The Economic Value of the BBC: 2011/12

A Report by the BBC

January 2013

Executive summary

The BBC is a public intervention that brings considerable benefits to audiences as consumers and to society more generally. The BBC's activities also have a significant and positive effect on the UK economy.

Firstly, the BBC's spending and investments have a positive economic impact. Secondly, the BBC helps to create the right conditions for the UK creative sector, and for private firms within the sector, to grow.

Previous BBC publications have examined the ways in which the BBC encourages growth, for example, by setting a quality benchmark across the industry and by finding and developing on-screen talent.

This report considers the economic benefits that the BBC brings to the UK economy – and the digital and creative sectors in particular – in more detail. Specifically it:

- Fulfils the commitment to report every two years on the economic value the BBC's spending delivers to the UK, updating for 2011/12 our previous estimates (based on standard 'multiplier' analysis);
- Develops a framework to analyse the additional value and economic growth created by the BBC as a uniquely 'open' media organisation that collaboratively innovates and shares its knowledge and expertise with the creative sector; and
- Provides case studies of four BBC activities and partnerships in 2011/12 which have contributed to innovation, growth and knowledge sharing.

The BBC's economic impact in the UK

Every year the BBC spends over £4 billion on its television, radio and online public services and on its commercial activities. Furthermore, the effect of this spending and investment goes beyond the first round of purchases as additional economic value is created in national and regional economies further down the supply chain and in other markets. Thus the effect of initial BBC spending is 'multiplied' as it ripples through the economy from region to region and sector to sector (and to the employees of those sectors).This is known as the 'multiplier effect'.

In 2010, the BBC commissioned a study by Deloitte based on standard multiplier analysis to quantify the BBC's economic impact on the UK economy. That report, based originally on 2008/09 data and subsequently updated to reflect 2009/10 data, estimated the BBC's Gross Value Added (GVA), i.e. the value generated for the UK economy as a result of the BBC's expenditure on a range of activities including third party suppliers across content, technology, publishing, marketing, and other areas.

In 2011/12, BBC total operating expenditure in the UK – including both public service and commercial subsidiary UK expenditure[1] - was £4,341 million (excluding inter-group re-charges).This expenditure had a significant economic impact, generating a Gross Value Added of £8,323 million for the UK economy equivalent to two pounds of economic value for every pound of the licence fee.

As in previous years, BBC expenditure on its television channels was the main source of GVA in the UK, accounting for over half of the BBC's total GVA and nearly two thirds of GVA generated by our spending on the public services. In 2011/12 BBC GVA for BBC Television was £4,465 million, broadly similar to that generated in 2009/10. BBC GVA generated by spending on BBC radio services in 2011/12 was £1,136 million, increasing by approximately 5% between 2009/10 and 2011/12.

There has been a marked change in the pattern of regional GVA across the Nations and regions between 2009/10 and 2011/12, consistent with the BBC's strategy of moving production out of London and building centres of excellence.

The BBC's GVA in Scotland has increased from £355 million to £410 million and from £138 million to £151 million in Northern Ireland. Wales has seen a slight reduction in BBC expenditure and a corresponding fall in GVA from £292 million in 2009/10 to £276 million in 2011/12[2].

Within England, the changes in GVA by region reflect the move of activity to Media City UK in Salford Quays and our commitment to develop the media industry in the North of England. UK Gross Value Added attributable to the BBC in the North increased by almost a fifth between 2009/10 and 2011/12 and, whilst the majority of BBC spending is still focussed in London, its share of spend is declining.

The BBC's role in promoting innovation and knowledge sharing

While multiplier analysis usefully provides estimates of the economic impact of an organisation or a sector, it does not capture the wider benefits that organisations can have on economic growth. The main ways in which the BBC supports the UK creative economy are summarised in the diagram below and explored in more detail in the BBC 2011 report *Helping Drive Growth in the UK Creative Economy*. It increases the productive potential - the supply-side - of the creative sector by enhancing its key productive inputs, through for example, investing in skills and technology innovations. Second, it stimulates the demand-side through, for example, the scale and scope of its commissioning of content from the independent production sector and the support it provides for exports of UK content.

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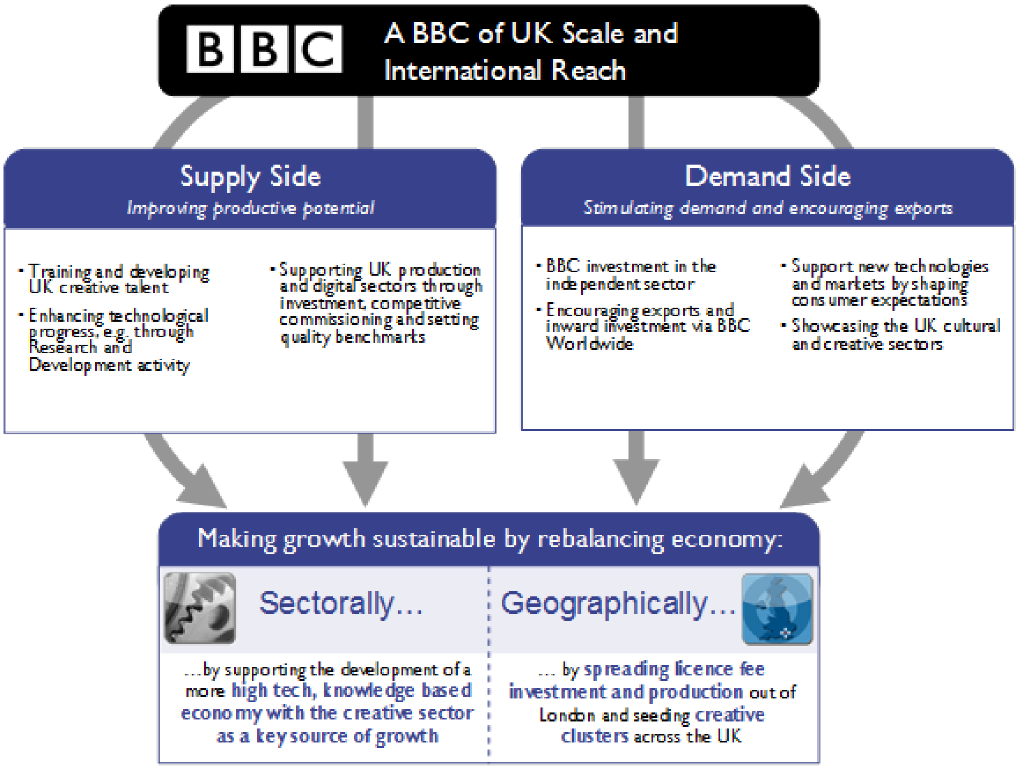
[1] The figures for expenditure do not include spending on World Service or BBC Monitoring as these activities are not funded by the licence fee. Commercial activities include BBC Worldwide, BBC Studios & Post Production, BBC World News and UKTV.

[2] Due to changes in the way that financial information is recorded, in 2010/11 approximately £6.7m of staff costs were allocated to London even though these employees were based in Wales. Had these staff costs been allocated to Wales in 2011/12 GVA in Wales would have been £288 million, similar to the level in 2009/10.



Innovation is a key driver of growth, underpinning much of the framework shown above. It helps to explain the performance of individual firms and it is a characteristic of competitive markets. The BBC is an important innovator within the UK digital and creative sectors, not only in a technical sense, but also more widely through the development of knowledge assets including programmes and formats.

Critically, the BBC's public service remit and commitment to invest on behalf of the creative sector means it is uniquely placed to promote knowledge 'spillovers' and transfers. The scale, scope and expertise of the BBC means the value of its knowledge spillovers and transfers is significant. The BBC shares its knowledge and expertise with the wider creative sector via a number of channels: the promotion of open standards, training BBC staff and others working in the creative sector, encouraging the development of creative clusters, and its joint ventures and partnerships, are all examples of how the BBC shares its knowledge and expertise to the benefit of the wider creative sector. Partnership is now the default model for the BBC on almost any new large-scale issue. It is a way of unlocking the scale, and expertise of the BBC in ways which can reduce market barriers and support other creative sector firms.

The BBC's contribution to innovation and knowledge sharing in 2011/12

In 2011/12 the BBC has been involved in a number of activities and partnerships which have contributed to innovation and knowledge sharing across the creative economy:

- The BBC's on-going contribution to Radioplayer, an online platform which allows audience to access UK radio station. Since its launch it has expanded from 157 stations to more than 300, and there has been a significant growth in online listening hours.
- The development of The Space, the digital arts service from the Arts Council and the BBC, has led to sharing of technology and improved digital production skills in the cultural sector.
- BBC R&D is a key driver of knowledge transfer, providing benefits which spillover to other broadcasters and firms in other sectors. In 2011/12, approximately £12 million of benefits flowed to other broadcasters and firms as a result of the work of BBC R&D. These spillovers occur as a result of the BBC's commitment to open standards, training of technologists and R&D's collaboration with a wide range of partners.
- BBC Worldwide contributes to UK growth in a number of ways: by supporting UK production, by working in partnership with digital and creative companies via the BBC Worldwide Labs Initiative, and through its Future Formats Scheme, which supports individuals looking for a career in TV. BBC Worldwide also promotes inward investment and provides a showcase for the British cultural and creative sectors abroad.

The future

Looking ahead, the BBC's contribution to growth in the creative industries will continue. *Delivering Quality First*, the BBC's plan for how it can deliver the highest quality programmes and content to audiences until the end of the Charter in 2017, set out clear priorities. These include:

- Maximising the proportion of the licence fee spent dedicated to content – providing continued investment in the UK creative sector and promoting exports and innovation;
- A commitment to support the development of a wider 'public space', with a growing number of partnerships with other public bodies and commercial bodies which will provide on-going benefits to the creative economy;
- Continued work to put the BBC's rich back catalogue online by a mix of public and commercial means; and
- A renewed commitment to use the BBC's funding, brand and technology to drive economic growth across the UK.

We are making progress in implementing these strategic objectives and considering new partnerships that can creative increased value for both the BBC and for the wider creative sector.

The economic value of the BBC: 2011/12

1. Introduction

The BBC's primary purpose is to provide quality programmes and content to inform, educate and entertain audiences. But it also has a significant positive impact on the UK economy[3].

