PRICEWATERHOUSECOOPERS

NZFA©T

Economic contribution of the New Zealand film and television industry

November 2009

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16 November 2009

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Dear Tony,

Economic contribution of the New Zealand film and television industry in 2008

We have very much enjoyed working with you to estimate the contribution made by the film and television industry to the New Zealand economy.

In 2008, it is estimated the film and television industry contributed approximately 1.4% of New Zealand's GDP. To put this in context, the wine industry was estimated to have contributed 0.84% in that period. With almost 22,000 total full time equivalent positions created in New Zealand as a result of film and television industry activity, it represented about 1% of the total labour force in 2008.

In drawing together this analysis, it has been possible to identify areas of film and television activity not fully captured in the national income accounting framework, specify sources of data for those areas and estimate the additional value added of the industry. These innovations could be replicated in future years, and for other countries. There is still activity, however, particularly in the digital content sector that could be included in further analyses of this type as reliable information becomes available.

This report is issued pursuant to the terms and conditions set out in our Agreement dated 15 July 2009. Please note the restrictions at Appendix C on the last page of this report.

Yours sincerely

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Acknowledgements

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Additionally, a large number of firms and individuals operating in the film and television industry revealed commercially sensitive information to the research team. This enabled a more precise approach to this study. These firms are not specifically mentioned, as part of our promise of confidentiality to them.

PRICEWATERHOUSECOOPERS

Executive Summary

Background and purpose

This study examines the contribution of the film and television industry to the New Zealand economy and provides estimates measuring the magnitude of that contribution for 2008. It estimates that the industry's value added is over 1 percent of New Zealand's gross domestic product (GDP).

The analysis takes account of the **direct**, **indirect** and **induced** economic impacts created by the industry to determine the industry's total economic contribution. In other words, it measures not just the spending that occurs by the industry itself, but the subsequent effects of that spending as money, labour and materials impact other industries.

To quantify the economic contribution of the film and television industry, four measures are estimated:

- **gross output** – the combined revenues of all industry participants attributable to film and television activity;
- **value added** – the returns to labour and capital attributable to the industry (which amounts to the industry's contribution to GDP);
- **labour income** – the contribution made by the industry in wage and salary payments (a subset of value added); and
- **employment**– the number of jobs created as a result of film and television industry activity.

Additionally, other contributions made by these industries to the New Zealand economy are identified and described.

The film and television industry is a changing and evolving industry with new services, products and distribution channels frequently. The system of national accounts that seeks to measure this industry is structured based on industry classifications that are revised relatively infrequently. As is the case with other industries that change with the pace of the technology driving their production, the system cannot separately identify all of the activity of the film and television industry in a manner that reflects current industry structure.

NZFA©T has an interest in knowing with greater accuracy the impact of film and television on the economy, as its role is to protect the creators of content. Better information about the significance of the industry informs the dialogue between copyright owners and the New Zealand government about protecting the rights upon which the industry relies in order to remain commercial.

Results

Table 1 sets out the key estimates calibrated by this study to calculate the economic impact of the NZ film and television industry.

Table 1: Total economic impact of NZ film and television industry

Industry Sector	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	**Total**
Production	1,266	2,890	373	955	316	613	3,470	8,328
TV Broadcast	1,155	1,950	716	1,120	174	413	2,622	7,850
Distribution	176	361	44	123	6	17	195	570
Film Exhibit'n	145	300	49	129	35	68	1,130	1,780
Rental	153	310	61	146	44	81	1,475	2,375
Retail	210	290	28	68	26	47	680	1,080
TOTAL	**3,105**	**6,101**	**1,271**	**2,541**	**601**	**1,239**	**9,572**	**21,983**

Source: PricewaterhouseCoopers, Statistics NZ; Butcher Partners Ltd.

This study estimates that: [1]

- the **total gross output** in New Zealand arising as a result of the film and television activity was approximately $6.1 billion in 2008.
- the **total value added** to the New Zealand economy from film and television activity was approximately $2.54 billion in 2008.
- the **total labour income** in New Zealand generated as a result of film and television activity is approximately $1.2 billion.
- the **total employment created** in New Zealand as a result of film and television activity is estimated to have been almost 22,000 full time equivalent positions in 2008.
- the **average salary** for those directly employed in the film and television industry in 2008 was $63,000 per annum.
- the New Zealand film and television industry contributes **1.4% of GDP,** which can be compared to the wine industry's contribution of 0.84% of GDP.

In addition, significant economic benefits may accrue to the New Zealand economy when film and television content enhances awareness and equity in its national brand. This can increase tourist activity, enhance the perception of other New Zealand goods and services and contribute to the sense of national identity. Such impacts are not quantified in this study.

[1] All film and television industry results would be lower if 2003/2004 multipliers were used, however, they are considered to be outdated. The results expressed in this study are based on multipliers developed for this particular analysis. They are based on 2003/2004 multipliers, but have been modified to incorporate more recent data and survey results.

These results in context

Total New Zealand GDP in 2008 was $178 billion.[2] The film and television industry's **direct** impact of $1.27 billion was, therefore, 0.7 percent of GDP, and its **total** impact of $2.5 billion was 1.4 percent of GDP.

The total New Zealand labour force (people employed) in 2008 was an average of 2.188 million.[3] With 9,572 direct jobs, the film and television industry directly employs 0.4 percent of the New Zealand labour force. With 21,983 total jobs, film and television is directly and indirectly responsible for the employment of 1.0 percent of the New Zealand labour force.[4]

The average direct value added to the economy per employee in the film and television industry is $133,000.[5] By contrast, an average for all New Zealand employees is $81,000.[6] This means that combined wages and profits generated by film and television businesses is higher, per employee, than the average for the New Zealand economy.

The average salary for those directly employed in the film and television industry in 2008 is estimated to be $63,000 per annum. This is established by dividing direct labour income by the number of direct employees. The production and post-production sector had

[2] Statistics NZ data.

[3] Statistics NZ data.

[4] Please note that this relies upon the assumption that the labour force is a full time equivalent measure.

[5] Direct value added of $1,271m / direct FTEs of 9,572.

[6] GDP of $178 billion / total NZ labour force of 2,188m (Statistics NZ).

an average salary of $91,000. These are both significantly higher than the national average salary in 2008 of $39,000.[7]

To put the magnitude of the film and television industry in context, its economic impact can be compared with the wine industry. Both industries have been growing rapidly over the past decade. A key feature of both is the leverage gained from using international distributors.

A study was undertaken by NZIER[8] that provides comparable estimates for wine to those in this report:

Table 2: Film & television industry compared to wine industry 2008

Measure/estimate	Film and Television	Wine
Direct Employment Impact (FTE)	9,572	5,940
Total Employment Impacts (FTE)	21,983	16,568
Direct wages	$601 m	$168 m
Direct contribution to gross output	$3,105 m	$1,280 m
Total contribution to gross output	$6,101 m	$3,530 m
Direct contribution to GDP	$1,271 m	$454 m
Direct contribution as % of GDP	0.70%	0.25%
Total contribution to GDP	$2,540 m	$1,520 m
Total contribution as % of GDP	1.4%	0.84%

Source: PricewaterhouseCoopers (film and television); NZIER (wine)

[7] Statistics NZ data. Please note this comparison relies upon the assumption that Statistics NZ average salary data is a full-time equivalent measure.

[8] NZIER, Economic Impact of the NZ Wine Industry [in 2008], April 2009.

How to use this report

This report is structured in two broad sections. The first explains the methodology and approach used to determine the economic impact of film and television activity. The second explains the results of the study.

For the quantitative results of the study, proceed to page 19.

Section	Content	Purpose
EXECUTIVE SUMMARY		
METHODOLOGY AND APPROACH		
1	The scope of this study	This section defines the question that this study examines.
2	Assessing economic impact	This section explains the types of economic impacts that are considered in this study.
3	Defining economic measures	This section explains the ways in which economic impact is measured.
4	Defining the industry	This section describes the activities of the film and television industry that are measured in this study.
5	Sources of data	This section explains how information was gathered, and the approach of assessing economic impact.
RESULTS		
7	Economic impact of the film and television industry	This section quantifies the total impact of the film and television industry on the New Zealand economy, and the impacts generated by different parts of the industry.
8	Other impacts	This section comments on the other benefits that may accrue to the New Zealand economy that are not quantified in this study.
APPENDICES		
A	Glossary	Key terms defined
B	Sources of data	Detailed information about sources of data relied upon in this assessment
C	Restrictions	Important disclaimers for a reader to be aware of in interpreting this report.

