Shepperton Studios
Planning Application for Growth 2018

Review of UK Film and High-End TV production facility market
Review of the UK film and high-end TV production facility market

Key findings
Important Notice

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Our key findings

1. More and higher quality screen content (film and high-end TV) is being produced globally.

2. The UK government has a target to nearly double the UK’s film & high-end TV inward investment spend.

3. London is a preferred location for international blockbuster and high-end TV production.

4. London’s ability to accommodate more productions is constrained as there is a relatively small amount of stage space.

5. As a result, there is more demand for London than available supply – we estimate this potential demand as 8 additional blockbusters per year.

6. A studio expansion in Shepperton would address a material portion of this demand.

7. The Shepperton expansion would make a significant contribution towards meeting the government target for inward investment.
Demand for film and TV content is growing globally by c.3% p.a.

Global consumer and advertising spend on TV and cinema, 2013-2022
£bn

<table>
<thead>
<tr>
<th>Year</th>
<th>Traditional TV</th>
<th>Home video</th>
<th>Cinema</th>
<th>Online TV</th>
<th>CAGR 13-17</th>
<th>CAGR 17-22</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>342</td>
<td>-2.5%</td>
<td>6.2%</td>
<td>23.8%</td>
<td>2.8%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2014</td>
<td>358</td>
<td>-1.7%</td>
<td>4.7%</td>
<td>10.2%</td>
<td>1.7%</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>373</td>
<td>-9.1%</td>
<td>6.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>387</td>
<td>-9.8%</td>
<td>4.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>394</td>
<td>2.5%</td>
<td>6.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>403</td>
<td>-9.8%</td>
<td>4.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>412</td>
<td>10.2%</td>
<td>6.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>425</td>
<td>-9.8%</td>
<td>4.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>434</td>
<td>10.2%</td>
<td>4.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>444</td>
<td>-9.8%</td>
<td>4.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: CAGR = Compound Annual Growth Rate
Source: PwC Entertainment & Media Outlook 2018. Please see p14-15 of the Technical Appendix for further information on key drivers

Key drivers

Cinema

- Continued rollout of cinema, especially in emerging markets (e.g., China), is growing global admissions
- IMAX screens continue to roll out in the US, as exhibitors hope to differentiate

Dominance of blockbusters and franchises

- Studios continue to create higher-budget blockbusters and franchises, which support admissions through their global popularity

TV

Growth in accessibility of filmed content

More people are watching more filmed content, aided by:
- Growth in TV subscriptions in developing markets
- Growth in penetration of internet enabled, mobile devices which can play video content
New entrants into the film & TV market have driven increased competition for viewers

Internet companies with direct access to the consumer have significant (and growing) programming budgets, which is encouraging other media companies to launch their own streaming offerings and grow programming spend in response.

Increased competition is likely to continue driving filmed content creation.

“If you believe that the deathstar fight for viewers hasn’t really started yet, because Apple and Disney haven’t really entered the TV streaming market, then you have to believe that production of high-quality content will continue.”

UK film and TV industry body (#2)

“With the rise of Netflix, Amazon, and Disney streaming services, feature films aren’t the mainstream any more...Feature films will only get bigger as a result. The only way to get people into cinema is to get bigger and better, so the audience experience bigger things.”

Major US film studio (#4)

Non-sport programming spend by selected commissioners, 2017

$bn

<table>
<thead>
<tr>
<th>Commissioner</th>
<th>Internet Companies</th>
<th>Non-internet Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netflix</td>
<td>10.2</td>
<td>7.8</td>
</tr>
<tr>
<td>Disney</td>
<td>8.0</td>
<td>6.3</td>
</tr>
<tr>
<td>Viacom</td>
<td>8.0</td>
<td>5.4</td>
</tr>
<tr>
<td>CBS</td>
<td>6.3</td>
<td>4.5</td>
</tr>
<tr>
<td>BBC</td>
<td>4.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Hulu</td>
<td>3.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Discovery</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>AMNC</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Apple</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Key: Internet companies = Red
Non-internet companies = Brown

Netflix is increasing its budget significantly year on year; for 2018 it is reportedly $8bn.

Note: 1) A conglomerate / company wide streaming service which shows original scripted content 2) Reported to be developing

Source: Interviews, Recode, The Economist, Annual Reports. Please see p15-18 of the Technical Appendix for further information.
As a result, more and higher quality screen content is being produced, and spend on filmed content is growing. The number of blockbuster films ($100m+ budget) has been consistent, but the number of ultra-high budget blockbusters is growing. High-end TV has seen growth in both volume of shows and budgets. These trends are likely to continue in the future.

“Movies have to get bigger and better [in the future] so customers don’t just stay at home and watch Netflix”

Major US film studio (#5)

“The stuff that is in danger is the middle budget films which have to compete with Netflix and Amazon. So I see us making bigger and bigger movies. We are looking at this in our strategic planning as well”

Major US film studio (#1)

“There’s increasing demand for high-quality content especially in drama across television and film, with both broadcasters, film production companies and global streaming platforms like Netflix thinking they have to go up in quality in order to compete on the marketplace”

UK film and TV industry body (#3)

“High end TV drama is basically film making. Today you can see high end TV spending $80m per series of a show.”

Independent film producer (#2)
In this growth context, there is a UK Government target to grow UK film and HETV inward investment as it creates employment and economic uplift.

Inward investment is particularly important in generating high levels of spend within the UK.

Going forward, the Government has a target to nearly double inward investment within 7 years.

Value vs. volume of films produced in the UK by type of investment, 2017

<table>
<thead>
<tr>
<th>Type of Investment</th>
<th>Number of Films</th>
<th>Value of Spend on Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>50%</td>
<td>89%</td>
</tr>
<tr>
<td>Co-productions</td>
<td>8%</td>
<td>9%</td>
</tr>
<tr>
<td>Inward</td>
<td></td>
<td>2%</td>
</tr>
</tbody>
</table>


The Creative Industries Sector Deal states “with substantial increases in studio capacity and investment in skills, it is feasible that in the period to 2025 our revenues could nearly double to approximately £4bn a year”, and acknowledges that the Pinewood Group “has plans for a major expansion at its Shepperton Studios, where it has recently acquired a new plot of land adjacent to the existing site.”
Inward investment to the UK is primarily driven by large international productions, that can choose from a number of global clusters to film in.

Selected major production facilities, worldwide

- **Canada (Toronto / Vancouver)**
  - Pinewood Toronto
  - Mammoth Studios
  - Canadian Motion Pictures Park
  - Vancouver Film Studios
  - Island North Studios
  - Martini Studios
  - Skydance Media

- **UK (London)**
  - Pinewood Studios
  - Shepperton Studios
  - WB Leavesden
  - Longcross
  - Elstree
  - Titanic Studios

- **Hungary (Budapest)**
  - Origo (Prev. Raleigh Budapest)

- **Germany**
  - Babelsberg

- **South Africa**
  - Cape Town Studios

- **Australia**
  - Fox Studios
  - Village Roadshow Studios

**Selected examples**

- **Key**
  - Opened before 2013
  - New facility since 2013
  - Has expanded >25% since 2013 or has planning permission to expand >25% in the future

**Studios selected include major facilities (produced more than two large productions since 2013), and major developing and regional studios (selected based on press mentioned). This selection is not exhaustive.**

Note: We have analysed the 2013 – current period to provide a medium term historical view on capacity expansions.

Source: Studio Websites, Interviews, FilmLA Soundstage Production Report 2017, PwC Analysis. Please see p27 of the Technical Appendix for the relative size of major international studios.
The ‘greater west London cluster’ is the UK’s premier film and HETV production hub (centred around Shepperton, Pinewood and Leavesden)

The motion picture, video and television industry is highly clustered in the UK

In particular, there is a cluster in ‘greater west London’ close to the major production studios

Concentration of companies involved in motion picture, video and TV production

London production facilities

1. WB Leavesden
2. Pinewood
3. Shepperton
4. Elstree
5. Ealing
6. Twickenham
7. Cardington
8. Black Island
9. Wimbledon
10. Gillette Building
11. Bray
12. Longcross
13. Arborfield
14. Black Hangar

Note: 1) Includes production and supporting activities (e.g. video editing), distribution, projection and buying & selling of rights. Also includes sound recording and music publishing.

Source: ONS Regional Economic Analysis "The Spatial Distribution of Industries", Studio Websites, Interviews, Discussions with Management. Please see p28, 29, and 36 for further information.

“The whole cluster of film-making is Leavesden all the way down to Shepperton.”

Major US film studio (#5)

“There’s a crescent from Elstree to Longcross of good facilities and crew”

Independent film producer (#3)
London is a world leading filming location, and a key destination for large film productions

Number of blockbusters produced within each location for major studios in each cluster, 2015-17, largest 7 clusters

<table>
<thead>
<tr>
<th>Location</th>
<th>Blockbusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>London, UK</td>
<td>27</td>
</tr>
<tr>
<td>LA, US</td>
<td>9</td>
</tr>
<tr>
<td>Atlanta, US</td>
<td>8</td>
</tr>
<tr>
<td>Australia</td>
<td>6</td>
</tr>
<tr>
<td>Vancouver, CA</td>
<td>6</td>
</tr>
<tr>
<td>Louisiana, US</td>
<td>6</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
</tr>
</tbody>
</table>

Reasons for London’s position

**Infrastructure & skills**
- A highly skilled crew and talent base is present in the UK, avoiding the need for imports of crew from elsewhere
- Purpose-built production facilities with sizeable stage footprints and backlots are available
- High-quality equipment is available, minimising the imports required

**Location**
- International top talent is happy to be based in London whilst filming
- A number of films are set in the UK, which encourages filming here
- A variety of filming landscapes are available within reasonable proximity (city, countryside, rugged)
- The UK is well served by major airports, especially Heathrow which may be expanded following parliamentary approval for a third runway

**Financial**
- UK tax incentives are simple, attractive, and stable compared to other locations (e.g., no cap, applies to above and below the line)
- Government support for the creative industries, including film & HETV, is bipartisan

Note: Where films have used studios in more than one cluster they are both included. Excludes animated films.
However, London’s ability to accommodate more productions is constrained as there is a relatively small amount of stage space (1 of 2)

Major London facilities have been running at capacity for at least 5 years...

