Competing in the global economy

A series of debates
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Conclusions and recommendations from a series of three debates organised by the International Committee of The Royal Academy of Engineering on challenges facing the UK as it seeks to compete in a turbulent international economy

Introduction

By Professor Sir William Wakeham FREng

The Royal Academy of Engineering held a series of three debates between October 2010 and January 2011 in which Fellows of the Academy, senior engineers and other interested people from the government and policy, business, and academic communities were invited to consider and then to vote on motions that covered important issues affecting UK competitiveness in international markets.

As the national academy for engineering, we take a strong interest in the health of the UK economy and the contribution that engineers make to it as innovators, researchers and industrialists. Our purpose in undertaking this series of debates was to provide an open platform to discuss some of the key challenges facing the UK, and the policy responses open to us, as we strive to strengthen our competitiveness in this period of global economic uncertainty.

The motions picked for debate were deliberately provocative and wide-ranging so as to encourage participation and to stimulate a productive discussion. We were privileged to secure a diverse set of authoritative and eloquent speakers for our panels, and all three debates generated a wide variety of views and a welcome willingness to share them. Of particular value to the international work of the Academy was the degree to which all three debates were able, through the input of Fellows and other contributors, to make insightful comparisons between the UK and competitor countries. In current economic circumstances, willingness to learn from our allies and our rivals is a skill that we all need.

This report is a distillation of the debates, the contributions made in them and the issues that were raised at them. It does not reflect and should not be taken in part or in summary as an indication of the Academy’s policies or views. Rather we see it as a material contribution to the wider public discourse. We have quoted from our panellists and participants but as the debate was conducted under the Chatham House rule not all of these quotes have been attributed. We end with a chapter drawing together the broad conclusions that emerged during the course of the three debates. I hope you find them interesting and reasoned and that they will provide a spur to future work and discussion.

The debates were engaging and enjoyable and we will be conducting a second series of them on different topics later this year. I would like to thank the staff of the Academy’s International team for their work in organising them and in producing interesting events and, I hope you will agree, a stimulating report.

Sir William Wakeham FREng
How to use this report

This is the report of a series of debates held by The Royal Academy of Engineering in the autumn and winter of 2010-11. The debates focused on issues that impact on the ability of the UK to be competitive in global markets. The motions chosen for debate were deliberately provocative and our principal speakers provided diverse and contentious viewpoints. We are grateful to them and to all the participants for their contributions and for the forthrightness with which views were expressed.

This report summarises each of the three debates, giving some of the arguments that were delivered in support of the motions and then against them, and providing a synopsis of the main points that emerged through the subsequent discussion. The format we have adopted in this report is intended to give readers a flavour of the debates; the viewpoints expressed are those of participants, and not of the Academy.

Following the reports of the three individual debates, there is a Themes and Conclusions section, which attempts to draw out topics and issues where the process of debate reached consensus, or where there appeared to be scope for further investigation by the Academy or by others. Our aim has been to provide a forum for debate and discussion, and it is in that spirit that this report is being published.

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Executive summary

The three debates covered wide-ranging issues affecting the UK's competitiveness in the global economy, and each was self-contained. The points raised in the individual debates are summarised in the pages devoted to each debate. However, a number of themes and common threads emerged from the debates, reflecting wider concerns and areas where further investigation might be helpful. Fuller information on these themes and conclusions will be found toward the back of this report.

In brief, the main recurring points in the debates were:

• Short-term considerations drive many of the actions and activities of important players such as government and the financial sector to a degree that appears not to apply in some competitor countries. These short-term horizons impact unfavourably on the ability of many UK businesses to compete in international markets.

• Openness and free trade have been central to the UK's successes, but insufficient attention has been paid to the potential risks of openness to foreign takeover and ownership. The impacts of substantial foreign ownership of UK infrastructure and of reliance on overseas suppliers for fundamentals such as energy sources merit further investigation.

• Manufacturing has an important part to play in the “rebalancing” of the UK economy in the wake of the financial crisis but it is not necessary to aim for a specific percentage of GDP. However, manufacturing's ability to build on the science and engineering base, to add value and to build communities appears to have been less widely recognised in the UK than in many competitor countries.

• UK models of corporate structure, ownership and financing options seem at times less suited to extracting maximum value from assets and capabilities than those in other countries. Globalisation offers opportunities to learn from others.

• Broader knowledge of business and competitiveness issues within government could help build a more supportive environment for enterprise and innovation. More widely, there is much value in debate and discussion as a means of developing understanding of the realities of the UK economy and the policy options for the future.
First Debate

Motion: This House believes that the advantages of foreign ownership of the UK corporate sector outweigh the disadvantages

Issues:
In all sectors of UK business and industry, ownership by foreign or multinational groups is now commonplace. Many sectors are dominated by foreign-owned groups, and large UK concerns, including privatised companies and significant elements of infrastructure, have been taken into foreign ownership or have become part of multinational groups. Do foreign owners bring new ideas and better management to UK firms? Or should we worry that the takeover of UK assets leaves us vulnerable to entities that have little concern for the UK national interest? Is the incidence of acquisition proof of the robustness of the UK market or a sign that our homegrown investment model is flawed and that UK investors are fickle?

