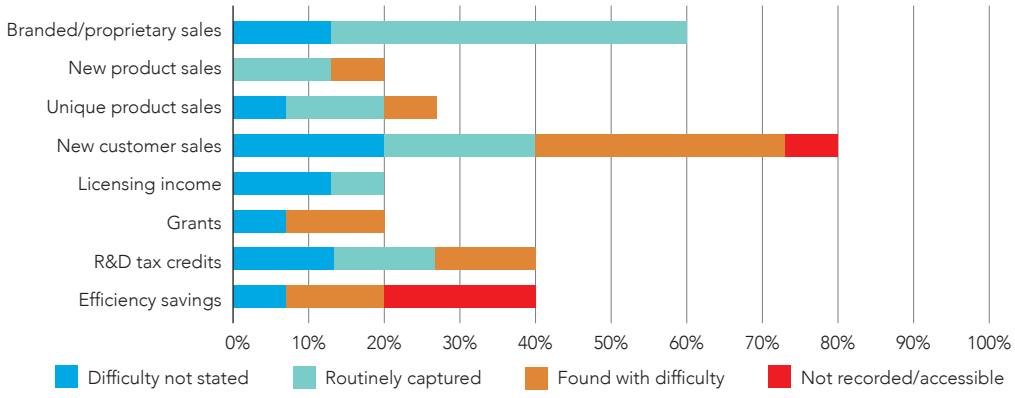
For financial outcomes, this finding was less clear-cut in the UK study, with only a very small number of companies characterising the difficulty associated with locating the desired information as high, where it was considered relevant. The difficulty ratings are indicated in Figure 5.10; as commented on above, there were a large number of instances where specific outcomes were not relevant to this particular sample.

One characteristic the UK sample does share with the Malaysian SME study is the difficulty experienced by companies in quantifying efficiency savings. As figure 5.10 shows, the absence of any 'green' status indicators shows that not one of them routinely captured this information. Nonetheless, unlike the Malaysian SMEs, three were able to make estimates of the amount (i.e. the three that did not classify the information as falling into the 'red' category).

A related pair of output questions that were modified for the UK study also turned out to be unexpectedly difficult for participants to answer. Depending on a firm's activity sector, it may be easy or hard to provide an overall volume of outputs, so in order to examine whether efficiency gains could be assessed using output data, all respondents were asked to provide their total sales volume separately from their total production volume.

In the case of Company N, this worked well, as it was able to report tonnage produced in both categories without difficulty, as this is routinely recorded. Only four other businesses indicated that one or both figures were routinely recorded, and more than half of all participants characterised this as a 'red' area that is not routinely recorded (no-one used the amber status for this pair of questions). Although it is possible that some respondents chose to withhold this information for reasons of confidentiality, the same pattern also applies to companies answering other questions in full, and may point to a reason why, for the accounting function at least, efficiency gains are hard to quantify.

Figure 5.10: Difficulty in identifying financial innovation outputs, by question



Given the sectors represented in the UK sample, it was not surprising to find only two firms indicated they owned patents. However, only four indicated they held trademarks.

Other information on products (here taken to include 'services') and customers, shown in Figure 5.11, was generally easier to provide. The format of this chart is different (expressing each answer as a % of all respondents) because there were no qualifying 'yes/no' questions to indicate whether the participant considered the subject to be relevant; accordingly, 100% of the sample's responses are categorised.

Two participants (Companies G and J) elected not to provide any information under this heading (one marking all areas as red, and the other choosing not to indicate a degree of difficulty, leaving all answers blue). Also, Company L was quite selective in what it provided. In all other cases, however, even where the degree of difficulty was not indicated (shown in blue), quantity counts were still provided, and generally the difficulty indicators appear to have been used in a considered way.