...due to high demand for a limited volume of stage space

Utilisation of Pinewood Group and Shepperton stages, %

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group (Iver Heath, Shepperton)</td>
<td>81%</td>
<td>90%</td>
<td>93%</td>
<td>82%</td>
<td>86%</td>
<td>89%</td>
</tr>
<tr>
<td>Shepperton</td>
<td>80%</td>
<td>81%</td>
<td>89%</td>
<td>93%</td>
<td>93%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Average = 85%

In practice, it is very difficult to achieve 100% utilisation; 85% broadly represents ‘at capacity’ given the usual short vacant periods in between productions

Sound stage space at production facilities, 000 sq. m.

<table>
<thead>
<tr>
<th>Location</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA, California, US</td>
<td>530</td>
<td>163</td>
<td>152</td>
<td>130</td>
<td>114</td>
<td>113</td>
</tr>
<tr>
<td>British Columbia, CA (Vancouver)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>London, UK</td>
<td>152</td>
<td>152</td>
<td>152</td>
<td>152</td>
<td>152</td>
<td>152</td>
</tr>
<tr>
<td>Ontario, CA (Toronto)</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td>New York, US</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>114</td>
</tr>
<tr>
<td>Georgia, US</td>
<td>113</td>
<td>113</td>
<td>113</td>
<td>113</td>
<td>113</td>
<td>113</td>
</tr>
<tr>
<td>Louisiana, US</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
</tr>
</tbody>
</table>

LA has the largest stage capacity, but supports a smaller number of blockbusters than London since much of this capacity is allocated to TV productions. LA, Vancouver and Toronto are reportedly also operating at capacity

“Leavesden is full”
Independent film producer (#3)

“Pinewood, WB Leavesden - they are all full”
UK film and TV industry body (#2)

Source: Management Information, FilmLA Soundstage Production Report 2017, Interviews
However, London’s ability to accommodate more productions is constrained as there is a relatively small amount of stage space (2 of 2)

One of the big problems we face is that there’s nothing available [studio space] so it’s very hard to arrange to film in London as we don’t know that we can get space in advance”

Major US film studio (#1)

“We tried on a couple of occasions to shoot in the UK...on one occasion, Pinewood, Shepperton and Leavesden were all full. We only looked at those three studios as they were the only ones big enough for our film"

Major US film studio (#7)

“The lack of sound stages is a huge issue. Shepperton receiving planning permission is crucial for the success of industry.”

Independent film producer (#1)

“There’s a broad consensus that there is not enough studio space in the UK. It would be hard to argue that there isn’t pressure on studio space in the UK... There is definitely a general shortage but at the higher end it’s probably more acute”

UK film and TV industry body (#3)

“The lack of capacity is the first thing that comes to mind when I think of film-making in the UK. Capacity pressure is particularly concentrated around the South East for the obvious reason that the industry is substantially based in the South East.”

UK film and TV industry body (#4)

“The two biggest challenges we face are providing enough traditional space for people to shoot and also providing alternative space”

UK film and TV industry body (#2)

“There’s a drastic shortage of stage space to film on right now. Inevitably we have to go elsewhere as we can’t find stage space.”

Major US film studio (#2)

Source: Interviews
As a consequence, London and the UK are missing out on potential additional demand which is currently going to other international locations (we estimate potentially c.8 blockbuster films p.a.)

We estimate there were 23 blockbusters from 2015-17 that might have filmed in London, if more capacity were available (c.8 p.a.)

Many blockbusters will consider London for filming, but end up elsewhere internationally due to a lack of capacity.

"If films can’t be in the major facilities around London, then they will produce their movies overseas instead. We have just been sourcing locations for a film which we have to film at facilities in Budapest or Prague instead[...because we can’t get space in the UK]"

Independent film producer (#1)

"It’s very hard to arrange to film in London as we don’t know that we can get space in advance...we have discussed having some of our bigger films here but due to lack of space we’ve gone to Montreal or Vancouver"

Major US film studio (#1)

"There are a number of films that we haven’t been able to fit in to the UK’s top facilities, and they end up filming in other international locations"

UK film and TV industry body (#2)

"Each month, sometimes each week, we have enquiries from productions wanting stage space in London who are ready to deposit and contract. We have to turn them away and then often see they have substantially had to go and make their films abroad"

Pinewood Studios Commercial team

In addition to blockbusters, there is demand for stage space from high-end TV (from both internet companies (e.g., Netflix) and other players) which may also be lost. We have not quantified this here.

Number of blockbusters released 2015-17 (excluding animated films)

<table>
<thead>
<tr>
<th>Filming location</th>
<th>Ability to change filming location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholly filmed in London</td>
<td>67</td>
</tr>
<tr>
<td>Partially filmed in London</td>
<td>40</td>
</tr>
<tr>
<td>Wholly filmed outside London</td>
<td>100%</td>
</tr>
<tr>
<td>Highly unlikely to film elsewhere</td>
<td>20</td>
</tr>
<tr>
<td>Somewhat unlikely to have filmed elsewhere</td>
<td>7</td>
</tr>
<tr>
<td>Apparently footloose productions - accessible for London</td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>23</td>
<td>100%</td>
</tr>
</tbody>
</table>

The c.8 additional blockbusters p.a. would represent nearly £1bn of production expenditure, and would require c.90k sq. m. of new sound stage space

We estimate the value of blockbuster budgets that the UK could win at £950m p.a.

This is equivalent to approximately 90k sq. m. floorspace

Number of ‘apparently footloose’ blockbusters

<table>
<thead>
<tr>
<th></th>
<th>2015-17</th>
<th>Annual (average)</th>
</tr>
</thead>
<tbody>
<tr>
<td># blockbusters</td>
<td>23</td>
<td>8</td>
</tr>
<tr>
<td>Aggregate production budget (USD)</td>
<td>$3,657m</td>
<td>$1,219m</td>
</tr>
<tr>
<td>Aggregate production budget (GBP)</td>
<td>£2,841m</td>
<td>£947m</td>
</tr>
</tbody>
</table>

Blockbuster production budgets | $1,219m

Budget ($) per sq. ft. / sq. m. of sound stage space per year | $14,000 (sq. m.) / $1,300 (sq. ft.)

Required floorspace (rounded) | ~90k sq. m. (~900k sq. ft.)

Note: Floorspace figures are NLA
Source: The-Numbers.com, PwC Analysis. Please see p44–45 of the Technical Appendix for further information
The new studio investment proposed by Shepperton would provide London with the ability to capture a material portion of this demand

Sound stage space and blockbuster market potential for London (000 sq. m. NLA), 2017-2025

000 sq. m. NLA

Key observations
- Current capacity is 150k sq. m. NLA (1.6m sq. ft.), which is expected to rise in 2019 and 2021 based on committed expansions at Pinewood, Leavesden and Elstree
- As described in the prior pages, the currently unmet market potential is estimated at c.8 blockbusters p.a., with a space requirement of c.90k sq. m. (c.900k sq. ft.)
  - This is an estimate which only includes blockbusters and not HETV; as a result, this is likely to be a conservative view of London’s potential
- The proposed Shepperton development would result in an additional maximum c.43k sq. m. NLA (c.465k sq. ft. NLA / 59k sq. m. GEA), and will add to the already committed additional capacity, helping London to close more of the ‘gap’

Note: Floorspace figures are NLA
Source: PwC Analysis. Please see p42-47 of the Technical Appendix for further information on methodology
Shepperton would also make a significant contribution towards meeting the government target for inward investment

In real terms (excluding inflation), the government target is worth £3.3bn in today’s money

The Shepperton development allows the UK to capture significantly more inward investment, whilst also allowing other studios to benefit from additional demand

<table>
<thead>
<tr>
<th>Government inward investment target, nominal and real terms¹, £bn</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal terms (2025)</strong></td>
</tr>
<tr>
<td>4.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contribution of capacity expansions to achieving government target for inward investment (film and HETV), £bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017 UK inward investment</td>
</tr>
<tr>
<td>2.4</td>
</tr>
</tbody>
</table>

Note: 1) 2.5% p.a. inflation rate assumed.

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Review of the UK film and high-end TV production facility market

Technical Appendix
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Our work has been informed through review of available industry information and data, and c.30 interviews with production facility buyers and stakeholders.

We have conducted 28 interviews.