Participants
For the motion:
Professor Colin Mayer,
Peter Moores Dean, Said Business School,
University of Oxford

Professor Richard Parry-Jones CBE FREng,
Co-Chair, Automotive Council

Against the motion:
Sir Alan Rudge CBE FREng FRS,
Chairman, ERA Foundation

Dr David Clark,
Executive Secretary, ERA Foundation
Arguments in favour of the motion

So-called “British” business is in fact very rarely UK-owned in its entirety because of the global ownership of shares. The openness of the UK economy to foreign takeovers and investment is one of its strengths, and the UK should, if anything, be prevailing upon other nations where appropriate to open up their corporate sectors to overseas acquisition and investment, in the interests of global free trade. In any case, there is a two-way trade in corporate ownership, and UK groups have been successfully buying overseas corporate entities for many years.

“In global markets, companies are globally owned. Who knows or cares whether the pension funds and insurance companies that own British firms reside in Threadneedle or Wall Street?” – Professor Colin Mayer

Foreign direct investment is a vital part of foreign capital flows into the UK and brings jobs as well as money into the UK economy. It has also had benefits in introducing new forms of corporate governance into the UK mainstream: many of those models of governance are more stable and long-term in outlook than those that have been traditionally applied in UK firms. Foreign ownership can open up UK groups to sources of funding such as venture capital that may be more advantageous than those available in the UK alone.

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Examples - UK privatised utilities and foreign ownership.

The panel

Foreign owners of UK businesses may also be less likely to be swayed by political interference. Foreign ownership has opened up UK companies to better management than they would have achieved under purely UK national ownership. Transferring UK corporate entities into international ownership also enables them to benefit from efficiencies at the operational level. Foreign owners introduce new technologies and new techniques into UK companies and refresh our national capabilities. Research demonstrates that foreign-owned companies perform well: a McKinsey report in autumn 2010 indicated that multinational firms (which includes some UK owned groups) account for 23% of service sector employment and 38% of industrial employment in the UK, but as much as 80% of research and development spending.1

“UK financial markets regard manufacturing as risky with unattractive returns. Many foreign investors… see boundless opportunity in the talents and resources available to them in the UK and are happy to fill the gap left by our own investment community” – Professor Richard Parry-Jones

Foreign direct investment allows ownership to be transferred to the most efficient producer, thus “raising the game” of UK industry. If the UK had been better at managing its corporate entities then they would not have been as susceptible as they have been to foreign takeover. Without foreign ownership, some sectors of UK industry would be in much worse shape.
Arguments against the motion

In terms of international comparisons, the UK appears to be extremely open to foreign investment and acquisition. Where other countries, including some in the European Union, have explicit or implicit policies that protect their “strategic” sectors from takeovers by a foreign entity, there are almost no restrictions in the UK.

“Unlike any other developed nation, the UK provides no constraints on the sales of its industries. To question this is to be labelled xenophobic or ‘little Englander’, probably with connections to undesirable political interests.”
– Sir Alan Rudge

To be concerned about the scale of foreign ownership of UK corporates is not to be xenophobic, though fear of being labelled as such has tended to suppress debate on the topic. Many of the companies targeted for foreign takeover could be regarded as the “crown jewels” of UK business and industry, and 100% or even 70-80% foreign ownership of industries or sectors raises issues of national self-sufficiency and control. The issue is not just about the quality of the assets being acquired; it is also about the quantity. Foreign owners do not, in the 21st century, necessarily have much to teach UK managers and business owners about issues such as quality and addressing market needs. It is defeatist to suggest that the way to deal with inefficiencies in UK industry is by foreign takeover.

“As soon as the R&D base moves out of the UK, an awful lot of your higher value goes with it. As soon as the strategic direction and investment decisions go out of the UK, you no longer have the basis for growth.” – Dr David Clark

The interests of foreign owners may not be the same as the “national interest”. This is particularly important where decisions that are critical for the country as a whole, say, infrastructure investment such as power station provision, may now be made by non-UK interests. Senior management influence extends beyond corporate control into areas such as government. Where core decisions are made about, for example, the location of new facilities or which operations to invest in, a foreign-owned group will often favour its own national roots against UK interests, even if it is nominally an “international” operation.

“Despite all the claims of globalisation, the world is still heavily influenced by national interests and ambitions and to ignore this is naïve at best”
– Sir Alan Rudge

There is a serious mismatch between the size and scale of foreign investments into the UK and the equivalent UK purchases or investments in overseas companies and businesses. Where foreign investors have targeted the UK’s most productive and strategically important companies, UK overseas investment has tended to concentrate on areas such as services and property.

Sir Alan Rudge CBE FREng FRS
Points of common ground and discussion

Recent governments have shown little interest in monitoring or intervening in foreign acquisition of UK assets. Lack of a coherent or identifiable industrial policy in the UK from successive governments has resulted in a failure to address whether or how the national interest might be taken into account in the acquisition of assets. In the period where privatisation was a major economic policy, the emphasis was on the successful sale of assets, rather than on looking to see who was doing the acquiring, and few if any safeguards were built into the deals to track the future disposition of assets sent out into the private sector. Against that, many foreign-owned groups have been long-term and serial investors in UK corporate entities, and have demonstrated their commitment to the UK and its national interest over many years.