Firstly, the BBC's spending has an economic impact which can be measured by standard 'multiplier' analysis to show the economic value the BBC 'adds' to its inputs in the course of making its outputs.

Secondly, but rather more difficult to quantify, the BBC can encourage growth in the UK economy by supporting the right environment for firms within the private sector to grow. One of the ways it can do this is by enhancing the supply-side of the UK economy; for instance by providing a stimulus for high quality standards in the creative sectors, by encouraging technological progress and by acting as a catalyst for development of new products and emergence of new markets. The BBC also helps its suppliers to increase in size, potentially enabling them to benefit from economies of scale and lowering their costs of production. Finally, by representing a stable source of demand, it can reduce overall commercial risk for its suppliers, effectively supporting them through difficult periods.

Previous publications by the BBC have looked at these benefits[4].This report, the third based on the outputs of an economic model commissioned by the BBC from Deloitte, updates these publications. Specifically it:

- Fulfils the commitment to report every two years on the economic value the BBC's spend delivers to the UK, updating for 2011/12 our previous estimates (based on standard 'multiplier' analysis).
- Develops a framework to analyse the additional value and economic growth created by the BBC as a uniquely 'open' media organisation that collaboratively innovates; shares its knowledge and expertise; and provides training in support of the wider creative industries.
- Provides case studies of four BBC activities in 2011/12 which have contributed to innovation, growth and knowledge sharing.

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[3] See *The Economic Impact of the BBC on the UK Creative Economy*, July 2008, PriceWaterhouseCoopers

[4] *The Economic Impact of the BBC 2008/09, by* Deloitte (2010), *The Economic Impact of the BBC 2009/10* (BBC, 2010) and *Helping to drive growth in the UK creative economy (BBC, 2011)*

2. The BBC's economic impact in 2011/12

This section of the report provides an update to Deloitte's original and comprehensive study, responding to the commitment made in *Putting Quality First* that the BBC will:

- Strive to maintain an economic value of at least twice the value of the licence fee while recognising the importance of spreading that value across the UK; and
- Report every two years on the economic value it delivers to the UK, updating the Deloitte analysis as necessary.

We provide a measure of the economic impact of the BBC in 2011/12, including the BBC's Public Service and Commercial Subsidiaries, in terms of the BBC's Gross Value Added – that is an estimate of the value generated for the UK economy as a result of an the BBC's spending. We apply standard economic impact analysis which distinguishes between three types of GVA impact: direct value added and the wider indirect and induced impacts. Direct value added for an organisation is defined as the value of total sales or revenue less expenditure on goods or services purchased from other organisations. This is roughly equivalent to the wage bill and operating surplus of the organisation. Indirect impact is the impact of the organisation of the GVA of firms in the supply chain which supply goods and services purchased by the organisation in question. Induced impacts arise on the GVA of firms outside the immediate supply chain as a result of the expenditure of the organisation's own employees and those in the supply chain. The wider indirect and induced impacts are estimated by applying multipliers to the expenditure.

The analysis shows how the economic benefits of the BBC continue to stretch far and wide, delivering real value to digital and creative businesses across the UK. BBC investment in creative activity across the UK is injected into the local economy via local companies and freelancers working closely with the BBC. This helps to sustain jobs in these companies. Meanwhile these companies themselves (and their employees) buy further goods and services, creating a positive 'multiplier' effect of economic benefits for the national and regional economies. Overall, many private sector jobs are sustained by the BBC and every region of the UK benefits.

2.1. Measuring the economic impact of the BBC

We assess the economic impact of the BBC in the UK, including the impact on creative and non-creative sectors. Our assessment includes the BBC's activities across a variety of areas such as content, distribution, publishing, sales and marketing as well as infrastructure and overheads.

Measuring the economic impact of the BBC requires a definition of the scope of the BBC's activities and a methodology for evaluating the consequential impact of these activities.

2.1.1 The scope of the BBC's economic activities

This report examines the same economic activities of the BBC – both public service and commercial - as described in previous reports in 2008/09 and 2009/10. Through these public service and commercial activities, the BBC has an economic impact both directly through its immediate expenditures on people, infrastructure and services as well as more widely through consequential effects in the digital and creative sectors and beyond.

This report does not currently include the activities of BBC Monitoring and the BBC World Service as these were not funded by the licence fee in 2011/12. However we recognise that the latter plays a strong role in promoting the UK to the world, and therefore indirectly helps to strengthen the UK's brand.

2.1.2 The methodological framework for assessing the BBC's economic impact

Our approach to estimating the economic impact of the BBC follows that established by Deloitte[5]. The approach is based on the premise that the effects of an organisation's spending - say on wages and salaries paid to employees, purchases of raw materials and supplies and capital expenditure - go beyond the first round of purchases.

The economic modelling reflects three types of value added. Firstly, it captures the direct value added to the UK economy by the BBC's spending. Secondly, additional economic value is generated in national and regional economies further down the supply chain. For example, a company receives income if the BBC were to buy a camera from a supplier in Manchester. This generates wider indirect impacts. Thirdly economic value is also generated by those directly and indirectly supported by the company spending that income on other goods and service. So the camera supplier in Manchester would pay their employees and these employees would go on to spend some or all of their income, perhaps in their local or regional economy. These are known as induced impacts.

Thus the effects of the initial spending are 'multiplied' as the money ripples through the economy. This is known as the 'multiplier effect'. The ONS produces sector-specific estimates of multiplier values derived from official data which measure indirect impacts and induced impacts in a single number usually split by sector and region. These multipliers therefore reflect the relationship between inputs and outputs at a sector level, capturing the extent to which expenditure is dispersed throughout the economy and from region to region.

Gross Value Added

As Figure 1 shows, a measure of the BBC's economic impact is derived by applying multipliers to annual expenditure data (split by service, activity, nation and region) to give an estimate of the value generated for the UK economy as a result of the BBC's expenditure

[5] This report provides a brief summary of the approach. For a more detailed discussion see Deloitte (2010).

on a range of activities including third party suppliers across content, technology, publishing, marketing, and other. This is known as the BBC's Gross Value Added (GVA) impact. This captures the value generated in the economy as a result of the BBC's production of its outputs i.e. its television, radio and online Public Services and through its commercial activities.

Figure 1: Approach to estimating UK GVA

The multipliers therefore form a key component of the Deloitte model, reflecting the extent to which the TV, radio, online and other related sectors sector both rely on the purchases of inputs, some of which are created by other firms in the digital and creative industries and also generate outputs which are used by other firms elsewhere in the economy. The model includes a matrix of UK and regional multipliers for the TV, radio, online, digital publishing, print publishing, infrastructure, overheads, sales and marketing sectors split by nation and region. These range between 1.7 and 2.4 and are relatively high when compared to an economy wide multiplier of 1.97.

Although the multipliers included in the model are sector-specific rather than BBC-specific, it is assumed in the model that a licence fee funded BBC has a bearing on the level of TV, radio and online multipliers given its influence within the creative industries. The BBC is a major employer and buyer of goods and services sourced from outside of the BBC. During 2011/12 the BBC employed 22,580 employees, processed 259,305 transactions (new contracts and payments) and engaged with 64,447 on-air and off-air freelancers[6]. The BBC buys in around £1.4 billion worth of goods and services each year to support programme making and content creation. These transactions are themselves a major source of economic benefit.

Net Value Added

The model also provides an estimate of the BBC's impact on UK economic activity that would not exist were it not for the licence-fee funded BBC. This is known as the BBC's Net Value Added (NVA). It is calculated by comparing the Value Added in the status quo to the Value Added in a hypothetical counter-factual where an advertising-funded PSB takes the place of the BBC. The NVA is the difference between these figures, and represents the incremental value generated by a licence fee funded BBC relative to an advertising funded BBC.

[6] Source: *Review of Freelance Engagement Models*, Deloitte, (October 2012)

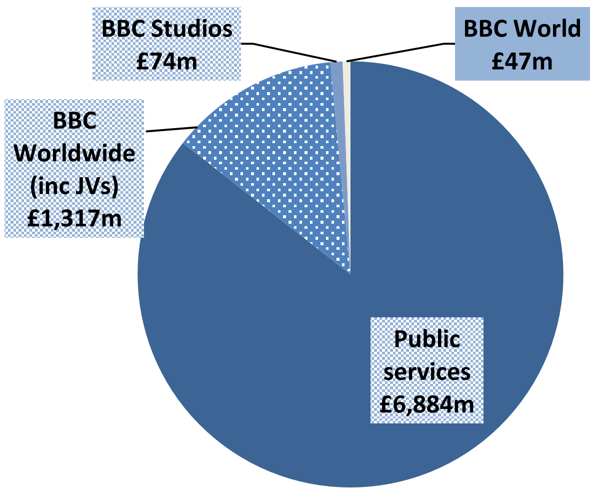
We have adopted the same counterfactual assumptions used by Deloitte and described in detail in their report. Note that these assumptions factor in the economic impact of the consumer spend that would be freed up as a result of the abolition of the licence fee.

2.2. BBC's gross economic impact

BBC total operating expenditure in the UK for 2011/12 – including both public service and commercial subsidiary[7] UK expenditure - was £4,341 million (excluding inter-group re-charges), representing a 2.5% increase on 2009/10[8]. This expenditure was incurred when paying wages to employees, in taxes, as well as spending within the supply chain across content (in-house, indie and acquisitions) and on distribution, infrastructure and overheads, publishing and sales and marketing.

Our analysis suggests that this expenditure had a significant economic impact, generating economic value of £8,323 million for the UK economy as a result of the BBC's expenditure on its Public Services and its commercial activities. This represents an increase in the GVA generated by the BBC in 2009/10 of around 4%[9].

Figure 2: Chart showing breakdown of GVA across the BBC Group, 2011/12



Source: BBC analysis based on Deloitte model

The majority of the BBC's GVA in 2011/12 (83%) was attributable to spending on the BBC's Public Services - that is the BBC's television services, the BBC's radio services and BBC

[7] Commercial Subsidiaries are defined as including BBC Worldwide, BBC Studios & Post-production, BBC World News and UKTV

[8] All figures in this section are in nominal terms.

