Materials Processing Institute

INNOVATING THE INTANGIBLES: HOW TO SUPPORT INNOVATION IN SMALL BUSINESSES

A speech given at the launch of the Innovation Report by the Federation of Small Businesses, The 'Walkie-Talkie', London

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Introduction

Ladies and gentlemen, welcome to this launch by the Federation of Small Businesses into the results of the most extensive innovation survey ever conducted by the Federation. I am the policy chair for Innovation and Enterprise for the Federation. I also run a small business that is itself an innovation business. The Materials Processing Institute is a privately funded research centre, that for over 70 years has been active in developing and commercialising innovation in advanced materials, low carbon energy and the circular economy.

I know from personal experience that supporting the needs of the complex and diverse SME community to successfully innovate brings great challenges. This research gives us an insight into why that is, but crucially also how to recognise, promote and accelerate innovation in small businesses, in a way that is meaningful and useful to the owners, managers and employees of these firms.

Innovation that is New to the Firm

Many myths exist about the innovative capacity and capability of small businesses. It is acknowledged for instance that flagship innovation policies, such as R&D tax credits, do not experience the level of take up from small businesses that might be expected. It can be wrongly assumed that this is due to a lack of innovation activity in small companies, yet we know that sectors such as pharmaceuticals rely on innovative start-up businesses to generate the future pipeline of new compound development.

Over the last year the FSB has rightly and successfully campaigned for innovation that is new to the firm to be regarded as equally valid as innovation that is new to the market. This is supported by the results of this survey, which show that 76% of small businesses engaged in some form of innovation. 95% of these engaged in new to firm innovation and 25% in new to market innovation.

The importance of this new to the firm innovation can be seen in the need to improve the group of firms characterised by Bank of England Chief Economist, Andy Haldane, as being in the 'long-tail' of lower productivity in a sector. For these businesses it is new to the firm innovation which will raise their levels of productivity. New to firm innovation is not just about new products. Process innovation and organisational innovation play an equally important role.

Both patent box and R&D tax credits are fairly straightforward to apply to new to market product development, but new to firm process development requires considerably more effort to adapt to the requirements of R&D tax credits and cannot achieve the same benefits from patent box. Indeed, patenting of a process innovation is often inadvisable in that it makes public the very competitive advantage on which a firm may depend.

Business Model Innovation

Process innovation is one step removed from the product innovation which usually catches the limelight, but this report also shows that innovation in business structures is widely and successfully adopted in the sector. The importance of intangibles in this form of innovation chimes well with the recent work of Haskel and Westlake[1], which points to the rise of the intangible economy. It is also a theme I explored in a recent speech I delivered at Google HQ in London[2]. Here I identified the challenges around differentiating between the tangible and intangible aspects of international trade, given the advance of digital technologies and the servitisation of goods. These themes hold true for the importance of innovation in intangible aspects of small businesses.

Self-Design

As a consequence of the need for small businesses to focus on these areas of process and business structure innovation, the survey has revealed that the primary methodology for innovation in the sector is 'self-design'. Self-design does not necessarily mean new to market, but it is my opinion that this is unsurprising when the solutions required are necessarily bespoke to the individual firm.

Recent policy initiatives, such as the 'Knowledge Exchange Framework', an index of excellence for universities in England and Wales, have focussed on diffusion to accelerate innovation and improve productivity. Whilst it would be a false dichotomy to talk about self-design versus diffusion, this report shows that both are important and a balanced approach is required.

More important is the need to support leadership within the firm and to focus on capabilities. For this reason, business led initiatives such as Sir Charlie Mayfield's 'Be the Business', with a strong focus on improving skills and leadership, would be expected to have a much greater impact. We need to think more about the interaction between science and social sciences, suggesting that the recently launched 'Productivity Insights Network', will have much to offer.

Innovating Intangibles

Our natural instincts drive us to imagine innovation as being about the development of tangible, new to market products and indeed our current innovation policies encourage precisely this viewpoint. However, the research presented here by the FSB, shows the importance of productivity improving process innovation and self-designed business model innovation, sitting alongside product innovation.

If government wants to be more in tune with the needs of small business, then there needs to be an acknowledgement in policy of the value of intangible innovation, alongside the tangible product innovation, whether new to the market, or new to the firm.

