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The Danish Film Industry Annual Mapping 2005

**Copenhagen Business School
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Preface

The present report is part of a series of mappings of Danish creative industries. It has been conducted by staff of the international research network, the Danish Research Unit for Industrial Dynamics, (www.druid.dk), as part of the activities of *IMAGINE.. Creative Industries Research* at the Copenhagen Business School (www.cbs.dk/Imagine).

In order to assess the future potential as well as problems of the industries, a series of workshops was held in November 2004 with key representatives from the creative industries covered. We wish to thank all those, who gave generously of their time when preparing this report. Special thanks go to Marianne Moritzen, Danish Film Institute; Michael Fleischer, Director, SF Film; Mads Peter Ole Olsen, Executive Producer, Scanbox Entertainment Denmark A/S; and Ole John, director of the producer programme, the National Film School of Denmark. Numerous issues were discussed including, among others, market opportunities, new technologies, and significant current barriers to growth. Special emphasis was placed on identifying bottlenecks related to finance and capital markets, education and skill endowments, labour market dynamics, organizational arrangements and inter-firm interactions.

The first version of the report was drafted by Nicolai Mariegaard, Copenhagen Business School, during the autumn of 2004 and finalized for publication by Julie Vig Albertsen, who has done sterling work as project leader for the entire mapping project. Together with similar mappings of a variety of Danish creative industries and summaries of the workshops held, the report constitutes part of the underpinning for the associated policy memo and for subsequent work within *IMAGINE..*

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Executive summary

- During the past decade, the Danish film industry has enjoyed substantial artistic recognition, reflected, for example, in the number of film awards received. However, it has not generated the same degree of economic success. Of the 42 Danish films supported by Danish Film Institute from 1999 to 2001, 15 films have generated money for the producer, while 27 have not.
- The contribution of the Danish film industry to the Danish economy is currently limited (less than 1 per cent of BNP). However, the industry demonstrates very impressive growth rates and this paper argues that there is substantial potential for further growth. Exports of Danish films have had limited success. Danish producers seem to lack experience and know-how in the area of international distribution.
- The international market for motion pictures is dominated by the US. In Europe, more than seven out of ten cinema tickets sold are currently to American films, whereas European films only account for approximately 5 per cent of American cinema admissions. In Denmark, Danish films had a share of 26 per cent of all tickets sold in 2003. The top twenty chart of most seen films in 2003 consisted of six Danish films, one British film and 13 American.
- The Danish film industry can be characterized as being composed of a highly fragmented production structure, lacking both horizontal and vertical integration. The industry is characterized by a very dynamic ownership structure, since half the companies in the industry have changed owners in the last two-three years.
- The most critical factor for the Danish film industry is access to capital. Private investors are virtually non-existent, and it is difficult to imagine a film industry without public funding. Thus, the Danish film industry is highly vulnerable.
- Production companies have had a hard time getting returns on their investments. This is due in part to the fact that, in order to raise the financing necessary to put a film into production, producers are forced to pre-sell the distribution rights to a foreign distributor. This means that even if a film is financially successful, a foreign distributor often takes the lion's share of the turnover.
- Whether the qualified human resources and talent necessary to expand Danish film production are currently available is an open question. Certainly, interest in the business is high. Both the institutionalized education systems and the independent filmmaking environments are experiencing increased interest from talented people wanting to find

their way into filmmaking, and production companies receive hundreds of unsolicited applications each year.

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1 The Danish film industry

"Danish films are nowadays generally considered to be horribly depressing. There is nothing new in this; as a matter of fact there hasn't been anything new in Danish films since the glory days before World War I. Slightly new, however, is the fact that everybody agrees upon it (...) Economically, Danish films are money out the window, and film critics agree that the taste revealed in Danish films is nothing to write home about." (Schmidt & Nørrested 1985: 153, author's translation)

Two film professors made this colourful, yet depressing, diagnosis when they set out to study the Danish film industry in the mid-eighties. Fortunately, things have changed quite a bit since then. In the late eighties Gabriel Axel and Bille August both won Academy Awards and later, Lars von Trier won Golden Palms at the Cannes Film Festival. Danish films have also experienced a revival in the domestic market, where a wave of young talent has prompted audiences to choose Danish films when they go to the cinema. This paper is an attempt to point at the factors needed to promote the economic success of the Danish film industry. The purpose is not in any way to criticize current film funding or the work performed by and priorities made by the Danish Film Institute. Rather, the paper points to the substantial economic potential of the Danish film industry, if it succeeds in entering international markets that are still relatively new and unexplored.