[9] For purposes of comparability with our 2008/09 report the GVA calculation for 2009/10 included in *The Economic Impact of the BBC 2009/10* was on the basis that 2Entertain was a JV. For purposes of comparability with 2011/12 in this report we have restated the GVA estimates for 2009/10 to reflect full integration of 2Entertain within BBC Worldwide from August 2009.

Online. These generated a UK GVA of £6,884 million. The BBC's commercial subsidiaries (comprising BBC Worldwide, BBC World News, BBC's Joint Ventures and BBC Studios & Post-Production) contributed a further £1,438 million.

Although the BBC's GVA in 2010/11 was broadly similar to the BBC's GVA in 2009/10, a breakdown of this total indicates some differences between 2009/10 and 2011/12.

- There has been a slight decrease in the GVA generated by the Public Services – in 2011/12 GVA for the Public Services was £6,884 million compared with £6,693 million in 2009/10.
- There has been an increase in the GVA generated by the BBC Worldwide – in 2011/12 GVA for BBC Worldwide was £947 million compared with £881 million in 2009/10. This was primarily due to strong performance of BBC Worldwide which last year increased its profits by 7.9% to £155 million and its sales by 5.4% to £1,085 million. The GVA figure would be greater but for the divestment of the magazines business, completed in October 2011.
- The GVA generated by BBC Worldwide's JVs - £370 million in 2011/12 - increased by 17% compared with the level in 2009/10.
- Both BBC World News and BBC Studios & Post-Production slightly increased their GVA by around 13% and15% respectively between 2009/10 and 2011/12.

2.2.1 BBC's GVA by nation and region

There has been a marked change in the pattern of regional GVA across nations and regions between 2009/10 and 2011/12 consistent with the strategy of moving production out across the UK and building centres of excellence in the Nations and the English regions.

As Table 1 shows there has been a reduction in the level of BBC expenditure (and hence GVA) in England; in 2011/12 the BBC's spending in England of £3,638 million (a 0.8% reduction compared to 2009/10) generated a UK GVA of £6,936 million (2up 0.6% from £6,893 million in 2009/10). Wales has also seen a slight reduction in BBC expenditure and a corresponding fall in GVA (from £292 million in 2009/10 to £276 million in 2011/12). This reduction has mainly been driven by a change in the reporting of spending on central support functions[11].

In contrast BBC expenditure in Scotland and Northern Ireland has increased between 2009/10 and 2001/12 by 15% (from £173 million to £199 million) and 10% (from £66 million to £72 million) respectively and consequently GVA has also increased from £355 million to £410 million in Scotland and from £138 million to £151 million in Northern Ireland.

[11] As a result of this change £6.7million of staff payroll costs for finance staff based in Wales were allocated to London even though these staff were located in Wales; had these costs been allocated to Wales in 2011/12 GVA in Wales would have been approximately £288 million, similar to the level in 2009/10.

Within England, the changes in GVA split by region reflects the move of BBC North to Media City UK in Salford Quays and our commitment to develop the media industry in the North of England. UK Gross Value Added attributable to the BBC in the North has increased by almost a fifth between 2009/10 and 2011/12 and, whilst the majority of BBC spending is still focussed in London, London's share of total spend is declining.

Table 1: Expenditure and GVA between 2009/10 and 2011/12

	2011/12		2009/10	
	Expenditure £m	UK GVA £m	Expenditure £m	UK GVA £m
England	3,638	6,936	3,667	7,893
Scotland	199	410	173	355
Northern Ireland	72	151	66	138
Wales	154	276	162	292
Unallocated	278	549	167	321
TOTAL	4,341	8,323	4,234	7,999

Source: BBC analysis based on Deloitte model

Table 2: Expenditure and UK GVA by English region in 2011/12

English region	Expenditure £m	UK GVA £m	GVA change on 2009/10 (%)
North*	203	391	19.7
London	2,981	5,647	3.6
Midlands**	100	199	-21.7
South***	353	699	-18.8
Total England	**3,638**	**6,936**	**0.6**

North includes North East, North West and Yorkshire & Humberside ** Midlands includes East and West Midlands and East of England * South includes South East and South West*

Source: BBC analysis based on Deloitte model

These GVA estimates underline the progress that the BBC is making in meeting its commitment to increase production for its network services outside of London so that by 2016, 50% of network TV programming spending will occur outside of London and 17% will take place in the Nations. The BBC plays a unique role in supporting the creative industries across the UK, helping to change the nature of programme supply so that it better reflects the diversity of creative talent around the UK and connects with the audiences it serves.

2.2.2 BBC Gross Value Added by Service Type

As in previous years, BBC expenditure on its television public services is the main source of GVA in the UK, accounting for over half of the BBC's total GVA and nearly two thirds of GVA generated by our spending on the Public Services. The fall in GVA attributable to BBC Online spend was consistent with the plan to reduce expenditure on BBC Online by 25%.

Table 3: BBC Gross Value Added by service type

	2011/12	2009/10	% change between

	£m	£m	09/10 and 11/12
BBC Public Service GVA – TV	4,465	4,527	-1.4%
BBC Public Service GVA – Radio	1,136	1,077	5.5%
BBC Public Service GVA – Online	297	369	-19.7%
BBC Public Service GVA – Other inc tax	987	720	37.0%
BBC Commercial Subsidiaries and JVs	1,438	1,305	10.2%
BBC GVA	**8,323**	**7,999**	**4.1%**

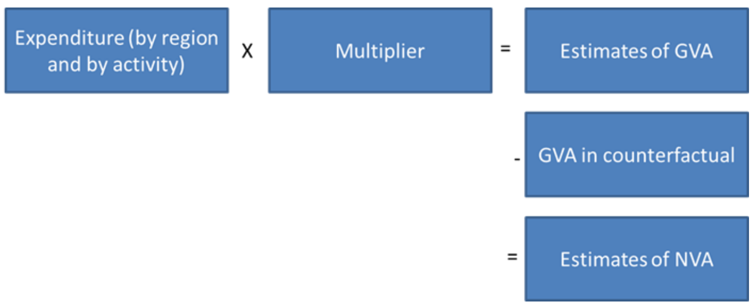
Source: BBC analysis based on Deloitte model

The increase in Public Service GVA – Other category is partly due to a reclassification of spending now included in Overheads.

2.3. Net value added

As noted above, the Deloitte model also calculates Net Value Added, by comparing the GVA in the status-quo ('Factual scenario') to the GVA in a hypothetical Counterfactual where the BBC was replaced by an ad-funded PSB. We have adopted the same assumptions and approach in this report.

Figure 3: Approach to estimating the BBC's NVA



While there is an increase in aggregate TV Net Advertising Revenue (NAR) in the Counterfactual (due to the impact of the advertising revenues generated by the BBC), it is not sufficient to replace the licence fee. In particular, the modelling for the Counterfactual scenario reflects the following:

- In 2012/13 Total TV NAR would only be 10% bigger than in the Factual scenario:
- This larger total of advertising revenue would be spread across four commercial PSBs rather than three PSBs on the basis of assumed viewing shares in the Counterfactual.
- The allocation of TV NARs across the Counterfactual BBC and its rival commercial broadcasters results in reduced revenues for all broadcasters relative to the Factual scenario. As a consequence, there is also less expenditure in the Counterfactual on commissioning from independent production companies.
- Radio NAR would increase by 20% in the Counterfactual and the BBC's share of listening would fall to 33% if BBC radio services were funded by advertising.

- The multipliers in the Counterfactual are calculated to be lower for the TV, radio and online sectors, reflecting the absence of a licence-fee funded BBC.

On the basis of these assumptions, we have estimated, using the Deloitte model, that if the BBC were advertising funded, the resulting GVA would only be £2,353 million in 2011/12 (including that stemming from consumers spending the cost of the licence fee elsewhere). The significant decline in BBC activity in the Counterfactual would have a consequential effect on other parts of the broadcasting industry. In addition, there would be a reduction in the value added of other commercial broadcasters as a result of the activities of a commercially funded BBC Counterfactual.

The BBC's NVA in 2011/12 - the difference between the GVA of the BBC in the Factual (£8,323 million) and the Counterfactual (£2,353 million) - is £5,415 million.

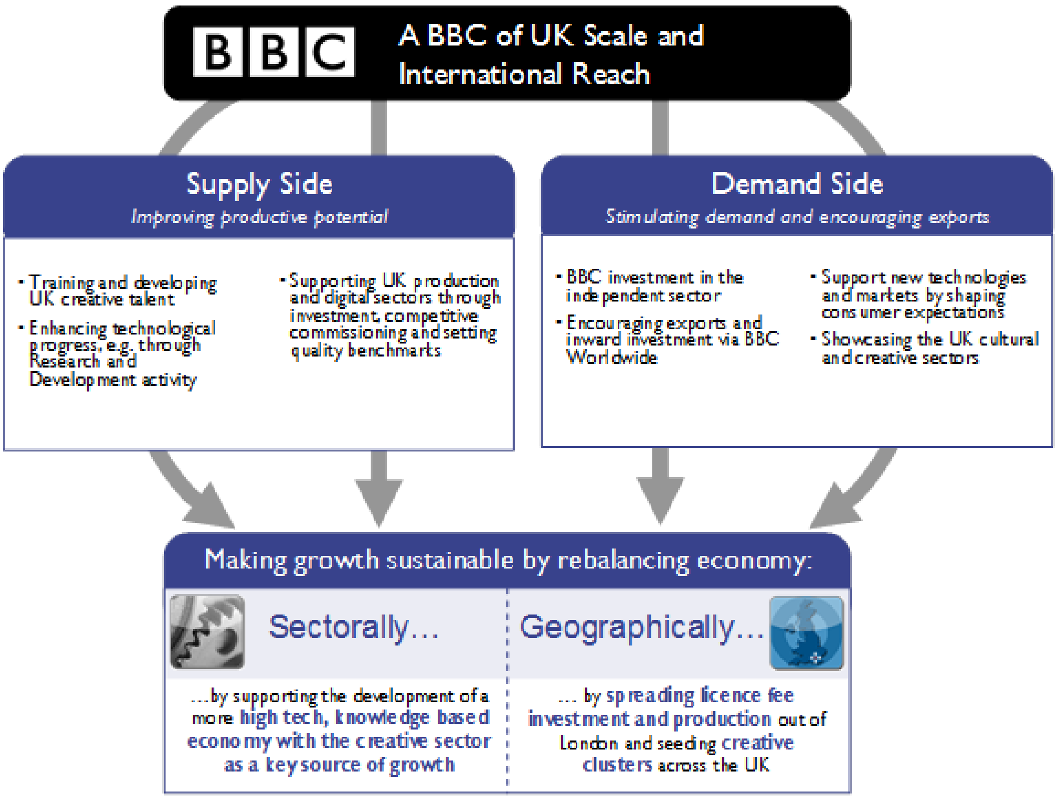
3. The BBC's role in supporting growth in the creative sector

Economic impact models usefully provide estimates of the economic impact of an organisation of a given size or of a sector as a whole - at a point in time, over time and relative to other organisations or sectors. They nevertheless have some limitations. In particular multiplier analysis only accounts for tangible economic effects attributable to an organisation's spending on goods and services in the UK economy.