<table>
<thead>
<tr>
<th>Type</th>
<th>Company</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK TV &amp; film industry bodies</td>
<td>Film London</td>
<td>Adrian Wootton</td>
</tr>
<tr>
<td></td>
<td>British Screen Advisory Council</td>
<td>Pete Johnson</td>
</tr>
<tr>
<td></td>
<td>Department for Culture, Media, and Sport</td>
<td>Senior Civil Servants</td>
</tr>
<tr>
<td></td>
<td>British Film Institute</td>
<td>Amanda Nevill, Anna Mansi</td>
</tr>
<tr>
<td></td>
<td>British Film Commission</td>
<td>Iain Smith</td>
</tr>
<tr>
<td></td>
<td>Creative Skillset</td>
<td>Seetha Kumar</td>
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<tr>
<td></td>
<td>Production Guild</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creative England</td>
<td>Caroline Norbury</td>
</tr>
<tr>
<td>UK production companies</td>
<td>ITV Studios</td>
<td>Senior Executive x 2</td>
</tr>
<tr>
<td></td>
<td>BBC Studios</td>
<td>Senior Executive</td>
</tr>
<tr>
<td></td>
<td>Darrall Macqueen</td>
<td>Julie Cronshey</td>
</tr>
<tr>
<td></td>
<td>Eon Productions</td>
<td>Andrew Noakes</td>
</tr>
<tr>
<td></td>
<td>Working Title Films</td>
<td>Tim Bevan</td>
</tr>
<tr>
<td></td>
<td>Ingenious Media</td>
<td>Senior Executive</td>
</tr>
<tr>
<td>UK / European independent film producers</td>
<td>Independent film producer</td>
<td>Jeremy Johns</td>
</tr>
<tr>
<td></td>
<td>Independent film producer</td>
<td>Simon Emmanuel</td>
</tr>
<tr>
<td></td>
<td>Independent film producer</td>
<td>Callum McDougall</td>
</tr>
<tr>
<td></td>
<td>Independent film producer</td>
<td>Dean O’Toole</td>
</tr>
<tr>
<td>US film studios</td>
<td>Universal</td>
<td>Heads of Physical Production</td>
</tr>
<tr>
<td></td>
<td>Marvel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lucasfilm</td>
<td>Head of Physical Production</td>
</tr>
<tr>
<td></td>
<td>Disney</td>
<td>Heads of Physical Production</td>
</tr>
<tr>
<td></td>
<td>Fox</td>
<td>Head of Physical Production</td>
</tr>
<tr>
<td></td>
<td>MGM</td>
<td>Head of Physical Production</td>
</tr>
<tr>
<td></td>
<td>Sony</td>
<td>Head of Physical Production</td>
</tr>
<tr>
<td>US TV commissioners</td>
<td>HBO</td>
<td>Head of Physical Production</td>
</tr>
<tr>
<td></td>
<td>Netflix</td>
<td>Senior Executive</td>
</tr>
<tr>
<td></td>
<td>Amazon Studios</td>
<td>Anonymous</td>
</tr>
</tbody>
</table>

Our interviewees were selected due to their prominent and relevant roles within the global film and entertainment industry, in order to provide up-to-date views of industry trends and motivations. Our data sources were selected on the basis of being widely used across the UK film industry and for public policy purposes.

We have used a range of data sources:

- PwC Entertainment and Media Outlook 2018
- PwC World in 2050 report 2017
- BFI Statistical Yearbook 2017; Film, high-end television and animation programmes production in the UK: full-year 2017; Statistical Research Unit
- NESTA The Geography of Creativity in the UK
- UK Government Creative Industries Sector Deal March 2018
- ONS Regional Economic Analysis "The Spatial Distribution of Industries"
- IMF WEO Outlook
- FCA 2017 report on ‘Rates of return for FCA prescribed projections’ prepared by PwC
- Ericsson Consumer Lab “TV and Media 2017”
- Olsberg “Economic Contribution of the UK’s Film, High-End TV, Video Game, and Animation Programming Sectors”
- FilmLA Soundstage Production Report 2017
- The-Numbers.com
- Variety
- IMDB
- FX Networks Research
- Recode
- The Economist
- Pinewood internal data 2013-2018
More and higher quality screen content (film and high-end TV) is being produced globally.

The UK government has a target to nearly double the UK’s film & high-end TV inward investment spend.

London is a preferred location for international blockbuster and HETV production.

London’s ability to accommodate more productions is constrained as there is a relatively small amount of stage space.

As a result, there is more demand for London than available supply – we estimate this potential demand as 8 additional blockbusters per year.

A studio expansion in Shepperton would address a material portion of this demand.

The Shepperton expansion would make a significant contribution towards meeting the government target for inward investment.
More and higher quality screen content (film and high-end TV) is being produced globally.

The UK government has a target to nearly double the UK’s film & high-end TV inward investment spend.

London is a preferred location for international blockbuster and HETV production.

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As a result, there is more demand for London than available supply – we estimate this potential demand as 8 additional blockbusters per year.

A studio expansion in Shepperton would address a material portion of this demand.

The Shepperton expansion would make a significant contribution towards meeting the government target for inward investment.
### Cinema: Spend on cinema is growing year-on-year on a global basis

Global consumer and advertisers spend on cinema, 2013-22

<table>
<thead>
<tr>
<th>Year</th>
<th>Admissions</th>
<th>Advertising</th>
<th>CAGR 13-17</th>
<th>CAGR 17-22</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>24.3</td>
<td>1.9</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>25.0</td>
<td>1.9</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>28.7</td>
<td>2.2</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>29.5</td>
<td>2.3</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>30.8</td>
<td>2.5</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>32.5</td>
<td>2.6</td>
<td>4.7%</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>34.2</td>
<td>2.8</td>
<td>4.7%</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>35.8</td>
<td>2.9</td>
<td>4.7%</td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>37.3</td>
<td>3.0</td>
<td>4.7%</td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>38.8</td>
<td>3.1</td>
<td>4.7%</td>
<td></td>
</tr>
</tbody>
</table>

Source: PwC Entertainment and Media Outlook 2018
Cinema: Admissions growth in APAC is one factor contributing to the worldwide growth of an increasingly global medium

Global cinema admissions, 2013-22
billions

<table>
<thead>
<tr>
<th>Year</th>
<th>EMEA</th>
<th>APAC</th>
<th>Americas</th>
<th>Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>6.6</td>
<td>1.3</td>
<td>1.9</td>
<td>8.1</td>
</tr>
<tr>
<td>2014</td>
<td>6.7</td>
<td>1.3</td>
<td>1.8</td>
<td>1.4</td>
</tr>
<tr>
<td>2015</td>
<td>7.5</td>
<td>4.2</td>
<td>2.0</td>
<td>7.7</td>
</tr>
<tr>
<td>2016</td>
<td>7.7</td>
<td>4.4</td>
<td>2.0</td>
<td>8.1</td>
</tr>
<tr>
<td>2017</td>
<td>8.1</td>
<td>4.7</td>
<td>1.9</td>
<td>1.4</td>
</tr>
<tr>
<td>2018</td>
<td>8.4</td>
<td>5.0</td>
<td>2.0</td>
<td>1.4</td>
</tr>
<tr>
<td>2019</td>
<td>8.7</td>
<td>5.3</td>
<td>2.0</td>
<td>1.5</td>
</tr>
<tr>
<td>2020</td>
<td>9.1</td>
<td>5.5</td>
<td>2.1</td>
<td>1.5</td>
</tr>
<tr>
<td>2021</td>
<td>9.3</td>
<td>5.7</td>
<td>2.1</td>
<td>1.5</td>
</tr>
<tr>
<td>2022</td>
<td>9.6</td>
<td>5.9</td>
<td>2.1</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

Source: PwC Entertainment and Media Outlook 2018
Cinema: Global admissions have been driven by the rollout of new screens in APAC, with admissions in developed markets supported by new format rollout

**APAC admissions growth has been driven by cinema screen rollout**

Growth is driven by new screens being built in Tier 3-5 cities, as the growing middle classes increasingly have the appetite to go to the cinema

Overall growth outside of APAC is relatively muted, in particular in the mature markets of Europe and North America

**Global cinema screens, 2013-22**

<table>
<thead>
<tr>
<th>Year</th>
<th>APAC</th>
<th>EMEA</th>
<th>Americas</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>133</td>
<td>142</td>
<td>151</td>
<td>426</td>
</tr>
<tr>
<td>2014</td>
<td>142</td>
<td>151</td>
<td>163</td>
<td>456</td>
</tr>
<tr>
<td>2015</td>
<td>151</td>
<td>163</td>
<td>170</td>
<td>484</td>
</tr>
<tr>
<td>2016</td>
<td>163</td>
<td>170</td>
<td>178</td>
<td>511</td>
</tr>
<tr>
<td>2017</td>
<td>170</td>
<td>178</td>
<td>186</td>
<td>528</td>
</tr>
<tr>
<td>2018</td>
<td>178</td>
<td>186</td>
<td>193</td>
<td>535</td>
</tr>
<tr>
<td>2019</td>
<td>186</td>
<td>193</td>
<td>201</td>
<td>549</td>
</tr>
<tr>
<td>2020</td>
<td>193</td>
<td>201</td>
<td>207</td>
<td>550</td>
</tr>
</tbody>
</table>

**Forecast**

- **CAGR 13-17**
  - APAC: 14.6%
  - EMEA: 2.4%
  - Americas: 1.2%

- **CAGR 17-22**
  - APAC: 7.2%
  - EMEA: 1.8%
  - Americas: 1.3%

**Global IMAX 3D screens, 2013-22**

<table>
<thead>
<tr>
<th>Year</th>
<th>APAC</th>
<th>EMEA</th>
<th>Americas</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
<td>2.4</td>
</tr>
<tr>
<td>2014</td>
<td>0.8</td>
<td>0.9</td>
<td>1.1</td>
<td>2.8</td>
</tr>
<tr>
<td>2015</td>
<td>0.9</td>
<td>1.1</td>
<td>1.2</td>
<td>3.2</td>
</tr>
<tr>
<td>2016</td>
<td>1.1</td>
<td>1.2</td>
<td>1.3</td>
<td>3.6</td>
</tr>
<tr>
<td>2017</td>
<td>1.2</td>
<td>1.3</td>
<td>1.4</td>
<td>3.9</td>
</tr>
<tr>
<td>2018</td>
<td>1.3</td>
<td>1.4</td>
<td>1.5</td>
<td>4.2</td>
</tr>
<tr>
<td>2019</td>
<td>1.4</td>
<td>1.5</td>
<td>1.5</td>
<td>4.4</td>
</tr>
<tr>
<td>2020</td>
<td>1.5</td>
<td>1.5</td>
<td>1.6</td>
<td>4.6</td>
</tr>
<tr>
<td>2021</td>
<td>1.5</td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>1.6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Forecast**

- **CAGR 13-17**
  - APAC: 26.3%
  - EMEA: 6.3%
  - Americas: 8.1%

- **CAGR 17-22**
  - APAC: 7.3%
  - EMEA: 4.8%
  - Americas: 3.6%

**New formats (e.g. IMAX) rollout in the Americas and EMEA is healthy supporting overall admissions as exhibitors compete on ‘cinematic experience’**

“Cinema-owners look to lure spectators to their auditoriums to enjoy huge-budget “tentpole” movies shown on giant screens. That is why more and more IMAX 3D screens are opening across the country [US]”

PwC Entertainment and Media Outlook, 2018

Source: PwC Entertainment and Media Outlook 2018
Cinema: In addition, audiences globally are willing to pay to see high budget, quality films - as evidenced by blockbusters growing box office share

Total global box office revenues split by blockbusters ($100m+ budgets) and other films, 2001-17
$bn (real prices)

“Big-budget live action and animated blockbusters, most of them sequels based on already proven properties, will dominate box office both in North America and globally. The US studios will look to freshen and renew these franchises either through prequels or spin-offs. US majors are making a concerted attempt to broaden the appeal, for example by setting them outside the US (as with Marvel’s Black Panther, which was largely set in Africa, or the Mexican-set Pixar animated feature Coco) or by featuring more female protagonists.”