The Danish film industry consists of more than motion pictures. Danish animated films and Danish TV series have recently begun attracting considerable international attention. Series like "Unit One" (*Rejseholdet*) and "Nikolaj and Julie" (*Nikolaj og Julie*) have been awarded with Emmys. In addition, the production companies involved in TV series and motion pictures also make commercials, music videos, and short films and are involved in other minor projects. In this paper, however, a motion picture is defined as a feature film with duration of at least 60 minutes and intended for commercial use.

Despite the many awards and the artistic recognition Danish films have received in the last decade, economic success has yet to be seen. Successful making and selling of feature films demands craftsmanship and creative, organizational, and financial capabilities, and the complex and demanding co-operation necessary makes great demands in terms of management and organization. It seems that whereas the Danish film industry has great strengths when it comes to creative elements and craftsmanship, the economic and organizational side leaves something to be desired.

2 Definitions and data sources

The data material used in this paper comes from various sources. The Danish Film Institute is the major source, and moreover StatBank Denmark of Statistics Denmark, the National Film School of Denmark, WIFT (Women in Film and TV), and the Danish Producers' Association have all contributed generously. In addition, information has been gathered through several interviews with industry representatives.

The main focus in this report is feature films produced and distributed by Danish Film Institute. School productions made entirely outside official institutions/companies are not considered. The entire value chain of the industry is taken into account, which means that video/DVD rentals, cinemas and the like are also considered in the paper. In accordance with the categories created by Statistics Denmark, the Danish film industry is defined as embracing the following sectors:

Table 1: Film sectors by NACE as categorized by Statistics Denmark

Sector (NACE Code)	Explanation
22.32.00	Video reproductions
33.40.90	Production of cinematic equipment
71.40.10	Video/DVD rentals
92.11.00	Film and video production
92.12.20	Film and video distribution
92.13.00	Cinemas

Note: The same definition of the film industry was employed by the Danish Ministry of Culture and the Ministry of Economics and Business Affairs (2000).

The figures regarding both the Danish industry performance and market dynamics should be taken solely as estimates. It has proved difficult to obtain precise data for several reasons. First of all, the industry is very fragmented and employs many part-time workers. There may be a certain status connected to being in the film business, since people are known to register as members of, for example, the Danish Film Institute even if film is just a hobby for them. The figures mentioned in this paper are restricted to people employed by enterprises, thereby omitting several groups—e.g., actors, technicians and other members of the crew working on a freelance basis. A problem is that most of the companies involved in the production phase make several other products such as commercials and TV productions. In order to give as specific information as possible these are not included in the figures, but it

seems that most of the companies involved in feature filmmaking are also involved in commercials and TV productions on various levels.

Regarding statistical material from Statistics Denmark, it should be noted that the main source employed in this paper, *General Enterprise Statistics*, in 1999 replaced the former *Enterprise Statistics* produced for the years 1992-1999. Both statistics have gathered information at enterprise level, usually corresponding to the legal unit. But whereas the previous Enterprise Statistics only contain economic and employment information concerning the private sector enterprises registered as compulsory to pay value added tax (VAT), the General Enterprise Statistics embrace all activities and sectors. Furthermore, the new General Enterprise Statistics only cover real active enterprises, where the statistics up to 1999 covered all VAT paying enterprises in the private sector, if they were engaged in even the smallest activity. Active companies include companies that have at least a turnover corresponding to ½ full-time equivalent employment registered. Consequently, active enterprises cover 284,000 enterprises of the total of 521,000 registered enterprises. This means in principle that only approximately 1 per cent of the VAT turnover is covered.¹ All in all, this is a considerable change in report methods. First, it obstructs the continuity in enterprise statistics when the period reported starts before 1999. Second, one could expect that the criteria of 'active enterprises' will rule out several of the smaller one-man operations such as freelancers.

