

B B C



# DOCTOR WHO: ECONOMIC IMPACT

# FOREWORD



**T**his year, 2023, the BBC celebrated a significant milestone as we marked one hundred years of broadcasting in Wales. This has been a landmark moment and one which has provided an opportunity to reflect on both our role within Welsh society and on the incredible transformation with regards to content and technology over the last century.

It is a source of immense pride to us that the BBC's contribution to Wales today is probably greater than ever before in terms of the services we provide. We are producing or commissioning content for BBC One, BBC Two, S4C, BBC iPlayer, Radio Cymru, Radio Wales, BBC Sounds, BBC News, BBC Cymru Fyw and BBC Sport Online, Bitesize as well as supporting the BBC National Orchestra and Chorus of Wales. Wales is also now home to weekly programmes on BBC Radio 1, Radio 2, Radio 3, Radio 4 and Radio 6 Music. Beyond that we continue to make a significant contribution to the social and cultural fabric of this nation, to the Welsh language, and of course to the Welsh creative economy and sector.

As this report concludes, a significant catalyst for growth in that sector was the decision to revive and regenerate Doctor Who in 2005 and to locate the series to Cardiff.

This decision was nothing less than transformative for us in Wales, and it is remarkable, as we celebrate Doctor Who's 60th anniversary, that the ambition for this title which has been the cornerstone of the BBC's schedules continues to evolve and grow.

The commissioning risk taken in 2004 was the right one. The return of the series was welcomed by audiences globally, and it paved the way for Wales to become one of the primary locations for drama production in the UK. It created confidence in the skills and talent of our workforce, and became a catalyst for growth in the Welsh creative economy. This has developed to such an extent that today, in 2023, Wales is experiencing its biggest ever year of BBC drama production.

As well as the new series of Doctor Who produced for us by Bad Wolf with BBC Studios, and our BBC Studios continuing dramas, Casualty and Pobol y Cwm for S4C, there are a further six new BBC drama titles from Wales which have already hit the screens or are set to broadcast soon to audiences across the UK. From Steeltown Murders to Lost Boys and Fairies, Wolf, Men Up, Tree on Hill and The Way, the portrayal and representation of Wales on our screens through drama has never been stronger.

Yet, it is not just the BBC that has been able to develop its production base in Wales as a result of Doctor Who. Other broadcasters and streamers have subsequently brought high-end drama commissions to Wales, contributing to the growth of the whole sector. Together, with the support of the Welsh Government as well as other broadcaster and industry stakeholders, we now have a creative landscape of which we can be very proud.

Penblwydd hapus Doctor Who yn 60 – ymlaen i'r dyfodol! Happy birthday Doctor Who, and thanks to all who had the vision and the ambition to make Wales the home of this inimitable Time Lord.

**Rhuanedd Richards**  
Director, BBC Cymru Wales



# EXECUTIVE SUMMARY

To celebrate the 60th anniversary of Doctor Who, this report examines the legacy impact of Doctor Who's production in Wales since the series relaunched in 2005, with filming starting in July 2004.

In particular, it focuses on the economic contribution from the Doctor Who production itself as well as the role of Doctor Who as a catalyst for Welsh screen sector growth and its specialism in high-end scripted drama.

The report considers Doctor Who's impact since the relaunched series in 2005 to the most recent series with Jodie Whittaker as the Doctor (Series 13). It does not consider the continuing economic impact of the 60th anniversary episodes or forthcoming series that are produced by BBC Studios Production in partnership with Bad Wolf (Wolf Studios) and Disney Branded Television, as the economic data beyond Series 13 is not yet complete nor available.

The research has focused on three key areas: quantifying the economic impact of production activities, measured in terms of gross value added (GVA) and employment; describing the timeline and key decisions in regenerating Doctor Who in Wales and the immediate and legacy impacts on the Welsh screen sector as well as the role of other key stakeholders; and the economic and cultural spillover effects of Doctor Who.

This report was written and the underlying analysis (including economic modelling and research interviews) was conducted in-house by economists in the BBC's Public Policy team, from June to October 2023.



# Regeneration of the Doctor and the Welsh screen sector

Part of popular culture in the UK and beyond for sixty years, Doctor Who was first broadcast on BBC television in 1963.

The show returned after a period off-screen in 2005, with the regenerated Doctor Who series produced in Cardiff by the BBC. Doctor Who's return was a pivotal moment and became a catalyst for the immense growth of the Welsh creative industries over the last 15 to 20 years. The screen sector – comprising of production, post-production, digital and special effects for film and TV, and TV broadcasting – is now the largest of the five Creative Industry sub-sectors prioritised by the Welsh Government and accounted for more than £459m turnover in 2022.

Commissioning Doctor Who in Wales was a risk for the BBC. Highly specialist sci-fi drama for TV had not been made in the UK for a significant number of years, and Welsh drama commissions for the BBC (UK network) was relatively limited. The immediate success of the first series helped establish Cardiff's reputation for delivering high-end drama and kicked off a series of Welsh drama commissions.



## Economic impact of production activities

Our analysis of Doctor Who production activities (Series 1 to 13) estimates the economic impact to be:

More than

**£134m**

in gross value added (GVA) generated Wales alone.

Employed roughly

**170**

crew roles per series, with the majority of crew (67%) based in Wales.

This is in addition to above-the-line crew, which includes but is not limited to core cast, supporting artists, writers and other jobs created by the show.

Total UK contribution of more than

**£256m**

in GVA and supporting 94.5 FTE jobs per series in the supply chain and wider economy.

# Catalyst for creative sector growth

The GVA of production activity understates the transformative impact that Doctor Who has had on the Welsh creative economy.

The show's overnight success strengthened industry confidence further that Wales could deliver world-class, high-end drama. Our research interviews and supplementary desk research identified the following key factors as fundamental to the outcomes observed today.

- Returning series of Doctor Who and successful spin-offs Torchwood and The Sarah Jane Adventures provided trust in the ability to deliver Welsh-made drama for network channels. The franchise was also crucial in offering scale and sustainable year-round work for local crew and opportunities for junior talent to develop their skills.



- The success of Doctor Who resulted in the BBC commissioning more Welsh-made drama for network and this includes both in-house and independent production. Moreover, the BBC built Roath Lock – the first purpose-built drama studio in Wales and an intended centre for excellence – and later invested in the new BBC Cymru Wales headquarters, Central Square. This demonstrated the BBC's intent and commitment to the Welsh screen sector and further high-end drama specialism.
- Other stakeholders have played a crucial role in realising the success of the Cardiff cluster and growth of creative industries across Wales; the creative cluster cannot solely be attributed to Doctor Who or the BBC. There has been a shared and continued ambition amongst industry stakeholders that has “helped create a virtuous circle where confidence, ambition and tangible sectoral growth interacted to change perception both within and outside Wales”.<sup>1</sup> The Welsh Government recognised that high-end TV drama would be an economic driver for the screen sector in Wales and focused their investments on local productions and large inward investments that would spend their budgets on local crews, facilities and locations, but also had the potential to be returning series. Independent producers, in particular Bad Wolf, have been immensely important in attracting international streamers and levelling up scale and production skills in Wales. There's also cross-industry commitment to skills and talent from Welsh universities, Sgil Cymru and Screen Alliance Wales in addition to strong innovation programmes and policy analysis from Media Cymru and Clwstwr.