PwC Entertainment and Media Outlook, 2018

Blockbusters defined as films with a budget of $100m+
Source: The-Numbers.com, PwC Entertainment & Media Outlook 2018
Cinema: Film “franchises” (produced based on well-known formats or characters) are driving admissions, accounting for c.55-80% of blockbuster box office takings

Global box office revenue of franchises (prequel, sequel and spin-offs), re-boots vs. non-franchise blockbusters, 2013-17 $bn real prices

Note: We have defined franchise as films that are sequels, prequels and spin offs of existing film series. Source: The-Numbers.com, PwC Analysis
Cinema: There is some growth in cinema ticket prices, predominantly driven by 3D (higher price) mix and inflation

Global average cinema admissions price (nominal), 2013-22

£

Source: PwC Entertainment and Media Outlook 2018
TV: Spend on TV is also growing, with certain formats gaining (e.g. online TV like Netflix) at the expense of others

Global consumer and advertiser spend on TV, 2013-2022
£bn

Note: 1) OTT video stands for Over The Top video, and refers to platforms that distribute screen content via an internet connection, which is viewable via a PC, TV, tablet, smartphone or other device which bypasses TV subscription providers. These services are split between transactional video on demand (TVOD) and subscription video on demand (SVOD). TVOD services (such as iTunes) deliver filmed entertainment content via the open internet and do not require a subscription. SVOD services (such as Netflix) are also delivered over the open internet, but require a subscription. Source: PwC Entertainment and Media Outlook 2018
TV: TV subscription growth continues in developing countries while in EMEA and the Americas ‘traditional’ TV subscriptions are being supplemented by internet-enabled e.g. Netflix

TV subscriptions by region, 2013-2022
Millions of households

Note: TV subscriptions is defined as: “The number of households with a paid-for TV subscription service, i.e. a TV service that can only be legitimately received by paying a subscription fee. This definition does not include services that are provided solely over the open Internet, such as Netflix”. Source: PwC Entertainment and Media Outlook 2018
**TV:** There has been a proliferation of internet-enabled devices that can play video, widening access to filmed content

**Penetration of communication devices and services in the UK, 2007-2017**

% of households

Source: Ofcom report "Public service broadcasting in the digital age"
**TV: Consumer-focused, internet-enabled OTT' platforms with large and growing content budgets have emerged rapidly**

**Netflix**

Total programming spend by Netflix
$Bn, 2013-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Bn</td>
<td>2.4</td>
<td>3.2</td>
<td>4.9</td>
<td>5.0</td>
<td>6.3</td>
</tr>
</tbody>
</table>

+27.3%

**Hulu**

Total programming spend by Hulu
$Bn, 2013-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Bn</td>
<td>0.6</td>
<td>1.1</td>
<td>1.5</td>
<td>N/A</td>
<td>2.5</td>
</tr>
</tbody>
</table>

+42.9%

Note: Hulu figures are for acquired content only pre 2016

**Amazon Prime**

Total programming spend by Amazon Prime
$Bn, 2013-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Bn</td>
<td>1.2</td>
<td>1.3</td>
<td>2.7</td>
<td>3.2</td>
<td>4.5</td>
</tr>
</tbody>
</table>

+39.2%

+42.9%

**Global Netflix subscriptions**
2012-2017 (Year end), millions

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millions</td>
<td>35</td>
<td>47</td>
<td>60</td>
<td>79</td>
<td>98</td>
<td>121</td>
</tr>
</tbody>
</table>

+28%

**Global HULU subscriptions**
2012-2017, millions

<table>
<thead>
<tr>
<th>Time</th>
<th>Mar-12</th>
<th>Dec-12</th>
<th>Mar-13</th>
<th>Dec-13</th>
<th>Apr-14</th>
<th>May-14</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millions</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

+41%

Note: Hulu spend in 2016 is not available.

Note: 1) OTT video stands for Over The Top video, and refers to platforms that distribute screen content via an internet connection, which is viewable via a PC, TV, tablet, smartphone or other device which bypasses TV subscription providers. These services are split between transactional video on demand (TVOD) and subscription video on demand (SVOD). TVOD services (such as iTunes) deliver filmed entertainment content via the open internet and do not require a subscription. SVOD services (such as Netflix) are also delivered over the open internet, but require a subscription. Source: Hub Entertainment Research, Press, PwC Interviews, Forbes.com

Note: 2) Reliable figures for Amazon Prime video members are not available, given Amazon bundles video content with other Prime services (e.g., e-commerce delivery)

• Total Amazon Prime subscribers were 85m in June 2017, up from 28m in June 2014.
**TV: In response to increased competition from OTT\(^1\) players, broader media players have been developing their own streaming services (1 of 2)**

### Ownership of Subscription Video on Demand\(^1\) services by selected commissioners

<table>
<thead>
<tr>
<th>Commissioner</th>
<th>Company-wide streaming service for own scripted content?</th>
<th>Strategy</th>
<th>Example owned SVOD services with scripted content</th>
<th>Launch date</th>
<th>Country and Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBCUniversal</td>
<td>Reportedly developing</td>
<td>Reportedly NBCU are developing an aggregated SVOD platform, including both NBC content as well as USA, Bravo and Syfy material</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>FOX</td>
<td>-</td>
<td>Currently focusing on distributing content primarily through licencing content to Pay-TV providers</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>TimeWarner</td>
<td>-</td>
<td>TimeWarner are focusing on distributing content through its brands (e.g., DC Universe / HBO). They have not yet planned to release new content on these, using linear TV instead to broadcast the content before uploading to these VOD services</td>
<td>HBO Now</td>
<td>2015</td>
<td>US only</td>
</tr>
<tr>
<td>TimeWarner</td>
<td>Exp. 2019</td>
<td>Disney are planning to launch a new platform in 2019 with original content from its 4 brands (Disney, Marvel, Lucasfilm and Pixar) as well as its back catalogue. In addition it is planning on providing a Sports service through the ESPN branding</td>
<td>Disney</td>
<td>Exp. 2019</td>
<td>Exp. Global</td>
</tr>
<tr>
<td>TimeWarner</td>
<td>Exp. 2019</td>
<td>Viacom have a number of SVOD services that operate under its brands’ names, but is planning to establish an aggregated ‘Viacom’ platform in future, e.g. covering MTV, Nickelodeon and Paramount</td>
<td>Bet Play</td>
<td>2016</td>
<td>c.100 countries, not including US, Italy, France or Africa</td>
</tr>
<tr>
<td>TimeWarner</td>
<td></td>
<td></td>
<td>Noggin</td>
<td>2015</td>
<td>n/a</td>
</tr>
</tbody>
</table>

---

Note: 1) OTT video stands for Over The Top video, and refers to platforms that distribute screen content via an internet connection, which is viewable via a PC, TV, tablet, smartphone or other device which bypasses TV subscription providers. These services are split between transactional video on demand (TVOD) and subscription video on demand (SVOD). TVOD services (such as iTunes) deliver filmed entertainment content via the open internet and do not require a subscription. SVOD services (such as Netflix) are also delivered over the open internet, but require a subscription. 2) We have focused on subscription ‘video on demand’ (SVOD) services within OTT (e.g. Netflix), as opposed to a transaction VOD where a movie may be purchase for a limited time (e.g. iTunes)

Source: Company Websites, Press
**TV: In response to increased competition from OTT players, broader media players have been developing their own streaming services (2 of 2)**

Ownership of Subscription Video on Demand services by selected commissioners

<table>
<thead>
<tr>
<th>Commissioner</th>
<th>Company-wide streaming service for own scripted content?</th>
<th>Strategy</th>
<th>Example owned SVOD services with scripted content</th>
<th>Launch date</th>
<th>Country and Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBS</td>
<td>✔️</td>
<td>CBS operates two main standalone SVODs which show scripted content, while it also offers them as a bundle. CBS are planning on expanding their CBS All Access service to more countries in 2018</td>
<td>CBS All Access, Showtime</td>
<td>2014, 2015</td>
<td>US and Canada, US only</td>
</tr>
<tr>
<td>BBC</td>
<td>✔️</td>
<td>BBC is planning to continue to invest in content for its free to access iPlayer. May be in discussions with Channel 4 and ITV about pooling resources to create a shared SVOD service</td>
<td>iPlayer</td>
<td>2007</td>
<td>UK only</td>
</tr>
<tr>
<td>Discovery Communications</td>
<td></td>
<td>Discovery's digital strategy is focused on ad-supported on-demand streaming services, with their GO TV Everywhere app which is available to pay-TV customers and aggregates content from their portfolio. They have a sports focused and motor focused SVOD service</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>AMC</td>
<td>-</td>
<td>AMC owns 2 boutique SVODs - Sundance Now, founded in 2014, focused on high-quality storytelling based on the Sundance brand, and Shudder, founded in 2015, focused on horror and thriller titles</td>
<td>Sundance Now, Shudder</td>
<td>2014, 2015</td>
<td>US, Canada and part of Europe, UK, Canada, UK, Ireland, Germany and Austria</td>
</tr>
<tr>
<td>Apple</td>
<td>Expected 2019</td>
<td>An Apple SVOD service is expected in 2019; it is currently unclear if it will be bundled with Apple Music</td>
<td>Branding undecided</td>
<td>Exp. 2019</td>
<td>Exp. Global</td>
</tr>
<tr>
<td>All4</td>
<td>✔️</td>
<td>May be in discussions with BBC and ITV about pooling resources to create a shared SVOD service</td>
<td>All4</td>
<td>20016</td>
<td>UK only</td>
</tr>
</tbody>
</table>