Methodology and Approach

1 The scope of this study

Purpose and scope

This purpose of this study is to estimate the contribution of the film and television industry to the New Zealand economy.

The contribution is measured taking account of the **direct**, **indirect** and **induced** economic impacts created by the industry, and combines them to determine total economic contribution. To do this, the study measures both the spending that occurs by the industry and the subsequent effects of that spending, as money, labour and materials impact other industries.

To quantify the economic contribution, four measures are estimated:

- **gross output** – the combined revenues of all industry participants attributable to film and television activity;
- **value added** – the returns to labour and capital attributable to the industry (which is the industry's contribution to GDP);
- **labour income** – the contribution made by the industry in wage and salary payments (a sub-set of value added); and
- **employment** – the number of jobs created as a result of film and television activity.

Additionally, other contributions made by the film and television industry to the New Zealand economy are identified and described.

NZFA©T

PricewaterhouseCoopers (PwC) has been commissioned by the New Zealand Federation Against Copyright Theft (NZFA©T) to undertake this study.

NZFA©T was established in 2005 by the Motion Picture Association to protect its six member company studios in New Zealand from the adverse impact of copyright theft.

NZFA©T has an interest in a comprehensive analysis of the impact of the film and television on the economy. Its role is to ensure that creators of content receive a return on their investment that enables their activities to develop and be sustainable. Better information about the economic contribution of the industry informs the dialogue between copyright owners and the New Zealand government about protecting the rights upon which the industry relies in order to remain commercial.

NZFA©T works in association with the Motion Picture Association, which represents the interests of its six member company studios and the wider industry across the world. In New Zealand, NZFA©T works closely with its members, government and enforcement authorities to protect the New Zealand film and television industry, retailers and movie fans.

NZFA©T members include: Walt Disney Studios Motion Pictures, New Zealand; Paramount Pictures Corporation; Sony Pictures Releasing International Corporation; Twentieth Century Fox International Corporation; Universal International Films, Inc.; and Warner Bros. Pictures International, a division of Warner Bros. Pictures Inc.

Estimates versus actuals

Although calculations are based on actual, officially published data where possible, the official statistics do not fully cover all parts of the film and television industry as defined in this study. For these parts of the industry, the calculations are referred to as estimates, to distinguish them from actuals published by Statistics NZ as official statistics. Note, however, that these estimates are based on measures of actual activity that occurred in 2008.

2008

The 2008 financial year has been selected as the basis for the economic impact calculations because 2008 is the most recent full set of annual data available. All amounts in this report, then, relate to impacts that occur in this period. Some of the value added impacts may have been generated by activity that has occurred in preceding years. The reader should refer to the Glossary for a fuller explanation of what is meant by the 2008 financial year in this context.

Note that film and television industry product cycles tend to be longer than a single year. While this is common in other industry groups as well, the product cycles of film and television are characterised by production cycles that can extend over several years.

In the future, by carrying out this study on an annual basis and tracking trends over time this information will become valuable to both industry and government decision-making to develop the sector. Measuring the total value added in the industry, and including the industry as a separate sector in the next inter-industry study of the New Zealand economy, would enhance knowledge of its drivers and performance.

NZD

All figures in this report refer to New Zealand dollars. Calculations with respect to exchange rates are performed on a 2008 average exchange rate, sourced from the Reserve Bank of New Zealand.

2 Assessing economic impact

Economic impact

Economic impact studies measure the production[9] and costs of an industry or project and the impact of these on a given region or country. In this case, the study is of the economic impact of the film and television industry on the New Zealand economy.

These studies seek to measure the consequences that an industry or individual project will have on parameters/matters such as employment patterns, wage levels, business activity and economic value added.

Flow-on economic impacts occur when an industry or project purchases goods and services from other suppliers in the course of producing its own outputs. They also occur when those employed in producing those outputs receive income that they then spend in other sectors. An important aspect of economic impact is that it is a measure of the total additional contribution an industry makes over and above the impact that would otherwise happen.

Determining impact with an *Input/Output* model

One method of examining economic impact is to construct an economic model specific to the area of study, based on an input/output table accounting framework. The economic model describes, in quantitative terms, the interrelationships between industry sectors, final expenditures by consumers and the primary inputs in an economy, such as labour and capital.

For example, take a film cinema (an exhibitor) that generates retail sales. In order to generate that revenue, the cinema pays staff, distributors for the content, rent, and so on. On the other side of the equation, the producers of the film purchase materials to build sets and costumes, pay cast and crew, purchase and develop scripts, and so on. Each of the suppliers of inputs had to pay their own staff and purchase their own materials.

An input/output table is a matrix of the inputs that shows the origin of inputs which go into the production of an industry and the destination of the outputs of that industry. The relationship between inputs and outputs in each cell of the matrix provides ratios that enable an estimation of the total impact of activity. The total impact is made up of:

- direct net impacts;
- indirect net impacts; and
- induced net impacts.

1. Direct

The direct impacts relate to the injections of revenue and expenditure that can be specifically attributed to an industry or project (in this case, the film and television industries). For example, a television producer employs a television camera operator specifically for its own productions, and sells the programme to a broadcaster.

[9] *Production* is used in three different contexts in this report. Firstly, production is used in its economic context - as combined industry output. Secondly, it is used in a particular film and television industry context – that sector (or part) of the industry involved in the making of a film or television program. Thirdly, it is used as subset of the production sector – referring to all parts of the development and making of a film until principal photography / filming is complete. Subsequent activity is referred to as post-production.

2. *Indirect*

Indirect impacts arise as a consequence of changes in the level and value of sales for suppliers of goods and services to that industry or project.

For example, the television producer purchases film (a direct impact). This purchase in turn generates indirect impacts in the form of increased demand for chemicals by the film maker, which in turn produces demand for electricity by the chemical maker, and so on.

3. *Induced*

Induced impacts arise as a consequence of increases in the level and value of expenditure on goods and services due to increased household incomes. As demand increases for the film and television industry, and in the industries that supply it, so wage and salary payments increase to service that demand.

Hence for example, the food and beverage retailers in an area might sell more goods because of the additional discretionary income brought into an area by film activity.

Multiplier effects

These indirect and induced impacts are collectively termed the **multiplier effects.** All three impacts (direct, indirect and induced) add to become the **total economic impact**. When projecting the contribution from an additional or new investment, an approach has been derived by economists to use data about indirect and induced impacts to calculate a multiplier which can then be applied to the direct impacts to calculate the total impacts. In that sense, the multiplier shows the relationship between the direct and total economic impacts.

Leakage

Any national economy interacts with other national economies and the value chain in film and television extends outside New Zealand. This means that the net impacts of the industry, whether direct, indirect or induced, may not all accrue to New Zealand.

Instead, there are economic leakage effects where some money leaks out of the money spent on purchases in order to pay taxes to government, to increase private savings, or to purchase goods or services from entities resident in other countries. Such leakage limits the multiplier impacts to a finite number.

3 Defining the economic impact measures

This study measures the contributions of the film and television industry to the economy in four different ways:

- gross output;
- value added;
- labour income; and
- employment.

This section further defines the economic measures by describing the manner in which they applied to assess economic impact.

Gross output

Direct gross output, for the purposes of an economic impact study, is the total value of goods and services provided by firms and individuals operating in the film and television industries. It is calculated based on the collective sales of each industry participant.

The value of output equates to the value of all goods and services used as inputs to generate that output, referred to as intermediate inputs, plus the value of payments to labour and capital within the film and televisions industries.

This is expressed as a dollar amount.

Gross output = value added + value of intermediate inputs

Value added

Value added is a measure of the value of output generated by the industry's factors of production - labour and capital. It is the difference between the value of gross output and the cost of the intermediate inputs used in the production process.

This is expressed as a dollar amount.

Value added = labour income + net profit before taxes

To illustrate the difference between gross output and value added, it is helpful to draw the analogy of a single transaction.

- Suppose Firm A sells a feature film DVD for $10. Its gross output is $10.
- In doing this, it purchases supplies (e.g. the right to distribute the film, the disc itself, marketing materials, etc) collectively worth $7 from Firms B, C and D.
- Firm A's value added is the difference; $3.
- From this, it pays its staff, taxes and other costs, with any remainder being profit.

Labour income

Labour income, a part of value added, is the value of the payment made by the film and television industries to their labour inputs. This is measured by summing total salary and wage payments to those employed carrying out the activities that generate film and television production. Conceptually, it also includes the income of the self-employed, although this is often included in the returns to capital because it can be hard to distinguish between the two, especially in small businesses.