## What comes next?

The 60th anniversary specials and forthcoming Season 1 have been commissioned by BBC and Disney Branded Television under a shared creative vision that will deliver this quintessentially British show on an unprecedented scale, with Disney+ as the exclusive home for new seasons of Doctor Who outside the UK and Ireland.

Doctor Who, produced by Bad Wolf in association with BBC Studios Production continues to be made in Wales, retaining the strong association between Wales and the production. There's no doubt that the new Doctor Who series will continue to generate economic growth for Wales, the Welsh screen sector as well as engaging Welsh creative and production talent.

<sup>1</sup> Centre for the Creative Economy. October 2023.

# INTRODUCTION

Part of popular culture in the UK and beyond for sixty years, Doctor Who was first broadcast on BBC television in 1963. Since then the ground-breaking series has showcased the best of British creativity to international acclaim and is loved by audiences across the globe.

Sixty years of Doctor Who has seen spin-offs on stage and screen as well as factual companion TV shows and podcasts for fans to peek behind-the-scenes or to celebrate the show's history. In 2022, Doctor Who was in the top 10 of TV franchise sales on DVD and paid-for download. Elsewhere, the show has a dedicated 24/7 FAST channel – Doctor Who: The New Adventures (2005 – 2022) – in Canada; and in France, Spain, and Italy Doctor Who is dubbed from English to the local language.<sup>2</sup> Prior to the landmark global distribution deal with Disney Branded Television in 2022, Doctor Who was available in 13 regions worldwide via 56 partners and in 54 languages. BBC Studios distribution includes more than 150 DVD products and almost 40 Blu-ray offerings. The breadth and depth of Doctor Who's fandom has also seen a range of gaming, live events, media and other products launched over the years.

“Our aim was to make an absolutely international programme that would be seen in Hong Kong and India and Australia and America, made in Wales... It's made here absolutely. And I think that's a really powerful thing to do.”

*Russell T Davies, showrunner of Doctor Who (Series 1-4, the anniversary specials and forthcoming Season 1).*



<sup>2</sup> Translated into French, Castilian Spanish and Italian respectively.

As a content brand, Doctor Who has generated significant economic value for the UK by exporting the best of British content and creativity to international audiences.

However, it is relevant to also consider significant economic activity generated by production of Doctor Who in the UK, and particularly in Wales.

The BBC's decision to make the rebooted Doctor Who in Cardiff has played a pivotal role in the development of Wales's creative industries.<sup>3</sup> Creative industries are those which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property.<sup>4</sup> Today the Welsh creative industries account for 3.3% of total businesses in all industries;<sup>5</sup> generating more than £1.4 billion annually and with more than 3,500 creative businesses employing almost 32,500 people.<sup>6</sup> In 2019, 60% of all creative companies in Wales were concentrated in and around Cardiff, and more than a third of all Welsh creative industries turnover was generated in Cardiff alone.<sup>7</sup> This report provides a new analysis of the regional economic impact of Doctor Who in Wales since the mid-2000s.

### 1.1 The Screen sector in Wales today

The screen sector in Wales has grown rapidly over the last 15 to 20 years, and has distinguished itself as a place to make quality, high-end drama for both TV and film.

The screen sector is the largest of the five Welsh Creative Industry sub-sectors prioritised by the Welsh Government, contributing 33.4% of total creative industries turnover in Wales.<sup>8,9</sup> The other priority sub-sectors include Music, Digital, Publishing and an umbrella Emerging sub-sector. In 2022, the screen sector accounts for more than a third of all creative industries turnover with an annual turnover of £459m and employed around 6,200 people across 650 businesses. However, the screen sector has a high concentration of freelance workers and actual employment figures are likely to be much higher given the large freelancer workforce that makes up the sector are not always captured by official statistics.

Much of the screen sector is clustered around Cardiff, which now has the third largest film and TV cluster in the UK after London and Manchester.<sup>10</sup> The number of full-time workers in the audio-visual media sector (defined to include film, TV and gaming) in the Cardiff Capital Region almost doubled from 2,600 in 2005 – when the first Doctor Who series aired – to around 4,500 in ten years to 2015.<sup>11</sup>



<sup>3</sup> As defined by Creative Wales (Welsh Government). Creative Industries definition varies slightly from UK GOV Department of Culture, Media and Sport (DCMS) in terms of industry sub-sectors that are included.

<sup>4</sup> UK GOV DCMS definition of Creative Industries.

<sup>5</sup> Source: Creative Wales Business and Labour Market Statistics 2022.

<sup>6</sup> As of 2022. Source: Creative Wales, 2016-2022 Year on Year Statistics for the Number of Businesses, Employment and Turnover in the Creative Industries in Wales and its Subsectors.

<sup>7</sup> Clwstwr, [Creative Industries Report No 1.2: Report Update: The size and composition of the Creative Industries in Wales in 2019](#). January 2021.

<sup>8</sup> Source: Creative Wales, 2016-2022 Year on Year Statistics for the Number of Businesses, Employment and Turnover in the Creative Industries in Wales and its Subsectors.

<sup>9</sup> Note, Creative Wales statistics indicate that the Welsh Screen sector has the largest turnover in 2022. This applied in 2021, but it was also the smallest subsector in terms of FTE employment and number of businesses.

<sup>10</sup> Clwstwr, [Creative Industries Report No.2: The media sector in the Cardiff Capital Region – driving economic growth through audio-visual activities](#). February 2021.

<sup>11</sup> Ibid.

## 1.2 Scope and analytical approach

This report examines the legacy impact of Doctor Who's production in Wales since the series relaunched with production activity starting in 2004. In particular, we focus on the economic contribution from the Doctor Who production itself, as well as its contributing role in the growth of the creative cluster around Cardiff and the specialism in high-end screen production across Wales.

The analysis considers the impact of Doctor Who from the start of production on Series 1 to the most recent series with Jodie Whittaker as the Doctor (Series 13). It does not include the 60th anniversary episodes or forthcoming season that have been produced by BBC Studios Production in partnership with Bad Wolf (Wolf Studios) and Disney Branded Television, as the economic data beyond Series 13 is not yet complete nor available.

The analysis presented relies on a combination of primary research, desk research and economic modelling and has been undertaken in-house by economists in the BBC Public Policy team. It also incorporates primary research conducted by Media Cymru.

- Primary research from BBC-led stakeholder interviews with 13 individuals involved in the Welsh screen sector or involved in the Doctor Who production (list provided in Annex I). This is supported by research from the Centre for the Creative Economy at Cardiff University based on focus groups and interviews with 11 industry leaders in Welsh creative industries.
- Complementary desk research that included a review of distribution and production data provided by BBC Studios for this study and a range of data and industry reports from Media Cymru, Clwstwr, Creative Wales and DCMS amongst others.

- Economic modelling to estimate the gross value added (GVA) of Doctor Who production spend. This relies on production data supplied by BBC Studios, industry data from Wales Screen (now part of Creative Wales), and economic statistics published by the Office of National Statistics (ONS). Annex II provides further detail on economic approach.

## 1.3 Structure of this report

The rest of this report is structured as follows.

- Section 2 presents the economic impact of Doctor Who production activities for Series 1 to 13, estimated as GVA and FTE job creation.
- Section 3 describes the factors that meant the Doctor Who reboot was produced in Wales, the immediate and legacy impacts on the Welsh screen sector, and the role of other key stakeholders in developing significant creative industries observed in Cardiff and Wales today.
- Section 4 highlights some of the spillover impacts of Doctor Who in Wales – notably the impacts on Welsh tourism and spin-off events across the UK.
- Section 5 sets out our conclusions and what comes next for Doctor Who in Wales.
- Annex I lists the key stakeholders that were interviewed as part of the BBC's qualitative research for this study.
- Annex II is a technical annex that sets out the data sources and methodology of the economic impact modelling.