Multiplier analysis does not capture the wider benefits that organisations can have on economic growth – for example in driving up standards in an industry, by investing in open standards and compression technologies or through knowledge sharing. Nor does it capture the benefits that arise from the way in which the BBC spends licence fee income e.g. by targeting a diversity of suppliers across the country.

These wider impacts are best examined through 'bottom up' analysis based on individual case studies set within an analytical framework to gain a stronger understanding of the channels through which a publically-funded organisation like the BBC can enhance economic growth.

Figure 4: A framework explaining the BBC's contribution to growth



Earlier work by the BBC – *Helping Drive Growth in the UK Creative Economy* – considered a framework for describing the BBC's contribution to growth in the digital and creative sectors and also the wider economy, as summarised in Figure 4.

3.1 Improving productive potential of the UK creative economy

A BBC with UK scale and international reach improves the productive capacity of the UK digital and creative sectors in a variety of ways – for instance, through the provision of skills and training both for its own staff *and those in the wider industry* and by fostering technological innovation through its investment in research and development.

Innovation[12] is a foundation of economic growth. Economies as a whole benefit when knowledge transfers and knowledge spillovers (for a fee and uncharged respectively) enable best practice and new ideas to spread amongst firm. The BBC is a powerful engine for such knowledge sharing in the creative sector. How knowledge diffuses from one firm to another and, in turn, how that improves productivity of the other firm is critical to understanding the BBC's contribution to UK economic growth and these effects underpin much of the framework described above.

The main UK channels for knowledge sharing and examples of the BBC's role are summarised in Table 4 and described in more detail in Annex A.

As Table 4 shows knowledge spillovers can occur at many different levels – for example, between firms within a sector, between firms in different sectors and between firms in different regions and countries. Therefore the extent to which a single organisation is likely to generate spillovers (and benefit from them too) will depend upon how outward facing it is and whether it is in an industry that is strongly integrated into the wider economy through its supply chains.

A BBC of UK scale and international reach is well-placed to generate and benefit from knowledge sharing in the UK and overseas. Research[13] suggests the creative industries are highly integrated into the wider economy through their supply chains and they provide an importance source of interaction with other sectors. The BBC's economic footprint stretches far and wide, bringing it into contact with firms and other partners in the UK and overseas, enabling the benefits of BBC innovation to spread through the digital and creative sectors. Furthermore the BBC's funding model gives it the stability and incentives to engage in a wide range of activities at a time when the other parts of the creative sector are under financial pressure.

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[12] Traditionally innovation has been measured in terms of expenditure on technical R&D. However a much broader definition of innovation is relevant in the creative industries which include investment in a wider range of knowledge assets including such as copyright and skills. See *Growth, Innovation and Intangible Investment*, a Note to the LSE Growth Commission by Jonathan Haskel (June 2012) for further discussion.

[13] See the Nesta working paper*, How linked are the UK's creative industries to the wider economy? An input output analysis* by Experian.

Table 4: BBC's contribution to knowledge sharing in 2011/12

Channels for knowledge sharing in the UK	**Examples of BBC activities in 2011/12**
Firms observe/copy practices of others, particularly where there are open technology standards	The BBC worked with partners to develop core technical specifications for connected-TVs. These were published on 14 April 2011[14]. (Also see Box 1 in section 4.3)
Movement of skilled and experienced labour, particularly where new ways of working, organisational structures and technologies is embodied in individual workers	In 2011/12 the BBC spent around £27 million on training. We employed 55 apprentices across the UK – based in London, Salford, Cardiff and Glasgow. The 2012 London and Scotland Schemes are industry wide, involving partners such as ITV, Talkback Thames, Tiger Aspect and Endemol. Approximately 8,500 non-BBC delegates attended BBC training courses and events. Amongst those registered on LinkedIn, there are 9,071 former BBC employees working in broadcasting and online. This compares to 2,245 for ITV and 927 for Channel 4, highlighting the BBC's role as training ground for the industry.
Geographical clusters can encourage sharing of knowledge through social networks and personal contacts	2011/12 marked the start of the move of the BBC to MediaCityUK in Salford. 2011/12 also saw the opening of the Roath Lock studio complex in Cardiff which is now home to *Doctor Who, Casualty and Pobol y Cwm*
Partnerships and contractual relationships with other firms e.g. in the form of Joint Ventures, partnership and licensing agreements, leading to knowledge transfer	Key strategic BBC partnerships in 2011/12 included: **YouView** is a partnership with ITV, Channel 4, Five, BT, TalkTalk and the communications infrastructure company Arqiva to build an open, internet-connected TV platform. (See Box 1in section 4.3 for more details.) **Freeview HD** is a partnership with ITV, Channel 4 and the Welsh broadcaster S4C to make high definition channels available on digital terrestrial television. **Radioplayer** is a partnership with commercial radio that allows audiences to access hundreds of radio stations online via a single console. (See section 4.1). **City and regional partnerships** The Bristol-BBC-Anchor collaboration is a partnership between the BBC and Bristol-based organisations including Bristol City Council and Creative England, which is working to boost local TV production and film-making and collaborate on digital and connectivity projects. The BBC is planning to enter similar agreements in other parts of the country. **The Digital Production Partnership** (DPP) is an initiative formed by the UK's public service broadcasters to help producers **Other** The BBC and STV have entered into a partnership agreement to share pictures, facilities, training, and technology, with the aim of providing better services for audiences in Scotland. The BBC is also a strong supporter of pan-industry groups such as Digital Radio UK, the Radio Academy, RAJAR and the Radio Council.
Backwards and forwards supply chain linkages	The BBC's is a major purchaser of goods and services and provider of products to other businesses and services. These activities help to embed BBC knowledge expertise in the wider economy. For example, in 2011/12 the BBC spent £489 million on TV content supplied by indies commissioned from 295 companies.

[14] See *YouView Core Technical Specification*, 14 April 2011 available on the Youview website.

In 2010 *Putting Quality First* set out the BBC's proposed strategy for the remainder of the second half of this Charter period. It referred to many of the channels for knowledge sharing discussed above, emphasising the BBC's special role in developing and backing open standards and highlighting the contribution of the BBC as a catalyst and a connector in partnership with others in a world where content and competition are increasingly becoming more global. Going forwards, the BBC will seek to use its scale and knowledge for the benefit of others, by facilitating new opportunities to foster sustainable growth, by supporting the wider economy through its innovation, by helping organisations to reach more audiences, by encouraging BBC expertise to permeate through to the rest of the economy and by working with others to establish mutually beneficial partnerships.

3.2 Stimulating demand and encouraging exports

The BBC's spending on content and programme making forms a critical source of demand for other parts of the creative economy, not only directly, but also by encouraging exports. Content is an area of competitive advantage for the UK and the BBC helps to sustain a UK-based production and talent base with the necessary scale to compete.

In 2011/12 the BBC spent nearly £1.1 billion in the creative economy[15], including £489 million on independent productions supplied by companies across TV, radio and online, £75 million on acquired programmes and £277 million on payments to rights holders. This £277 million includes payments to on-air contributors such as actors, scriptwriters, composers, musicians, presenters as well as licences associated with the use of music, existing literary works and directors programme contributions.

The commissioning of programmes from the independent production sector and the way the BBC does business with external suppliers has helped to underpin a dynamic and vibrant commercial production sector which in 2011 had an estimated income of £2.4 billion[16]. In a period where other sources of revenue are under pressure, the licence fee provides a valuable source of funding for a wide range of range of TV, radio and online content. The introduction of greater competition between in-house and external suppliers has had a positive impact and the BBC's public service remit has set a high bar for quality, driving standards up in the UK production sector and influencing audiences' expectations. Furthermore the BBC's interactions with the independent sector provides opportunities for external suppliers to increase in size (either in the UK or overseas via BBC Worldwide), enabling them to benefit from economies of scale, leading to further supply-side efficiencies.

BBC spend can also sustain the viability of certain sectors. For instance, it has been helpful in keeping the UK animation sector viable in the face of increased international competition supported by overseas tax incentives (now to be matched in the UK).

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[15] Source: *BBC Annual Report and Accounts 2011/12* (section 2-3). This figure does not include spending on in-house production. Total spending on content and programming (including in-house production, independent production and acquisitions) in 2011/12 by the BBC Public Services was £2.4 billion.
[16] Source: *PACT Financial Census and Survey 2012*

In addition, the BBC helps to sustain breadth and depth in the independent production sector. The BBC is not only a key source of revenue for the independent production sector but we also continue to work with the largest number of suppliers compared to other broadcasters. In 2011 the BBC was supplied by 295 different suppliers. In comparison, Channel Four worked with an estimated 250 indies in 2011, ITV worked with 73 and Sky worked with 110[17].

The introduction of the BBC's Window of Creative Competition (WoCC) in 2007 – the portion of BBC commissioning (currently 25% of qualifying TV hours) for which the in-house and external suppliers compete head to head[18] – has continued to drive up quality in the UK content sector.

BBC Worldwide also helps to support the UK independent sector. In 2011/12, BBC Worldwide invested £98.6 million in distribution rights, around three-quarters of which was into BBC commissions, both BBC in-house productions and indie-produced. In addition to its relationship with the BBC, BBC Worldwide's ability to acquire content rights comes from the success of its indie relationships. This year BBC Worldwide took delivery of over 700 hours of programming from indies. In 2011/12, £76.2 million was returned to UK independents through upfront rights investment, profit share and royalties.