Source: Company Websites, Press
**TV: Competition is unlikely to abate in the medium / long term, given continued commitment to commissioning original content**

Selected media and internet companies scripted content strategy

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Netflix</th>
<th>Amazon</th>
<th>BBC</th>
<th>Time Warner</th>
<th>Apple TV</th>
<th>Disney</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Looking to continue to increase investment in content, with $8bn expected to be spent in 2018</td>
<td>A core Amazon strategy is to convert video subscribers to shoppers on their online platform</td>
<td>Increased commissioning of high-budget drama</td>
<td>Acquisition of Time Warner by AT&amp;T is expected to result in an increased programming budget for HBO, known for its a premium scripted shows</td>
<td>Expected to launch a new streaming service in 2019 - creating new content (film and TV) across different brands (e.g. Disney, Pixar, Marvel and Lucasfilm)</td>
<td>Expected to launch a new streaming service in 2019 - creating new content (film and TV) across different brands (e.g. Disney, Pixar, Marvel and Lucasfilm)</td>
</tr>
<tr>
<td></td>
<td>• Breadth and depth of content a key strategy – including producing across multiple genres and specifically producing for local markets through co-productions (e.g., Sacred Games in India)</td>
<td>• Aiming to produce more content with appeal to outside the US, where Prime membership is currently lower</td>
<td>• Joint discussions between BBC, ITV and Channel 4 on creating a joint SVOD service to rival Netflix</td>
<td>• Investing in high quality dramas (e.g. Show involving Jennifer Aniston and Reese Witherspoon)</td>
<td>• Removing licenced Disney content from rivals platforms including Netflix</td>
<td>• Removing licenced Disney content from rivals platforms including Netflix</td>
</tr>
<tr>
<td></td>
<td>• Not currently looking to offer sports</td>
<td>• Prime started showing sports in 2017, and will increase this in 2018 with exclusive rights to the US Open in tennis</td>
<td>• Increased commissioning of high-budget drama</td>
<td>• Joint discussions between BBC, ITV and Channel 4 on creating a joint SVOD service to rival Netflix</td>
<td>• Expected to launch a new streaming service in 2019 - creating new content (film and TV) across different brands (e.g. Disney, Pixar, Marvel and Lucasfilm)</td>
<td></td>
</tr>
</tbody>
</table>

**Productions**

- The Crown
- Stranger Things
- The Man in the High Castle
- McMafia
- The Crown
- The Great British Bake Off
- Game of Thrones
- Succession
- Westworld
- Planet Apps
- The Lion King
- Incredibles
- Guardians of the Galaxy
- Captain Marvel
- The Karate Kid
- Toy Story

Source: The Economist, Press, Annual Reports, Interviews
TV: Investment in content appears sustainable over the medium term (1 of 2)

Major content investors have seen profit growth, which could support content investment.

Competition for viewers is expected to remain intense, particularly as new players enter the market.

"This trend [production of high-quality content] will grow in the foreseeable future, because there’s more money going into competing for viewers, which is the ground on which the competition is being staged.”

UK film and TV industry body (#3)

“Competition for viewers is expected to remain intense, particularly as new players enter the market.”

"The net outlook is for the volume content to continue growing. We’ve learnt that viewers of streaming services have a high demand for content, and the only way to satisfy this is to produce more; there won’t be any more sharing between providers.”

UK production company (#4)

Note: Conclusions on high-end TV based on US and UK. Source: Wall Street Journal, Interviews
**TV: Investment in content appears sustainable over the medium term (2 of 2)**

Expectations across a broad cross-section of the film and TV industry are for ongoing strong competition driving sustained investment

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“The long-term opportunity is in the small screen. Sustainable growth is in the area of high-end TV drama, rather than high-end movies”

**UK Film and TV Industry Body (#4)**

“I think that the growth of Netflix is potentially sustainable because it’s subscriber based. None of the analysts looking at Netflix are saying that the subscribers are going away. The subscribers are there and as long as they continue to pay then business will be good. I think it will be strong for some time.”

**Major US Film Studio (#1)**

“I don’t believe this is boom and bust, it’s sustainable for the next 5 years”

**UK Film and TV Industry Body (#1)**

“Apple, Amazon etc. need to build up a library as they enter the market. In the next 5 years it is sustainable, while players build up these libraries”

**Major US Film Studio (#7)**

“There’s probably 3-5 years of growth in high-end TV, though I can’t really predict it”

**US TV Commissioners (#3)**

“I think this trend will grow in the foreseeable future, because there’s more money going into competing for viewers, which is the ground on which the competition is being staged...I think this trend is sustainable because it’s one of the things we know: as economies develop, so do appetites for quality entertainment and experiences. Much of the world is developing in that way and there are emerging middle classes all over the place”

**UK Film and TV Industry Body (#2)**

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Note: Conclusions on high-end TV based on US and UK. Source: Interviews
The impact for production facilities is that there is growing demand for stage space from films and now also high-end TV

Blockbuster films typically take c.9k+ sq. m. (100k+ sq. ft.) of stage space, plus ancillary workshops, offices and backlot

TV productions show a greater range of stage preferences, although cost considerations may result in selecting non-conventional locations

If at all possible, producers prefer to concentrate filming at one facility, rather than split over multiple sites

“Many production facilities don’t have sound stages big enough to serve very big productions. Big films need 120 -150k sq. ft. of stage space”

UK Film and TV Industry Body #2

“The majority of films will want a backlot – it’s important for when you need certain types of light”

Major US Film Studio #7

“Every show will be slightly different – but typical footprint is about 100,000 sq. ft. (ideally 5 x 20k sq. ft.). Then we need about another 75,000 sq. ft. of extra space for offices, workshops etc. and we want it in one facility”

Major US Film Studio #3

“Since many of our films are fantastical in nature, we need a significant amount of space. Typically, it’s 80-100k sq. ft. of stage space, divided up into a 30k sq. ft. stages for a manor house or castle etc. but then also smaller sets for a hotel room or a café”

Major US Film Studio #2

“These [high end] TV series are the same size as filming movies in terms of set size and sound stages”

UK Film and TV Industry Body #2

“On average I’m looking for 40-60k sq. ft. of stage space...in addition, I need everything else, like backlot, office. It’s a misconception that television is smaller and leaner than feature films”

US TV Commissioner #3

“With TV we could maybe do slightly smaller stages than with film”

Major US Film Studio #3

“Because we’re cost constrained, we’ll look for alternative filming sites...we’ve used ex-military sites before”

UK production company #2

“We want to be in one place to save time, money, and our sanity – it really helps to make the difficult movies a little less difficult”

Major US Film Studio #3

“It’s really not ideal to have to use 2 facilities, as it increases costs for facilities and workshops”

Independent Film Producer #1

Source: Interviews
More and higher quality screen content (film and high-end TV) is being produced globally. The UK government has a target to nearly double the UK’s film & high-end TV inward investment spend. London is a preferred location for international blockbuster and HETV production. London’s ability to accommodate more productions is constrained as there is a relatively small amount of stage space. As a result, there is more demand for London than available supply – we estimate this potential demand as 8 additional blockbusters per year. A studio expansion in Shepperton would address a material portion of this demand. The Shepperton expansion would make a significant contribution towards meeting the government target for inward investment.
**UK Government policy has been highly supportive of attracting international film and high-end TV to the UK and been consistently implemented cross-party**

**Film tax relief**
- Introduced in 2007, the UK tax relief applies to all British films of any budget level.
- Initially, the tax relief applied to 25% for the first £20 million of qualifying expenditure and 20% for spending above this threshold. Production expenditure is defined as expenditure incurred on filming activities (pre-production, principal photography and post production).
- In 2015, the UK Government increased and simplified this, to a flat rate of 25% of UK qualifying expenditure.
- Details on film tax relief can be found on HMRC’s website.

**High-end TV tax relief**
- In 2013, the government introduced a new tax relief for high-end TV for scripted TV projects with a minimum core expenditure of £1m per broadcast hour.
- Tax relief is available for British qualifying scripted TV and must reach a minimum UK spend requirement of 10%.
- Details on high-end TV tax relief can be found on HMRC’s website.

Source: UK Government
The UK Government is supportive of inward investment as it creates economic growth and employment

Investment in the film industry brings substantial benefits to the UK, both through economic output and employment.

It is estimated that the tax relief which incentivises film production to come to the UK, generates large returns in terms of tax revenue and GVA.

Economic contribution (GVA) of Core UK Film sector, 2013 (£bn)

| Direct impact (e.g. Production, distribution, cinema exhibition) | 1.4 |
| Spillover effects (e.g. Film induced tourism and merchandise) | 0.8 |
| Multiplier effects (e.g. Suppliers to the value chain) | 1.5 |

Total: £7.7bn

Employment impact

- 39.8k FTEs
- 40.5k FTEs
- 17.0k FTEs

Total: 97.3k FTEs

Estimated impact on tax revenue and GVA of each £1 additional tax relief granted to the film industry in the UK between 2006/07–2013/14, £

- 12.49
- 3.74
- 1.00

Tax relief

Additional tax revenue

Additional GVA

Note: GVA is Gross Value Added, which provides a value for the amount of goods and services that have been produced, less the cost of all inputs and raw materials that are directly attributable to that production.

Source: Olsberg Report - "Economic Contribution of the UK’s Film, High-End TV, Video Game, and Animation Programming Sectors"; Investopedia
Going forward, the UK Government has set a target of nearly doubling inward investment from film & HETV to £4bn by 2025

UK Government target for inward investment in film and HETV, 2017-2025

- Film inward investment and high-end TV in the UK have increased by c.92% and c.162% respectively over the last 5 years
- In the Creative Industries Sector Deal published in March 2018, the government stated that growing inward investment in film and HETV to £4bn by 2025 is feasible if sufficient capacity in sound stages is added and the crew base is sufficiently expanded

Source: UK Government Creative Industries Sector Deal March 2018
More and higher quality screen content (film and high-end TV) is being produced globally.