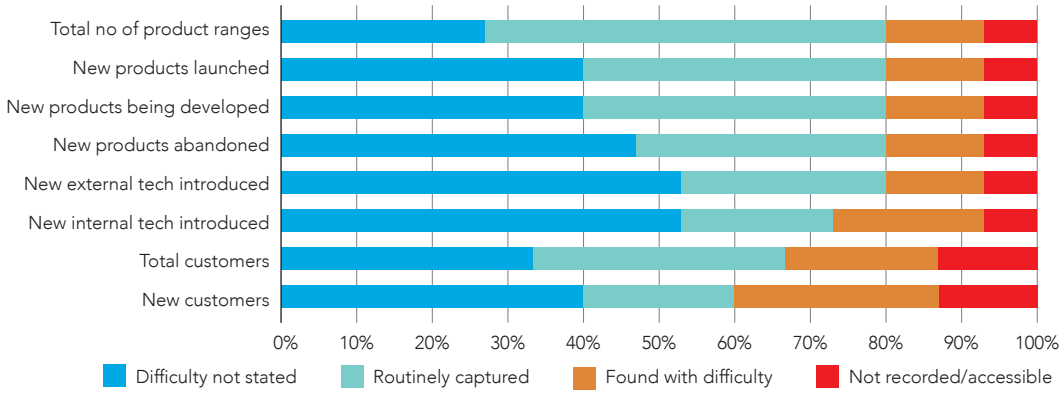
Where information was provided on the product pipeline, it enabled a simple calculation to be made on the likely rate of replenishment. Although the supplementary question on the level of product abandonment (how many new developments were discontinued in the year) may appear to be a negative indicator, it can also be interpreted as a measure of a company's willingness to innovate even when a return is not assured. Interestingly, over half (eight) of the participants did have new products in development, but only three of them stated that any had been dropped.

Quantifying new customers gained in the previous year proved more difficult than determining an overall number of customers (with only three stating that this was easy), though both overall emerge as being harder to identify than product data. It was also in this area that a few inconsistencies emerge, with Companies C and O providing quantities for new products having indicated elsewhere that no new products had been introduced (Company D did the same, but as it was the first year of trading for this business, the way the questions were phrased could have appeared ambiguous).

The final part of the output volume questionnaire asked companies about their registered IP rights. Only two firms, Companies A and M, indicated that they owned patents pending or granted (one and four respectively), which given the sectors present in the sample is not particularly unusual. For the same reason, the fact that only company A had applied for registered design protection was not surprising. However, even though expenditure on branding and marketing was the most commonly found area of investment across all the companies, only four companies (A, F, G and I) had chosen to obtain trademark protection for their products and services.

Each company was provided on its personalised report with an assessment of the potential relevance of its IP and intangible assets for fundraising purposes.

Figure 5.11: Difficulty in obtaining product/service data, where relevant



Firms participating in the pilot received an estimation of the cost saving to their business that would result if relevant expenditure could be amortised over the life of the innovation.

5.4 COMPANY REPORTS, INCLUDING BENCHMARKS

Where the amount of data supplied permitted it, each participating company was informed of its total level of innovation expenditure, and the results of an amortisation calculation, in its individual report. This expressed the effects of spreading the cost of each company's innovation expenditure over the number of years it could be considered likely to benefit the business, on the basis of previous survey data obtained by Nesta as set out below.

This strategy is intended to illustrate long-term value by mirroring the treatment that would be applied to investment in tangible assets. It was made clear to participants that such treatment would not be permissible in their statutory accounts, but it takes to their logical conclusion the observations of economists such as Corrado et al (2005), on the motivational similarities between tangible and intangible investments.

The amortisation calculation was performed by totalling all the elements of innovation expenditure falling within each category of investment (research and development, design, etc.) and applying a lifespan estimate. This was based on rounded figures from two sets of UK survey findings: the Innovation Index (Goodridge et al. 2012: 73) and Office of National Statistics data on intangible assets dating from 2008 and 2010 (Field and Franklin 2012).