# ECONOMIC IMPACT OF PRODUCTION

This section estimates the economic impact that the production activities of Doctor Who has had on the Welsh and the broader UK economy from 2004 to 2021.<sup>12</sup>

During this time, Doctor Who was produced in-house by the BBC; first by BBC Cymru Wales from 2004 to 2018, and then by BBC Studios from 2018. We consider the production's gross value added (GVA), which includes direct economic activity generated by the BBC and within the wider supply chain, as well as broader impact on employment.

To estimate economic impact, we construct a representative timeseries for Series 1 to 12 production spend, based on Welsh Screen tracking data combined with detailed production spend data for Series 12 and 13 provided by BBC Studios Productions.

Thus, our analysis considers the economic impact of the production from Series 1 to 13 (July 2004 to October 2021). The time series data is then used within the BBC's GVA model along with economic statistics and multipliers published by ONS to identify the gross value added generated directly by production activity, from spend with direct suppliers, and within the wider supply chain.

Further details on the data analysis and modelling approach are set out in Annex II.



<sup>12</sup> Production activities for Series 1 (filming dates start July 2004) to Series 13 (production activities ending October 2021).

## 2.1 Gross economic impact of Doctor Who production

Doctor Who production activities contributed approximately £134.6m in GVA to the Welsh economy between 2004 and 2021, of which more than £113.1m was in the Welsh creative industries. Across all the UK, Doctor Who production activities generated £256.0m since the show was relaunched and produced in Wales and 87% of economic output was generated in the UK creative industries.

For every £1 of direct economic output (GVA) generated by the production of Doctor Who, a subsequent £0.96 of economic output was generated in Wales, making its total economic contribution £1.96. This captures GVA generated directly from production and post-production activities, indirect GVA from spend within production supply chain, and induced GVA within wider economy. The latter captures production staff and workers within the supply chain spending their wages on consumer goods and services. This is further explained in Annex II.

Figure 1: GVA contribution (£m) of Doctor Who production activities, Series 1 to 13

GVA (£m)	Wales	All UK
Direct GVA	68.8	132.6
Indirect	38.7	71.5
Induced	27.1	51.9
<b>Total</b>	<b>134.6</b>	<b>256.0</b>

Source: BBC estimates based on analysis of data from BBC Studios, Wales Screen and ONS

“That’s why I completely love this [approach to commissioning]. I love it. When people say, Oh, a television or television drama cost £2 million... But what that means is £2 million goes into Cardiff. £2 million to the drivers and the office staff and the hospitality, the hotels and then pubs and the bars, and then supermarkets. It’s £2 million ploughed into Cardiff”

*Russell T Davies, showrunner of Doctor Who (Series 1-4, the anniversary specials and forthcoming Season1).*



## 2.2 Employment impact of Doctor Who production

Production of Doctor Who has a positive economic impact through employment – both for those directly involved in making the show as well as in the supply chain and wider economy.

We have analysed Wales Screen data that tracks crew roles on Doctor Who productions. We consider that using this actual data will provide a more robust view of job creation than estimating direct employment from the GVA model. However, it is important to note that this generates a limited view of direct employment on Doctor Who, as the Wales Screen crew data does not include above-the-line crew.<sup>13</sup>

The direct employment footprint is also substantial with typical series directly employing 170 crew,<sup>14</sup> with the majority of crew – 67% – were local and permanently based in Wales. The overall crew size and composition of local Welsh crew varies across series in response to factors such as budget and scale of production, filming outside of Wales and does not adjust for part-time roles<sup>15</sup>

We also estimate the indirect employment generated through Doctor Who’s production supply chain and the induced employment within the wider economy from production employees and supply chain workers spending their wages on other goods and services. Annex II provides more detail on how this is estimated from GVA figures.

We estimate that each series of Doctor Who (Series 1 to 13) generated indirect and induced employment equivalent to 50.3 full-time equivalent (FTE) jobs per series in Wales, and 94.5 full-time equivalent (FTE) jobs within the UK overall.

In Wales, this breaks down as each series typically creating 33.0 FTE roles within the supply chain (indirect employment) and 17.4 FTE roles within the wider Welsh economy (induced employment) for each series of filming.



Figure 2: Employment impact of Doctor Who production activities, Series 1 to 13

Employment per series	Wales	All UK
Indirect (FTEs)	33.0	61.4
Induced (FTEs)	17.4	33.1
<b>Indirect + induced (FTEs)</b>	<b>50.3</b>	<b>94.5</b>

Source: BBC analysis of BBC Studios, Wales Screen and ONS data.

<sup>13</sup> Above-the-line crew includes but is not limited to producers, directors, screenwriters, principal cast and supporting artists.

These are excluded from Wales Screen figures. However, staff costs for these roles are included within the direct GVA (£m) estimates.

<sup>14</sup> Wales Screen data only includes Welsh and total crew figures for Series 5-10 and 12; BBC Studios Productions figures used for Series 13.

<sup>15</sup> Wales Screen data captures all crew involved in production, therefore not adjusting for part-time roles or provided FTE equivalent as with the GVA model.

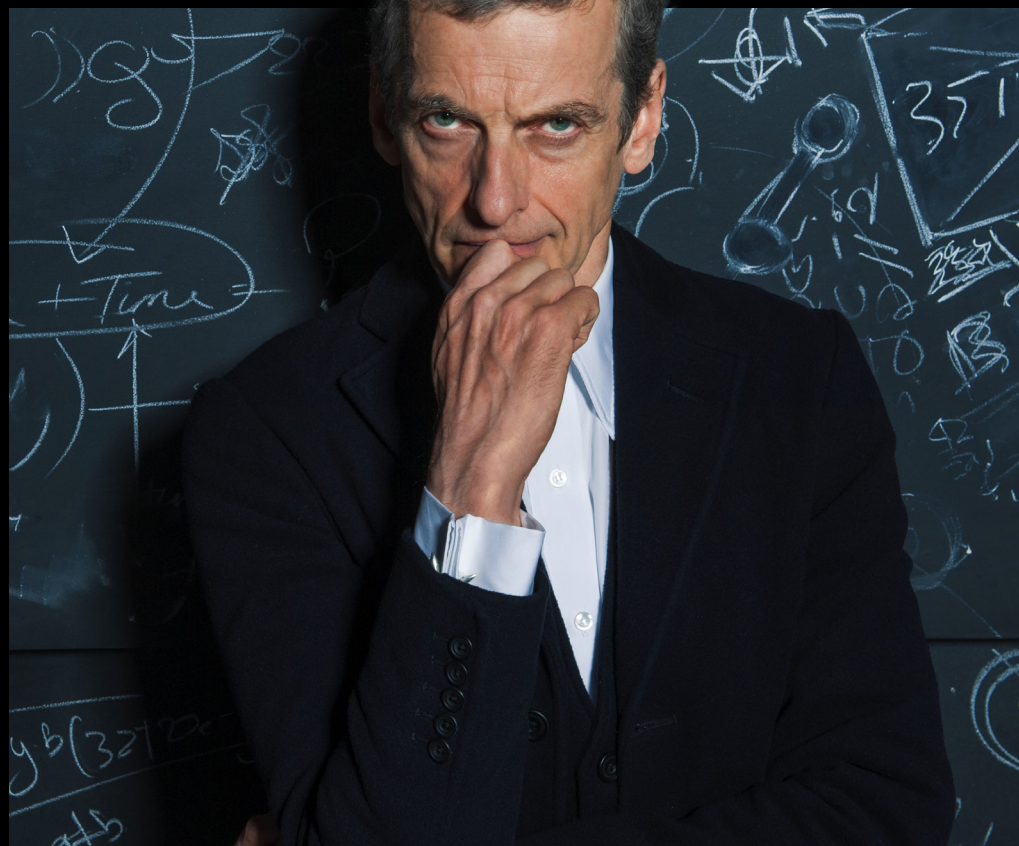
# DEVELOPMENT OF WELSH SCREEN SECTOR

This section explores the wider impact that Doctor Who has had in Wales, which far exceeds the economic output (GVA) generated from the Doctor Who production activities.