The UK has been a vocal advocate in international economic circles of the benefits to all of openness and free trade. Protectionism is not the answer. Nevertheless, the evidence is that the UK's openness to foreign investors has led to a growth of foreign takeovers that has not been paralleled in other comparable countries that are, notionally at least, as committed to free trade ideals as the UK is. In some cases, takeovers appear to have been backed by subsidised capital, and the degree to which this has distorted markets appears not to be fully understood.

The UK financial sector is international in its outlook and very much committed to deal-making, without necessarily being concerned with the country of origin of the acquiring company or the national implications. UK corporate investors tend to see companies as assets to be traded and to see underperformance as a reason to sell, not as a reason to demand investment for improvement. There appear to be differences in the UK investment market from that in other countries, with UK investors tending towards greater impatience and away from a long-term view. Despite the maturity of the UK financial services sector, areas such as venture capital provision appear in international terms to be under-developed or rigid in their application.

“If a company is underperforming, then here in the UK the immediate reaction of the shareholders is, ‘We need to sell it.’ The attitude in Germany, by contrast, would be that if the company is performing poorly, then the management should be changed, and that is a very fundamental issue.”

– Comment from the floor

Foreign ownership of sectors such as railways and power stations risks the loss of critical skills in the UK, though less in the local operational skills than in the provision of technology, design services and equipment such as locomotives. Where “head office” is increasingly in a distant location, there may be effects on career structures and opportunities for UK nationals. The idea that foreign owners have much to teach UK companies or managers about fundamental business issues such as quality is disputed. In addition to these
effects, intellectual property ownership may be under-appreciated as a potential consequence of foreign takeovers, and intellectual property flows may prove in the long term to be as important a negative factor as the improvement in capital flow is seen as a benefit.

“If we want to go back into nuclear power we face a shortage of skills and industrial infrastructure in that area. I doubt that it would have happened in other countries.” – Comment from the floor

The debate was held on 6 October 2010 and the motion was defeated by a small majority

Reference:
Second Debate

Motion: This House believes that a manufacturing sector accounting for at least 20% of GDP will provide the only basis for more balanced growth of the UK economy

Issues:
Manufacturing accounted for a quarter of the UK’s gross domestic product a generation ago, but now accounts for little more than an eighth. Economic growth in the UK has in recent years been driven largely by the dynamism of the financial services sector, but the recent downturn has caused many to question whether we are now too reliant on sectors where added-value is more difficult to achieve and where the benefits in terms of tradable goods are lower. Other, arguably more successful, countries have retained a higher proportion of GDP in manufacturing: would “rebalancing” the UK economy in favour of manufacturing bring us greater wealth?

Participants
For the motion:
Professor Sir Mike Gregory, Head, Institute for Manufacturing, University of Cambridge
Andrew Simms, Policy Director, New Economics Foundation

Against the motion:
Sir Richard Lambert, Director-General, CBI
Rob Killick, Chief Executive, cScape
Arguments in favour of the motion

Manufacturing is about more than just making things: it covers research and development, design, production, distribution and after-sales service. Its contribution to the UK economy has been beset by myths – that it is about brawn rather than brain, that it is about manual work. Also damaging has been the perception that the future for the UK lies in service sectors where we can be more competitive internationally. The reality is that manufacturing should be considered an integral part of the “knowledge economy”.

“Manufacturing is frequently the route by which we can exploit our science base and capture value, and exploit our natural inventiveness. Manufacturing is a way to provide skilled employment and it is a route to protectable, competitive advantage.”
– Professor Sir Mike Gregory

Measures of manufacturing activity in the UK are not necessarily reliable. Activities that would in the past have counted as part of manufacturing, such as support services within manufacturing organisations, have often been outsourced and are no longer counted. On past measures, manufacturing may account for anywhere between 13 and 31.5% of UK GDP. Nor should “manufacturing” be regarded as a description of a single, homogeneous set of economic activities: for some products and sectors where manufacture requires a lot of basic skills, the actual production may well be better done in lower cost-base countries, though design, marketing and other value-adding activities, including the ownership of the intellectual property, may remain in the UK.

Reliance on financial and service sectors has been socially and economically detrimental to the UK. Manufacturing offers a direct route to exploit the excellence of the UK science and research base. It provides a mechanism for adding value to science through innovation and engineering and it gives the UK a more secure base than service industries ever can for creating exportable goods and commodities. Manufacturing enables the UK to invest in the economic activities of the future: if we opt out, we will not be able to participate in the industries that will drive global economic growth.

“The loss of our own manufacturing capacity leaves us uniquely vulnerable against a background of our energy dependence rising, year on year.”
– Andrew Simms

Big changes are under way in global economic activity. The transition to a lower-consumption society – cleaner and greener technologies and minimising use of scarce resources – demands a lot of engineering to create new products and new ways of producing them. In addition, current reliance on external suppliers and extended supply chains makes the UK vulnerable in crucial sectors such as energy.
Arguments against the motion

The decline in manufacturing as a percentage of GDP is not unique to the UK and is an inevitability as countries move from being “developed” to being “affluent”. The UK is best served by focusing on what it does best, and some of that will mean that we import goods and services from places that are better equipped than we are to supply them.

