

## A Two Year DTI Research Strategy

### 1. Introduction

Developing the evidence base for policy has moved higher up the agenda than ever before. Government Spending Reviews are putting an increased emphasis on evidence provided by Departments. It is therefore crucial for the Department of Trade and Industry to have good evidence for policy proposals.

DTI has changed over the past 18 months to adapt to these new challenges. Its new Strategy<sup>1</sup> sets out how DTI will contribute to upgrading UK competitiveness. The strategy is “built upon a rigorous understanding of the UK’s competitive position, the opportunities facing the UK, and how DTI can make a difference. It is the fruition of a year long process to examine the drivers of productivity, to gather evidence on the UK’s strengths and weaknesses, and to evaluate our programmes.”<sup>2</sup>

The DTI has developed an evidence base to help it understand better the UK’s competitive position, over three stages: first we developed the business plan<sup>3</sup> based on **17 operative objectives** (see Annex 1) derived from economic analysis and a brief overview of the evidence in each area; second we undertook a more **systematic review of the existing evidence** provided by the objective owners; and third, we are developing a **research strategy** based on the evidence provided and an assessment of priorities. The research strategy will help sharpen our focus to deliver on the 17 current work objectives.

### 2. The evidence base: What are the priorities for research?

All objective owners and their economists at the DTI have been asked over the last few months to contribute to the evidence base. DTI used the evidence base to focus its new strategy on the areas in the economy where DTI could have most influence. To ensure that DTI policies stay focused, and to monitor progress, we have to continuously work on the evidence base and have a consistent evaluation strategy, allowing us to compare the impact of various policy measures.

Using the evidence base the research strategy prioritises areas in which further work needs to be done. We identified five areas which run **across the Department** and four **priority areas** related to **specific objectives** which we believe need further attention. Annex 2 contains a list of project proposals in individual areas which need more research.

#### Cross-cutting areas

- We need to know more about how to interpret and apply the Departmental aim of ‘prosperity for all’ in certain situations and its measurement. How can DTI best use its resources to enhance ‘prosperity for all’?
- We need to build on what we know about how companies work and the rationale for Government intervention. Where can DTI best make a difference for business?
- We need to know more about evaluation methodologies in certain areas. They are well established in some areas but underdeveloped in others. How can we improve evaluation and learn for future projects?

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<sup>1</sup> <http://www.dti.gov.uk/about/dti-strategy.pdf>

<sup>2</sup> <http://www.dti.gov.uk/about/dti-strategy-analysis.pdf>

<sup>3</sup> <http://www.dti.gov.uk/about/dti-businessplan-2003-06.pdf>

- We want to develop a consistent database with a panel on business performance which can be used across the Department and Government. This is an important step forward.
- We need to know more about certain aspects of the competitive position of UK sectors - manufacturing and services - compared to other major countries.

These five areas of cross-cutting work can be developed into the following suggestions for work to be done. Some of this work we can do ourselves while for others we will need help.

- **Prosperity for all:**

There is a wide range of evidence – though not comprehensive – on how DTI programmes can influence productivity, but less about the non-productivity aspects of ‘prosperity for all’, including protection of the environment and achieving social objectives, such as reducing fuel poverty. The analysis paper accompanying the DTI strategy highlights key aspects of the evidence base for the strategy. More work has been done inside and outside the Department. This includes work on the non-productivity oriented DTI activities and their influence on prosperity for all.

‘Prosperity for all’ includes the whole of the UK and all sectors of society. We need to understand better how DTI policies affect the regions, their labour markets, income levels etc. This may help to understand regional differences. A research project in the Regional Policy Directorate will report later in autumn on some of these issues.

- **How do companies work: Causes for market and systems failure and rationale for Government intervention**

We need to know more about decision-making in businesses, and sources of knowledge for those decisions. Can particular circumstances, such as stages of business growth, be identified which give rise to particular needs for external knowledge sources e.g. how to transition to a higher skills and value added business model? What kinds of internal or external organisations or networks do business decision makers turn to? What are the roles profit seeking and not for profit organisations in this, and are they likely to be met without Government involvement?

How far are firm’s investment decisions constrained by deficiencies in information? For example, are low skills or low productivity patterns of behaviour reinforced through learning from peers in networks which lack outside contact? How and why do businesses develop horizontal and vertical networks, or more formal institutions for cooperative knowledge development? How effectively are knowledge needs of new and innovative firms met by these? Do the interests of older incumbents dominate the resources of membership bodies or knowledge networks to the detriment of newer entrants?