Most calculations² in the paper are based on existing data that only rarely cover film production in a narrow sense. Parts of the analysis have thus been conducted on estimated values from the film industry. It has not been possible to include all effects in the calculations. For instance, the general marketing/recognition value of Danish films in foreign countries has not been included, even though it is significant.

¹ Statistics Denmark: *Declarations of content: General enterprise statistics*, downloaded from www.dst.dk, January 2005.

² The calculated effects may be underestimated since companies involved in film production are defined as the makers of cinematic equipment, but at the same time, other companies providing transport, construction catering etc also play significant roles. On the other hand, the calculated effects may be overestimated because even though the production companies' core production is full-length feature films, several of them also make commercials, music videos and other minor commercial products.

3 Industry performance

In the following sections, the performance of the film industry is measured according to various parameters including ticket sales, turnover, export and employment. The production of films, the main focus of this paper, is here said to make up the core of the Danish film industry. A periphery of related sectors is here said to support the core, where the periphery embraces reproduction, production of cinematic equipment, rentals, distribution, and cinemas. Yet another series of related sectors such as for example transportation, construction work, catering, etc. are not included in this report.

3.1 Key figures

As can be seen from table 2, the total Danish film industry – consisting of both a core of film and video production and a periphery of supporting sectors – employed around 4,500 people in 2003. The sectors had a total turnover of approximately EUR 780 million. Approximately one-fifth of this comes from export.

Table 2: Key figures of the total Danish film industry 2003

2003	Turnover (Million EUR)	Export (Million EUR)	Full-time employees
Reproduction of film and video material	1.3	0.7	20
Production of cinematic equipment	106.3	90.2	590
Video/DVD rentals	88.8	0.0	735
Film and video production	309.6	33.7	2,270
Film and video distribution	172.3	21.5	225
Cinemas	101.0	0.0	650
Total Danish film industry	779.3	146.0	4,490

Source: Statistics Denmark and Danish Producers' Association

Note: Exchange rate of 01.07.2004 of DKK 1 = EUR 0.13460³.

The film industry thus contributes to less than 1 per cent of total Danish exports. Considered in isolation, the Danish film industry does not appear very important in relation to the total

³ As this report publishes value growths in fixed euro terms, EUR values in each historical year (i.e. 2003) are restated rather than actual—i.e. the values stated throughout does not inflate according to currency exchange changes.

of Danish industries. What make the film industry interesting from an economic point of view are the growth rates the film industry has demonstrated during the past decade, which are far higher than the average growth in the total of Danish industries.

Table 3: Growth of the total Danish film industry compared to growth of the total Danish industries 1993 to 2003

	Film industry 1993	Film industry 1998	Film industry 2003	Share compared to the 2003 total Danish industries %	Growth rates for the Danish film industry 1993-2003 %	Total Danish industries 1993-2003 %
Companies	1024	1260	1470	0.5	44	2*
Full-time employees	2034	3016	4490	0.2	153	7*
Turnover Million EUR	356.8	596.1	779.3	0.2	167	64**
Export Million EUR	73.5	142.4	146	0.3	252	73

Source: Statistics Denmark, Enterprise Statistics for the years 1993 and 1998, General Enterprise Statistics 2003.

* Growth from 1999-2002

** Growth from 1992-2002

Note that Enterprise Statistics solely embrace the Danish private sector enterprises covered by activities in which the enterprises are liable to pay value added tax (VAT), while General Enterprise Statistics covers all activities and sectors, and furthermore only include enterprises which are 'real active', while the previous statistics of Enterprise Statistics covered all enterprises, if they were engaged in even the smallest activity. See chapter 2, *Definitions and data sources* for further detail.

Note: Exchange rate of 01.07.2004 of DKK 1 = EUR 0.13460.

As mentioned earlier, the figures above should be considered rough estimates. In addition to the above-mentioned employment there are two more groups, the actors and the non-film workers who build the set. According to the Danish Producers' Association, 837 actors were involved in filmmaking in 2003. A significant contribution to the overall economy not elaborated on here is the amount of work that a production brings to an area. According to estimates from the Danish Producers' Association, an average shooting involves around 300 people above and beyond the film crew. These people only work up until and/or during the 6-8 weeks the film is actually in production; thus, it is hard to give a precise estimate. *FILMFYN*, a regional fund that supports a film production financially if the film is shot in their area, aims to create 400 full-time positions within film production. The first evaluation is to be conducted around 2005.