Labour is one of the primary inputs to the economy. As such, it is a component of value added and, therefore, a subcomponent of gross output. This is expressed as a dollar amount to give it monetary value.

Employment

Employment can be expressed both as numbers of people employed (whether full or part time), and number of Full Time Equivalents (FTEs), where an FTE is a person working at least 30 hours per week. Typically, part time workers are counted as half a full time worker. This information is combined into the number of full time equivalent employees (FTEs) employed as a result film and television activity.

This is expressed as the number of full time equivalent employees rather than a monetary value.

Data about numbers employed in the film and television industry is estimated by official statistics, but information on FTEs is not currently collected, aggregated or published in New Zealand in a manner helpful for this particular study. To gather it in total would be a considerable exercise beyond the scope of this assignment.

The study uses the rolling mean average employment (RME) data provided by Statistics NZ. RME tracks the average number of employees (full time and part time) over a twelve month period.

The actual number of full time equivalents would be a more accurate measure of real activity, but it is not currently measured. It would standardise different parts of the film and television industry and other industries, enabling comparison. For example, television broadcasting is believed to have a lower proportion of part time workers than does a DVD rental outlet. Not to acknowledge this could distort the actual measures of economic activity.

This study makes assumptions that convert the official measure of RMEs into estimated FTEs. It applies different assumptions for each part of the industry, according to their employment, and wage and salary profiles.

Avoiding double counting – a note on output

The most detailed current source of official information about economic activity is provided by the Statistics NZ Screen Industry Survey for 2008. The core information collected relates to 'revenue' earned by firms in the industry. While revenue can be a useful measure to demonstrate trends in activity over time, it provides only part of the measure of actual activity in an industry.

Consider, for example, a business that is the lead production company for a $100 million feature film. It employs 50 staff and plays a coordination role for a series of contractors. Those contractors may employ 1,000 staff, carry out a vast majority of the economic activity and are paid, say, $80 million for this. The revenue of the principal and contractors combined is $180 million.

Had the same work been done by a production company which employed all 1,050 staff directly and did all the work in-house and had no contractors, the revenue would have been only $100 million. In each case, the number of people employed, the salaries earned, the value added and the physical output would have been the same, but the measured revenue would have been different.

Adjustments are required to take account of the structure of a firm and the level of third party and/or internal expenditure to produce a consistent measure.

Firms and individuals within the screen production sector expressed concerns about an economic impact analysis based solely on that survey because of its approach of adding together production company and contractor revenues. In instances where contractors provide inputs to production companies, adding together their revenues risks double-counting.

The study tests for double counting by examining the additional measures of employment, wages and salaries, and value added. The latter measure includes not only wages and salaries but all other returns to capital including depreciation, interest, tax and profit. Value added can broadly be interpreted as the combination of household and business income (measured by the accounting measure, EBITDA).[10] In the two examples of industry structure shown above, value added would be the same in both cases.

These official statistics measure direct output, employment and salaries and wages in the film and television industry. This study combines that data with other published data and information including ratios of wages to value added and output to value added gathered from other sources. Amongst other sources are data from selected film and television sources, from national input-output models of film, television and related entertainment and media activities, national industry taxation data and from Australian screen industry data.

[10] Earnings before interest, taxation, depreciation and amortisation

4 Defining the film and television industry

Two methods of specifying and describing the film and television industry are used in this study:

- **horizontal** - type of output (product/service); and
- **vertical** - stage on the value chain.

The first defines the horizontal boundaries of what is measured consistent with outputs for other sectors. The second broadly groups particular stages of value adding activity of the industry into discrete sectors – from the conception of an idea, through its distribution and consumption.

Breaking the industry down in both of these manners permits deeper analysis and allows for the determination of the value added of different parts stages of the industry. Each method describes its own set of commercial activities and provides a basis to make separate estimations that are relevant to each part. This effective ‘double checking’ of the information applied to the analysis, heightens the accuracy of the results.

A firm’s type of output

The types of output included in this study are:

- feature films and short films;
- television programmes;
- commercials; and
- other non-broadcast media.

These categories have been adopted for three reasons.

- Firstly, they are the most significant sources of industry revenue.
- Secondly, information is more readily available for them.
- Thirdly, they describe what are currently considered to be key outputs of the industry.

The film and television industry has been undergoing considerable change, however, its range of outputs is increasingly expanding.[11]

Ideally, analysis of the impact of the industry should be based on a method that reflects innovation in outputs. The accounting classifications used by the national accounting framework,[12] however, currently do not incorporate changing patterns of output/production.

Examples of recent output innovation might include:

- mobile phone screen entertainment;
- film-related and television-related video gaming, books, mobile applications, etc;
- sound tracks and audio recordings based on film and television;
- online screen entertainment activity;
- film festivals; and
- consoles and hardware manufacture, distribution and sale.

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[11] For comprehensive trend analysis with respect to entertainment and media products, the reader should refer to PricewaterhouseCoopers’ Entertainment and Media Global Outlook 2009:2013.

[12] Australian and New Zealand Standard Industrial Classification (ANZSIC) has been developed for the production and analysis of industry statistics in both countries.

There is a strong basis for including these when examining the economic impact of the film and television industry. For example, the continuing expansion of the smart phone and portable device market means that large numbers of consumers are already enjoying film and television content on their mobile devices, laptops, hand-held devices, and the like. Convergence and proliferation of viewing devices means that analysis of outputs based on traditional ‘film screens’ and ‘television screens’ will reflect a reducing proportion of the industry.

Given a change in primary data collection, this study could look very different in a few years’ time. If data became available and the national accounting framework moved to incorporate features of national income accounting to include new audio-visual screen content, then analysis of the film and television sector may better reflect innovation.

Additionally, hardware related to film and television viewing by the consumer (televisions, DVDs, BluRay players, recorders, etc.) is excluded from the national accounting framework and, subsequently, this study. Whilst the television industry relies upon the existence of a television, the focus of this study is on content, rather than the platform of displaying that content. Hardware has a significant offshore manufacturing component that is not easily ascertained. Its market dynamics, though related, are not directly comparable. And a smart phone plays music, video, games, and applications, as well as providing a means of visual and aural communication. To be able to include this output, it is important to be able to determine the proportion of the device attributable to the film and television industry.

Finally, although the production of television commercials is included in this study, several of the creators of value are excluded. For example, advertising agency services are not directly included in this assessment. This is because they provide services over a variety of media, and to identify that component of their activity attributable to television commercials (rather than newspaper, online, radio, print, etc) is beyond the scope of this study. Additionally, the base data from Statistics NZ does not cover this.

These combined limitations lead to the assumption that the actual impact of the industry is larger than is estimated and described in this study. In short, the economic impact described here is, by definition, conservative.

A firm’s stage on the value chain

This study estimates the contribution to the economy from the entire value chain of the outputs outlined above - from the conception of an idea through to the viewing of its finished product. That value chain is broken down into the following six sectors:

- i) production,
- ii) distribution;
- iii) television broadcast – subscription and free-to-air;
- iv) film exhibition;
- v) home video (e.g. DVD) rental; and
- vi) home video (e.g. DVD) retail sale.

The data gathered for this estimation is based partly on Statistics NZ’s ‘2008 Screen Industry in New Zealand’ survey. It describes the first four of these six major sectors of the screen industry: production, distribution, television broadcasting and film exhibition.

In order to use the Screen Survey information effectively, this study adopts the same definitions for those sectors. This study adds the home video rental and retail sectors. They are not included in the Statistics NZ survey.

Production

Whether producing a film, television program or television commercial, the production process is similar, from an economic perspective.

- *Production* involves all work leading up to and including filming. This includes development, pre-production, and principal photography.
- *Post-production* is all activity involved in putting together scenes to make a production complete: for example, editing, visual effects, computer graphics, animation and special effects; developing, printing and processing; captioning and sub-titling; film and video transfers or reproduction; and audio and duplication.

Statistics NZ and PwC/Butcher Partners grouped both production and post-production into the ‘production’ sector.

Film and television distribution

The process of distributing the completed work for display to the market (for example, film, TV or software distribution; film library operation, and film leasing). This process includes marketing of the completed work. This excludes retail distribution.

Television broadcasting

The distribution of works through media such as television or the Internet.

Film exhibition

The display of a completed work to the public at a pre-set location, such as a cinema, drive-in-theatre, festivals, or as part of a museum display.