- **Evaluation methodologies:**

In the UK we have a long experience of government support for industry in the economy. Many of these policies have been evaluated, but we need to develop consistency in the way we approach market failure, the policy rationale and in the way we test for it.

It would be particularly helpful to know more about how long it takes for the effects of different policies to feed through and the balance between direct and indirect effects, which is very important.

DTI has substantial experience with evaluation, for example in the business support area. But evaluation methodologies appear to be underdeveloped in some areas such as those

for examining the impact on business performance of knowledge transfer networks and the influencing role the Department has as a voice for business in Whitehall and Europe.

There are now new opportunities using microdata for more rigorous quantitative analysis. We need to make more use of these sources to complement case studies and other qualitative methods.

- **Use of the existing data and building a new data base:**

ONS, with assistance from the DTI and the Treasury's evidence based policy fund, has set up a micro database giving details on the performance of enterprises over time. The data have already been used for some valuable work for DTI. This database can be a useful additional tool for analysing the determinants of productivity and the role of policy. We would like to encourage researchers to access the database and undertake analysis in the broad areas set out here.

The ONS micro database is a significant step in the right direction to provide researchers and Government with the data they need to evaluate policy and research better. We intend to build on this to develop an integrated **database** the DTI and others can use to evaluate policies and to conduct background research. We aim to improve the data on services to improve our knowledge of this part of the economy. The database could consist of data from companies participating in DTI programmes matched to the IDBR, while keeping in mind the requirements for confidentiality. Such a database would allow us to use control groups to enable formal econometric analysis, to complement qualitative surveys and case studies which are normally undertaken.

- **Sectoral studies**

We need to understand better what determines productivity differences in individual sectors and how the UK compares with other major G7 countries. The results emerging from such studies need to be related to practical policy considerations and the way in which sectors themselves view their performance. This sets the framework for sector studies and cross sector studies being instigated by Business Relations.

### **Priority Areas**

Next to the five cross-cutting areas which go right across DTI policy areas there are four priority areas emerging from the evidence base where more work needs to be done. They are: commercial best practice, high performance workplaces, consumer policy, and energy. Below they are organised according to the operational objective they are closest related to.

**a) Promote Commercial best practice to help business to be more competitive at home and abroad**

There are large differences in commercial practices between companies within the same sector. They often learn best from each other. Business Support has a number of programmes which help spread commercial best practice. A project could analyse the conditions for success in this area the rationale for future Government support. The work could explore issues of additionality of Government support and the effects of Government support on the five drivers of productivity. Work in this area has already started.

**b) Promote commitment and partnership in the workplace**

Apparently comparable workplaces can have very different levels of productivity. High performance workplaces combine high economic performance with employees who can fulfil their potential and at the same time maintain a healthy work-life balance. It would be useful to build on research into the factors making up a high performance workplace and how DTI policies can influence these, by linking WERS with ARD data as a further source for analysis. How can employers identify the right mixture of employee friendly policies, shareholder value and customer care? Under what conditions can firms improve performance by adopting new management techniques? What is the direction of causation between management and performance?

**c) Place empowered and protected consumers at the heart of an effective competition regime**

There is not sufficient understanding of how consumers take decisions and how they respond to policy measures. To develop a policy which ensures that empowered consumers play their full part in driving competitive markets we need to improve our knowledge of how decisions are made, how consumer and competition policies can be best co-ordinated and their role in improving productivity.

**d) Ensure the continuity and security of energy supply and other natural resources, consistent with competitive markets**

Reliable energy supplies require a resilient energy system. This means a diverse system, based on a mix of fuel types, a variety of supply routes, efficient international markets, back-up facilities such as storage, and a robust infrastructure. Competitive markets are at the heart of policy to provide security. But the risks are significant and increasing. The issues also move beyond the competitive generation and supply businesses, to the regulated networks and the international market. Our understanding of these markets, as we move towards increased import requirements, need for more investment and requirements to meet enhanced environmental standards, will require increased attention.

### 3. Conclusion

DTI has recently reviewed a large body of evidence and as part of that process it has published the analysis paper underlying the new strategy and has started publishing a regular series of economic papers<sup>4</sup>. This work has established some priorities for further work. We want to begin addressing the priorities outlined in this paper as soon as possible, and will publish the results in due course. But we also want to engage in a dialogue with researchers working in these areas to help us refine the forward work programme and encourage research in those areas which are of priority interest to us. This seminar is one step in this dialogue.