The UK government has a target to nearly double the UK’s film & high-end TV inward investment spend.

London is a preferred location for international blockbuster and HETV production.

London’s ability to accommodate more productions is constrained as there is a relatively small amount of stage space.

As a result, there is more demand for London than available supply – we estimate this potential demand as 8 additional blockbusters per year.

A studio expansion in Shepperton would address a material portion of this demand.

The Shepperton expansion would make a significant contribution towards meeting the government target for inward investment.

Section
A small number of production facilities globally regularly serve international blockbuster movies and high-end TV; the top studios globally are all based in and around London

Major international production facilities by number of large film / TV productions, 2013-17

Note: 1) Films quoted as having used multiple studios have been double counted 2) Does not include animated films 3) We have included high-budget drama series with budgets >$100m per season, but excluded long running comedies and sitcoms like The Big Bang Theory

Source: IMDB, The-Numbers, PwC Research
There is high concentration of suppliers near to Shepperton, within the greater west London cluster

Shepperton supplier locations vs. Shepperton

<table>
<thead>
<tr>
<th>Decile</th>
<th>Distance from Shepperton (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>26</td>
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<tr>
<td>5</td>
<td>30</td>
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<tr>
<td>6</td>
<td>45</td>
</tr>
<tr>
<td>7</td>
<td>77</td>
</tr>
<tr>
<td>8</td>
<td>133</td>
</tr>
<tr>
<td>9</td>
<td>258</td>
</tr>
<tr>
<td>10</td>
<td>609</td>
</tr>
</tbody>
</table>

50% of suppliers within 30km

Source: Management Information
Major studios such as Pinewood, Shepperton and Leavesden are the most desirable locations in the UK for blockbuster films; smaller studios tend to serve different customers.

UK production facility landscape

Note: 1) A number of these studios would also be considered part of the greater west London cluster
Source: TheKnowledge.com, Studio Websites, PwC Interviews

“The London tent-pole studios are Leavesden, Pinewood and Shepperton. Bigger movies will prefer these studios in the UK. There are a number of smaller UK facilities which can also serve productions when required e.g. Longcross, Arborfield, Gillette Corner, Ealing, Elstree – but these studios are all way smaller than Pinewood and Shepperton”

Independent Film Producer #2

“Regional studios are not going to house tent pole movies due to the size of the facility, volume of crew, and location. Huge shows and movies which are filming for long time periods just wouldn’t be able to do it outside of the southeast in order to get the talent required”

UK Film and TV Industry Body #2
## London is attractive to international productions due to its infrastructure & skills, location and financial advantages

### Infrastructure & skills
- A highly skilled crew and talent base is present in the UK, avoiding the need for imports of crew from elsewhere
- Purpose-built production facilities with sizeable stage footprints and backlots are available
- High-quality equipment is available, minimising the imports required

### Location
- International top talent is happy to be based in London whilst filming
- A number of films are set in the UK, which encourages filming here
- A variety of filming landscapes are available within reasonable proximity (city, countryside, rugged)
- The UK is well served by major airports, especially Heathrow which may be expanded following parliamentary approval for a third runway

### Financial
- UK tax incentives are simple and attractive compared to other locations (e.g., no cap, applies to above and below the line)
- Government support for the creative industries, including film & HETV, is bipartisan

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**Source: PwC Interviews**

"The UK is globally recognised as second to none in having all of the people and talent you need to make a film"

**UK production company (#4)**

"The talent and creatives like to go to London. We don’t have to force them to go there, like we would with some other countries"

**Major US film studio (#5)**

"The benefits of the UK tax incentive are that it’s very simple relief and it’s paid back very quickly. No other countries have one as efficient or appealing"

**UK film and TV industry body (#6)**

"One current film in production is set in the UK so we need to film in the UK...we want to film in real locations"

**Major US film studio (#2)**

"The UK has the most robust tax incentive scheme and there’s full non-partisan government support behind it which is fantastic"

**Major US film studio (#5)**

"We look to film at all the studios that can provide a variety of different sized stages with good infrastructure and crew bases nearby"

**US TV Commissioner (#1)**

"Being close to Heathrow is a great benefit"

**US TV Commissioner (#1)**

"The local infrastructure is important in terms of crew, equipment, and liveability"

**US TV Commissioner (#3)**
The depth and expertise of the UK production crew base is widely recognised, and is a key reason why producers choose the UK

The crew and talent base in the UK is large is widely seen as a highly valuable asset to filmmakers and production companies

In particular, the level of technical expertise amongst the UK crew base is highlighted as a key strength

“The UK is really attractive to film in...There’s great crews ”
US TV Commissioner #2

“UK is attractive for a number of reasons...the crews are spectacular there, they are some of the best in the world in terms of technical skills”
Major US Film Studio #3

“A lot of our directors are already UK-based...The crew base is really good”
Major US Film Studios #5

“The technical and talent infrastructure in the South East is way ahead of anywhere else in the UK. It’s one of the biggest and most effective clusters in the world.”
UK Film and TV Industry Body #4

“The UK has world-class facilities partly because of scale and partly about the technical support – film crew, construction – that can be provided ”
UK Film and TV Industry Body #3

“The UK crew base have excellent technical knowledge”
Independent Film Producer #2

“Everyone wants to film in the UK because the crew base and production facilities are so good”
Independent Film Producer #1

Source: PwC Interviews
London has premier production facilities with large sound stage footprints suitable for blockbusters, in addition to backlots and offices (1 of 2)

<table>
<thead>
<tr>
<th>Facility</th>
<th>Pinewood Iver Heath</th>
<th>Shepperton</th>
<th>WB Leavesden</th>
<th>Longcross</th>
<th>Babelsberg</th>
<th>Pinewood Atlanta</th>
<th>Sony Pictures Studios</th>
<th>Titanic Studios</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Iver Heath, UK</td>
<td>Surrey, UK</td>
<td>Hertfordshire, UK</td>
<td>Woking, UK</td>
<td>Babelsberg, Germany</td>
<td>Atlanta, USA</td>
<td>Culver City, USA</td>
<td>Belfast, UK</td>
</tr>
<tr>
<td><strong>Number of stages</strong></td>
<td>21</td>
<td>15</td>
<td>14</td>
<td>4</td>
<td>21</td>
<td>18</td>
<td>18</td>
<td>2 (plus 4 'cells')</td>
</tr>
<tr>
<td><strong>Range of stage sizes (000 sq. ft. NLA)</strong></td>
<td>1.7 – 59</td>
<td>3 – 30</td>
<td>10.8 – 48.8</td>
<td>12.2 – 42</td>
<td>3.9 – 75.8</td>
<td>15 – 40</td>
<td>7.6 – 41.9</td>
<td>16 – 21</td>
</tr>
<tr>
<td><strong>Total sound stage footprint (000 sq. ft. NLA)</strong></td>
<td>417</td>
<td>168</td>
<td>400</td>
<td>92</td>
<td>300</td>
<td>360</td>
<td>354</td>
<td>106</td>
</tr>
<tr>
<td><strong>Backlot?</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Offices?</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Flight time to LA</strong></td>
<td>12 hours</td>
<td>12 hours</td>
<td>12 hours</td>
<td>12 hours</td>
<td>14 hours</td>
<td>4 hours, 45 minutes</td>
<td>n/a</td>
<td>14 hours</td>
</tr>
</tbody>
</table>

Source: Company Websites, Public Information
**London has premier production facilities with large sound stage footprints suitable for blockbusters, in addition to backlots and offices (2 of 2)**

<table>
<thead>
<tr>
<th></th>
<th>Big Easy Studios</th>
<th>Elstree</th>
<th>Fox Studios Australia</th>
<th>Pinewood Toronto</th>
<th>Universal</th>
<th>Vancouver Film Studios</th>
<th>Village Roadshow Studios</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>New Orleans, USA</td>
<td>Hertfordshire, UK</td>
<td>Sydney, Australia</td>
<td>Toronto</td>
<td>LA, USA</td>
<td>Vancouver, Canada</td>
<td>Gold Coast, Australia</td>
</tr>
<tr>
<td><strong>Number of stages</strong></td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>10</td>
<td>29</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td><strong>Range of stage sizes</strong></td>
<td>15.4 – 26.2</td>
<td>3.8 – 15.7</td>
<td>4 – 42</td>
<td>10 – 46</td>
<td>6.8 – 29</td>
<td>12.5 – 21</td>
<td>4.8 – 40</td>
</tr>
<tr>
<td><strong>Total sound stage footprint</strong></td>
<td>[unavailable at time of writing]</td>
<td>60</td>
<td>160</td>
<td>196</td>
<td>381</td>
<td>190</td>
<td>157</td>
</tr>
<tr>
<td><strong>Backlot?</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Offices?</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Flight time to LA</strong></td>
<td>4 hours</td>
<td>12 hours</td>
<td>13 hours, 45 minutes</td>
<td>5 hours, 20 minutes</td>
<td>n/a</td>
<td>3 hours</td>
<td>13 hours</td>
</tr>
</tbody>
</table>

Source: Company Websites, Public Information
The UK’s tax incentives are very attractive to producers as incentives apply to all spending and there is no annual cap on rebates paid

Film tax incentives in selected regions

**British Columbia, Canada**
- Federal tax credit of 16%
- Province tax credit of 28%
- Above-the-line costs excluded
- Minimum project spend of $745m; no project cap
- No annual cap

**Ontario, Canada**
- Federal tax credit of 16%
- Province tax credit of 21.5%
- Minimum project spend of $745m; no project cap
- No annual cap

**UK**
- 25% cash rebate of qualifying project expenditure
- No project cap
- Applies to above- and below-the-line costs
- No annual cap

**Germany**
- 20% rebate (on German production costs)
- Minimum project budget of $1.1m
- Project cap of $4.3m per project
- Annual cap of $136m from 2018 onwards

**California, USA**
- 20% feature film / 25% independent film tax credit on below the line costs
- Above-the-line costs excluded
- Credit capped at first $100m of expenditure for feature films / $10m for independent film
- $330m annual cap / $1.55bn over 5 years

**Hungary**
- 25% rebate
- No project cap
- Government cap of $439 to end of 2019

**Georgia, USA**
- 20% Transferable tax credit
- Applies to above- and below-the-line expenditure
- No project cap
- $500k minimum project spend (can be split over multiple projects)
- Additional 10% if Georgia promotional logo included in content
- No annual cap

**Ontario, Canada**
- Federal tax credit of 16%
- Province tax credit of 21.5%
- Minimum project spend of $745m; no project cap
- No annual cap

It is difficult to compare tax incentive schemes across countries/regions as:
- Each country applies the tax incentives to different parts of the budget or expenditure in the region
- Many have caps or different rates for different sizes of production budgets
- The volatility/ frequency of change varies significantly

Source: KPMG report “Film Financing Taxation Guide”, Olsberg, BFI, LA Film report (2016)
The FX rate can make filming locations more or less desirable. The current USD/GBP FX rate makes the UK quite attractive.