While manufacturing undoubtedly makes an important contribution to the UK economy, the motion is a “well-meaning fantasy”. It is not sensible to prescribe a particular percentage of the GDP that any one sector should account for. In any case, definitions of “manufacturing” and “service” sectors are increasingly blurred as companies with manufactured products see growing revenue streams from activities such as service and spares. To attempt to dictate a proportion of the economy that should come from any one sector smacks of failed notions of national self-sufficiency, or of Soviet-style command economies – neither provides a sustainable or viable economic model for the 21st century.

“What we need to set the economy on a sustained and balanced pathway is not some unrealistic, top-down, plucked out of the air percentage figure. It is for the government to set the objective of macro-economic stability above everything else, so that business can plan, invest and train for the future.”
– Sir Richard Lambert

It is a myth that the greed of the financial services sector is the root cause of present economic travails, and any distaste we feel for some of the methods used by the financial services companies should not lead us to conclude that our economy was too dependent on that sector. In fact, financial services have provided the UK with its main area of economic dynamism over the past 15 years or so, and not to have developed this sector would have been to miss an opportunity. The current difficulties were caused by a credit bubble: there

“The problem with the financial sector was not its dynamism per se, but because ultimately it fuelled a bubble which then burst, as bubbles tend to do.”
– Rob Killick

For government (or anyone else) to seek a “balanced economy” suggests that balance is more important than growth, and that cannot be right: it is to endorse a lack of dynamism in the economy. The prime role for government in this area in any case is not to dictate the type of activity undertaken but to set the objective of macroeconomic stability as a priority above all others. If government sets the right conditions, all businesses, including manufacturing ones, will be able to grow. Economic growth will come from business investment and trade; manufacturers will play an important part in that and we should cherish our manufacturers where they can offer a competitive advantage. But there should be no special dispensation for manufacturers.
**Points of common ground and discussion**

UK economic performance in terms of the balance of trade and the balance of payments is worrying. The gaps in our national performance are primarily the result of our dependence on imports of manufactured goods rather than services, where we operate a surplus. Although manufactured goods are the source of our trade deficit, our exports of goods outweigh our exports of services by a ratio of approximately 3:2. Our imports of goods are almost three times our imports of services. The percentage increase in manufacturing activity that would be needed to eliminate the overall trade gap is much less than the percentage increase in services activity that would be needed to achieve the same effect.²

“There is a direct link between investment in research and development and cycles of growth in manufacturing; these investments and cycles are not related to overall downturns and recessions within the wider economy. The day-to-day economic needs of manufacturing companies, investment in research and innovation and other aspects of growing the manufacturing part of the economy are not well appreciated in government or the City, and the domination of short-term considerations in economic thinking is detrimental to the ability of manufacturing to meet national growth aspirations and to the resilience of companies engaged in manufacturing in the UK. This may well represent something of a “systemic” issue that needs to be addressed if the UK is to be able to take advantage of growth areas within manufacturing.

It may not be right to promote manufacturing as a kind of panacea for the UK economy or to fantasise about manufacturing’s golden past. But there is a value to manufacturing that lies beyond economic viability: a need to provide jobs and welfare in places such as inner cities that some sectors and activities may be better at fulfilling than others. This may not be answered in terms of a specific percentage of GDP, but manufacturing may offer more “cross-society” benefits than other kinds of economic activity can.

The debate was held on 18 November 2010 and the motion was defeated by a small majority.

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². UK Government Pink Book, 2010
Third Debate

Motion: This House believes that the best innovation happens without government intervention

Issues:
Innovative products and services and innovative processes to deliver them benefit corporate and national competitiveness. But what role should the government have in this process, if any? Is it the task of government to pick winners in terms of promising technologies and promising companies? Or is the culture of government incompatible with entrepreneurism and innovation? Should the politicians concentrate on creating the right economic climate and stand well back, or would their involvement and understanding be helpful?

Participants
For the motion:
Professor David Payne CBE FREng FRS, Director, Optoelectronics Research Centre, University of Southampton
Edward Atkin, Founder and former Owner, Avent

Against the motion:
Professor Ian Shott CBE FREng, Chair, Leadership Forum on Industrial Biotechnology
Dr Graeme Reid, Head of Economic Impact, Department for Business (BIS)
Arguments in favour of the motion

Innovation is not the same as invention. Invention is about the conversion of cash into ideas; innovation is about the conversion of ideas back into cash. In international terms the UK has traditionally been seen as second only to the US in terms of invention but as no more than average in innovation. However, the UK’s share of internationally protected intellectual property is declining in comparison with other nations.

“Innovation is the wandering of a free spirit, unfettered by regulation, unlimited by imagination, answerable only to the judgement of the market and of history. It disrupts the existing order and it is the toolkit of the entrepreneur. Now, which one of those strikes you as a description of government?” – Professor David Payne

Government is not cut out for innovation. Innovation is about revolution and disruption and about overthrowing the status quo; government is about order and stability. Innovation is about challenging the regulations; government is about codifying regulation and controlling and enforcing it. Entrepreneurs need to be able to react fast to market needs and to take risks in order to reach the best solution; government needs to proceed by consensus and due consideration to achieve the most widely acceptable solution – and that may be the “least worst” rather than the best. A particular UK problem may come with our tendency to “gold-plate” regulation and strictly enforce it, where other nations are less compliant.