The effects of the investment calculation varied considerably by company, according to the mix of expenditure they each reported. This is because the estimated lifespan varies substantially across each type of investment. Both research and development and design are relatively long-lived categories, estimated at five years; accordingly, the amortisation calculation allocated 20% of the cost to each year. Software was estimated to be of benefit for three years, so 33% of the cost was counted in-year; staff training and organisational processes were both accounted for at 40% in-year; and the most short-lived expenditure, on branding and reputation, was counted at 60% in-year.

Although the innovation expenditure of several participants was quite modest, the largest difference between actual and amortised expenditure recorded in the study would add £550,000 to the participant's profitability if it were permissible to treat all intangible asset expense as investment.

In a smaller number of cases (owing to the reduced relevance and availability of the necessary outcome and output data), it was also possible to calculate a 'rolling return' on innovation, being the relationship between innovation expenditure (after deduction of non-innovation-related marketing and training costs) and the financial benefits identified from new product sales, licensing, grants, tax reliefs and efficiency savings. Again, although some returns were modest, the highest figure found was a 250% return, graphically illustrating the direct benefits some companies can achieve through innovation investment.

Clearly, this is a simple formula that treats each year in isolation, because the Tool is only currently capable of providing a snapshot in time. If the calculation were performed each year, it would be possible to ensure that the 'carry forward' amounts from previous years' investment in innovation were applied, which would lead to a different and more representative calculation.

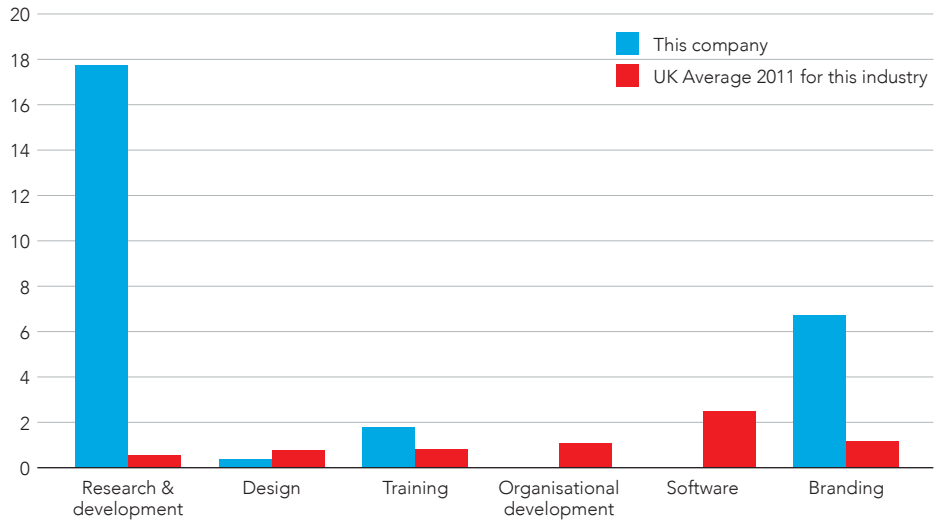
Most of the UK SME sample invested in innovation at similar levels to their UK sector average – newer firms investing somewhat above average.

As well as providing information on a company's individual innovation performance, the Tool made it possible to compare its areas of investment (as a percentage of overall turnover) with a cross-section of UK businesses by using Nesta's 2011 Innovation Index as a reference year (representing the most recent robust core data sample set available). The data was then processed by:

- splitting the source data from the Innovation Index inputs into top level Standard Industrial Classification (SIC) code – a fairly coarse adjustment, but one that still brings out significant differences in the levels and types of innovation investment
- establishing the overall turnover of the firms represented in each sector
- calculating an average turnover for the firms in each sector
- calculating the percentage of intangible investment attributable to each of the six core categories
- mapping these percentages to produce sector-level typical profiles.

Most of the comparisons conducted in this way tended to show overall patterns and levels of investment that were in line with broad industry averages, though the chart shown at Figure 5.12 for Company A indicates that some notable variances also existed. These were most evident where companies were at a relatively early stage of development and were therefore re-investing a larger proportion of their turnover in innovation-related expenses than would be considered sustainable in the longer term.