I am an innovator, so I am as guilty as anyone in being captivated by the excitement of a new gizmo, or piece of technology and indeed we welcome the findings in this report on the importance of digital technologies for instance. However, as well as being about the technology itself, my experience in commercialising innovation in industry has taught that the successful application and monetisation of an invention relies on managing the change associated with its implementation. Ultimately the success of an innovation is determined by the absorptive capability of the firm to which it is being applied.

This research suggests that there is a need for a greater focus on new to firm innovation in all its forms and that means looking beyond just product innovation. Of increasing importance is innovation around organisational structures, supported by the necessary leadership skills. At its core, successful innovation is about the management of change and it is here that government needs to place greater emphasis for the future.

I don't expect this to be an easy change to make. It isn't possible to display an intangible process innovation in the foyer of 1 Victoria Street, yet we must find ways to champion and promote this intangible, new to the firm innovation, just as much as we champion the tangible, new to market innovation now. The support we have offered for the development of technology, particularly 'hard tech' such as new products, needs to be equally as successful in supporting soft skills, leadership and innovation in business structures.

Success in innovation for the future will be as much about focussing on people, as on things.

[1] *Haskel and Westlake: 'Capitalism Without Capital: The Rise of the Intangible Economy', ISBN 9781400888320*

[2] *McDonald: 'A Digital and Exporting Future for UK SMEs', November 2017, https://www.mpiuk.com/downloads/speeches/Speech-2017-11-01-A-Digital-and-Exporting-future-for-UK-SMEs.pdf*

Materials Processing Institute

Chris McDonald is the Chief Executive Officer of the Materials Processing Institute. The Institute carries out industrial research and innovation in advanced materials, low carbon energy and the circular economy. Chris's background is in industrial research and manufacturing, where he has worked internationally. He led the divestment and return to independent, not-for-profit ownership of the Institute in 2014, the year the organisation celebrated its 70th anniversary.

In addition to leading the Institute, Chris provides expert consultancy support to companies, Governments and public bodies, in technology strategy and the technical due diligence aspects of mergers and acquisitions. He is prominent in the development of public policy, around innovation, steel and SMEs, where he works to support growth and inward investment. He is the policy chair for Innovation and Enterprise for the Federation of Small Businesses, a member of the CBI Regional Council for the North East and is the Innovation Lead for the UK Metals Council. Chris is also a member of the Steel Advisory Board for UK Steel (EEF).

A graduate of Cambridge University, Chris is a Fellow the Institute of Chemical Engineers and of the Institute of Materials, Minerals and Mining. He sits on industrial advisory boards at a number of universities, including Oxford and Sheffield.

He is often called to commentate in the media on innovation leadership and the steel industry.

> "Chris provides expert consultancy support to companies, Governments and public bodies in materials, technology and innovation strategy"

Chris McDonald
Chief Executive Officer
Materials Processing Institute

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The Materials Processing Institute is an independent, open access and not-for-profit technology and innovation centre working with industry, government and academia worldwide. Support ranges from small scale, site based investigations, through to long term collaborative research programmes.

The Materials Processing Institute is expert in advanced materials, low carbon energy and the circular economy, specialising in challenging processes, particularly those involving high specification materials, high temperatures and difficult operating conditions.

The Institute has over 70 years' experience as a leading UK technology provider. Extensive materials processing knowledge is supported by state-of-the-art facilities with a broad range of equipment, from laboratories through to demonstration, scale-up and production plant.

Scientists and engineers work with industry and apply their expertise to develop and implement robust solutions to research and development and improvements for products and processes.

Expertise is spread across a wide range of disciplines, including:

- Materials Characterisation, Research and Development
- Simulation and Design
- Monitoring, Measurement and Control in Hostile Environments
- Process Development and Upscaling
- Specialist Melting and Steel / Alloy Production
- Engineering / Asset Management
- Materials Handling
- Minerals and Ores

Research and project management teams deliver support across a wide range of industrial and manufacturing sectors including:

- Metals and Metals Manufacture
- Chemicals and Process
- Nuclear
- Oil & Gas
- Energy
- Aerospace and Defence
- Mining and Quarrying

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