Furthermore the BBC's support for the independent sector brings indirect benefits. The BBC's contribution to driving up quality in the UK broadcast market improves its reputation overseas and consequently increases the ability of UK companies to earn secondary revenues, including from exports of finished programmes and programme formats, plus potential commissions from overseas. Additional funding for content is also attracted to the sector because of the BBC. BBC Worldwide attracted £230 million in sales revenue from overseas broadcasters in 2011/12 driving reinvestment in the UK creative sector. This is particularly significant given the importance of co-productions to fund UK commissions.

3.3 Ensuring sustainable growth

The overall impact of the BBC's supply-side and demand-side impacts is that it supports a rebalancing of the UK economy both on a sectoral and a geographical basis.

Stimulating demand in high-high tech, knowledge based sectors

The BBC's activities – most notably making engaging digital content and services available on a wide range of digital platforms and devices – stimulate demand in high-tech, knowledge-based sectors. Throughout its history the BBC has worked with industry to deliver the benefits of new communication technologies to a mass audience. In 2011/12 the BBC continued to do this in a variety of ways:

[17] Source: *Broadcast Indie Survey* (March 2012)

[18] In addition to the WoCC the BBC is subject to the independent production quota which ensures that a minimum of 25% of production comes from independent companies.

- By investing in research and innovation to develop emerging technology standards and new content formats along with new BBC services which exploit them – our digital services are no longer tied to a single device, like a desktop, but increasingly are available on all digital platforms. In 2011/12 BBC Online reached a record 43 million average weekly unique browsers in February. The BBC's coverage of London 2012 represented the first truly multiplatform games allowing audiences to consume content across PC, mobile, tablet and connected TV at different times of the day.
- By encouraging adoption of new technologies and services – over 2011/12 the BBC worked with Government and other stakeholder to deliver on our roadmap for digital terrestrial television through the Digital Switchover Help Scheme.
- By raising awareness and understanding of new technologies and services – the BBC continued to support media literacy in 2012 through the Give an Hour campaign.

Rebalancing the economy geographically

The shift in the BBC's spending out of London helps to rebalance the economy geographically, spreading the benefits of growth across the UK. This ensured that growth within the creative industries is likely to be enduring if the benefits of prosperity are shared by all rather than limited to the few.

Table 5: Network TV programming spend by region as a % of eligible spend

	2011	**2010**
London	**59.0%**	**62.2%**
Scotland	9.0%	7.4%
Wales	5.3%	5.0%
Northern Ireland	2.0%	0.8%
Total Nations	**16.3%**	**13.2%**
Midlands	3.7%	3.9%
North of England	9.4%	7.7%
South of England	11.1%	13.0%
Multi-region*	0.5%	n/a
Total English regions	**24.7%**	**24.6%**
Total Nations and Regions	**41%**	**37.8%**
Grand total	**100.0%**	**100.0%**

Source: BBC Annual Report 2011/12

To help meet this goal, the BBC has sought to encourage network production in the Nations with the development of production hubs in Glasgow, Cardiff and Northern Ireland. Studios at Roath Lock, which opened last year in Wales, are now home to *Casualty, Pobol y Cwm* and *Doctor Who*. *Waterloo Road* has recently moved to Greenock bringing an estimated 230 jobs to the area. The transition to Salford is well underway, with BBC Sport, Radio 5Live, the BBC's two children's channels and many highly-skilled technology roles now located there.

4: Case studies of the benefits of BBC innovation and knowledge sharing

As we have seen, the BBC brings a number of benefits to the creative sector, quite apart from the direct impact of its spending. These benefits, from knowledge sharing, demand stimulation and so on, are real and substantial. However, in practice, they are difficult to quantify, given that they are diffuse and diverse.

We therefore believe that the best way to assess these benefits is via case studies. In this section we set out four examples of BBC activities that have had spillover benefits to the wider creative sector. They measure, where possible, the potential financial, commercial and other benefits that occur as a result of the BBC's intervention. They focus on four specific areas of BBC activity in 2011/12:

- The BBC's on-going contribution to Radioplayer, an online platform which allows audience to access UK radio stations;
- The development of The Space, a digital arts service from the Arts Council England and the BBC[19];
- The work of BBC R&D; and
- The role of BBC Worldwide in supporting growth in the wider creative sector.

4.1. Radioplayer

Radioplayer is a radio aggregator that brings all UK radio together in one place online to improve the audience experience on internet-connected devices and to help listeners discover new stations and programmes, thereby growing radio listening for the whole industry.

The BBC was instrumental in conceiving and developing Radioplayer: the vision for Radioplayer grew out of the BBC's focus on partnerships; the BBC designed the blueprint for the operating model and led early industry discussions; and the BBC was also instrumental in forming the cross-industry partnership that runs Radioplayer. The presence of BBC stations alongside commercial radio stations was and still is considered necessary to giving the proposition critical mass as a viable platform.

The impetus for Radioplayer developed because online radio listening was not growing as quickly as hoped despite the rapid take-up of broadband and the adoption of IP-connected devices[20]. BBC research suggested that online radio listening could be encouraged by broadcasters working together to provide a simple, integrated experience for finding and listening to radio. An online experience as simple as turning on and tuning between stations

[19] Although The Space launched in FY2012/13 much of the development work underpinning it took place in 2011/12.
[20] Only about 3% of all radio listening took place online, a proportion that was growing very slowly compared to other online media consumption such as video.

on a traditional radio set. Through industry discussions, a model was conceived to meet the requirements of all UK radio stations, from the largest national brands to the very smallest community and student stations.

Radioplayer offers live radio streams from participating stations as well as on-demand content. The experience is underpinned by a minimum set of common standards adopted across the industry to define a shared user experience. Consumers enjoy the simplicity of a common interface and are able to search across and navigate between all participating stations – BBC, commercial, community and student radio - without changing console. Broadcasters pool their station and programme metadata to support the search function, retaining control of their content streams which are distributed from each broadcaster's own servers. Broadcasters can also determine the content displayed in the central area of the player consoles. Here BBC radio services have the opportunity to display programme and schedule information, links to on-demand content and interactive features; commercial radio stations can also include display advertising, 'click-to-buy' services and other means of monetisation.

Access to Radioplayer is made available to as wide a range of audio content providers as possible, subject to owning an Ofcom broadcast license. The core partnership comprises the BBC, Global Radio, Real and Smooth Limited, Absolute Radio and the RadioCentre. All core partners have committed to making the Radioplayer their primary live player on their own websites.

Initially aimed at desktop and laptop computers, Radioplayer launched in March 2011 with a 'popup' player featuring 157 stations and was predicted to attract between 3-4 million users per month. A year from launch, Radioplayer had 330 stations and 7 million users per month. Official RAJAR listening figures showed a 32% increase in online listening between Q2 2011 and Q2 2012.

4.1.1 Radioplayer and spillovers to UK firms

The establishment of this BBC/commercial radio partnership has helped focus debate and innovation across the industry. In addition to the desktop Radioplayer, the partnership has now launched apps for iOS and Android mobile phones, built prototype integrations with Facebook and Google Chrome, and is prototyping for other connected devices including hybrid 'kitchen radio' sets.

While it is too early to quantify precisely the direct economic benefit of this focused development activity, the industry considers that, through the partnership, UK radio is getting 'match-fit for digital'.

4.1.2 Radioplayer and international spillovers

Even before the partnership had launched the first version of Radioplayer, it was receiving enquiries from other countries about the potential for the Radioplayer model to work elsewhere. In response to this, the partnership now licenses the brand and IP overseas through licensing partners Radioplayer Worldwide[21]. This will help to spread common standards globally and generate licensing revenue that can flow back into UK Radioplayer, for the benefit of all stations.

4.1.3 Measuring the impact of Radioplayer

The improvement to the online listening experience benefits all stations in Radioplayer – including BBC, community, student, and commercial stations. The economic uplift to the commercial stations can be estimated based on their increase in online listening stations from commercials heard online.

Table 6: Increase in online listening and revenues between Q1 2011 (pre-Radioplayer) and Q2 2012

	Q1 2011	Q2 2012	Difference
Commercial radio			
Online listening hours (m)	14m	21m	7m
Share of total hours (%)	3.0%	4.6%	53.3%
Total MAT revenue* (£m)	£512m	£555.6m	£43.6m
Online revenue - based on share of hours (£m)	**£15.4m**	**£25.6m**	**£10.2m**

*Moving Annual Total

Source: Radio Advertising Bureau

Table 6 compares online listening and advertising revenues pre- and post- the introduction of Radioplayer. It shows a benefit of approximately £10 million from the uplift in total online listening, for commercial radio. This uplift cannot be wholly attributed to Radioplayer, as there may be other reasons why online listening started growing – but it is fair to assume that the simplicity and consistency of Radioplayer played a part. The analysis only takes into account the advertising included in programmes – it does not capture any sponsorship or display advertising also sold by commercial stations (every station in Radioplayer controls its own visuals, branding, and advertising within its Radioplayer console).

From the data available it is difficult to identify whether the increase in online listening is incremental. However according to according to a RAJAR/MIDAS survey[22], the great majority of users of time-shifted radio (around 69%) say that it makes no difference to their consumption of live radio. Of those who said it had made a difference, two thirds reported that it had increased their usage of live, not decreased it. This is perhaps because on-demand listening deepened relationships with certain stations or programmes, or enabled discovery of programmes of which the listener was previously unaware. Only 9% said it would cause them to listen to less live radio. This suggests that catch-up consumption overall is additive rather than substitutional.

[21] This entity is owned by UBC-Imagination.
[22] RAJAR, MIDAS 9

4.2. The Space

In 2009, the BBC and Arts Council England (ACE) developed a three year partnership, which aimed to increase the value, reach and impact of public investment between the publicly funded arts organisations and the BBC's investment in arts. The agreement also provided for using digital technologies to increase audience access to publicly-funded arts content through BBC services and platforms. As part of this partnership, ACE and the BBC have worked together to launch The Space - a digital arts service.