Home video rental

The rental of film or television content on any format (e.g. DVD) to be viewed by the consumer in private.

Home video retail

The sale of film or television content on any format (e.g. DVD) to be viewed by the consumer in private.

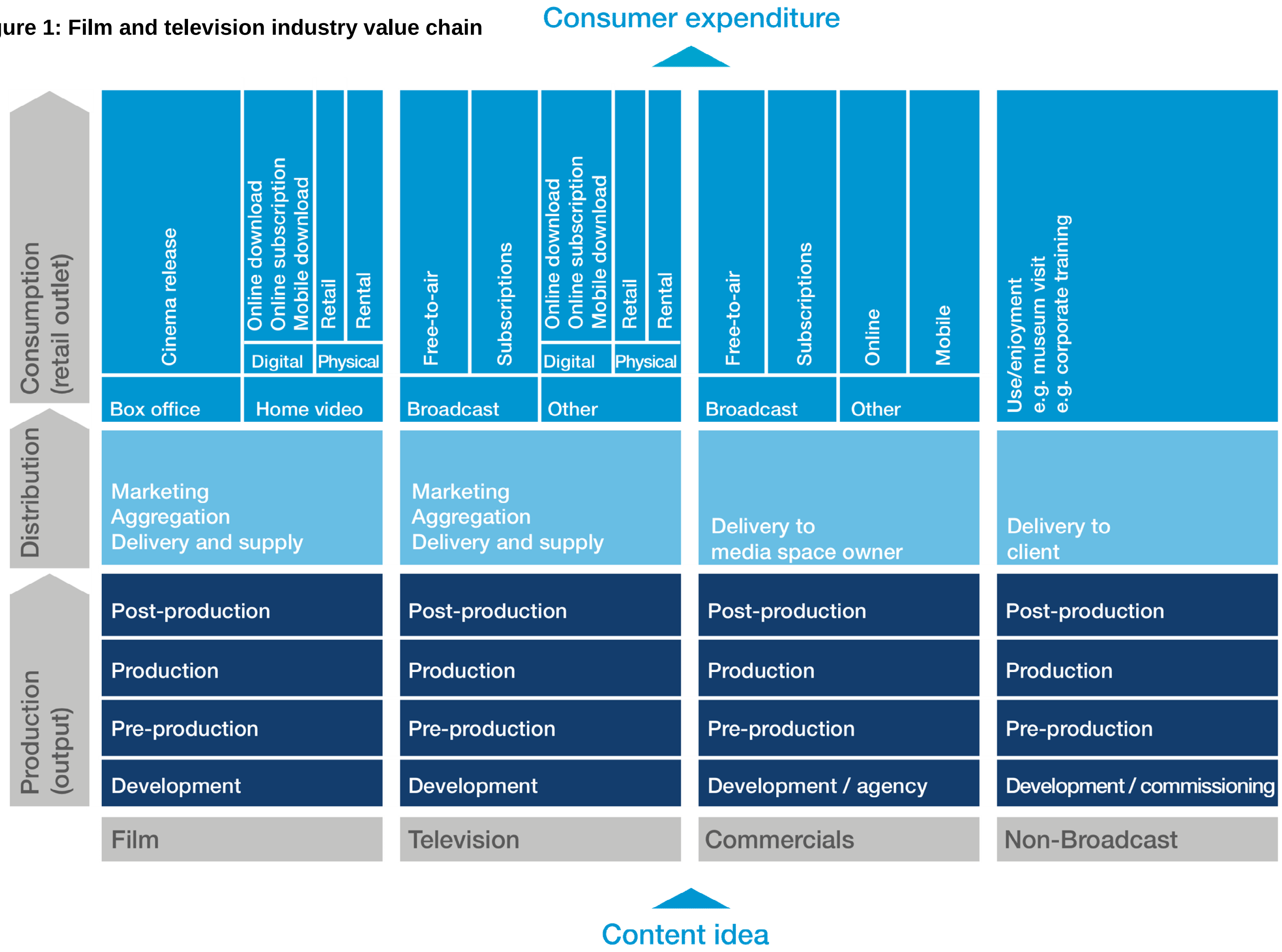
Value chain illustrated

What follows on the next page is a diagram illustrating key parts of the value chain of the film and television industry. It describes how the sectors of the film and television industry activity relate to each other. It provides a framework for the wider analysis adopted for this study.

On the horizontal axis, different types of output are separated into four main streams: film, television, commercials and other.

On the vertical axis, different stages along the value chain, from the conception of the idea through to the consumption of the idea are separated out.

Figure 1: Film and television industry value chain



Source: PricewaterhouseCoopers

5 Sources of data

The table below presents the base data upon which much of this study's calculations are based.

Table 3: Statistics NZ results of '2008 Screen Industry in NZ Survey'

Sector (2008 Jan-Dec)	Revenue $m/yr	Employment (jobs)	Wages & Salaries ($m/yr)
Production	945	1,141	163
Post-Production	321	646	
Television Broadcasting	1,155	2,622	57
Film & Video Distribution	176	195	6
Film Exhibition	145	2,069	35
Other	1	40	2
Sub-total (of Stats NZ)	**2,743**	**6,713 (RME)**	**381**

Source: Statistics NZ

Note that film and video distribution excludes distribution at the retail level.

Also note that the 'Other' category includes, for example, museum visual display and corporate video activity.[13]

It is important to recognise that, although official data and the Screen Industry in New Zealand Survey are excellent resources for the industry, the information and analysis in them is only a starting point.

For example, the film and television home video market is not part of the 'Screen Industry' as defined in that survey. Other sources of information show that the retail and rental of DVDs is a significant sector with respect to the value generated by the industry and employment created. It is, therefore, included in this study.

Table 4: NZ home video market information

Sector	Revenue $m/yr	Employment (jobs)	Wages & Salaries ($m/yr)
Home Video rental	153	1,475	44
Home video retail	210	680	26
Total (from Stats NZ tables above)	2,743	6,713	381
Overall TOTAL	**3,106**	**8,868**	**451**

Source: NZ Film and Video Labelling Body, PricewaterhouseCoopers; Butcher Partners

[13] NZFACT notes that this is an area in which copyright theft frequently occurs, with many firms not compensating copyright owners for content use in training material

The approach of this study, therefore, is to base the economic impact of the film and television industry on the official statistics, and to add to these with data from other sources known to be of significance.

Those sources include:

- a survey of some significant firms operating in the sector;
- market size information from industry bodies, such as the Film and Video Labelling Body;
- annual reports from listed and publicly funded bodies;
- annual accounts lodged and available through the Companies Office;
- sample film and television production expenditure accounts;
- New Zealand Film Commission production incentive data;
- interviews with industry professionals;
- additional Statistics NZ reporting enquiries; and
- National goods and services tax information.

Results

6 Economic impact of the NZ film and television industry

This section discusses the results of the study of economic impact. First, the film and television industry's total economic impact is described, and then each sector of the industry is described individually. For each sector, results are given followed by a discussion of the methodology used to estimate them.

Total economic impact of film and television in 2008

- the **total gross output** in New Zealand arising as a result of the film and television activity was approximately $6.1 billion in 2008.
- the **total value added** to the New Zealand economy from film and television activity was approximately $2.54 billion in 2008.
- the **total labour income** in New Zealand generated as a result of film and television activity was approximately $1.2 billion.
- the **total employment created** in New Zealand as a result of film and television activity is estimated to have been almost 22,000 full time equivalent positions.
- the **average salary** for those directly employed in the film and television industry in 2008 was $63,000 per annum. [14]

[14] These results would be lower if 2003/2004 multipliers were used, however, they are considered to be outdated. The results expressed in this study are based on multipliers developed for this particular analysis. They are based on 2003/2004 multipliers, but have been modified to incorporate more recent data and survey results.

These totals include direct, indirect and induced activity and as such represent the full economic impact attributable to film and television activity – i.e. its direct impact and flow on effects.

Table 5: Total economic impact of NZ film and television industry

Industry Sector	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	**Total**
Production	1,266	2,890	373	955	316	613	3,470	8,328
TV Broadcast	1,155	1,950	716	1,120	174	413	2,622	7,850
Distribution	176	361	44	123	6	17	195	570
Film Exhibit'n	145	300	49	129	35	68	1,130	1,780
Rental	153	310	61	146	44	81	1,475	2,375
Retail	210	290	28	68	26	47	680	1,080
TOTAL	**3,105**	**6,101**	**1,271**	**2,541**	**601**	**1,239**	**9,572**	**21,983**

Source: PricewaterhouseCoopers; Butcher Partners; Statistics NZ.