Iconic innovations that shape our current world owe little or nothing to government involvement. Big innovative groups of the past few years such as Microsoft, Google and Apple have had little or no input from public sector funding. The internet is currently a hotbed of innovation precisely because it is largely unregulated; new areas of innovation and development such as apps are forging ahead because such regulation as there is remains in the hands of the innovators.

“Innovation is all about revolution and disruption. It depends on overthrowing the status quo. Governments – at least, here in the West – are essentially conservative and believe in maintaining stability.” – Edward Atkin
Arguments against the motion

Government is not often the source of innovation, but its activities are vital in creating the supportive environment in which innovation can take place and in removing the roadblocks to innovation. It has an important role in bringing together business, finance and academia. Its direct role in supporting innovation through grants may be small, but there is a much larger role in terms of developing a pool of skilled people, encouraging universities and other public sector bodies to think and act commercially, developing the marketplace in areas such as healthcare and defence, and making the UK an attractive venue for global investment.

“I don’t for one minute believe that the government is in any way the source of innovation but, on the other hand, I believe that government is responsible for, and in fact should be demanded to make an input into, creating a supportive environment and removing the road blocks that stifle innovation.”

– Professor Ian Shott

Recent reports by Sir James Dyson CBE FREng and Dr Hermann Hauser CBE FREng have identified ways in which the government could be proactively involved in innovation. On culture, it could help to raise the esteem in which scientists, engineers and entrepreneurs are held. On education, it could attract, support and nurture Science, Technology, Engineering and Mathematics (STEM) skills. As a big organisation and an important customer, it is a large part of the process whereby knowledge is exploited. In terms of finance, it can encourage banks and the investment community to invest in high technologies; and on continuous innovation it can support investors to spend on R&D by incentivising them to do so. Consistency in government policy can also be a key factor in creating a conducive environment for innovation and entrepreneurship.

“Government procurement is an intervention which stimulates innovation in the business sector. Whether it be a government response to climate change, or to healthcare, to transport, to personal security or many other things, as government evolves to handle the challenges of the world, it stimulates innovation in those who provide goods and services.”

– Dr Graeme Reid

Government record on innovation is no worse (though no better) than non-governmental companies; in that there are large numbers of failed entrepreneurs with failed innovations that one never hears about: the innovation process is inefficient everywhere. Government (or public sector) involvement in innovation often tends to be underestimated, so the World Wide Web’s antecedents in academic networks and at CERN can sometimes be overlooked.
Points of common ground and discussion

There was general agreement that government’s role in innovation is primarily in creating a climate in which innovation can flourish and in providing the infrastructure to encourage innovators and supply them with skilled people, facilities and financial incentives. To some extent the differences in the positions of those supporting and opposing the motion revolved around their interpretation of the words “intervention” and “innovation.”

“Invention is the conversion of cash into ideas, innovation is the conversion of ideas into cash.”  
– Professor David Payne

There is disquiet about the fact that UK performance in bringing new products and services to market is lacklustre in comparison with that of competitor countries and that the UK’s record on invention, as measured by patents, may be declining in comparison to others.

The difference between the UK performance on invention and on innovation may mask a deeper difference, which is that the UK is in general good at research and less good at development. Much of government direct aid in terms of grants goes to small and start-up companies; much of government activity in innovation is targeted through universities and other agencies towards innovation involving entirely new products rather than towards making small incremental “iterative” improvements in current products or developing improved manufacturing processes for making existing products.

“The role of government (is) to create the environment and to remove roadblocks. In order to do that, you have to have people in government who understand the innovation process and it seems to me that we demonstrably do not have people in government who understand the innovation process.”  
– Comment from the floor

The UK does not have a good track record in growing large technology-based companies, though there are some notable exceptions. This may be due to the difficulties experienced by UK firms in “scaling up” the production of new products and services and in introducing process innovations that might enable them to retain or regain competitiveness for existing products and services over foreign competitors. It also reflects the fact that venture capitalists tend to be focused on selling companies to the highest bidder so many promising hi-tech companies end up in foreign ownership. However it was also noted that not all SMEs are interested in growing their businesses, so government should focus its efforts on supporting those that do.

The difference in culture between entrepreneurial business and government is striking, and entrepreneurs complain consistently of a lack of knowledge about business, markets and the need to take risk that they encounter in government departments. Allied to this are complaints about the slowness of decision-making and the consensual committee-led approach that focuses on reaching agreed decisions rather than optimal ones. There is particular vitriol reserved for the planning process for new facilities and infrastructure, but the criticism that government is “amateur” and “uninvolved” goes wider than that.

“Innovation is the engine of progress and it is how the human race progresses.”  
– Comment from the floor

Chi Onwurah MP
The UK was contrasted with the more professional and knowledgeable attitudes found in some foreign governments and it was suggested that further work should be undertaken to shed light on this differential performance. One useful development would be to recruit a higher proportion of civil servants with business experience. Models allowing civil servants to spend a proportion of their time in industry were also advocated.