The FX is a consideration when producing a film, however it is unlikely to be a critical deciding factor. Even so, GBP/USD rate has been relatively attractive in recent years.

“Exchange rate gets thrown into the equation when we are looking at the overall cost of the picture but it’s not so big it tips the dial. We wouldn’t take a film to some place just because of the exchange rate.”

Major US Film Studio #6

“Overall though FX has less impact than you think. If $ is strong then the UK is cheap to film in, but when money comes back into the US from cinema tickets it’s also worth less.”

Independent Film Producer #3

“If the GBP / USD FX rate went back up then productions might not spend as much in the UK.”

Independent Film Producer #2

Exchange rate of GBP vs. USD, 2000-2018
USD per GBP

Source: OFX
**The greater west London cluster is the preferred location for international productions in the UK; if they can’t film here they typically consider other international locations**

International productions are attracted to the Greater West London area for a number of reasons including the quality of crews and transport links...

<table>
<thead>
<tr>
<th>Crews and equipment</th>
<th>“The technical and talent infrastructure in the South East is way ahead of anywhere else in the UK”</th>
<th>“There’s a crescent from Elstree to Longcross of good facilities and crew. Major productions want a hub here because that’s where the construction crews are, and crews prefer to work close to where they live”</th>
<th>“The reality is that it’s a very tight marketplace and if we are not able to find space at Shepperton or Pinewood or a warehouse then we have to look elsewhere outside of the UK ”</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UK Film and TV Industry Body #4</strong></td>
<td><strong>Independent Film Producer #3</strong></td>
<td><strong>US TV Commissioner #1</strong></td>
<td></td>
</tr>
<tr>
<td>Culture</td>
<td>“Top talent really like being close to London, and producers and directors like to be close to their homes in London”</td>
<td>“We want to develop the rest of the UK more and more but the talent wants to be in close proximity to London and the South East”</td>
<td>“There are a number of films that we haven’t been able to fit in to the UK’s top facilities, and they end up filming in other international locations”</td>
</tr>
<tr>
<td><strong>Major US Film Studios #1</strong></td>
<td><strong>UK Film and TV Industry Body #2</strong></td>
<td></td>
<td><strong>UK Film and TV Industry Body #2</strong></td>
</tr>
<tr>
<td>Proximity to Heathrow</td>
<td>“Being close to Heathrow is a great benefit. Execs don’t want to have to drive or make connecting flights. We want to be close to an airport and not too far from central London”</td>
<td>“Access to Heathrow and internet connectivity are expected from all top facilities”</td>
<td></td>
</tr>
<tr>
<td><strong>US TV Commissioner #1</strong></td>
<td><strong>Independent Film Producer #3</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: PwC Interviews
The UK has experienced strong growth in the volume of film and HETV produced

Volume of films produced in the UK by type of investment, 2010-17

Volume of high-end TV shows* produced in the UK by type of investment, 2013-17

*Defined as TV shows which qualified for the UK Government’s high-end TV tax credit (£1m per hour of content).

Source: BFI

2017 numbers may reflect lower totals than actual, due to difficulty in collecting data on time.
In value terms, 2017 recorded the highest value of screen sector production spend since 1994, due to the inclusion since 2013 of high end TV (HETV) production expenditure and a boost in inward investment film production.

UK feature film production spend, 2002-17
£bn

UK HETV production spend, 2013-17
£bn

Source: BFI
The UK’s main competitor locations currently are Vancouver, Atlanta and Budapest; interview feedback suggests space is hard to find in all three areas, although Atlanta has eased pressure by expanding in recent years

<table>
<thead>
<tr>
<th>Location</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Vancouver      | • Vancouver is well perceived due to its film community, crew base and favourable climate  
• However, its film tax rebate only applies to below-the-line spend (i.e., applies only to production and not actors’ salaries)  
• Key studios: Vancouver Film Studios, CMPP, Mammoth  
 "Atlanta and Vancouver are expanding and full ”  
**UK Film and TV Industry Body #2**  
 "It is hard to get stage space in Atlanta, Budapest and Vancouver”  
**Major US Film Studio #7**  
 "It’s easier to find space in Georgia as there are more facilities there...We were always able to get space at Pinewood Atlanta previously and now there’s more space than there has ever been as more facilities open”  
**Major US Film Studio #6**  |
| Atlanta        | • Atlanta is seen favourable due to its strong tax incentive and available stage space  
• However, its climate and lack of film community are not as favourable as Vancouver or London  
• Key studios: Pinewood Atlanta  
 "Atlanta were smart and have more stages (than London). There are a lot of facilities available ”  
**Major US Film Studio #3**  |
| Budapest       | • Budapest is perceived very well as an alternative filming location to the UK, due to its good tax incentive and skilled crew base  
• However, some interviewees noted that talent may be reticent to film here  
• Key studios: Origo  
 "Budapest has a good amount of stage space in relatively close proximity to down town. ”  
**US TV Commissioner #1**  
 "It’s becoming hard to get into Budapest as well. It’s regularly full”  
**Major US Film Studio #1**  |

Source: PwC Interviews
A reasonable amount of capacity in these locations has opened recently or is scheduled to become available; the UK needs to expand or risk losing business

<table>
<thead>
<tr>
<th>Location</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vancouver</strong></td>
<td>Four studios already open at 812 sq. m (8,750 sq. ft.), 700 sq. m. (7,500 sq. ft.) and two at 580 sq. m. (6,250 sq. ft.) Two more studios to follow in early 2019. Site includes office space and a prop shop.</td>
</tr>
<tr>
<td><strong>Atlanta</strong></td>
<td>Opened in 2017 with 9 sound stages varying in size from 1.9-3.7k sq. m. (20-40k sq. ft.) with associated office space, mill space and post production facilities on site. Plans to double in size in 2018.</td>
</tr>
<tr>
<td><strong>Budapest</strong></td>
<td>From available sources and desktop research we have found no evidence of plans for new studios or significant expansions amongst Budapest studios.</td>
</tr>
</tbody>
</table>

**Vancouver**
- Opened in 2017 Martini Film Studios is a 14k sq. m. (150k sq. ft.) facility with eight stages and an additional 9k sq. m. (100k sq. ft.) of backlot space in Vancouver.

**Atlanta**
- Proposed new Founders studio is being built in Atlanta and opening 1Q 2019. Phase one 9k sq. m. (100k sq. ft.) of stage space and at full build out 23k sq. m. (250k sq. ft.) of space is proposed.

**Budapest**
- New studios established in 2018 on the former site of Tyler Perry Studios in Atlanta. Consists of five sound stages on 60 acres as well as offices and post production facilities.

Source: Company Websites, Public Information
More and higher quality screen content (film and high-end TV) is being produced globally.

The UK government has a target to nearly double the UK’s film & high-end TV inward investment spend.

London is a preferred location for international blockbuster and HETV production.

London’s ability to accommodate more productions is constrained as there is a relatively small amount of stage space.

As a result, there is more demand for London than available supply – we estimate this potential demand as 8 additional blockbusters per year.

A studio expansion in Shepperton would address a material portion of this demand.

The Shepperton expansion would make a significant contribution towards meeting the government target for inward investment.
**We have used a number of data inputs to estimate the market need today and in the future for sound stages in London**

Market potential vs. supply analysis for greater west London – calculation steps and data sources

<table>
<thead>
<tr>
<th>Current – 2017</th>
<th>Future – up to 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply side</strong></td>
<td><strong>Demand side</strong></td>
</tr>
<tr>
<td>Current sound stage space in London</td>
<td>Current occupied stage space in London</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Market potential ($9 + 9$) vs. Supply ($9$)</strong></td>
<td><strong>Growth in market potential</strong></td>
</tr>
</tbody>
</table>

Key
- Data input – see following slides
- Output (calculation / comparison)
1 **Current sound stage space in London**

- Calculate sound stage space within the greater west London cluster (based on company websites). This includes Pinewood, Shepperton, WB Leavesden, Longcross, Arborfield, Cardington, Elstree, Gillette Building, Black Island, West London, Black Hanger, Ealing, Bray, Twickenham, Wimbledon, LH2 and Duke’s Island

2 **Current occupied stage space in London**

- We estimate that in 2017 the entire usable supply of sound stage space was occupied (i.e., demand = supply)
- This is based on several data sources:
  - Utilisation of Pinewood and Shepperton being c.85-90% in the past 2-3 years
  - Anecdotally hearing that other major studios (e.g., Leavesden) are also ‘full’
  - Significant evidence from interviews (both with major US film studios and independent film producers) that it is very challenging to find sound stage space in London

Source: Management Information, PwC Interviews
Potential unmet demand (1 of 2)