Figure 5.12: Benchmarking individual company expenditure against national averages: Company A example



6. Conclusions

This pilot study finds that while UK SMEs can account for some innovation, there is a lot of innovation activity they are not routinely tracking.

6.1 HOW MUCH INFORMATION ON INTANGIBLE ASSETS CAN SMES IDENTIFY?

This study, although based on a modest sample, has provided an opportunity to create a more detailed understanding of the challenges facing accountancy practitioners who are seeking to support businesses by providing analysis and scrutiny of innovation performance, or who wish to understand in detail the more general contribution being made by intangible assets. Some of the key findings are given below.

- With the exception of new product information, there appears to be a good degree of consistency across inputs and outputs provided (for example, where new products are being developed, there are corresponding costs relating to R&D, design and software development, and vice versa). This helps to lend confidence to the study's findings regarding information availability.

- The information gaps present and difficulties identified in this study tend to reinforce the view that SMEs are likely to be making investments in innovation that are not being routinely tracked.

- Splitting investment between internal (staff and people-related) costs and external (bought-in) costs appears to be a helpful strategy, though as noted above, it does not follow that external costs are always easier to identify than internal ones.

- Unlike the Malaysian sample, there was no correlation between the size of the SME (measured by turnover or employee numbers) and the ability of its management to answer the questions.

6.2 WHICH DATA IS MOST TIME-CONSUMING OR DIFFICULT FOR SMES TO FIND?

The Innovation Accounting Tool confirms the need for a broader definition of innovation that goes beyond conventional research and development, since this was only relevant to one-third of those participating. Nonetheless, it is interesting to find that companies that are active in R&D appear to find it easier to provide other input and output information than their peers that are not active in this area.

Other conclusions are as follows:

- Of the financial measures requested, inputs emerge as easier for companies to identify than outcomes (though the gap is much narrower than was the case with the previous, smaller, study of Malaysian SMEs).

- Although most companies are able to provide volume-related outputs of products and services, some basic sales volume data appears consistently difficult to obtain across different activity sectors. Where weaknesses exist in identifying innovation-related outputs, it increases the possibility that innovation is seen as a cost rather than an investment.

- Design is sometimes viewed as a 'Cinderella' IP right which is undervalued, and this study seems to bear out this characterisation. Thanks to clearer and broader definitions, it became possible for nearly half the participants to recognise that the area has relevance. Even so, only one company found it easy to identify the investment being made in design, and then only for a modest level of internal costs.

- Organisational development and business process improvement have proved difficult to quantify in other large-scale surveys. In this instance, over half the participants recognised its relevance, but it was being routinely recorded by only one of the sample companies (which is a specialist in open innovation).

- As with the earlier Malaysian pilot, companies appear to struggle to measure or quantify efficiency savings, even though this is (presumably) a strategic objective for many firms. It may suggest that incremental forms of innovation are harder to measure than activities that are clearly 'badged' as being innovative (such as R&D). It may also indicate that such activities are seen either as a matter of compliance, or as a general cost of doing business not distinguishable from everyday activities. A further clue to the root of the problem lies in the apparent lack of visibility of sales and production data volumes; these would enable efficiency savings to be quantified more easily.

Accounting professionals can play a crucial role in supporting SMEs to better account for their intangibles - and therefore for their innovation investments, outputs and returns.

6.3 WHAT CONCLUSIONS MIGHT BE DRAWN REGARDING INTANGIBLE ASSET AWARENESS AND PROFESSIONAL DEVELOPMENT?

In overall terms, the number of areas where respondents were able to provide information only after additional work is greater than would be considered ideal, especially if accountants are to provide truly effective support to enhance innovation, competitiveness and productivity within business. By highlighting these areas, the Tool appears to play a useful role in identifying the need for change. The fact that the UK SMEs sampled here generally appear willing to take the time to retrieve detailed data in exchange for insights into their innovation performance is an encouraging sign.