The regeneration of the show in Wales is widely acknowledged as the catalyst for investment in the South Wales creative cluster and its specialism in high-end television and drama production. Analysis by Cardiff University's Centre for the Creative Economy pinpoints Doctor Who as the moment the South Wales creative cluster shifted from strength to recognised excellence.<sup>16</sup> This sentiment was "universally endorsed" in interviews with senior industry representatives, and evidenced by statements such as:

"I think it's undeniably been the catalyst for Wales scripted [TV sector], everything has stemmed from that" and "It's perhaps the single most important production that has cemented the positioning of Cardiff as one of the three key media centres in the UK".<sup>17</sup>

This section sets out the factors leading to the Doctor's return and the history of the production Wales.



<sup>16</sup> Centre for the Creative Economy, Cardiff University, [Summary report on the impact of Doctor Who on the Cardiff and South Wales media sector](#). October 2023.

<sup>17</sup> Ibid.

### 3.1 Early 2000s and decision to bring back Doctor Who

In the early 2000s, the BBC's productions in Wales were mostly broadcast to audiences in Wales which included a mix of Welsh-language content like the iconic *Pobol Y Cwm*, the Welsh language continuing drama series, produced by BBC for S4C along with some English-language hits, such as *Belonging*, broadcast on BBC One Wales. More widely, scripted English-language TV production in Wales prior to *Doctor Who* has been described as full of potential and solid, but lacking self-confidence and recognition in its abilities to deliver network and high-end content.<sup>18</sup>

Whilst much loved and respected by audiences in Wales, Welsh-made drama was under-represented on the BBC's UK network channels.<sup>19</sup>

"Network production [in] Wales before *Doctor Who* was pretty meagre. You might have had about £10 million or so of network spend per annum going into Wales. Let's be honest, it was pretty derisory."

*Rhodri Talfan Davies, Director Nations, BBC.*

The BBC at the time was looking to distribute spend out of London and across the nations and regions, in response to the Communications Act 2003 which introduced requirements on public service broadcasters to make a proportion of their programmes outside the M25 area and a shared ambition to grow its role supporting the creative economy across the UK. At the same time, BBC Wales, had an ambition to strengthen Wales's reputation for production with network

commissions. Russell T Davies' personal connection to Wales, as a Welshman, then provided the final impetus for BBC Wales to produce the relaunched series and film it in Wales.

"I went to my first meeting with Jane Tranter in my new job as Head of Drama, Wales. We talk about network programming. We talk about some of the things on the existing BBC Wales drama development slate. And there, for the first time, Jane asked me, what I would think about bringing *Doctor Who* back. This was a light bulb moment."

*Julie Gardner, Head of Drama, BBC Wales (2003-2009), Controller of Drama Commissioning, BBC (2006-2009), Executive Producer Scripted Projects, BBC Worldwide (2009-2015), Founder, Bad Wolf and Bad Wolf America (2015-)*

However, commissioning *Doctor Who* in Wales was a substantial risk for the BBC. Highly specialist sci-fi drama for TV had not been made in the UK for a significant number of years, and high-end drama production experience, made in Wales for network specifically, was relatively limited. The first series required a rapid upskilling of local production staff, and extensive hiring of experienced staff and suppliers such as for prosthetics and visual effects from outside of Wales.

To credit the return and accomplishment of *Doctor Who* to Wales, the BBC hosted the premiere of the first episode – *Rose* – in Cardiff with the UK press descending on the city, and when it aired on 26 March 2005, it was an overnight success. The risk taking had paid off.



<sup>18</sup> Ibid.

<sup>19</sup> In 2003/4 the BBC reported that about 1.4% of network hours across all genres were being produced in Wales. In 2022, it stood at 5.8% of network hours – more closely aligned and representative of the Nation as a percentage of UK population. Source: BBC Analysis of BBC Annual Report and Accounts 2003/4 and the Commissioning Supply Report 2022/23. Note, definitions of what qualifies as out of London spend and thus figures reported by BBC has changed over time. Here, the analysis adjusts published figures to provide comparable definitions.

### 3.2 Building confidence in Wales

The show resonated with audiences in Wales and across the UK, and grew industry confidence in Wales's ability to deliver high-end drama for network TV.

“[Confidence] developed really fast through Doctor Who. I think it gave the whole nation a huge amount of confidence that it could pull off the show. That was an impactful and immediate success... It's not an easy show to conquer, but the fact that it did get conquered and then some – and with such verve, passion, love and warmth.”

*Jane Tranter, Controller of Drama Commissioning / Head of Fiction, BBC (2000-2008), Executive VP Programming and Production, BBC Worldwide (2009-2015), Founder, Bad Wolf (2015-)*

The end of Series 1 saw the Ninth Doctor, played by Christopher Eccleston, regenerate into David Tennant's Tenth Doctor. Given the success of the show alongside Series 2, the BBC commissioned the first spin-off series pitched by Davies, Torchwood, following Captain Jack Harkness, a popular character from Series 1. Torchwood was deliberately set in Cardiff, the show addressed some of the Welsh audiences and industry concerns that the main Doctor Who series did not represent or portray Wales on-screen. Torchwood aired from 2006 to 2011, with four series in total.

“There was an opportunity to make a spin off that would give significant representation to Wales. It wasn't Cardiff pretending to be somewhere else... Torchwood was very deliberate. It would showcase contemporary Wales. The show would be glossy and contemporary, and make Cardiff look beautiful.”

*Julie Gardner, Head of Drama, BBC Wales (2003-2009, Controller of Drama Commissioning, BBC (2006-2009), Executive Producer Scripted Projects, BBC Worldwide (2009-2015), Founder, Bad Wolf (2015-)*

A second spin-off, The Sarah Jane Adventures, made by BBC Wales for CBBC, was aired in 2007 to 2011. Although the show is largely set in and around Banner Road, Ealing, the show was filmed using locations in Wales.

The three shows built a critical mass through the franchise that could secure year-round employment and development opportunities for the crew. Together they created a secure continuation of work for a period of six years. Talent were able to move into more senior roles on the smaller-scale spin-off shows, providing more opportunities for career development. This provided sustainable opportunities for the sector and its talent to grow and, as one Cardiff University interviewee notes:<sup>20</sup>

“It's an example of a production that's really delivered sustainable legacy from [being] a returning series. It's allowed people to actually upscale in a sensible, controlled manner and develop really skilled, talented individuals over time” .