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<sup>4</sup> For the DTI economics paper series see:  
<http://www.ecdti.co.uk/CGIBIN/priamlnk.cgi?MP=CATSER^GINT65&CNO=1&CAT='ECONOMICS'>

**Prosperity For All - Operational Objective**

1.	Promote commercial best practice to help business become more competitive at home and abroad.
2.	Promote a culture in which people are willing to take the risks of starting and growing businesses.
3.	Raise the calibre and use of management, leadership and workforce skills.
4.	Improve access to finance for investment in business and innovation.
5.	Improve infrastructure to support business competitiveness and productivity.
6.	Ensure the continuity and security of energy supply and other natural resources, consistent with competitive market.
7.	Promote enterprise and employment in minority and disadvantaged groups, including amongst women.
8.	Promote growth in all English regions, especially those whose performance is below average.
9.	Promote knowledge transfer to accelerate business exploitation of science and new and existing technologies.
10.	Improve the relative international performance of UK science and engineering.
11.	Promote sustainable development and environmental protection to enable UK business to lead in environmental markets.
12.	Provide policy formulation and advice for a range of science and technology (S & T) policy issues cutting across Government, including international S & T issues.
13.	Promote economic reform in Europe, and free and fair world trade building on the Doha.
14.	Place empowered and protected consumers at the heart of an effective competition regime.
15.	Promoting and realising the benefits of diversity in the economy and more widely.
16.	Promote and effective framework for corporate activity giving confidence to investors, business and other stakeholders.
17.	Promote commitment and partnership in the workplace.

## **Annex 2: Specific Projects**

### **Promote a culture in which people are willing to take the risks of starting and growing businesses.**

1) A range of indicators suggest that the UK has a relatively low level of enterprise. DTI has identified weaknesses in socio-cultural attitudes to risk taking that act as barriers to enterprise. More research needs to be done in this area. There is a lack of data on entrepreneurial activity. The data could be used to analyse which attitudes have the largest impact on behaviour and how policy could influence culture and attitudes. In addition such research might help to explain longstanding issues such as the reasons why UK business owners are less interested in growth than those in the US and why the UK has a relatively low proportion of female entrepreneurs.

2) The UK needs stronger business leadership. This does not apply only within the business but also outside. A research project could analyse what are the effects of Corporate Social Responsibility on productivity.

### **Raise the calibre and use of management, leadership and workforce skills.**

The UK has a long-term weakness in the level of human capital. Together with DFES which has the policy lead, DTI has a role to play in the improvement of the UK skills level. A lot of research is needed on how to improve skills. Four possible projects are:

3) UK firms are the key to workforce development. More research needs to be done to identify the factors that drive demand and supply of workforce development. Case studies to identify and promote best practice in workforce skills development. Such a project could also include an analysis of the management of skills linking productivity and skills.

4) Workers and firms will only invest in skills if they feel it is worth their while. There is a need to carry out studies using a range of methods, to assess the rates of return to various skills.

5) DTI research has shown that in the manufacturing industries large firm hire more skilled workers and that firms with more skilled workers are more productive. More research needs to be done to investigate the skills needs of small firms and how they meet these.

6) The UK needs stronger business leadership and improved management competence to innovate and improve productivity. We need more research to identify the motivations of managers and how these translate into organisation performance. A project could also consider what are Government can do to influence incentives and behaviour.

### **Improve access to finance for investment in business and innovation**

7) The Government's economic strategy aims to achieve sustainable increases in prosperity. Prosperity needs to be considered in the light of how it is shared among the population. This means that it has to include those living in deprived areas. More research of these deprived areas needs to be done. Topics could include an explanation of the problems related to access to finance for start-ups in deprived areas, the role of self-employment and enterprise in these areas and/or analysing the spatial variations in productivity, investment in human resources and access to finance. This topic has a lot of scope for cross-cutting research which can benefit several objectives.

8) Entrepreneurship and start-ups need access to finance. There is a need for more research into access and attitudes to, and uses of, external finance especially for small firms. The analysis would have to drill down into different sub-groups of the SME population. This includes ethnic minority businesses, women (there has been a number of studies done, but still there is no clear and unequivocal picture), businesses in disadvantaged areas (and more generally understanding better the profile of these businesses and therefore their needs); and start-ups and growth orientated businesses.