The next section outlines the economic methodology driving these estimations. Some readers may wish to proceed directly to the Production sector (on page 23) and explore the results of individual sectors of the industry.

Total Impact: methodology notes and assumptions

<u>Sources</u>

Source data used to determine the magnitude of direct impact came from Statistics NZ's Screen Survey, the New Zealand Film Commission production incentive information, television broadcasters' annual reports, online account information for major firms and consultation with informed individuals for the sector.

A survey was conducted for this study and responded to by some of the more economically significant firms in each part of the industry.[15] This survey was used to indicate firm expenditure profiles, profitability, labour payments, employment, and, importantly, leakage and intra-industry expenditure information.

Various interviews with industry professionals were conducted to provide cross checks. These results were cross-checked against Australian and UK equivalent studies and are comparable.

As a cross check, the net GST sales less purchases from the film and television industry participants surveyed in the Statistics NZ Screen survey was within 6 percent of the direct value added figure calculated above. GST can serve as a proxy for value added. This lends further confidence to the approach.

Multipliers[16]

Different multipliers were applied to calibrate the indirect and induced impact of different parts of the industry. The analysis of the total impact is based on a variety of different methods – each appropriate to the nature of that part of the industry and the available data.

PricewaterhouseCoopers and Butcher Partners Ltd have derived multipliers for those sectors of the industry where there was sufficient appropriate data to do so (i.e. the television broadcasting and film exhibition sectors).

These multipliers were calculated by incorporating the expenditure patterns of the industry, or the various sub-sectors of the industry, into a national economic model consistent with the system of national account approach.

For the other sectors of the industry, the unique approach used is described in its relevant section of the report. Generally, for other parts of the industry, multipliers were selected from official input – output tables, using a similar industry from the tables as a proxy.

In the case of New Zealand's input-output tables, the most appropriate industry definition is "Motion picture, radio and TV services".

These multipliers have three drawbacks, however.

Firstly, the information is dated. The last full survey-based input – output table relates to 1996/97, although approximate updates are available for as recently as 2003/04.

Secondly, they are only approximate. Multipliers are applicable at the margin, but there are problems in applying them to the total output of the industry because they incorporate feed-back effects through the industry, and hence lead to double counting if applied to the total output of the industry.[17] The PricewaterhouseCoopers approach adjusts the standard multipliers to correct for this double counting.

Thirdly, the total industry mix has changed rapidly over time, as has technology, and so the industry average ratios (e.g. employment /

[15] In order to ensure that this research had access to commercially sensitive information, assurances were made that no individual firm would be identified and that the coverage that survey results represent would not be stated for any individual part of the industry. On a weighted average basis, the survey results represent 54 percent of total industry revenues for all sectors except production.

[16] Please refer to Section 2 for an explanation of multipliers and how they are used.

[17] The output multiplier for the Film, radio and TV industry is 2.28 according to Butcher 2006. This implies indirect and induced effects equal to 1.28 times the direct effects. However, 48 percent of the total effect, or 1.09 of the total of 2.28 is from the industry itself. Deducting the direct effect of 1.0 leave a residual of 0.09 which has been included in the flow-on effects of 1.28. Correcting for that means that the industry as a whole has flow-on impacts equivalent to 1.19 times the size of the industry.

$million of output) and multipliers have possibly changed significantly over time also. This reduces their relevance.

The drawbacks with using these existing ratios are demonstrated by reference to the most recent update to the input/output table matrix. If the 2003-04 direct employment : output and income : output ratios are applied to the Statistics NZ measure of total sector direct output, the consequential direct wages and employment turn out to be about three times the direct impacts reported by Statistics NZ. Similar overestimation of total economic impacts is also likely to occur. The implication is that the old ratios are not reliable.

To reiterate, this approach applies the best available proxy multipliers for each sector to official direct output, wages and employment figures. This gives an estimate of value added. The best estimates of direct impacts and multipliers for each sector were combined to give total impacts for each sector. The impacts for each sector were added together to give a total impact for the film and television industry in New Zealand.

In the sections that follow, the report examines each individual sector of the film and television industry in turn – production, distribution, broadcasting, exhibition, rental and retail.

1. Production sector – total economic impacts

The film and television *production sector* activity is estimated to have generated total output in New Zealand of $2.890 billion in 2008. Associated with this was value added of $955 million (including $613 million of wages and salaries) and 8,328 FTE jobs.[18]

Table 6: Production sector economic impact

Film and TV Production	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Multiplier		2.28		2.56		1.94		2.40
Impacts	**1,266**	**2,890**	**373**	**955**	**316**	**613**	**3,470[19]**	**8,328**

Source: PricewaterhouseCoopers; Butcher Partners; Statistics NZ

In the results tables throughout this report, **direct** impacts are listed for each measure – gross output, value added, labour income and employment. The **multipliers** derived for each sector are listed, and the **total** impacts are the result of applying these multipliers to the direct impacts. Indirect impacts are, therefore, the difference between direct and total impacts.

[18] We caution that there are high error margins in these estimates.

[19] This relies on the assumption that each contractor/contracting business has 1 FTE in addition to any employees listed in Statistics NZ results.

Definition of the production sector

The activity measured in the production sector is the making of a film, television program or television commercial. This includes both *production* and *post-production*. Production refers to all work leading up to and including filming. This includes development, pre-production, and principal photography.

Post-production involves all activities involved in putting together scenes to make a production complete: for example, editing, visual effects, computer graphics, animation and special effects; developing, printing and processing; captioning and sub-titling; film and video transfers or reproduction; and audio and duplication.

Production sector: methodology notes and assumptions

Determining direct value added

Statistics NZ estimates that the turnover of the film industry is $1,266 million, including $932 million from production and post production *companies* and $334 million in production and post production *contractors*. To add them, however, risks double counting value added as contractors can be an ‘expense’ of production companies.

Production companies employed 1,141 people with total annual wages and salaries of $107 million, while the contracting business paid $57 million to the 646 people working in them. Average salaries in the industry were, therefore, $91,000, and an estimated 98 percent of the labour cost was paid in New Zealand.

The combination of output and wages produce an unusual result in that wages and salaries form a very low percentage of gross output. To put this in context, an Australian Access Economics report, drawing on Australian Bureau of Statistics reports, notes that in 2006/07 $620 million in wages and salaries was paid from $2,003 million in gross output (31 percent). The New Zealand equivalent is

$163 million in wages and salaries generated from $1,266 million in gross output (12.8 percent.)

According to industry sources, there are no fundamental labour profile variations in the methods of production between New Zealand and Australia that could account for the extent of this difference. It might, however, be explained by variations in the method of data collection, or in the definitions of output used.

The survey results of this study, supported by interviews, have led to the estimation that labour expenditure is likely to account for more than 12.8 percent of output in the production and post production sector. Subsequently, the approach used in this study to determine value added involves making certain assumptions in addition to the Statistics NZ information.

This study assumes that:

- the $163 million wages and salary payments identified by Statistics NZ remain included as part of returns to labour;
- an additional $153 million in is used to represent that part of contractor revenues that may be drawn down by owner/operators, and so could be thought of as contributing to household income; this is calculated as the Statistics NZ average salary for the sector ($91,000) multiplied by the number of contracting businesses (1,683), assuming one owner/operator for each contracting business;
- $57 million is estimated as the gross profit is generated by the production sector; this is calculated as the difference between the Statistics NZ revenues from production and post-production companies ($932 million), and their total expenditure ($875 million).

This process estimates direct value added of $373 million. This amount is 29 percent of gross output; much closer to an Australian benchmark of 31 percent.

Multipliers

Different approaches were used to estimate different measures of impact in the production sector. To measure total economic impacts, multipliers from the film and television industry from the 2003-04 New Zealand inter-industry study were applied to the direct impacts of production as estimated by the process explained above.

In addition, this study prepared sample production accounts for film and television productions based on ten real budgets, cross referenced against New Zealand Film Commission incentives reporting and producer interviews.[20]

There are some limitations with using these production accounts as is briefly discussed below.

- It is difficult to ascertain whether estimated labour costs are for direct wages or for companies contracted to provide labour.
- Operating surplus (including profit) is highly volatile depending on when a product is released, how successful it is and over how many years, and where the ownership lies.
- Finally, revenue as defined by the NZ Film Commission may differ from the definition of revenue used by Statistics NZ.

Cross checking these estimates against those of the Film, Radio and Television industry in the 2003-04 national input – output model of the economy, found reasonable consistency.