The reports by Sir James Dyson and Dr Hermann Hauser point to a range of actions and activities that the UK government could undertake to be more proactive in its support of innovation. Some of the recommendations of these reports are already being acted upon and there is a responsibility on both government and business to monitor and report back on the effectiveness of these measures. Results may, however, be both difficult to measure and long-term in effect, particularly in areas such as education and correcting gender imbalance. Continuity of policy and of the relationship between government and entrepreneurs is widely seen as desirable.

The debate was held on 20 January 2011 and the motion was defeated by a significant margin.

Reference:
Themes and Conclusions

Issues that were covered in the debates that may form the basis for future investigation by the Academy and others

Although the three debates each addressed a different topic, a number of common themes emerged during the series. As explained in the introduction to this report, the Academy’s intention in holding these debates was not to come to firm or fast conclusions but to air the issues and point to areas where there appeared to be either a mismatch between the perception and the reality or a gap in the knowledge. The conclusions and recommendations of this report therefore should be seen as a guide — and by no means a comprehensive guide — to some key areas that affect our collective national ability to compete in global markets and that merit further exploration. They do not necessarily reflect the policies of the Academy, but they do reflect items of genuine interest and concern to the individual Fellows of the Academy and interested people from business, industry and academia who contributed to the debates.

Short-termism

The prevalence of short-term horizons used by both the City and the government impacts negatively on UK competitiveness and was regularly contrasted in all three debates with attitudes prevailing in other competitor countries.

Financial institutions and the UK investment community as a whole came under criticism. Investors in UK-owned corporate entities appear to be more fickle and less committed to long-term corporate growth than is the case with investors in foreign groups. In times of difficulty or downturn, the tendency in UK companies was for investors to look for an exit, rather than ways in which they could help, as might be the case elsewhere.

“We are now locked into the short-term political cycle and it is very hard to imagine how we will get out of it.”
— Rob Killick

“The UK is seriously short of long-term, patient capital — investors who are willing to see capital reinvested and grow over the long-term, rather than being paid out as short-term dividends.”
— Professor Colin Mayer

Particular differences were noted in two of the debates about the UK venture capital market and the venture capital facilities available to innovative and developing companies in other countries, especially the United States.

Short-termism in government manifests itself in inconsistent targets and attitudes towards enterprise, with a focus on expediency and short-term results that is ill-at-ease alongside the longer-term focus of much of business and industry. Again, in more than one debate comparison was made to government policies and attitudes in other countries, particularly Germany, where there is a more consistent approach to the support of enterprise across all political parties. It was also argued that the UK government had been less successful than some counterparts in tackling strategic issues, such as nuclear power generation, which require a long-term perspective and commitment from policy-makers.

“We are now locked into the short-term political cycle and it is very hard to imagine how we will get out of it.”
— Rob Killick
Foreign ownership

There was wide consensus in the first debate that the UK benefits from openness and from free trade, and there is no appetite for protectionism in any form. Yet there was also a strong sense that the extent of foreign acquisition of UK corporate entities has been under-appreciated and that the net effect, especially in strategically important sectors of infrastructure, is not known. The balance between the desire to participate in globalised industries and the degree to which that entails relinquishing local control of companies has not been achieved in the same way in the UK as it has in other countries, and government has failed to address the “national interest” in decisions regarding foreign acquisitions.

“Why does the UK rather uniquely feel that no form of protection of key industrial assets is required?” – Dr David Clark

There is an apparent shortage of up-to-date data about the proportion of UK business and industry that is owned by foreign groups, broken down by sector, and particularly focusing on key sectors such as manufacturing, power and water supply, and, though it is outside the remit of the Academy, media.

Outside the utilities, where investment data is freely available, there appears also to be little follow-up data on what happens to UK corporate entities that are acquired by overseas groups, the capital and operational investment policies pursued and what happens to facilities, to jobs and to intellectual property.

Rebalancing the economy: The role of manufacturing

Politicians of all main parties have talked in recent times about a need to “rebalance” the UK economy and to rely less on the financial services sector as the principal energiser of economic dynamism that it was up to the recent downturn. A greater contribution from manufacturing is implicit in this rebalancing, but it is not clear how this will be achieved, what priority rebalancing has against the need for growth in the economy, and whether direct stimulus for manufacturing investment will be part of any package of measures.

The vote in the second debate rejected the notion of a target for manufacturing as a percentage of UK GDP, but there was unanimity about the importance of manufacturing to the economy and widespread feeling that UK policy makers could do a better job of putting in place a supportive policy environment. While there was caution about the idea of giving manufacturing a special status, there was broad recognition of its role in extracting value from the science and engineering base and in creating and sustaining a wide variety of employment and a sense of community across the country.

Equally, however, there was recognition that manufacturing is now very different from the industries of the past. In areas such as software, the product is intangible and the cost of production is negligible in comparison with the costs of development, design, marketing and distribution.

“The only manufacturing Bill Gates does which is hardware based, or material based, is to make the boxes and CDs on which his software is occasionally delivered. His multi-billion pound profit generating business is based on pressing buttons.” – Comment from the floor

In much wider areas, there is a blurring of the lines between manufacturing and services and much of the added value is derived from activities such as...
after-sales and maintenance that would formerly not have been regarded as part of a manufacturing company. To see manufacturing and the contribution that it can make to the UK economy in terms of production activities alone is both out-of-date and potentially damaging to the ability to extract maximum value from manufacturing activities. The debates consistently reflected a consensus among engineers that this change in the nature of manufacturing is ill-understood by important players, such as government and the media, and that much wider understanding is necessary if the UK is to take fullest advantage of its capabilities.