9) Migration becomes more important as the demographic pattern especially the age pattern change. More research needs to be done on the effects of migration on productivity. This includes how do migrants drive productivity (especially from the innovation/entrepreneurial aspects which have not been researched). This could include an assessment of the importance of migration in developing international trade links and encouraging FDI. This topic is closely linked with the proposed analysis of enterprise and employment in disadvantaged communities.

**Ensure the continuity and security of energy supply and other natural resources, consistent with competitive market**

10) The Government has a target to end fuel poverty in vulnerable households by 2010, and a legal obligation under the Warm Homes and Energy Conservation Act 2000 to remove all households from fuel poverty by 2016-2018 (the target dates reflecting the different targets in the 4 UK countries). Research is needed to understand better how reductions in fuel poverty translate into improvements in prosperity for all.

**Promote growth in all English regions, especially those whose performance is below average**

11) The prosperity of the UK is dependent on strong regional and local economies. More research needs to be done to identify whether sub-national/regional disparities are beneficial or harmful to the economy of the UK as a whole and in particular research on the impact of regional programmes on local labour markets and the characteristics of projects which have a positive impact on employment (through for example improving the working of the labour market, boosting the supply side or reducing hysteresis).

**Promote sustainable development and environmental protection to enable UK business to lead in environmental markets**

12) The UK has a target under the Kyoto protocol to reduce emissions of greenhouse gases by 12.5% from 1990 levels by 2008-12, and a domestic goal to go further to reduce CO2 emissions by 20% by 2010. Analysis is needed of the effects of achieving the Kyoto target and beyond on competitiveness and/or the effects of a positive environmental reputation on the profits of business.

13) Research is required on the competitiveness and labour productivity – using the ONS matched database - of the UK environmental industry in domestic and overseas markets, identifying key weaknesses. This is to help inform our objective on Sustainable Development, to: “Promote sustainable development and environmental protection to enable the UK to contribute to the improvement of the environment and to enable UK business to lead in environmental markets”. Work in this area will also help us to understand better trends in Total Factor Productivity and the drivers for innovation in sustainable production and resource productivity.

14) In relation to our Sustainable Development objective and the Government’s recent Sustainable Consumption and Production framework, we require better data on the cost saving potential of clean technologies & processes, as well as the potential for greater resource efficiency.

15) Analysis or piloting is needed on the potential contribution of Climate Change projects to UK greenhouse gas emission reductions to help inform the projections of future emissions and to enable the UK to remain on track to meet its targets for greenhouse gas and carbon dioxide emission reductions.

16) Further work will be led by DEFRA to inform the Government’s suggested social cost of carbon. Consideration should also be given to valuing ancillary effects which in some cases might be significant. For example, a project which reduces emissions of carbon dioxide may have the effect of increasing emissions of other local, regional or global pollutants.

### **Promote economic reform in Europe, and free and fair world trade building on the Doha**

17) Effects of trade liberalisation, especially the benefits of the Doha Development Agenda on a range of issues including: distributional effects within the UK and the gender impact of trade liberalisation .

18) . The potential for the expansion of South-South trade if developing countries were to reduce tariffs as part of a multilateral trade round.

19) Case studies of infant industry protection in developing countries

20) An analysis of the prospects for greater international outsourcing in the service sector and its implications.

21) The EU single Market for services: scope of the draft directive and its implications for the UK

22) Further analysis of impact of EU enlargement, including consideration of implications for investment.

23) An analysis of the characteristics of UK exporters – using ONS matched database to assess which kinds of firms will benefit most from exporting

24) Identifying and quantifying scale of non-tariff trade barriers or the size of trade in services (all modes, rather than just straight exports of services currently classified in balance of payments).

### **Promote commitment and partnership in the workplace**

Employee involvement and development are key to improve workplace performance. This will work best if employers and employees work in partnership. A lot more research needs to be done in this area. Three possible topics are:

25) Repeat of the 2003 work-life balance baseline surveys in 2006 to evaluate the impact of the new rights introduced in April 2003.

26) Possible repeat of the maternity rights study and/or the awareness and knowledge surveys around 2004/05 to establish trends in awareness and employment disputes.

27) Qualitative studies of employers to measure in some detail the impact of specific legislation (e.g. the duty to consider requests for flexible working).