The Space was conceived in 2011 as an experimental digital platform that would make available UK artistic works to the public through a variety of digital interfaces. The project was designed to deliver a temporary not-for-profit and free to air digital service through which audiences could access digital works covering a wide range of arts and in particular those taking place as part of the 2012 Festival and Cultural Olympiad. It was designed to encourage experimentation and innovation and to provide an opportunity to learn more about how to connect audiences with arts and culture using digital technologies.

The stated aims of the project were:

- To build digital capacity in the arts;
- To support digital creativity and experimentation;
- To connect arts organisations with a wider audience and with each other;
- To realise a digital public space through open collaboration; and
- To deliver a lasting legacy through meeting these objectives.

The Arts Council England initially invested £3.5 million in commissioning projects for The Space and announced a further £8 million in its Digital Innovation fund[23]. The BBC committed a £2 million support package including providing technology solutions, training and mentoring for successful applicants.

It was originally agreed that the project (including evaluation and review) would run until December 2012, and that the service itself would be publicly available between May and October 2012 inclusive. Since then, it has been agreed by both the BBC and Arts Council that The Space should continue for a further 6-12 months (though in a less-resource intensive form) to allow both partners time to assess its long term viability.

The Space went live on 1 May 2012 and is available online, on mobile platforms and some digital TV platforms (i.e. Freeview HD channel 117). Based on initial evidence The Space has successfully delivered on its aims, to the benefit of the wider arts sector. More generally, by sharing resources, expertise and access, the BBC and the Arts Council has achieved more together than they could have achieved alone.

[23] ACE will make this funding available over a period of three years provided that The Space continues as a permanent offering beyond Autumn 2013.

4.2.1 The Space and knowledge sharing amongst UK firms

Sharing of technology

The BBC has acted as a key enabling partner by delivering the technological solution and running the operational side of The Space. We created a complete end-to-end production and distribution capability including the development and licensing of a delivery platform and have maintained the distribution infrastructure.

In this respect, BBC involvement has been critical to the success of the project as we have provided significant expertise in aggregation and the underlying technology, which would have been difficult to find outside of the BBC[24] at the scale and within the timeframes available. Our input has led to the development of a platform for publication of content commissioned from a large number of arts organisations. It has also provided an accessible route for audiences to watch arts content which they might otherwise not have been able to see.

As of the beginning of September 2012 over 1,000 items had been published covering a range of arts (e.g. dance, film, literature, music, performance and festival, theatre and visual and media arts) and the volume of content on the platform is increasing on a daily basis.

Audience response to The Space has been positive. Since its launch, The Space has attracted over 1 million[25] visits, reading over 2.5 million pages. It has averaged around 40,000 visits per week by around 30,000 unique visitors per week. Audience appreciation of the site has been high with an Appreciation Index[26] of 77. 77% of users have rated the site 4 or 5 out of 5 for the quality of content available and 71% rated the service 4 or 5 out of 5 for range of content available. A large portion of the audience has been international with 43% of visits from outside of the UK.

Training

A key aspect of the BBC's involvement in The Space has been its contribution to building digital capacity i.e. in supporting the development of the arts and cultural sector's media production skills.

The BBC Academy provided practical and professional support, running nearly thirty workshops covering eight major topics (creativity and the BBC archive, rights, self-operating cameras, editing with final cut pro, story-telling, social media best practice, production

[24] A specific condition of ACE's Lottery funding means that its contribution must be limited to investing only in content and cannot be spent on technology. In the absence of the BBC's involvement in The Space the BBC could licence the technology to ACE (on a non-exclusive and open access basis) but ACE would still have to employ a freelance operations team or work with a company capable of running the operation and maintaining the platform on their behalf.

[25] ~630,000 unique visitors

[26] The Appreciation Index is a score out of 100 which is used as an indicator of the public's appreciation of a television or radio programme.

coordinator and creating great digital experiences). The BBC has also supported a mentoring scheme and has provided more general production support.

Preliminary analysis of the BBC's learning and production support offer for The Space based on data gathered over March to July 2012 showed that 138 delegates from 44 arts organisations and 92 individual delegates have attended the workshops and eight organisations have visited BBC Information and Archives.

4.2.3 Measuring the impact of The Space

Although the full evaluation will not be completed until early 2013, early analysis suggests that that The Space has had a beneficial impact on the suppliers of arts content.

The Space has raised the profile of suppliers who benefit from having greater exposure than they might have otherwise expected. Preliminary audience data suggests that The Space gives rise to a strong 'multiplier' effect. There are many examples emerging for live events. For example the Birmingham Opera Company's production of Stockhausen's *Mittwoch* was sold out but viewers could watch the performance by the Helicopter Quartet on The Space. In the first week, compared to the total live audience of 2,500 (for all nights including the rehearsal), another 10,465 people got to watch it online.

An online survey of visitors[27] to The Space indicated that 20% of those surveyed had visited an artist's/organisation's website after seeing their work and 4% had purchased tickets for an event/exhibition. Whilst these benefits may have been generated in the absence of the BBC's involvement in The Space, it is likely that the innovative nature of the platform has magnified this impact.

Furthermore The Space has provided a launch pad for the commercial availability of content. For example *Kursk*, an award winning play about an explosion on a Russian submarine created in collaboration with film director Amanda Boyle, is available on The Space for on-demand viewing and it may become available via Digital Theatre, a website where audiences can purchase or rent plays on an on-demand basis.

4.3. BBC R & D

Under clause 87 of the BBC Agreement with Government, the BBC must conduct research and development in cooperation with suitable partners, striking a balance between: (a) the potential for generating revenue through commercial exploitation of its intellectual property, and (b) the value that might be delivered to licence fee payers and the UK economy by making new developments widely and openly available. Therefore, whilst others in the digital and creative industries often invest in order to preserve their creative or brand advantage, BBC research is in part intended to deliver spillover benefits to the wider sector and economy.

[27] Source: The Space website survey of 1,500 users; data generated on 6 August 2012.

In addition, its remit and funding model, including the requirement to invest in open standards rather than proprietorial IP, allow it to focus on areas that might not appear commercially viable in the short term but add value for audiences and partners in the longer run. This helps create horizontal markets, which in turn foster competition and innovation.

In these respects and others the BBC's R&D work thus contributes to the development of the digital and creative industries in many of the ways described in section 3 of this report.

4.3.1 BBC R&D benefits to the BBC

Productivity benefits to the BBC itself are broad. For example the Ingex project (see Box 4) has led to improvements in the efficiency of production processes (particularly digitisation of the archive) and has generated revenues from commercial technology transfer. In addition, improvements in compression technologies provide on-going distribution cost savings saving the BBC tens of millions of pounds. These changes mean that the BBC is able to spend more on content and programme making, in addition to the direct dividend that BBC R&D provides to the creativity and accessibility of BBC products and services.

4.3.2. BBC R&D and knowledge spillovers and transfers between UK firms

The role of open standards

Open standards are integral to how the BBC operates, not least in delivering its mission to introduce the benefits of new technology to society. They are also key drivers of innovation, enabling manufacturers to replicate new or improved technologies across multiple markets (maximising cost savings) and allowing content providers to share their content more widely.

Box 1: Open standards and BBC R&D's contribution to YouView

BBC R&D made a major contribution to the development of the YouView platform by working with partners to develop the technical specification for the YouView branded set top boxes linking broadcast and IP delivery in the home. This was published in 2011[28] by YouView and makes use of many existing and emerging standards, including the DTG D-Book 7. It is available to set top box manufacturers whether or not they adopt the YouView branding, to help create a competitive market for connected TVs in the UK and beyond.

YouView boxes went on sale at the end of July, providing access to digital TV and radio channels, 7 day catch-up, and on-demand content from the libraries of the PSBs.

BBC R&D and training

[28] See *YouView Core Technical Specification*, 14 April 2011

R&D training is equally important. The BBC is required under the Agreement to train its own staff and 'support the preparation and maintenance of a highly-skilled media workforce across the audio-visual industry'. Given the increasingly essential role of technology in the broadcasting industry, BBC training programmes in this area have never been more important, particularly as training budgets can sometimes suffer in times of financial hardship.

A key driver of the BBC's success in this area is the scale and location of its R&D services. BBC R&D currently comprises c160 engineers and 40 operational staff, largely concentrated in two geographical locations (London and Manchester) adjacent to other UK broadcasters - a proximity and concentration which helps encourage quicker diffusion of ideas. Also, as set out below, the BBC works to support the training of technologists and to ensure that there is a pool of expertise that is up to date with latest developments in a fast changing industry.

Box 2: BBC technology training

BBC R&D trainee schemes
R&D Trainee Research Technologists undertake three placements over a two year period, in areas such as Distribution, Production, Audience Experience, Archives and Prototyping. Each lasts for around eight months and is in one of three BBC labs, based in Central and West London and part of the new MediaCity development at Salford Quays. Trainees receive on-the-job supervised training, enhanced by formal training courses run by the BBC at the Centre of Broadcast Technology. The training ends with an optional three month "mini placement" in another area of the BBC to gain further experience.

Develop: BBC
Develop: BBC is the BBC's internal Software Developers conference. It is an annual event which looks at development strategy for the next 18 months and brings in speakers from the industry, including Sky, Netflix, Amazon Web Services, Akamai, Microsoft, OpenGov, Thoughtworks, the Financial Times and Google. In 2011/12 the event in London involved a day of presentations and knowledge sharing and was attended by around 60 delegates.

International Association of Broadcast Manufacturers
The BBC Academy worked with the International Association of Broadcast Manufacturers (IABM) in 2011/12 to run BBC Academy & IABM Lectures on 'Loudness' and 'Enterprise Networks for Broadcast and the Cloud'. The events brought together experts from the European Broadcasting Union, BBC R&D, Channel 4, Sky, Harris, Tektronix, Amberfin, Dolby, TVIPS, Ericcson, Evertz, DK Technologies & Orban to present on the latest challenges for Broadcast Technology and Engineering. The events provide a space for the industry to discuss implementing changes to broadcasting and standards for delivery. Invitations are extended across Broadcasters, Distribution companies and Equipment Manufacturers.