The returning series of Doctor Who and spin-offs demonstrated its ability to create legacy and build trust in Wales's capability to deliver. As one Cardiff University interviewee notes:<sup>21</sup> “Its mere presence and profile as a drama mainstream juggernaut has stimulated growth and confidence in the film and tv sector more broadly. This has led to increased credibility and clearly enhanced the positive perception of Cardiff as a maturing and exciting media hub capable of producing world class content”. Ultimately, this gave a launch pad for the future of scripted drama in Wales.

“Doctor Who was maybe the first moment where I think just about everyone clocked you could deliver high-end television drama production with a cast and crew based in Wales. I think everyone thought two things. One, it's obviously possible, so can we please get over the snobbery? And the second – if you can do Doctor Who what else can you do?”

*Rhodri Talfan Davies, Director Nations, BBC*



<sup>20</sup> Centre for the Creative Economy, October 2023.

<sup>21</sup> Ibid.

### 3.3 BBC commissions, Roath Lock and investment in Wales

“Work creates work, you know, and that has happened. The more crews get to work on stuff, more young people get trained in this stuff. So it’s more crucial for the future, and the more writers are pitching ideas. And you know, the whole thing comes over to attracting not only other international productions, [but] great regional shows as well.”

*Russell T Davies, showrunner of Doctor Who (Series 1-4, the anniversary specials and forthcoming Season 1).*

The BBC increased drama commissioning for network TV made in Wales with more content produced by or co-produced with independent production companies working in Wales. This included big BBC commissioned shows such as Merlin (produced by Shine TV), Atlantis (Urban Myth Films), Sherlock (Hartwood Films and BBC Wales) and . Wizards vs Aliens (BBC Cymru Wales). Development of the production sector in Wales also resulted in shows relocating their existing production base. For example, BBC Three comedy-drama Being Human produced by Touchpaper Television relocated at the start of its third series in 2011 from Bristol to Barry, Wales. The BBC also transferred production of Casualty from Bristol to Cardiff in 2011.

More broadly, Doctor Who played a direct role in transferring high-end drama production skills to other parts of the Welsh scripted screen sector.<sup>22</sup>

More companies in the TV supply chain also began to set up in Wales, such as 4WOOD (set construction) and Real SFX (special effects), servicing the production companies with specialist skills set grown in Wales.



## Q CASE STUDY REAL SFX

Real SFX, a multi award winning practical special effects company based in Cardiff, grew out of Doctor Who. Its founder Danny Hargreaves has worked on Doctor Who since its regeneration and established his own company, Real SFX, that’s provided the show’s special effects since Series 5. Doctor Who was critical in providing the opportunity for Hargreaves, originally from London, to set up his own company in 2008 and become part of Wales’s growing screen sector.

“I then had an ambition because I saw the growth in Wales and the opportunity coming through... Doctor Who gave me an opportunity to set up my own business, as I was working for another company before based in London, travelling every week. Imagine a 29 year old to set up a company and run one of the Nation’s biggest shows. It was such a great opportunity”

*Danny Hargreaves, Founder, Real SFX*

The company has developed alongside Doctor Who, showcasing its expertise which has enabled it to work on productions around the world including Peaky Blinders, Outlander and films such as The Expendables 4. An active partner in Screen Alliance Wales, they’re committed to recruiting locally

and upskilling their workforce by encouraging entry, for example, by offering two apprentice placements a year which they put through a four year development scheme.

“Now we live here, we need to establish a business, and bring people in from the local community and train them up or upskill them. Previously all our crew travelled from London and other parts of England. We started bringing in apprentices with the growth of Doctor Who. One of our very first apprentices is now running the floor on set. It is great to see them becoming technicians and supervisors growing with the company. Danny has always wanted to have a local, talented, trained crew to save production money on hotels etc, and the money goes onto the screen. I think we’re now a 100% Welsh crew... All this began with the success of Doctor Who coming to Wales.”

*Carmela Carrubba, Company Director, Real SFX*

Real SFX continue to work on the forthcoming Doctor Who seasons, including the 60th anniversary special and future seasons which will be produced in Wales in partnership by BBC Studios Production, Bad Wolf and Disney Branded Television.

<sup>22</sup> Ibid.

By 2011 Matt Smith had become the Eleventh Doctor, and Wales was becoming a centre of excellence for drama for the BBC. Roath Lock opened its doors – Wales’s first production studio which is situated in the heart of Cardiff Bay and consists of nine studios, three external filming lots and post-production facilities of over 3,700 square-metres. Roath Lock Studios became operational in 2012 and housed Doctor Who alongside continuing-dramas *Pobol y Cwm* – relocated from the BBC’s former broadcast centre in Llandaff – and *Casualty*, which relocated from the BBC’s studios in Bristol. The studios were also used for filming the BBC’s *Upstairs Downstairs*, *Class*, *A Midsummer Night’s Dream*, *Wizards Vs Aliens* and *Under Milk Wood*, and many other new BBC Wales commissions.



“I think we’re probably fair in saying that outside London, Wales is a key location for high end drama in the UK... We want to own the high-end TV drama space. And I think you can track that back [to Doctor Who] and *Casualty* coming here as well, obviously having that long running series alongside *Pobol y Cwm*. So, you’ve got people coming through the industry being trained almost on those shows that have also had a number of spin outs, so more opportunities. So I think absolutely fundamental, that decision, to where we are now.”

*Gerwyn Evans, Deputy Director, Creative Wales*

Moreover, Roath Lock created a hub around which production and post-production suppliers could base themselves and a consistent base for local crew offering a more stable employment and skills pipeline. In the three years to 2014, total spend at Roath Lock Studios exceeded £185m.<sup>23</sup>

These commissions and the BBC’s investment in studio space, co-locating *Doctor Who* and other drama series, demonstrated the BBC’s confidence in Welsh drama production and local creative talent. This became a catalyst for PSBs and later streamers commissioning high-end TV and film from Wales and the subsequent growth in independent production companies and studio facilities.

“It started with Roath Lock and the success of *Doctor Who*, and then it just got other people interested. You got brilliant shows that started coming [to Wales], and then you had these other studios popping up.”

*Carmela Carrubba, Company Director, Real SFX*

In 2019, BBC Cymru Wales moved to its new headquarters at Central Square next to Cardiff Central train station. Central Square acts as a hub for the creative sector and is home to BBC Wales and BBC Network teams, the National Film and Television School and while S4C’s headquarters is in Carmarthen, it has a hub at Central Square. It is projected to contribute £1.1bn in GVA to the city in the ten years to 2028 and to create an additional 1,900 FTE jobs.<sup>24</sup> BBC Wales is the largest media employer in Wales.<sup>25</sup>

A report by Clwstwr noted that, by 2019, the presence of BBC Cymru Wales and the Roath Lock Drama Village in Cardiff city centre (including Cardiff Bay), alongside several other major creative firms, had resulted in the highest concentration of employees in creative enterprises across Wales.<sup>26</sup>

BBC Central Square has recently become home to a number of network teams as a result of the BBC’s *Across the UK* initiative. The *Across the UK* initiative was launched in March 2021. It involves moving a significant level of roles, creative spend – around £700m – and decision-making outside London and across the UK.



The aim is to better reflect, represent and serve all parts of the country and ensure every household receives value from the BBC. It means the BBC is getting closer to audiences, telling stories that matter, better reflecting lives across our content and providing better value from the BBC.

Approximately, 70 roles have moved to Cardiff as a result of the *Across the UK* strategy across TV, Radio and News. These include teams in Network News digital growth and social, climate and science journalism and network radio and audio. The majority of these roles have moved over since late 2022 and with an expectation that further roles relocate in future.