Capturing value from assets and capabilities

All three debates in different ways highlighted that the process of creating value through the application of science and engineering to products and services is complex, and capturing that value in the face of global competition is difficult. But there was also concern that the UK faced particular difficulties in its corporate structures, in which medium-to-large companies appeared especially vulnerable to acquisition in comparison with similar-sized companies in other countries. In addition, though the UK has long been seen as a good place to start a business, there was concern that structures were less suited to the “growth” phase that might turn smaller companies into significant entities.

“We have failed to grow our companies and we have failed to have the forms of financing and ownership that are required to grow those companies”
– Professor Colin Mayer

A particular point made during the third debate was the difficulty that companies face in attracting funding and other forms of support to scale production up to meet expansion of demand.

Models of ownership

A recurring theme in all three debates was the impact of models of ownership. Examples of family ownership of very large German automotive groups and of employee ownership schemes were cited in evidence of different ways of achieving long-term corporate success. In the growth of foreign ownership of UK corporate entities, the emphasis has often been placed on the differences in management style at an operational level and the degree to which UK companies might learn from foreign managements; a side of this that is less emphasised is the difference in corporate structure and corporate governance that many successful foreign groups demonstrate in comparison to their UK counterparts.

It was also suggested that models of corporate governance and company ownership are likely to change following the global recession and with the move towards “greener” industries where suppliers and customers are seen as an integral part of a continuum, rather than as discrete entities. This was an area worthy of further investigation.

Government expertise and influence

In the debate on the government’s role in innovation, there was wide support for the view that business and industry suffered through a lack of knowledge at the heart of government about the way “the real world” works, and a lack of appreciation of the nature of risk within government and, at times, academia. It was noted by several participants that in competitor countries there was greater interchange between business and civil service personnel, with parallel and overlapping career structures and frequent moves between the two sides. Further work to investigate mechanisms for such interchange and their relevance to the UK could be beneficial.
Themes and Conclusions

appeared until relatively recently that there might be little development in the future, a skills gap has emerged in the UK; other sectors appear to have reached the same problem through demographic effects, with a high proportion of the engineering workforce at or nearing retirement age.

Value of debate

The Royal Academy of Engineering’s purpose in arranging this series of debates was to bring to wider attention underlying issues that affect the competitiveness of the UK in global markets. By selecting potentially provocative topics for debate, the Academy hoped to focus on real-world issues and to highlight gaps in knowledge and understanding.

The debates brought together a wide range of views, with contributions from engineers and from the worlds of business, industry and academia. While the Academy does not necessarily endorse all the views aired at the debates, it does believe that the series emphasised the value of debate in these areas and that further debate, discussion and investigation by the Academy and by others of many of the issues raised would be beneficial to help the UK maintain its competitiveness in challenging world markets.

“My main takeaway was the importance of the debate. Given the challenges we face, getting innovation right must be a key priority for all in government, science and industry. And that certainly won’t happen unless we talk to each other” – Chi Onwurah MP (post debate)

There was unanimity in the third debate that the government’s role was to provide a supportive environment for entrepreneurs and innovators. This stopped short of direct involvement in the innovation process itself, though there was considerable scope for innovation in public services which was a matter of direct concern to government.

Nevertheless, participants in all three debates noted the success of the German Fraunhofer Institutes which combine government, business and academia in determining research directions and policy. The recently announced “Technology and Innovation Centres” potentially offer the UK a similar facility, but their success will depend on resources available, on a consistency of approach that is not subject to political and other short-term changes and on developing skills and mindsets among all participants to work together to maximise the effects.

An area where government influence is paramount and necessary is in the provision of education and skills. One of the consequences of the outsourcing of whole sectors of business and industry has been that some skills that were formerly commonly held are now rare. A related issue is that in sectors such as nuclear power, where there has been little development work for many years and where it
Biographies of the participants

First debate

Professor Colin Mayer is the Peter Moores Dean of the Said Business School, Professor of Management and Management Fellow of St Edmund Hall, Oxford. He is also Chairman of Oxera Holdings, one of the largest independent economic consultancies in the UK. He has built an international reputation in the field of finance and has researched and published widely on corporate finance, taxation and governance.

Professor Richard Parry-Jones CBE FREng, together with Business Secretary Rt Hon Dr Vince Cable MP, is the Co-Chairman of the Automotive Council. Prior to that, he was Group Vice-President for Product Development and Chief Technical Officer at Ford Motor Company. During his career at Ford he led the development of the Ka, Fiesta, Puma, Focus and Mondeo. He is also Pro-Chancellor and Visiting Professor in automotive engineering at Loughborough University.

Sir Alan Rudge CBE FREng FRS is Chairman of the ERA Foundation, Deputy Chairman and Senior Independent Director of Experian plc and Chairman of the board of management of the Royal Commission for the Exhibition of 1851. He is a past Chairman of ERA Technology Ltd; a former Pro-Chancellor of the University of Surrey and has been Deputy Chief Executive of British Telecom, Chairman of WS Atkins, Chief Executive and then President of Celtel International and a special adviser to General Atlantic Partners.