A couple of specific areas stand out.

- In previous NCII and Innovation Accounting Tool work, dividing research expenditure from development costs (one of which cannot be capitalised, while the other can) proved difficult for participating companies. Only one firm was unable to separate the two categories in this latest study, though since R&D expenditure was only considered relevant by one-third of the sample, this does not necessarily suggest that companies are clear on the difference between them. Since the rules governing capitalisation of intangibles are (as explained in Chapter 2, section 2.5) now being updated, the study has identified one particular area for professional development. Nevertheless, it is also interesting to note the high correlation between tax credit reclaim and R&D activity, suggesting that the sample companies that do conduct this activity are well advised.

- The findings also indicate that the importance of software may be under-estimated. In this particular sample, only a minority of companies were involved in bespoke software creation, but those that were found it difficult to identify the investment being made. Given the level of business model transformation now being facilitated by hardware and software innovation and by permanently connected devices, this is an area the accountancy profession needs to understand well.

One other aspect, which may have implications for companies' ability to leverage intangible assets to finance business growth, relates to the relatively low number of registered IP rights found in this study. While it was not surprising to find comparatively few patents or design rights in a sample with a high proportion of service businesses, it is not encouraging to see such a low level of trademark protection. IP rights are an important weapon in defending margins and maintaining competitive advantage, but are also prone to being seen purely as a cost – a perception which needs to be challenged, and which the Tool highlights.

It is not possible to be certain that the inputs provided to the Tool are comprehensive. If they are not, it lends further weight to the need for better information systems, since (as the popular maxim states), 'if you can't measure it, you can't manage it'.

The key question is not whether accounting standards should treat intangible assets in a different manner (even if the study findings could be seen to lend some further weight to this suggestion). The main issue is the need to recognise that innovation expenditure primarily relates to intangible assets, often internally generated, and that this is a form of investment on which the company expects to generate a return in much the same way as it would with tangible asset expenditure.

This being the case, intangible investments should be identified and managed as a matter of routine, to ensure they give value; otherwise, a board may not be fulfilling its obligations to its shareholders. For accountants to fulfil this role, management systems must do a better job of capturing this information and turning it into actionable insights.

Now that management accounts and other financial toolsets are moving to the cloud, especially among SME clients, it is becoming simpler and less costly to introduce and share enhancements and improvements to system functionality. This provides an opportunity to introduce standard methods of describing these business-critical assets and investments, so that the language of innovation can be used and shared more easily.

Approaches like the Innovation Accounting Tool are one route for SMEs to provide better evidence of their intangibles and innovation, and to leverage those assets to access finance.

6.4 HOW CAN THE INFORMATION GATHERED ON INTANGIBLE ASSET INVESTMENT BE LEVERAGED TO ASSIST COMPANIES WITH THEIR OWN FUNDING STRATEGIES?

By improving a firm's ability to track and account for its innovation, approaches such as the Innovation Accounting Tool can make more visible the real drivers of value creation within a business. This, in turn, opens up new opportunities for using intangible investments and assets to negotiate other forms of business funding – an area that generally falls to the senior management within a business, and invariably needs to be supported by the finance function.

As indicated in Chapter 3, new opportunities are opening up for companies to leverage their intellectual property and other intangibles in financing discussions. Nonetheless, it is clear that for the foreseeable future, firms rather than lenders will need to make the running in bringing these assets to the discussion table, as it is the company that needs to have the best understanding of the importance of these assets to its cash flow.

The emergence of schemes for tapping into the 'hidden' investment made by companies in business-critical software provide a specific example of an opportunity that is only available to firms with a good understanding of their intangible assets. Also, the growing number of lenders offering a debt-based venture-funding option, which generally involves taking security over key value-producing intangible assets, emphasises the very real opportunities that now exist for truly innovative businesses to obtain the finance they require for growth.

As concluded above, however, this type of leverage only becomes possible when companies truly understand why they are investing, which assets have been created, what these are worth, and how they contribute to business returns.

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