<sup>23</sup> BOP Consulting for BBC, *The Economic Impact of BBC Wales: Roath Lock Studios and new BBC Wales Broadcasting Centre in Central Square, Cardiff – Final report*. December 2015.

<sup>24</sup> BOP Consulting for BBC, [Economic Impact of the new BBC Wales broadcasting centre in Central Square, Cardiff](#). April 2018.

<sup>25</sup> Clwstwr, [Creative Industries Report No 1.3: Report Update: The size and composition of the Creative Industries in Wales in 2020](#). July 2023.

<sup>26</sup> Clwstwr, [Creative Industries Report No 1.2: Report Update: The size and composition of the Creative Industries in Wales in 2019](#). January 2021.

### 3.4 Impact of other stakeholders

The success of the Cardiff cluster and growth of creative industries across Wales cannot solely be attributed to Doctor Who or the BBC. There has been a shared and continued ambition amongst industry stakeholders that has “helped create a virtuous circle where confidence, ambition and tangible sectoral growth interacted to change perception both within and outside Wales.”<sup>27</sup>

“What [Doctor Who] brought was a high, long form, multi-million pound production to the doorsteps of Cardiff, and it made people realise that there’s a career here. [Doctor Who] was the catalyst of what was the beginning of what still is a fantastic industry here in Cardiff, in Wales.”

*Danny Hargreaves, Founder, Real SFX*

Proactive policies and investments by Welsh Government have been critical as has the growth of independent production companies – in particular Bad Wolf – universities and other bodies representing the Welsh screen industry. In addition, Wales has significantly benefited from the UK Government’s screen sector tax relief, available for filming from 2007 and for high-end television (HETV) in 2013 and 2014. Analysis by Clwstwr finds that every £1 spent due to tax relief resulted in £8.80 return in terms of GVA on film production value chain in Wales and £1.5 across the HETV value chain.<sup>28</sup>

The Welsh Government’s creative sector team has been a strategic partner to the BBC and other stakeholders in supporting the screen sector in Wales. Its proactive investment in high-end TV drama helped supercharge the industry in Wales, and funding major TV dramas such as Atlantis (produced by Urban Myth Films for the BBC), Hinterland Series 1 to 3 (Fiction Factory for S4C/BBC), and Da Vinci’s Demons (Tonto Films and BBC Worldwide Productions for Starz, USA) amongst others. Creative Wales, established by the Welsh Government in January 2020, has continued with this mission and has awarded £18 million of production funding to 37 projects to date, estimated to have generated more over £208 million of production spend into the Welsh Economy.

All Creative Wales funding is contingent on productions offering a training package across entry level, upskilling and high level shadowing to provide better opportunities for those already in the industry and to create entry-level opportunities and provide sustainable careers in the Welsh screen sector. This is further supported by Creative Wales’s creative skills action plan<sup>29</sup> developed with local industry to promote education, training and placements, improved diversity and inclusive recruitment, and support Welsh creative talent in the Screen and other Creative Industries sub-sectors.

“We must support our creative workforce and develop the next generation of talent... that’s what we focus on, and every production we support now has to have a training element.”

*Joedi Langley, Head of Sector Development, Creative Wales*



<sup>27</sup> Centre for the Creative Economy, October 2023.

<sup>28</sup> Clwstwr, [Clwstwr Policy Brief No 3, The Impact of Screen Sector Tax Relief on Wales](#), January 2022.

<sup>29</sup> Creative Wales, [Creative Skills Action Plan 2022-2025](#).



Creative Wales continues to work strategically with the production industry and commissioners to identify talent, skills and industry needs to maximise opportunities for the Wales screen industry. Increasingly, this includes working with global streamers to further build the Welsh reputation for high-end drama. However, the Welsh Government's most significant investment has been in Wolf Studios with Bad Wolf.

“Obviously we had S4C and BBC in Wales for 30 years, and this provided an ecosystem of independent production companies producing drama and doing different things. But I think, having Doctor Who here moved us to that next level, and then Bad Wolf came in. And it's always been that progression since, so definitely I think it was the stimulus for the industry in Wales, really.”

*Gerwyn Evans, Deputy Director, Creative Wales*

Bad Wolf is one of the UK's most successful independent production companies and the largest independent production company based in Wales. Founded by Jane Tranter and Julie Gardner in 2015, Bad Wolf has invested heavily in Wales, bringing in big budget productions such as *A Discovery of Witches* for Sky/AMC and the BBC/HBO commissioned series *His Dark Materials* and *Industry*. In turn, these high-end productions provided opportunities for the creative and production communities to further upskill.

“Some of the people who were once on Doctor Who as trainees, then went on to work with us on *Da Vinci's Demons* in slightly bigger roles. When Bad Wolf then moved into production on *A Discovery of Witches* and then *His Dark Materials* – they worked with us again. The effect of this gave me a sense that Wales would benefit from the starting point of the then parameters of Doctor Who being expanded into bigger and bigger high-end television productions. And that if Bad Wolf could keep supplying those titles and opportunities – we could continue to grow and supply that talent in Wales.”

*Jane Tranter, Controller of Drama Commissioning / Head of Fiction, BBC (2000-2008), Executive VP Programming and Production, BBC Worldwide (2009-2015), Founder, Bad Wolf (2015-)*



And that I'm sure would not have happened had Doctor Who not come in [to Wales].”

*Sue Jeffries, Managing Director, Sgil Cymru*

Doctor Who has had significant impact on the recruitment of students, and its reputation has drawn UK and international students to study in Wales. Interviewees of Cardiff University's research notes that this reputation extends to China and India, and that Wales is considered a major place to work:<sup>32</sup> “Students coming to Wales, for instance, they're coming here with a sense, an expectation that this is somewhere to happen. Designers coming in, international postgraduates, they come here thinking that Wales is a place where serious, largescale things happen”.

The University of South Wales was noted as being particularly quick in recognising the skills demand in the early years of Doctor Who's return.

“The University of South Wales was very progressive, and The Royal Welsh College of Music and Drama was very, very hot on production design. So there were a number of institutions in the Cardiff area who were able to lean in very quickly, developing the right technical and creative skills that we needed. We were in a hurry too. We had a huge skill shortage for 6 or 7 years... There was such a fight for skills and such a shortage of talent. So we needed our educational institutions to really step up and focus on skills development in certain areas.”

*Rhodri Talfan Davies, Director Nations, BBC*

Bad Wolf itself has created substantial economic activity and employment in Wales and opportunities for local freelancers and suppliers. Bad Wolf's production activities in its first 5 years, from 2015 to 2020, were estimated to generate more than £110 million in GVA and more than 2,200 FTE jobs for the Welsh economy.<sup>30</sup> Furthermore, 81% of local suppliers to Bad Wolf reported that they'd experienced higher turnover since 2015, in part due to Bad Wolf and the Wolf Studios location in Cardiff.<sup>31</sup>

“Having a huge company like Bad Wolf come in to Wales has made a huge positive difference, obviously, and you know they eat up not just freelancers but facilities houses that sit around them as well... set builders and VFX companies and all the rest of it, meaning that there's more work for everyone, and a genuine need for constant training.

<sup>30</sup> Bad Wolf, Saffery Champness and Nordicity, [The Economic Impact of Bad Wolf – The first five years: 2015-2020](#). November 2021.

<sup>31</sup> Ibid.