Potential unmet demand

Step 1: estimate unmet production spend

Blockbusters released 2015-17 by filming location

<table>
<thead>
<tr>
<th></th>
<th>Number of blockbusters</th>
<th>Production budgets $m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholly filmed in London / UK</td>
<td>20</td>
<td>3,681</td>
</tr>
<tr>
<td>Partially filmed in London / UK</td>
<td>7</td>
<td>1,170</td>
</tr>
<tr>
<td>Wholly filmed outside London / UK</td>
<td>40</td>
<td>6,020</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>11,315</td>
</tr>
</tbody>
</table>

Of those filmed wholly outside the UK

<table>
<thead>
<tr>
<th></th>
<th>Number of blockbusters</th>
<th>Production budgets $m</th>
<th>Weighted by likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly unlikely to film elsewhere</td>
<td>9</td>
<td>1,427</td>
<td>-</td>
</tr>
<tr>
<td>Somewhat unlikely to have filmed elsewhere</td>
<td>8</td>
<td>1,380</td>
<td></td>
</tr>
<tr>
<td>Apparently footloose productions – accessible for London / UK</td>
<td>23</td>
<td>3,657</td>
<td>3,657</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>6,464</td>
<td>3,657</td>
</tr>
</tbody>
</table>

‘Unmet’ production budget 2015-17 $m

3,657

‘Unmet’ production budget p.a. $m

1,219

Source: PwC Analysis

- For every blockbuster ($100m+ budget) released between 2015-17, we have captured the studios in which it filmed (including if it split across different facilities; excluding animated blockbusters)
- Based on this analysis, we estimate that 40 of 67 blockbuster movies were filmed wholly outside London / the UK
- We then analysed each of the 40 blockbusters outside London / the UK, to understand how ‘footloose’ its choice of filming location was (e.g., did it require significant location filming, or was it predominantly set-based; were the Director / main actors local; if a franchise, was there a precedent of filming in that location)
- We estimate that 23 of these 40 films were internationally footloose and therefore could have considered London / the UK as a viable filming location. The total budgets of these films was $3.7bn
- This suggests that London / the UK could win additional blockbuster productions with a total production budget of $1.2bn annually
- Note, this analysis does not include high-end TV and therefore may understate the total potential demand for London / the UK
Potential unmet demand (2 of 2)

Potential unmet demand

Step 2: estimate equivalent floorspace

a) Calculate a production budget : floorspace ratio

• We took the 10 blockbuster productions that had filmed at Pinewood and Shepperton from 2014-17
  - For each of these films, we found:
    ◦ Production budget (from TheNumbers.com)
    ◦ Stage footprint taken (from Pinewood data; NLA)
    ◦ Length of time spent filming (from Pinewood data)
  • Using this information, we calculated an average production budget per occupied sq. ft. per year metric – c.$1,500
  • We then adjusted this to account for unoccupied stage space, based on Pinewood and Shepperton average utilisation of 85% between 2013-17. This provided a production budget : floorspace ratio for major studios in London – c.$1,300

b) Apply to blockbusters

• We applied the production budget : floorspace ratio to the production budgets of internationally footloose productions to estimate the UK’s ‘potential unmet demand’ in sq. ft.

Source: Management Information, The-Numbers.com
### Potential unmet demand (2 of 2)

#### Changes to capacity to 2025

<table>
<thead>
<tr>
<th>Studio</th>
<th>Location</th>
<th>Expansion in stage space (000 sq. m. NLA, 000 sq. ft.)</th>
<th># stages</th>
<th>Year of expansion / closure</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinewood</td>
<td>Greater west London</td>
<td>13 (East: 8, West: 5) (140 (East:90; West: 50))</td>
<td>8</td>
<td>2019; 2021</td>
<td>Planning permission gained</td>
</tr>
<tr>
<td>WB Leavesden</td>
<td>Greater west London</td>
<td>7 (74)</td>
<td>2</td>
<td>2019</td>
<td>Planning permission gained</td>
</tr>
<tr>
<td>Elstree</td>
<td>Greater west London</td>
<td>3 (32)</td>
<td>2</td>
<td>2019</td>
<td>Planning permission gained</td>
</tr>
<tr>
<td>Cardington</td>
<td>Bedford</td>
<td>9 (98)</td>
<td>1</td>
<td>2014</td>
<td>Opened 2014</td>
</tr>
</tbody>
</table>

**Committed openings**

- **Cardington**
- **Pinewood**
- **WB Leavesden**
- **Elstree**

**Committed expansions**

- **Cardington**
- **Pinewood**
- **WB Leavesden**
- **Elstree**

**Potential closures**

- **Arborfield**
- **Longcross**

Source: Studio Websites, Management Information
Potential unmet demand (2 of 2)

Growth in market potential

Global film spending growth rates, nominal and real, 2018-25

Step 1: Prepare projections of global entertainment and media (E&M) spending

- For the period of 2018-2022, we have used the projections of global E&M spending growth as reported in the “2018 PwC Global Entertainment and Media Outlook”. For the period of 2023-2025, our projections are based on consideration of i) projections of global nominal GDP growth during this period and ii) historic relationship between E&M spending (data obtained from PwC’s E&M outlook) and nominal GDP growth (data obtained from IMF for 2018-2023 and PwC’s World in 2050 report for 2024-2025).
- GDP growth is a key driver of global E&M spending. Entertainment and media expenditure should increase in periods of strong economic growth, when consumers have relatively higher levels of disposable income to spend.
- On average, historical growth in global E&M spending has been slightly below the equivalent growth rate of nominal global GDP. As a result, we have included a downward adjustment (0.5 percentage points) to the GDP forecasts when deriving the E&M growth projections.

Step 2: Project film’s share of global entertainment and media spending

- We have estimated film’s share of total E&M spending globally, and extrapolated share for the projection period.
- Film’s share of E&M spending has averaged 5.7% between 2000 and 2017. These shares are currently trending downwards, as other forms of media entertainment outgrow film (e.g. video games), but appear to have stabilised at c.5.1% (average 2010-17 and 2013-17).
- As a result, we have assumed film’s market share of E&M will remain 5.1% between 2018-25.
- While in practise we expect this share to vary on a yearly basis, as particular forms of media gain and lose popularity, over the longer term, we believe it reasonable to assume this share is constant.

Step 3: Prepare estimate for global film spending growth

- We combine the projections of (i) global E&M spending and (ii) film’s share of global E&M spending to create estimates of global film spending growth.
- We use projected global film spending growth as a driver for growth in ‘market potential’ as this predominantly consists of inward investment films which are often internationally financed.

Producers and commissioners are very supportive of the planned expansion of Shepperton

“The benefits to UK from the expansion of Shepperton are so great it really is worth doing – we really need it”
UK Film Industry Body #2

“If you expand Shepperton then the tentpoles will always want the additional stages”
Independent Film Producer #2

“Shepperton receiving planning permission is crucial for the success of industry.”
Independent Film Producer #1

“I’m in full support of Shepperton expanding – we need more sound stages in the UK”
Major US Film Studio #7

“[Shepperton will add] much needed capacity and a positive signal to send to the west coast that the U.K. is ready to produce even more quality content.”
Owner, Independent film management consultancy

“[The UK] could certainly do with the space!”
Film financing & accountancy expert

“We love London for obvious reasons and we prefer Pinewood and Shepperton. Those are the best locations and that is why the expansion of Shepperton will be so great, because it’s still the favourite spot of film-makers.”
Major US Film Studio #5

Source: Interviews
Potential site closures (e.g., Longcross and Arborfield Garrison) due to residential housing developments would have a negative impact on capacity

Sound stage space and blockbuster market potential for London (000 sq. m. NLA), 2017-2025

Key assumptions

Longcross closes in 2023:
- The Longcross site is an ex-military base. The north-west portion of this site is used as a sound stage. The rest of the site is being used for residential housing development (albeit in various stages of completion)
- Some interviewees hypothesised that Longcross Studios may close in the future to provide additional housing

Arborfield closes in 2025:
- Arborfield currently has planning permission to be used as film studios for c.9 years from 2017 (i.e., to 2025/26) – for illustration purposes, we have assumed a 2025 closure

Source: Company Websites, PwC Analysis
More and higher quality screen content (film and high-end TV) is being produced globally. The UK government has a target to nearly double the UK’s film & high-end TV inward investment spend. London is a preferred location for international blockbuster and HETV production. London’s ability to accommodate more productions is constrained as there is a relatively small amount of stage space.

As a result, there is more demand for London than available supply – we estimate this potential demand as 8 additional blockbusters per year. A studio expansion in Shepperton would address a material portion of this demand. The Shepperton expansion would make a significant contribution towards meeting the government target for inward investment.
We estimate that committed capacity developments in major London studios could contribute c.50% of the inward investment required to meet the UK Government target

Methodology to estimate annual inward investment that capacity increases will capture

1 Calculate inward investment target increase in real terms
   - We have used a GDP deflator rate of 2.5% as a measure of long-run inflation since our growth rate figure is based on GDP drivers. This is a more appropriate measure for inflation than CPI as it looks at inflation in both intermediate and final goods and services. Since supply of studio space is an intermediate service used in the production of films, it is not captured in CPI’s basket of goods and services, but is captured in GDP deflator measure of inflation
   - Based on this, the UK Government target for 2025 in real terms is £3.3bn (vs. £2.4bn in 2017)
   - This represents a gap of £883m p.a. of additional inward investment for the UK to capture by 2025

2 Estimate annual production budget contribution of planned capacity increases
   - Planned capacity expansions in Pinewood, Leavesden, Elstree and Shepperton will add 66k sq. m. NLA (711k sq. ft.) of floorspace to London
   - This is equivalent to hosting productions with budgets of $896m (based on our production budget : floorspace ratio)

3 Estimate annual inward investment that planned capacity increases will capture
   - The BFI estimates that c.67% of inward investment film production budgets are spent in the UK (where the filming has at least partially taken place in the UK)
   - This means that the planned capacity increase budget of $896m is expected to equate to inward investment of c.£465m p.a.
   - This accounts for 53% of the UK Government target of £883m

Source: Oanda, BFI, UK Government, PwC Analysis
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Director
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