[20] Kept anonymous in accordance with PwC’s arrangements with participants.

Subsidies

In 2008, the production sector received $224 million in direct cash funding from the government.[21] Subsidies and incentives should be deducted from value added because they are a cost to the economy spent in order to stimulate a benefit. If the revenue reported is only earned revenue excluding subsidies, however, then the estimate does not need to be adjusted.

[21] Statistics NZ Screen Survey 2008.

2. Distribution sector – total economic impacts

In 2008, the distribution sector had turnover of $176 million an average 195 people working in it, and annual wages and salaries of $6.0 million (3.4 percent of gross output).[22]

Table 7: Distribution sector total economic impact

Film and TV Distribution	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Multiplier		1.57		2.8		2.8		2.9
Impacts	**176**	**361**	**44**	**123**	**6**	**17**	**195**	**570**

Source: PricewaterhouseCoopers; Butcher Partners; Statistics NZ.

Definition of the distribution sector

Film and television distribution is the process of distributing the completed work for display to the market (for example, film, TV or software distribution; film library operation, and film leasing). This process includes marketing of the completed work. This excludes retail distribution.

Distribution provides a key link between the creation and consumption of entertainment products. Most of the participants in this sector are foreign-owned subsidiaries of Hollywood studios.

Their main activity is to provide foreign-owned content to New Zealand businesses. The leakage likely to occur as revenues are returned offshore has been taken into account by analysing the financial reports of key firms.

[22] These are highly approximate figures.

Distribution: methodology and assumptions

Different methodologies were used to determine different measures. To determine the relationship between direct value added and direct output, the ratio expressed in the Australian Access Economics study was adopted. This was necessary because of the varied nature of financial reporting in this sector, and the limited amount of data available.

Wholesale trade multipliers from the 2003-04 national input-output table were applied to estimate total output, employment, wages and value added.

3. Television broadcasting sector – total economic impacts

Television broadcasting generated $1.12 billion of total value added in 2008, including $413 million of wages and salaries. It supports a total of 7,850 FTE jobs in New Zealand.[23]

Table 8: Television broadcasting economic impact

Television Broadcasting	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Multiplier	1.00	1.69	0.62	**0.**97	0.16	0.36	2.27	6.80
Estimated impact	**1,155**	**1,950**	**716**	**1,120**	**174**	**413**	**2,622**	**7,850**

Source: PricewaterhouseCoopers; Butcher Partners; Statistics NZ

Definition of the television broadcasting sector

Television broadcasting activity is defined as the distribution of works through media such as television or the Internet.[24] The New Zealand television broadcast sector is dominated by a small number of firms. It can be split into two groups based on business model - free-to-air offerings and subscription offerings.

Free to air television broadcasters derive revenue from advertisers who pay for airtime during regular programming, while subscription television derives revenue from regular subscriber payments. Free-to-air television is available via both analogue and digital transmission, with subscription television also available via satellite.

The five identified major players in the industry have gross revenue estimated at $1,374 million.[25] It is assumed that $219 million of this is related to the production industry, already accounted for. This leaves a balance of $1,155 million as per the Statistics NZ survey.

In 2008, the industry had an average 2,622 people working in it, and annual wages and salaries of $174 million (15 percent of gross output). On the basis of published data from the industry, it is estimated that wages and salaries (15 percent of output) plus EBITDAF[26] (47 percent of output) are 62 percent of gross output.

Television broadcasting: methodology and assumptions

Multipliers for the television industry have been approximated based on analysis of the expenditure profiles of television broadcasting firms, and their responses to surveys. They are approximate with respect to the level of detail available from which to identify input categories, leakage and intra-industry spending.

- Royalties are assumed to have no economic impact because either they are payments made to overseas interests or because they are payments made to local production companies and local distributors, and so the impacts will have been accounted for in the production and distribution sectors.

[23] Note that this excludes people employed in the “Production” aspects of television broadcasting, who have been counted elsewhere.

[24] The analysis required the adoption of the Statistics NZ definition.

[25] According to their published annual reports: TVNZ, TVWorks, Sky Television, Prime TV, and Maori TV.

[26] Earnings before Interest, Tax, Depreciation, Amortization and Foreign Exchange losses. This is based on take the view that reported foreign exchange profits and losses and other “Impairments” are short term fluctuations which are not indicative of the long term industry outcomes. Hence, returns to capital measured by this study exclude those factors.

- Expenses classified by the television broadcasters as distribution and transmission are treated as a 50 percent purchase from the domestic communications industry and 50 percent purchase from international suppliers of such services.
- Consultants' fees, advertising and 'other' costs have been treated as purchases from local 'Business Services'.

These multipliers also reflect the subsidies provided to public broadcasting, and so total value added is net of these interventions.

4. Film exhibition sector – total economic impacts

The total impact created as a result of exhibition activity generated $129 million of value added in New Zealand in 2008, including $68 million of wages and salaries.

It is estimated that the sector directly employed 1,130 FTEs, and generates a further 654 FTE jobs in New Zealand through its flow on effects.

Table 9: Film exhibition sector total economic impacts

Film Exhibition	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Multiplier	1.00	2.06	0.34	0.89	0.24	0.47	7.8	12.3
Impacts	**145**	**300**	**49**	**129**	**35**	**68**	**1,130**	**1,780**

Source: PricewaterhouseCoopers; Butcher Partners; Statistics NZ

Definition of film exhibition

Film exhibition is defined as the display of a completed work to the public at a pre-set location, such as a cinema, drive-in-theatre, festivals, or as part of a museum display.

There are three identified major players in the exhibition sector: Readings Cinemas, Hoyts and Sky City. Together with the smaller chains, such as Rialto, and adding the various independent operators, the exhibition sector has gross revenue reported as $145 million in 2008.

Exhibition: methodology and assumptions

Statistics NZ reports that in 2008, the industry had an average 2,069 people working in it, and annual wages and salaries were $35 million (24 percent of gross output). Average income per person was $17,000 in 2008 and $20,000 in 2007. Based on this average wage and the legal minimum wage in New Zealand of $12 per hour in 2008, PricewaterhouseCoopers estimates that the vast majority of these people were part time, and that the full time equivalent employment number was around 1,130 FTEs.

On the basis of information from the industry surveys, this study used estimates that EBITDA is around 10 per cent[27] of gross revenue. The direct wage and employment impacts are approximately twice as high per $ million of sales as those reported in the Australian Access Economics report.

This study estimated approximate multipliers for the industry. The approximation was required because of an inability to identity in more detail the breakdown of some of the major expenditure categories for the firms surveyed.

Similar to other sectors up the value chain, it is assumed that the royalties paid by these firms have no economic impact because either they are payments made to overseas interests or they are payments made to local production companies and distributors. The economic impacts of these local payments would have, therefore, been counted in the production and distribution sectors.

[27] This excludes the return to investments in buildings by those businesses that own their own premises. Buildings are assumed to be leased on an arms length basis, and the value added component of rental is included in the multiplier effects.

5. Home video rental sector – total economic impacts

In 2008, the home video rental industry generated a total of $310 million of total output.

Associated with this was $61 million of direct value added (including $44 million of wages and salaries) and $146 million of total value added in New Zealand (including $81 million of wages and salaries).

It is estimated that the sector directly employed 1,475 FTEs, and generated a further 900 FTE jobs in New Zealand for a total of 2,375 FTEs.

Table 10: Home video rental economic impact

Home video rental	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Multiplier	2.05[28]		2.4		1.84		1.61	
Impacts	**153**	**310**	**61**	**146**	**44**	**81**	**1,475**	**2,375**

Source: PricewaterhouseCoopers; Butcher Partners; Film & Video Labelling Body.

Definition of the home video rental sector

The home video rental sector refers to the rental of film or television content on any format (e.g. DVD) to be viewed by the consumer in private.

[28] Adjusted to reflect the fact the retail trade multiplier of 2.5 relates to gross margin (70% of sales) rather than gross revenue (total sales). Hence indirect and induced output = $153m x 70% x (2.5-1) = 161m. Total output impact = $153m + $161m.

Rental: methodology note and assumptions

This is an area of the value chain that is not captured by Statistics NZ data in the Screen Survey. In order to generate an equivalent figure of gross output for the sector, the Film and Video Labelling Body (FVLB) provided total revenue data for the industry participants it represents, and estimated that representation to account for 60 percent of total industry revenues.

It has been assumed that there is none of the intra-sector spending which occurs in other sectors of the film and television industry, and so market size will serve as an adequate proxy for output.