Dr David Clark is now the ERA Foundation’s part-time executive secretary. He held roles at the then Science and Engineering Research Council, later EPSRC, culminating in his appointment as Director of Research and Innovation at EPSRC. A telecoms engineer by training, Dr Clark has authored 10 books and published 80 scientific papers.

Second debate

Professor Sir Mike Gregory is head of the Manufacturing and Management Division of Cambridge University’s Department of Engineering. After working in industry he has led the Cambridge Institute for Manufacturing since its inception in 1998. Under his direction, the institute has grown to more than 200 staff, researchers and post-graduate students, with internationally recognised activities in manufacturing strategy, technology management, international manufacturing, distributed automation and production processes.

Andrew Simms is the Policy Director at the New Economics Foundation and the founder of that foundation’s climate change, energy and interdependence programmes. He is on the boards of Greenpeace UK, the climate campaign 10:10, and the Energy and Resources Institute in Europe. He has written and edited a number of major publications.

Sir Richard Lambert was at the time of the debate Director General of the CBI. He joined the Financial Times after studying history at Oxford, and became editor in 1991. In 2003, he was asked by the Chancellor of the Exchequer to explore business/university collaborations, which led to him writing The Lambert Review soon afterwards. He was a member of the Bank of England’s Monetary Policy Committee from 2003 until 2006, and he took up the post of Director General of the CBI in July 2006.

Rob Killick is the founder and Chief Executive of one of the UK’s leading digital agencies, cScape. He has spoken and written on a wide range of subjects related to the internet and the economy. His blog, The UK after the Recession, has attracted a great deal of interest and some controversy over his prescriptions for the future of the UK.
Third debate

Professor David Payne CBE FREng FRS is Director of the Optoelectronics Research Centre at the University of Southampton. He has published over 650 scientific papers and is a co-inventor on over 20 patents in optical fibre communications as well as laser technology and has received very many international prizes for that work. As an entrepreneur, he founded York Technologies, now PK Technology Incorporated, and SPI Lasers, now part of the Trumpf Group, as well as supporting the ORC’s photonics valley of eight companies.

Edward Atkin developed Avent, the world leader in baby feeding, out of his father’s manufacturing business. By maintaining its focus on the highest quality products, constant investment in innovation together with strong brand marketing, Avent dominated its sector, becoming No. 1 in the world in 2000. All Avent products were designed in-house and made in their award-winning factory in Suffolk. Edward sold Avent in 2005 to a private equity company.

Professor Ian Shott CBE FREng is a chemical engineer and was the founder, majority owner and Chief Executive of Excelsyn, a fast-growing, contract development and manufacturing business focused on the global pharmaceutical industry. Excelsyn was sold to AMRI for $19 million in February 2010. He held senior executive positions in the international pharmaceutical industry for over 20 years and has worked in the UK, France and Switzerland, as well as the USA. He now holds a variety of advisory roles and acts as Chair of the Leadership Forum on Industrial Biotechnology.

Dr Graeme Reid is Head of Economic Impact at the Department for Business, Innovation and Skills. He co-ordinated the successful bid for the £20 billion four-year, ring-fenced research budget in the 2010 spending review. He began his career at the National Engineering Laboratory, where he did research and consultancy on optical sensors as well as computer vision. He then moved to central government, to work on the privatisation of government laboratories. More recently, he has held positions in the Treasury, the Cabinet Office and the Department of Trade and Industry.
The Royal Academy of Engineering

As Britain’s national academy for engineering, we bring together the country’s most eminent engineers from all disciplines to promote excellence in the science, art and practice of engineering. Our strategic priorities are to enhance the UK’s engineering capabilities, to celebrate excellence and inspire the next generation, and to lead debate by guiding informed thinking and influencing public policy.

The Academy’s work programmes are driven by three strategic priorities, each of which provides a key contribution to a strong and vibrant engineering sector and to the health and wealth of society.

Enhancing national capabilities

As a priority, we encourage, support and facilitate links between academia and industry. Through targeted national and international programmes, we enhance – and reflect abroad – the UK’s performance in the application of science, technology transfer, and the promotion and exploitation of innovation. We support high quality engineering research, encourage an interdisciplinary ethos, facilitate international exchange and provide a means of determining and disseminating best practice. In particular, our activities focus on complex and multidisciplinary areas of rapid development.

Recognising excellence and inspiring the next generation

Excellence breeds excellence. We celebrate engineering excellence and use it to inspire, support and challenge tomorrow’s engineering leaders. We focus our initiatives to develop excellence and, through creative and collaborative activity, we demonstrate to the young, and those who influence them, the relevance of engineering to society.

Leading debate

Using the leadership and expertise of our Fellowship, we guide informed thinking, influence public policy making, provide a forum for the mutual exchange of ideas, and pursue effective engagement with society on matters within our competence. The Academy advocates progressive, forward-looking solutions based on impartial advice and quality foundations, and works to enhance appreciation of the positive role of engineering and its contribution to the economic strength of the nation.