BBC R&D's contractual relationships

BBC R&D is involved in a range of contractual relationships with industry, academia and other partner, which help maximise research, share knowledge and innovation, and influence emerging standards and systems. BBC R&D has a long history of carrying out successful research collaborations which have benefited the BBC and the wider broadcast industry.

Collaboration with industry

The BBC's membership of standards bodies and industry organisations forms the core of its industrial collaboration, but the BBC also engages with industrial partners on a project-by-project basis and in broader partnership fora, e.g. over the last year BBC R&D worked with Bluebell, Leading Light Technologies, CoreEL, and Xilinx to launch Stagebox (See Box 4).

Collaboration with universities

BBC R&D has a wide portfolio of projects with universities, spanning:

- *Multi-university 'centres of excellence' over 4-5 years which focus on a particular area of research.* These partnerships tend to focus on long-term strategic technology needs and development.
- *Multi-faceted strategic partnerships with a single university over four years*. These tend to be thematic and can involve co-locating staff. They ensure that externally-funded researchers can work on BBC R&D projects and access state-of-the-art facilities and equipment which might not otherwise be available to them.
- *Ad-hoc collaborations with universities through joint R&D projects.* These often involve consortia put together following a particular Call for Proposals in a themed area, by a public funding body. They can be focussed on pre-competitive research or near-to-market applications.

Box 3: Collaboration with universities – the BBC Audio Research Partnership

Under this partnership BBC R&D collaborates with five UK universities which were selected for their excellence in areas of audio research that are relevant to BBC's audiences and the wider community. This partnership aims to amplify BBC R&D's audio capability, by advancing the state-of-the-art and by sharing the research outcomes with the wider industry, such as via RadioPlayer or HD Sound.

The larger and longer-term models of collaboration allow a critical mass of researchers to tackle problems from their differing perspectives, with an extensive knowledge base, and often using complementary facilities that could not be achieved by any of the partners alone - multiplying the potential benefits. This allows the investment to be channelled towards long term game-changing opportunities, to the benefit for all parties.

Equivalently, the ad-hoc collaborations enable the BBC to work with a wide range of bodies on topics of current interest, often sponsoring students at post-graduate and PhD level through structured programmes of work or short-term internships in BBC R&D Labs. Upskilled, these students may then go on to work at the BBC or elsewhere in the sector.

Technology transfer

BBC R&D's technology transfer work helps to make technology advances available to the BBC and to industry in a usable form. Work includes the licensing of BBC designs, patents and other intellectual property to industry (to the value of both parties) and helps speed the resulting product development.

Box 4: Examples of transfer projects in 2011/12

Ingex is a system used for tapeless studio recording based on inexpensive commodity PC hardware, created by BBC R&D and used on shows such as *EastEnders* and *Dragon's Den*. It is also the basis for much of the current programme of archive digitisation in which the BBC's vast collection of material stored on video tape is being ingested to digital files.

On-Channel Repeaters BBC R&D has been working with a number of external companies to licence our unique "on-channel repeater" technology which can boost a radio or TV signal to a local area without causing interference with the original signal.

Stage Box has been developed by BBC R&D engineers, building on open internet standards to provide a new way of allowing high definition multi-camera productions to use standard internet technologies to link their equipment and move content in real time.

Piero is a sports graphics system based on R&D technology that won a Queen's Award for Enterprise in 2011. In 2011/12 further capabilities of the system were developed and transferred to licensees, and subsequently featured in the 2012 Olympics Games.

The Technology Transfer team also manage the BBC's portfolio of patents and intellectual property created over the last 20 years, including a number of essential patents for the technology underpinning DVB-T2, the new standard in Digital Video Broadcasting which allows High Definition Television to be transmitted on the terrestrial platform. The use of DVB-T2 technology has improved spectrum capacity by 50% and is used around the world.

4.3.3 Measuring the impact of BBC R&D on UK economic growth

Measuring the impact of BBC R&D on UK creative sector growth is complex, but one way to do it is through the social rate of return to innovation, which is obtained by estimating the impact of R&D in one firm on the growth of firms around it. Ideally, estimates for the BBC should consider all firms in the UK creative sector and beyond to capture the full effect.

There is a large empirical literature on this effect, which some studies indicate is in the region of 40-80% for R&D conducted in one industry but used in another, and 17-34%[29] for R&D conducted by firms within the same industry.

In practice there are significant complexities in interpreting these estimates in relation to the BBC. An important part of innovative output is the introduction of new goods, and difficulties arise in measuring the value of these. In addition most studies focus on the manufacturing industries. Nevertheless these estimates provide some indication of the impact of BBC R&D. In 2011/12 BBC R&D's budget was approximately £14 million, which - using the rates of return above - suggests benefits of around £2 million to £5 million to other broadcasters and around £6 million to £11 million to other sectors.

Of course, financial estimates do not provide a full picture of the nature and range of spillovers generated by BBC R&D. Other measures - such as the number of patents filed, academic paper citations received, working papers published and number of partners worked with - are also indicative of the knowledge accumulated by other firms. For example, in 2011-12, BBC R&D's staff provided 49 conference papers and published 22 other papers. In addition, they filed 10 new patents, had 8 patents granted (from filings made in previous years) and continue to maintain a portfolio of around 134 patent families.

In addition BBC R&D has a strong track record in leveraging external funding for projects that benefit the UK digital and creative industries. For example, in 2011/12 they received £1.36 million from the EU and the Technology Strategy Board for collaborative projects such as PrestoPrime (a project to develop practical solutions for the long term preservation of digital media objects, programmes and collections).

4.4. BBC Worldwide's role in promoting knowledge transfer and growth

BBC Worldwide is the main commercial arm of the BBC and a wholly owned subsidiary. It exists to support the BBC's public service mission by exploiting the commercial potential of BBC intellectual property, talent and the BBC brand and, whenever possible, to help other British intellectual property reach global markets. Working in 200 countries and territories it is an organisation of scale and international profile and the world's largest TV programme distributor outside the US major studios. BBC Worldwide contributes to UK growth directly through its headline sales (up 5% to £1,085 million in 2011/12, with headline profit up 8% to £155 million in a challenging commercial climate), and indirectly through its contribution to the BBC (£216 million in 2011/12) and as an engine for the UK creative economy and its success overseas.

[29] *How Important is Business R&D for Economic Growth and Should Government Subsidise It?,* Rachel Griffith. IFS Briefing Note No 12.

4.4.1 Supporting UK production

BBC Worldwide invests in BBC and independent productions and works with both BBC talent and indies. The content acquired from these companies brings the benefits of scale to producers and distributors and gives indies access to additional know-how in co-production, digital exploration, brand-building, and international distribution and marketing. In some cases it also provides funding and mentoring to smaller production companies and individual talent (See Box 5), which might otherwise struggle to raise finance.

Box 5: Big Talk Productions

In August 2008, BBC Worldwide invested in the UK independent producer Big Talk Productions, which was founded in 1995 and uses British talent, specialising in original TV comedy and drama including *Rev, Him & Her, Spaced, Black Books* and *Friday Night Dinner.*

BBC Worldwide provided £1.6m for a 25% stake holding and access to new Big Talk TV productions for a period of 5 years. In addition it provided a £625,000 loan facility, plus subsequent short term funding including a development loan of £500,000.

Big Talk has since grown, securing 20 commissions in four years and reporting revenues around £11m in 2011. Its comedy series for BBC2, *Rev,* won the Best Situation Comedy BAFTA in 2011 and received nominations at both the Broadcast Awards and the South Bank Sky Arts Awards. Comedy *Free Agents* was nominated for the Best Situation Comedy award at the Rose d'Or 2009.

In addition to the finance provided, BBC Worldwide played a role in ensuring that Big Talk:

- Secured a UK-based partner with a culture and creative ambition well aligned to its own;
- Secured a successful global distribution partner, giving it the best opportunity to earn extra revenues from the sale of its shows internationally and on DVD, and
- Gained additional finance for TV projects on a case by case basis when full programme budgets were not met by broadcasters.

The undertaking has also been profitable for BBC Worldwide, adding 60 hours to its catalogue for international distribution and providing financial benefits in terms of sales commission, profit share and dividend payments.

4.4.2 Training

BBC Worldwide also contributes to training, as for example through its Future Formats initiative with BBC Entertainment, which has helped 12 people interested in a career in TV but from outside the sector to create and pitch television formats. The initiative, which is now running its third scheme this year, offers lectures and workshops, followed by placements with entertainment development teams within the BBC.

4.4.3 Working in partnership with digital companies

Another focus is digital media where, earlier this year, BBC Worldwide announced the six UK-based start-up finalists for its Labs initiative, a new six month programme to support the most dynamic emerging digital media and technology companies in the UK.

The start-ups have been offered workspace in BBC Worldwide's West London offices and will work alongside staff, who can advise on areas such as technology, content, marketing, sales and distribution, advertising, PR, HR and legal. BBC Worldwide hopes that commercial deals and partnerships will develop with these companies as a result of the collaboration.

4.4.4 Benefiting from international spillovers

As Britain's largest international television company BBC Worldwide is also active in supporting exports from, and inward investment into, the UK creative sector. In particular, its scale and reputation allow it to promote the UK's reputation overseas, raising the profile of the BBC and the UK creative industries, providing a springboard for British talent and bringing the benefits of international activity back into the UK.

BBC Worldwide is seeking at present to increase its overseas revenue, with the last financial year seeing the proportion of international sales increase to 64% (from 55% in 2010/11).

Promoting inward investment

BBC Worldwide helps British talent (both on and off screen) and indies to establish production businesses capable of competing in a global market. This includes helping to raise finance, either from its business or its network of international co-production partners, and serving as anchor partner in large, multi-partner deals for both the BBC and other broadcasters. Together the BBC and BBC Worldwide helped to attract £32m of co-production funding into the UK production sector in 2011/12 from overseas broadcasters.

Box 6: Attracting co-production funding

BBC Worldwide and Lookout Point brought together BBC, Mammoth Screen, HBO Miniseries, ARTE France, Trademark Films, BNP Paribas Fortis Film Fund and Anchorage Entertainment to make BBC Two's acclaimed drama by Sir Tom Stoppard, *Parade's End*.