The total 2008 turnover of the rental component of the home video sub-sector is estimated to be $153 million per year.[29]

In 2008, the industry had an average 2,700 people working in it, but is likely to be comparable to film exhibition in terms of the proportion of workers who are part time, hence implying around 1,475 FTEs.

Direct wages of $44 million, which is 29 percent of turnover, is slightly higher but still comparable to the 24 percent implied by the Australian data.

The major firms operating in this sector were surveyed for this study. The information gathered from the industry regarding wages and salaries is, unfortunately, contradictory.

On the one hand, firms report dollar values for both wages/salaries and revenues that imply labour expenses of 45 percent of revenue.

On the other hand, firms report wages and salaries as being 14 percent of gross revenue, where gross revenue includes the costs of purchasing the discs.

[29] Film and Video Labelling Body

The industry reports non-wage value added as being 20 percent of sales; a figure consistent with the Australian data. Hence, total value added including wages is around 49 percent of sales, or $61 million.

Retail industry multipliers have been applied to these direct figures to determine total impact, as the retail industry is the most comparable available.

6. Home video retail sector – total economic impacts

In 2008, the home video retail industry generated $290 million of total output.

Associated with this was $28 million of direct value added (including $26 million of wages and salaries) and $68 million of total value added in New Zealand (including $47 million of wages and salaries).

The sector directly employed 680 FTEs, and generated a total of 1,080 FTE jobs in New Zealand.

Table 11: Home video retail economic impact

Home video retail	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Multiplier	1.00	1.38[30]	0.53	1.28	0.49	0.89	12.8	20.5
Impacts	**210**	**290**	**28**	**68**	**26**	**47**	**680**	**1,080**

Source: PricewaterhouseCoopers; Film and Video Labelling Body

Definition of home video retail

The home video retail sector refers to the sale of film or television content on any format (e.g. DVD) to be viewed by the consumer in private.

[30] Adjusted to reflect the fact the retail trade multiplier of 2.5 relates to gross margins (25 percent of gross revenue) rather than gross revenue. Hence indirect and induced output = $210million x 25% x (2.5-1) = $80million. Total output impact = $210million + $80m = $290 million.

Retail: methodology and assumptions

As with home video rental, primary source data to determine direct impacts for home video retail was sourced from the Film and Video Labelling Body and a survey of the industry.

The total turnover of the video retail industry is estimated to be $210 million per year, including a gross margin of $53 million.

Similar to the film and television rental sector, this gross output amount has not been sourced from the Statistics NZ Screen Survey report. Instead, it has been provided by the FVLB's collation of market revenue data. Again, FVLB's estimation is that it represents 60 percent of the industry. This is applied to extrapolate the full industry.

Total economic impacts of this have been estimated on the basis of multipliers for the wider retail sector, derived from the 2003-04 national input output model. Each of these multipliers is shown in the table opposite, and calibrated to the direct gross output provided by FVLB.

Conclusion

Table 12: Total economic impact of NZ film & television industry

Total Industry	Gross output ($m)		Value added ($m)		Labour income ($m)		Employment (FTEs)	
Type of impact	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Production	1,266	2,890	373	955	316	613	3,470	8,328
TV Broadcast	1,155	1,950	716	1,120	174	413	2,622	7,850
Distribution	176	361	44	123	6	17	195	570
Film Exhibit'n	145	300	49	129	35	68	1,130	1,780
Rental	153	310	61	146	44	81	1,475	2,375
Retail	210	290	28	68	26	47	680	1,080
TOTAL	**3,105**	**6,101**	**1,271**	**2,541**	**601**	**1,239**	**9,572**	**21,983**

Source: PricewaterhouseCoopers, Statistics NZ; Butcher Partners

To put these results into a more meaningful context, the film and television industry is compared to national averages and other sectors.

Total GDP comparison

Total New Zealand GDP in 2008 was $178 billion.[31] The film and television industry's **direct** impact of $1.27 billion was, therefore, 0.7 percent of GDP, and its **total** impact of $2.5 billion was 1.4 percent of GDP.

[31] Statistics NZ.

Total Labour force comparison

The total New Zealand labour force (people employed) in 2008 was an average of 2.188 million.[32] With 9,572 direct jobs, the film and television industry directly employs 0.4 percent of the New Zealand labour force. With 21,983 total jobs, film and television is directly and indirectly responsible for the employment of 1.0 percent of the New Zealand labour force.

The discrepancy between the indirect value added to the economy (1.4 percent of GDP) and the number of jobs indirectly created (1.0 percent of the labour force) leads to the conclusion that value added per employee is high relative to the national average.

The average direct value added to the economy per employee in the film and television industry is $133,000.[33] By contrast, an average for all New Zealand employees is $81,000.[34] This means that combined wages and profits generated by film and television businesses is higher, per employee, than the average for the New Zealand economy.

[32] Statistics NZ data

[33] Direct value added of $1,271m / direct FTEs of 9,572.

[34] GDP of $178 billion / total NZ labour force of 2,188m (Statistics NZ)

Comparison with Other Sectors in NZ

To put the magnitude of the film and television industry in context, its economic impact can be compared with the wine industry. Both industries have been growing rapidly over the past decade. A key feature of both is the leverage gained from using international distributors.

A study was undertaken by NZIER[35] that provides comparable estimates for wine to those in this report:

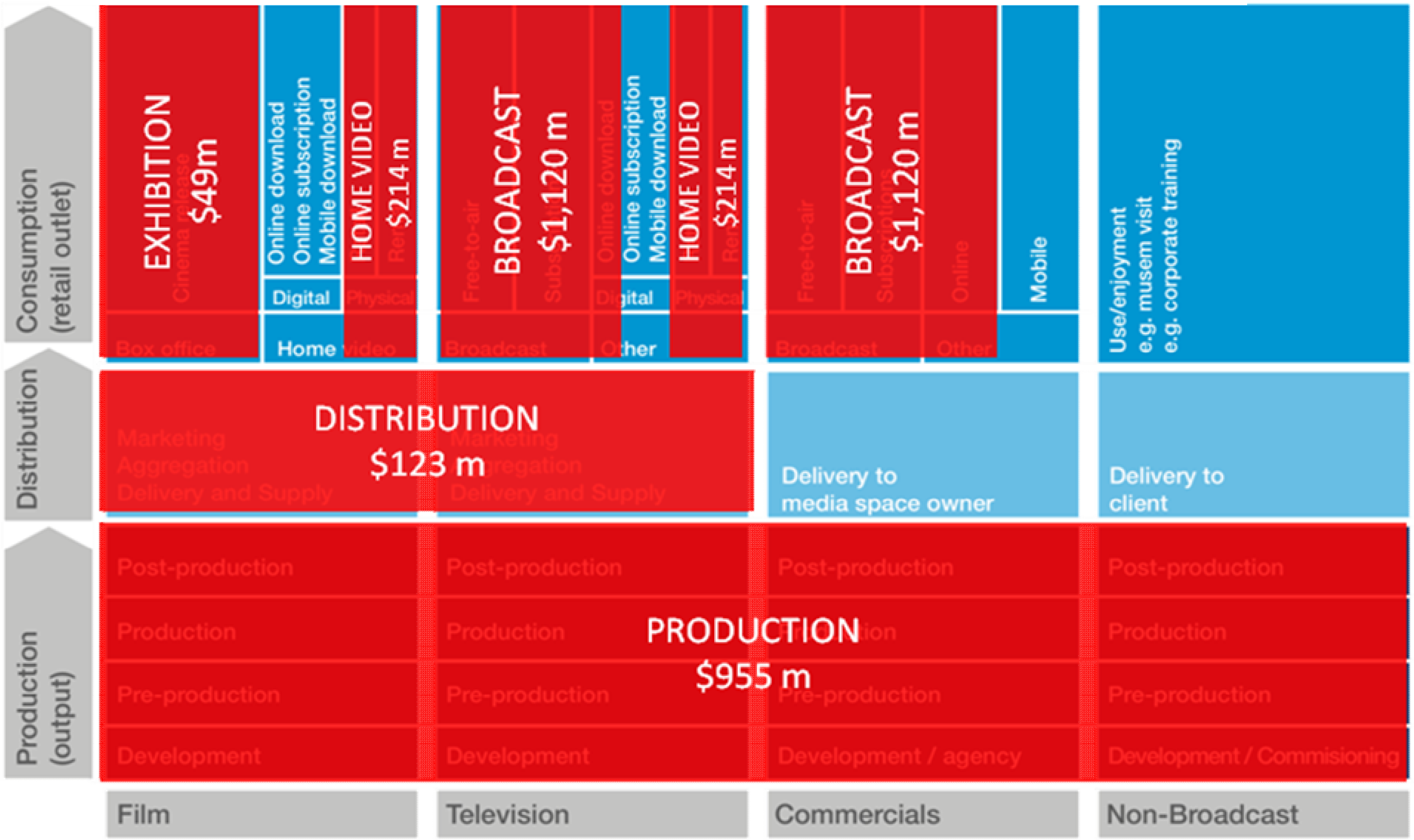
Table 13: Film & television industry compared to wine industry 2008

Measure/estimate	Film and Television	Wine
Direct Employment Impact (FTE)	9,572	5,940
Total Employment Impacts (FTE)	21,983	16,568
Direct wages	$601 m	$168 m
Direct contribution to gross output	$3,105 m	$1,280 m
Total contribution to gross output	$6,101 m	$3,530 m
Direct contribution to GDP	$1,271 m	$454 m
Direct contribution as % of GDP	0.70%	0.25%
Total contribution to GDP	$2,540 m	$1,520 m
Total contribution as % of GDP	1.4%	0.84%

Source: PricewaterhouseCoopers(film and television); NZIER (wine).