<sup>32</sup> Centre for the Creative Economy, October 2023.



Scaling up the formal training offer from universities and other further education providers has helped support a pipeline of required entry-level skills into the Welsh screen sector.

In 2021, the National Film and Television School, in partnership with BBC Cymru Wales and Creative Wales, opened a hub at BBC Central Square in Cardiff.

The base has provided hundreds of training opportunities for those wishing to develop their television skills in subjects such as production accounting and script editing.

Sgil Cymru is one of the learning providers the BBC uses to deliver Production apprenticeships in Wales. This includes early careers training, coordinating apprentices to partners by skillset and providing on-going professional development for freelancers as well as apprenticeships and placements. Sgil Cymru is the local training provider for BBC Studios' apprentices in Wales. Its own apprentice scheme aims to address challenges of the streaming age by directly employing apprentices and hiring them out to different production companies. This approach overcomes some of the difficulties from short-term contracts and provides a year-round employment safety net, and training apprenticeship with an industry recognised qualification, to entry-level professionals that would otherwise not be offered by the industry.

Screen Alliance Wales is one of several organisations that have supported training and entry-level placements to ensure sustainable

talent pipeline. Established as a not-for-profit organisation in 2018, its mission is to invest in training and education and to promote talent, crew and services of the film and TV industry in Wales. Bad Wolf and the University of South Wales are lead partners, and its supporters include Welsh firms 4WOOD set construction, post-production company Gorilla, and Real SFX amongst others and PSBs including the BBC, S4C and Channel 4.<sup>33</sup>

Over time, this has transformed the workforce in Welsh screen sector by developing a skilled, indigenous workforce through formal training and on-set experience as well as attracting workforce from outside Wales. As two Cardiff University interviewees note: "... It is so easy, now, to get people to travel to Wales to work, that's what I see, and that's changed over the last 15 years", and "What Doctor Who did was show that there is a crew here, or we can use people coming in to train up, build up, and just keep everything in Wales rather than flying people in".<sup>34</sup>

Furthermore, the University of Cardiff and University of South Wales have both worked closely with government and industry stakeholders to support and further grow the South Wales cluster. The Clwstwr programme<sup>35</sup> was established in 2018 with support from the Welsh Government and UK Research and Innovation (UKRI) and ran until 2023. Its objective was to enhance innovation in the screen industry cluster by bringing together screen industry businesses, organisations, professionals and stakeholders in adjacent sectors, and supported by academic research.

It awarded £3.4m of funding directly to local creative industries and supported over 100 projects. Clwstwr was estimated to directly contribute £1 of every £13 of annual turnover growth in the Welsh creative industries between 2019 and 2022.<sup>36</sup>

Subsequently, the Media Cymru Consortium launched in early 2023 and brings together 23 partner organisations from the Cardiff Capital Region including BBC Cymru Wales. Media Cymru projects focus on four main themes: economic growth, environmental sustainability, global reach, and equality, diversity and inclusion. Media Cymru's innovation pipeline provides target funding rounds and training opportunities with the aim to develop companies and individuals in order to "increase their capacity to carry out meaningful research, development and innovation (R&D). This can be from early-stage development through to scale up activity, to result in more ideas, diversity and growth to the industry."<sup>37</sup>

<sup>33</sup> Further detail on [Screen Alliance Wales partners and supporters](#).

<sup>34</sup> Ibid.

<sup>35</sup> Clwstwr programme [further details](#)

<sup>36</sup> As quoted on [Clwstwr website](#) (accessed 12 October 2023)

<sup>37</sup> Media Cymru, [Innovation Pipeline](#) (accessed 12 October 2023)

# 4 WIDER ECONOMIC IMPACT ON WALES

The economic impact of Doctor Who extends beyond that of the show's production activity and development of the (scripted) screen sector with a number of additional spillover effects.

Screen tourism, where visitors take part in activities related to a specific film or television series or to see locations that have appeared on-screen, is a spillover effect that can offer significant economic impact. VisitBritain estimates that 5% of all international visitors to the UK include a visit to a notable TV and film, music or literary location, delivering UK spending of approximately £2.1 billion per annum.<sup>38, 39</sup> Tourism contributes around £3.4bn in GVA to the Welsh economy.<sup>40</sup> Evidence from our research suggests that Doctor Who's strong links to Wales has influenced local tourism.

Wales has also frequently featured as the backdrop for iconic Doctor Who scenes and became a draw for tourists. Whovians were drawn to the Doctor Who Experience in Cardiff Bay, not far from Roath Lock Studios, during its five year run. The Cardiff Bay area, in particular, became recognised as part of the show's key filming locations, featuring prominently in both Doctor Who and Torchwood. The Water Tower, often referred to as "Torchwood Tower", features as the exterior of the fictional headquarters of the Torchwood Institute. Today, numerous companies offer walking tours to take in key filming sights around Cardiff Bay, the National Museum Cardiff, the Wales Millennium Centre and Ianto's Shrine, a fan shrine dedicated to fictional character Ianto Jones who appeared in the Torchwood series.



<sup>38</sup> Visit Britain, [Activities undertaken in Britain](#) (accessed 12 October 2023). Note, latest survey data for 2019 – 2020 and 2021 omitted due to Covid-19 pandemic.

<sup>39</sup> Visits to notable TV, film, literary and music locations excluded sightseeing famous monuments/buildings or visiting historic or heritage buildings.

<sup>40</sup> Welsh Government, [Wales Visitor Economy Profile: 2021](#) (last updated 28 April 2022).

The tourism impact extends across Wales and the UK. The Visit Wales website features a list of prominent Doctor Who filming locations across Wales including St Donat's Castle, Cold Knap Bay, and Southerndown Beach.<sup>41</sup> Similarly, the National Trust has also published a list of its properties and locations across the UK that have featured in the show ahead of the show's 60th anniversary.<sup>42</sup>

Other cultural spillovers include the relationship between Doctor Who and the BBC National Orchestra of Wales. The Orchestra had its first special concert, Doctor Who: A Celebration for Children in Need in 2006, which was broadcast live from the Wales Millennium Centre on BBC Radio Wales. This paved the way for 'Doctor Who at the Proms', where the Orchestra would perform at the Royal Albert Hall in London as part of the annual BBC Proms concert series in 2008, 2010 and 2013. Using Doctor Who to bring classical music to a wider audience, each performance was broadcast on BBC Radio Three as part of the Proms series, and had special appearances from the Doctor and other cast members. The BBC National Orchestra of Wales also toured the UK in 2015 with its live show Doctor Who Symphonic Spectacular.



<sup>41</sup> Visit Wales, [Follow the TARDIS to top Doctor Who locations](#) (accessed 12 October 2023).

<sup>42</sup> National Trust, [Doctor Who filming locations](#) (accessed 19 October 2023).

# WHAT 5 NEXT?

Doctor Who returns to screens with three special hour-long episodes for the 60th anniversary, airing this November 2023. This will be audiences' first glimpse of the show since Russell T Davies' return was announced.

The 60th anniversary specials and the forthcoming Season 1 has been commissioned by BBC and Disney Branded Television under a shared creative vision that will deliver this quintessentially British show on an unprecedented scale, with Disney+ as the exclusive home for new seasons of Doctor Who outside the UK and Ireland.

The show will continue to be produced in Wales in upcoming years, retaining the strong sense of Welsh identity and with production of the new series continuing the economic contribution (GVA) to the Welsh screen sector.