Driving exports and providing a showcase for the British cultural and creative sectors

As well as content from the BBC, programmes and formats from more than 200 UK independent producers were distributed by BBC Worldwide in 2011/12. Of the 100,000 hours of programming sold in 2011/12, roughly a third of TV sales revenue earned came from indie-produced content (both BBC and non-BBC commissioned).

Each year, BBC Worldwide puts on the trade fair ‘BBC Worldwide Showcase’ to provide a launch pad for UK programmes to be distributed overseas. This year, over 640 international buyers attended - a 19% increase on 2011 - generating around £50 million of sales. BBC Worldwide now also runs Showcase events in Latin America and China.

Box 7: Programme and format sales

The UK has a strong track record in international format sales, with remakes of programmes such as *The Great Bake Off* (Love Productions for the BBC), *The Office* (BBC) and *Top Gear* (BBC) securing prime positions in the schedules of major international broadcasters. This activity helps to showcase and strengthen the international standing of the UK creative industries.

As a channel owner, BBC Worldwide operates a global suite of television channels, reaching 356 million subscribers. BBC America, for instance, is a well-established cable channel available in nearly 80 million homes in the US, offering British programming from the BBC and independent producers. BBC Worldwide’s part-owned business, UKTV, extends the window of availability of classic programmes to UK audiences, and has seen consistent growth since its launch in 1997.

Box 8: Dancing with the Stars

BBC Worldwide’s US remake of *Strictly Come Dancing – Dancing with the Stars* has generated significant benefit for the BBC and the UK creative industries. It recently finished its 15th series in the US, where it was the most-watched entertainment show of the autumn primetime season. Benefits include: enabling an exchange of production talent between the UK and US shows; refreshing the show’s format; and increasing the profile of UK judges and dancing talent. The BBC Group has retained editorial control by remaking the show through one of its own production units. Success in the US has helped further international rollout.

To maximise the value of its catalogue, BBC Worldwide sometimes produces international reformats itself when a format is felt to have overseas potential.

Box 9: Brand extension

The Live Event business is a good example of BBC Worldwide’s work in this area. Every year BBC Worldwide stages special events built around major UK programme brands in arenas, theatres and museums for fans across the world. In addition to ticket sales, events foster wider revenue streams such as DVD sales and provide additional work for talent, crews, and venues across the UK. The most successful global project thus far has been *Walking with Dinosaurs - the Live Experience*, which was the 7th highest grossing tour globally in 2010 and has just embarked on an extensive new European tour.

This has brought considerable financial benefit, knowledge of local markets (See Box 8), and has provided a showcase for British on and off-screen talent, including writers such as Russell T. Davies (*Doctor Who* and *Torchwood*) and on-screen talent such as Ricky Gervais (*The Office*).

BBC Worldwide also have successful DVD, download-to-own, apps and games, and Live Events businesses. Brand extension through these routes helps to strengthen its relationship with existing audiences whilst also tapping new audiences and revenue streams.

4.4.5. Measuring the impact of BBC Wordwide's contribution to the creative economy

The direct benefit to the UK economy of BBC Worldwide's activity is substantial and growing. As the Deloitte analysis shows, BBC Worldwide's GVA has grown from £658 million in 2008/9 to £947million in 2011/12. The examples included above also provide an indication of the indirect ways in which BBC Worldwide supports the UK digital and creative sectors.

5: The BBC's plans for the future

This report has considered the diverse ways in which the BBC supports the creative industries and has provided some examples of key milestones achieved over 2011/12. Looking ahead, the BBC's contribution to growth in the creative industries will continue.

Delivering Quality First, the BBC's plan for how it can best deliver the highest quality programmes and content to audiences until the end of the Charter in 2017 set out some clear priorities. These include:

- A commitment to support the development of a wider 'public space', with a growing number of partnerships with other public bodies and commercial bodies which will provide on-going benefits to the creative economy.
- Continued work to put the BBC's rich back catalogue online by a mix of public and commercial means.
- An increased reliance on commercial income, targeting additional funding from commercial operations of at least £40 million per annum.
- A renewed commitment to use the BBC's funding, brand and technology to drive economic growth across the UK.

We are already making good progress in implementing these strategic objectives. In 2012/13 we will take forward a number of initiatives which will enhance the BBC's support for the creative industries.

The BBC is working in partnership with the independent sector to develop a new permanent download to own window for content. Over time the aim is to make available a greater volume of archive content.

The BBC plans to sign a new Public Value Partnership with Arts Council England early next year. As the two largest patrons of the arts and culture in England, the BBC and Arts Council England share a commitment to public engagement in arts and culture, developing and supporting the best creative talent, stimulating knowledge and learning and contributing to the vibrancy and innovation of the UK's Creative economy. Going forwards we propose to further refine our approach to partnerships to help BBC expertise to permeate through the wider creative sectors.

The BBC will advance The Connected Studio via a series of events taking place across the UK over the next twelve months. The Connected Studio provides an opportunity for external digital agencies, technology start-ups, designers and developers to submit and develop ideas for innovation new features and formats for BBC Online. The Connected Studio has a fund of up to £1 million available to invest in both early stage concepts and public-facing pilots across the whole of BBC Online, as well as support individual developers, project managers and design expertise.

BBC R&D expects to receive around £750,000 of funding from the European Commission and the UK Technology Strategy Board (TSB) to fund collaborative projects such as: Future Internet – Content (a project looking to transform the perception of, and possibilities for, the next generation Internet); FascinatE (a project looking at developing ways of broadcasting live events to give the viewer an enhanced interactive experience no matter what device they are using the view the broadcast); and TSB-CADI, a project which designed and built a pilot for the extension of high speed broadband networks to rural areas of Scotland.

In November 2012 the Department for Business, Innovation and Skills agreed to fund a proposal from Channel 4, BBC and Creative Skillset to create training, work placements, internships and apprenticeships in production and technology as part of the Employer Ownership Pilot. In the coming 12 months we will be introducing a new higher level apprenticeship qualification which offers a ladder of opportunity for the brightest non graduate talent to progress onto the BBC's prestigious (and predominantly graduate level) Trainee Schemes. We will also begin a world class Technology training programme to grow the next generation of talent needed to support the industry's IT infrastructures (there are currently very serious skills shortages in this area). The programme will take post A Level students all the way up to an MSc qualification. Our plans for these higher level apprenticeships involve hiring more apprentices than we need ('over-hiring) on behalf of other companies in the broadcasting supply chain and especially SMEs who find it difficult to make long term investments in talent development. Once trained, this talent will provide a new generation of skilled workers available to work across the wider broadcasting industry.

Last month, the BBC announced a Strategic Partnership between BBC R&D and University College London. A Research Partnership Agreement and a Property License Agreement will enable researchers to work alongside each other in a shared space on areas of mutual interest. In doing so, this partnership will inspire new ideas, help position the UK as a leader in media technologies, and act as a gateway to further innovation and to further collaboration with wider universities and industry. The universities benefit by being able to more easily exploit the results of innovation through partnering with the BBC and gaining access to wider markets and audiences.

Future publications will report back on these initiatives.

Annex: supporting annex on benefits of investment in intangible assets

This annex sets out the main channels through which investment in intangible assets can generate benefits, building on work published by BIS on the impact of investment in intangible assets on productivity spillovers.[30]

A1 Innovation leads to benefits within a firm

Within a firm, innovation leads to productivity improvements and so a firm can produce more for the same level of inputs/costs. This directly adds to GDP.

A2 Knowledge spillovers and transfers between firms

Knowledge can spillover or transfer between firms either within the same sector or in different sectors in a number of ways.

The simplest way in which this happens is when firms simply observe and copy or adapt the innovations of the others. **Open standards** are often cited as a way to promote innovation which in turn encourages competition and contribute to economic growth.

Mobility of skilled and experienced labour is critical in encouraging knowledge spillovers and transfers between and within industries and regions particularly where knowledge of new ways of working, organisational structures and technologies are embodied in individual employers either because of training or previous experience in a particular job. This is particularly relevant in the TV industry where use of freelancers and short term contracts is much more prevalent than in other creative sectors or the economy more generally.

The impact of labour mobility can further be enhanced where there are **knowledge clusters** or centres of excellence. This is because the concentration of a pool of skilled works in one firm can encourage exchange of ideas between employers working on the same issue. Policies within firms to promote knowledge sharing (e.g. mentoring schemes) can formalise this effect, but even without these social networks and a firm culture which promotes openness and transparency will also stimulate and encourage knowledge sharing.

Similarly the presence of **geographical clusters** will encourage the sharing of knowledge through social networks and personal contacts. There is extensive empirical evidence demonstrating the positive impacts that a geographical concentration of highly skilled works have on productivity – for example because of the effect of learning-by-doing, imitation of other co-workers, social pressure or leading by example – although the extent to which these materialise may depend upon the specific circumstances.

[30] See BIS Research Paper Number 74, *The Impact of Investment in Intangible Assets on Productivity Spillovers*, May 2012

Knowledge spillovers and transfers between firms also occur as a result of **contractual relationships between firms**. Contractual relationships between firms such as joint ventures (JVs) and other forms of collaboration on R&D (e.g. collaborations with other rival firms or universities) and technology licensing agreements enable knowledge sharing.

But even in the absence of formal contractual relationships, knowledge can still spread between firms and sectors simply as a result of **backward and forward supply chain linkages** which arise as a result of business to business transactions. Research has shown that the creative industries are strongly integrated into the wider economy through their supply chains as these channels provide an important source of interactions with other sectors, providing a channel for knowledge spillovers and transfers. The channels are particularly effective for organisations which rely heavily on links with other firms and public institutions.

A3 Innovation can benefit non-UK firms because of international knowledge spillovers

As well as bringing benefits to other firms and the sectors within the UK, innovations developed by UK firms also have the potential to cross national borders, thus leading to international knowledge spillovers and transfers. International knowledge flows from the UK to firms in other countries can occur as a result of a number of activities – for example if the UK exports new technologies and products overseas, through foreign direct investment (e.g. if a UK firm invests overseas), through exchange of blue prints at prices that are lower than the costs originally incurred by the innovator and through the setting of international standards. While the channels listed above do not always directly add to UK GDP, interactions with companies overseas can generate indirect benefits to the UK economy by raising the profile of the UK.