[35] NZIER, Economic Impact of the NZ Wine Industry [in 2008], April 2009.

Figure 2: Film and television industry value chain. (Blocks in red refer to sectors measured and value added by each sector)



Source: PricewaterhouseCoopers, Butcher Partners, Statistics NZ.

7 Other film and television industry impacts

A variety of other economic effects can be attributed to the film and television industry. These include:

- business effects benefiting other industries;
- increased tourism activity; and
- cultural benefits and sense of national identity.[36]

Wider business effects

Cross Pollination

An offshoot of film and television production is that firms can develop technologies and intellectual property that has application outside of the film and television industry, further adding value to the New Zealand economy. An example can be found in Massive Software, a firm that developed intelligent crowd technologies while working on visual effects for battle sequences in Lord of the Rings. This technology is benefiting from additional revenue streams outside of the film and television post-production sector.

Benefits of Scale

Increased demand stimulated by the film and television industry activity allows firms in supplier industries to invest in people, plant and equipment, to grow and to achieve economies of scale that make their business more resilient and increase performance.

[36] Screen content can generate a sense of self-identity for New Zealanders, stimulate optimism and reinforce a value system, all of which could be said to generate or facilitate the generation of economic value. However, a full discussion of this is beyond the scope of the current analysis.

Also, certain thresholds of activity need to be met before industry infrastructure investments can be made, which lifts the level of service offering of the industry and allows for more specialised equipment and capability.

Raising awareness of New Zealand's other capabilities

The increased global awareness generated by international viewing of New Zealand content can lend credibility to other industries.

Skills enhancement

Technology skills and business capability is developed by the film and television industry that can be leveraged into other sectors.

Film and television skills enhance capability in advertising and marketing industries. This in turn helps consumer facing firms.

Tourism

A film or television viewing experience can stimulate destination-specific tourism (with such visitors now referred to by the moniker, *set jetters)*. There is a considerable number of tourism businesses appealing to tourists interested in Lord of the Rings, for example. Additionally, Film NZ and various regional film offices have worked with Tourism NZ on reality television shows to capture these economic benefits. Some more recent shows include Castaway, The Bachelor, and Jack Osborne: Adrenalin Junkie.[37]

Also, tourism activity stimulated by a flim or television viewing experience can lead to enhanced levels of service within firms - a legacy effect of servicing the film industry.

[37] Film NZ

Appendix A Glossary

2008	This report examines activity for the financial year ending 2008. Statistics NZ, in gathering its screen sector data, requests that a firm states its financial year end date. If that date falls between 1st Jan - 30 Sept, then the firm should submit its data for the financial year ending 2008. If a firm's financial year ending balance date falls between 1 Oct - 31 Dec, then it should submit its data for its financial year ending 2007. This means that some of the data will be for financial year '07 and some for financial year '08, however, double counting will be avoided. Most of the firms surveyed by PwC had 30 June financial year end dates.
Direct impact	The direct impacts relate to the injections of revenue and expenditure that can be specifically attributed to an industry or project.
Film and television distribution	The process of distributing the completed work for display to the market (for example, film, TV or software distribution; film library operation, and film leasing). This process includes marketing of the completed work. This excludes retail distribution.
Film exhibition	The display of a completed work to the public at a pre-set location, such as a cinema, drive-in-theatre, festivals, or as part of a museum display
FTEs	Full time equivalent employees

GDP	Gross domestic product. The production measure of a country's total output. The total market value of goods and services produced in New Zealand after deducting the cost of goods and services used in the process of production, over a given time period.
Gross output	The total value of goods and services provided by firms and individuals operating in the industries. This includes the value of goods and services used to generate that output – intermediate inputs.
Home video rental	The rental of film or television content on any format (e.g. DVD) to be viewed by the consumer in private.
Home video retail	The sale of film or television content on any format (e.g. DVD) to be viewed by the consumer in private.
Indirect impacts	Indirect impacts arise as a consequence of changes in the level and value of sales for suppliers of goods and services to that industry or project.
Induced impacts	Induced impacts arise as a consequence of increases in the level and value of expenditure on goods and services due to increased household incomes in the area.
Labour income	the contribution made by the industry in wage and salary payments

Leakage	Where some money leaks out of the country's economy to pay taxes to, or purchase goods or services from entities resident in other countries. Such leakage has to be subtracted from the economic gains to the country.
MPAA	Motion Picture Association of America
Multiplier	The ratio that shows the relationship between the direct and total economic impacts.
Multiplier effects	Indirect and induced impacts of direct activity
Net economic impact	All three impacts (direct, indirect and induced) add to become total net economic impact.
NZD	New Zealand dollar
NZFA©T	The New Zealand Federation Against Copyright Theft was established in 2005 by the Motion Picture Association to protect the film industry in New Zealand from the adverse impact of copyright theft. NZFA©T members include: Walt Disney Studios Motion Pictures, New Zealand; Paramount Pictures Corporation; Sony Pictures Releasing International Corporation; Twentieth Century Fox International Corporation; Universal International Films, Inc.; and Warner Bros. Pictures International, a division of Warner Bros. Pictures Inc..

Production	Production is used in three contexts in this report, which can create confusion. 1. Production in its generic economic sense – as the combined output of an industry 2. Production as a sector of the industry – the making of a film, television program or commercial 3. Production as a sub-sector of the industry - involves all work leading up to and including filming. This includes development, pre-production, and principal photography, but does not include post-production.
Rolling mean employment (RME)	the average number of employees (full time and part time) over a twelve month period
Television broadcasting	The distribution of works through media such as television or the Internet.
Value added	the returns to labour and capital attributable to the industry (which amounts to the industry's contribution to gross domestic product (GDP);
Value chain	The inter-linkages between different steps/resources employed in the creation of a product from raw materials to the customer in its final consumable form.

Appendix B Sources of data

Sources of data

- Statistics NZ: Screen Industry in New Zealand Survey 2004, 2005, 2006, 2007, 2008
- A PricewaterhouseCoopers survey of major firms in the film and television industry, 2009 – names withheld upon request
- Interviews with industry experts and professionals including preparation of sample production accounts, 2009 – names withheld upon request
- Film and Video Labelling Body of New Zealand – home video market data
- The NZ Film Commission – incentives data for Large Budget Screen Production Grant and Screen Production Incentive Fund
- Access Economics, Economic Contribution of the [Australian] Film and Television Industry, 2006/07
- Published Annual reports for major firms operating in the sector
- Other annual reports collected from online Companies Registry repositories
- Goods and Services Taxation data collected from Inland Revenue Department via Statistics NZ.

International literature

- Ernst & Young, Economic and Fiscal Impacts of the New Mexico Film Production Tax Credit, Jan 2009
- Statistics NZ, Regional Input-Output Study, 2003
- NZIER, Scoping the Lasting Effects of Lord of the Rings, 2002
- Venture Taranaki/BERL, Economic Impact Assessment for the filming of the Last Samurai, 2004
- BERL, Maori Television and its contribution to the New Zealand economy

Appendix C Restrictions

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We reserve the right, but will be under no obligation, to review or amend our Report, if any additional information, which was in existence on the date of this report was not brought to our attention, or subsequently comes to light.

This report is issued pursuant to the terms and conditions set out in our Agreement dated 15 July 2009.