# Annex I

## Industry stakeholders interviewed by BBC

**Carmela Carrubba**, Company Director, Real SFX

**Clare Hudson**, freelance producer, previously BBC Wales Head of Productions.

**Danny Hargreaves**, Founder, Real SFX

**Gerwyn Evans**, Deputy Director, Creative Wales

**Joedi Langley**, Head of Sector Development, Creative Wales

**Professor Justin Lewis**, Director of Media Cymru and Professor of Communication and Creative Industries at Cardiff University, School of Journalism, Media and Culture.

**Jane Tranter**, Founder and CEO, Bad Wolf

**Julie Gardner**, Founder, Bad Wolf and Bad Wolf America

**Rhodri Talfan Davies**, Director of Nations, BBC

**Russell T Davies**, showrunner of Doctor Who (Series 1-4, the anniversary specials and forthcoming Season1).

**Professor Sara Pepper**, Deputy Director of Media Cymru and Director of Creative Economy at Cardiff University.

**Sue Jeffries**, Managing Director, Sgïl Cymru

**Tracie Simpson**, freelance producer



## Annex II

### Economic impact modelling and data sources

This annex sets out the approach assessing the economic impact of Doctor Who production activities. We measure economic impact via gross value added (GVA), calculated on the basis of income approach.<sup>43</sup> GVA, in simple terms, is an economic productivity metric that is the value of goods and services less the cost of all inputs and raw materials.



We estimate three main components of GVA:

- **Direct** – first round effects of the production that generate business activity and output. Consistent with prior analyses of the BBC GVA, this includes employment costs of staff and freelancers as well as value-added (profit) captured as production fees.
- **Indirect** – second round effects generated in the supply chain as a result of the production's procurement of goods and services that become inputs to the production. These include goods and materials bought directly by production (e.g. materials and items for set and costume design) as well as services procured as part of the production (e.g. hiring on-set caterers and other hospitality, contacting companies to provide specialised services such as security, SFX or VFX).
- **Induced** – multiplier effects that arise in the wider economy as a result of the production's direct employees and those employed in the supply chain spending their wages. This spending generates additional economic activity for those businesses from which these employees buy goods and services as well as their wider supply chains.

The production activity may also generate spillover effects for those not directly involved in Doctor Who production – i.e. benefits (or costs) to businesses, society and government. These can be disparate and are harder to quantify. We therefore do not quantify spillover effects. However, we qualitatively acknowledge some of the spillover effects of Doctor Who in Section 4.

To estimate the economic impact of Doctor Who, we first construct a representative production budget time series and which is then used as an input to the BBC's in-house GVA model.<sup>44</sup>

This is done for Wales only, and then UK overall. These are explained in further detail below.

### A.1 Building representative time series of production spending

We construct a representative time-series of production spend for Series 1 to 13 (2004 to 2021), which we use as a data input to our GVA model. The representative timeseries relies on:

- Wales Screen tracking data (Series 1 to Series 12), provided to BBC by Creative Wales. For each series, this data includes production spend in Wales (£m), total budget (£m), number of Welsh crew, and total number of crew as well as series filming dates and number of filming dates in Wales. Note, we estimate total budget for Series 1-4 and 9 based on Wales spend for these series and average ratio between Welsh spend v total budget from series with full data.
- Equivalent data from BBC Studios for Series 13 to complete the time series. We estimate filming days in Wales based on previous series, cross-checked with total Series 13 filming days.
- In-depth analysis of the Series 12 and 13 general ledgers, which include itemised production spend by location (i.e. Wales, rest of UK and foreign) and by category (i.e. direct staffing costs and production fees, or (indirect) supplier spend tagged with the relevant industry SIC classification).



The production budgets do not include any depreciation or amortisation costs and do not adjust for taxes and subsidies. In the in-depth analysis Series 12 and 13 general ledgers, we exclude any tax items expensed (e.g., council tax as part of accommodation expenses and any apprentice levy contributions). We are unable to separately identify tax contributions in employee or freelancer pay. Production subsidies are shown as negative payments in the general ledgers; subsidies excluded from our analysis of production budget spending (actual production spend is underestimated if included).

<sup>43</sup> This is consistent with the approach taken in KPMG, [Assessment of the Economic Impact of the BBC](#), March 2021.

<sup>44</sup> The in-house model has been adapted to assess economic impact (GVA) of Waterloo Road and Green Plant. The model was developed by BBC economists and applies the principles of the input-output modelling used by KPMG (March 2021) to assess overall economic impact of the BBC in FY2019/20. Refer to KPMG (March 2021) annexes for further details.

We used actual data for Series 12 and 13. For Series 1 to 11 we estimated the proportion direct spending and pipeline spend (by SIC code) for Wales and UK overall as an average of Series 12 & 13. These break downs are shown in Figures 3 and 4 below, and have been sense checked against the Wales Screen actual data. The production spend figures are an estimate of actual (nominal) production spend for the 10 series; i.e. spending figures are not adjusted for inflation.

Figure 3: Direct value (staff costs and production fee) by location

Series	Wales	UK (inc Wales)	Non-UK
Series 12 (actual)	56.3%	97.8%	2.2%
Series 13 (actual)	46.2%	98.5%	1.5%
Series 1 -11 (Series 12-13 average)	51.3%	98.2%	1.8%

Figure 4: Supplier spend by location

Series	Wales	UK (inc Wales)	Non-UK
Series 12 (actual)	48.9%	89.7%	10.3%
Series 13 (actual)	51.0%	99.5%	0.5%
Series 1 -11 (Series 12-13 average)	50.0%	94.6%	5.4%

Note, the representative time series uses averages and therefore does not accurately capture fluctuations in production spend by location of individual series that results from storylines and filming locations, etc.

Furthermore, Series 13 production was impacted by Covid-19 restrictions and this is reflected in lower non-UK spend compared to Series 12 and previous series. We acknowledged this as a limitation of our approach; while we can be confident that the UK wider figure is reflective of turnout, we cannot say whether the approach under or over estimates the impact within Wales.



## A.2 Approach to estimating GVA of production activities

The Series 1 to 13 total direct value and total supplier spend are used as inputs to the model. This is a simplification meaning that we do not calculate the GVA of production for individual series that require aggregation. The inputs are nominal – i.e. not adjusted for inflation – and reflect the total nominal economic impact of Series 1 to 13 production activities, from July 2004 to October 2021.

The BBC's in-house GVA model uses the income approach<sup>45</sup> and provide an estimate of direct, indirect and induced GVA. As a simplification the model does not contain subnational multipliers. This means that the GVA contribution in Wales is driven by the location of the spend alone and not by specific GVA multipliers for Wales. The GVA contribution in Wales would be higher (lower) where the productivity in the relevant sectors is higher (lower) in Wales than the national average.

The model also estimates the employment impact of Doctor Who production activities. The model calculates employment figures by taking the GVA estimate and dividing this by estimate of GVA per FTE in the sector.

The model's employment outputs reflects the number of FTE jobs generated over 13 series, Series 1 to 13. The report presents the average indirect and induced employment impact per series as this is more intuitive to understand. The 'per series' average is calculated by dividing the employment figures from the model by 13 (series).

<sup>45</sup> Note, modelling approach consistent with Consistent with the approach taken by KPMG (March 2021). Uses ONS (2019), input-output supply and use tables for 2013-2018. Note: latest release is February 2023 provides revised multipliers for 2015 to 2020. To be consistent with previous BBC GVA modelling, we rely on previous ONS release.