3.2 The core of the Danish film industry

The production companies embraced by the sector definition "Film and video production", make up the core of the film industry. As shown in table 4, this sector alone had in 2003 turnovers of approximately EUR 310 million and export worth EUR 34 million.

Table 4: Key figures for film and video producing companies 2003

Number of companies	Turnover in million EUR	Export in million EUR	Full-time employees
423	310	34	2,270

Source: Danish Film Institute

Note: Exchange rate of 01.07.2004 of DKK 1 = EUR 0.13460.

The number of full-time employees underestimates the actual number of employees involved in film production. This is due to the fact that the industry comprises many freelance employees, who are not hired as employees on the various productions. Freelancers are usually private entrepreneurs, and are thus not registered as employees, but as private subcontractors, i.e. companies without employees. This also explains the high number of companies.

The actual income of the approximately 2,270 people employed in film and video production has not been computed. However, the Danish Producers' Association has conducted several studies and estimated the average hourly salary to be 24.2 EUR (DKK 180)⁴ in 2003, resulting in an annual salary of EUR 46,706 (DKK 347,000). According to this estimate, the total income for workers in film and video production is EUR 107 (DKK 797 million). Exports in 2003 were around EUR 34 million. It should be noted that these figures only come from the sale of goods and services abroad. The total export would thus be greater if foreign financing in relation to Danish films and co-productions were included in the figures.

Danish film turnovers

A quick glance at an estimate of film turnovers⁵ from the Danish Film Institute calculated on the basis of cinema ticket sales, video/DVD rentals and sales, foreign sales and other items (e.g. remakes, merchandising, etc.) for 42 Danish films supported from 1999 to 2001, shows that 15 films have generated money for the producer, while 27 have not. On average, this means a surplus of EUR 80,760 (DKK 600,000) per film or an average turnover of 25 per cent. The total budget for the 42 films is EUR 70.7 million (DKK 525 million) or EUR 1.7 million per film. The producers' share is EUR 0.3 million (DKK 2.3 million) per film (18%), not including the foreign co-producer.

The 15 profit-making films had a total surplus of around EUR 9.4 million (DKK 70 million) – around EUR 0.6 million per film. The variation, however, is considerable since two films alone account for one-third of the surplus EUR 3.1 million (DKK 23 million). The profit-making films were produced by seven different companies, which made a total investment of EUR 4.2 million (DKK 31 million) in the films, giving a per share return of 226 per cent. The total deficit of the unsuccessful films was EUR 6.5 million (DKK 48 million), distributed between 27 films with an average deficit of EUR 0.24 million. The variation here is somewhat lower, since four films made up one-third of the deficit EUR 2.2 million. The firms originated from 16 different companies. 10 of these have yet to make an economically successful film,

⁴ Currency calculations are throughout based on exchange rate of 01.07.2004 of DKK 1 = EUR 0.13460.

⁵ The figures do not include English-language films or animated films.

and five of these companies do not exist anymore. In the deficit-making films, the producers had invested EUR 8.7 million (DKK 65 million) and thus lost 75 per cent of their investment.

3.3 The periphery of the Danish film industry

The production of Danish feature films draws upon a series of other sectors. At the periphery of the film industry, the most relevant sectors are:

- Production of cinematic equipment
- Reproduction of film and video material
- Film and video distribution
- Video/DVD rentals
- Cinemas

It should be noted here that television companies also are important for the production of Danish feature films since they often play a central role in the financing of the films⁶. However, we have in this report chosen not to include data on television companies since it is currently not possible to extract solely the film production related functions of television.

Producers of cinematic equipment. The yearly production of cinematic equipment generates work for 590 full-time employees, and has a total turnover of EUR 106 million from which EUR 90 million come from export. Approximately 15 per cent of the turnover and employment in this sector is related to Danish film production, and the export seems to be unaffected by the level of Danish film production.

Reproduction of film and video material. In 1993 this sector employed 120 people and had a turnover of more than EUR 22.9 million a year. Ten years later the sector employed about twenty people and generated a turnover of EUR 1.3 million a year. This is mainly due to the digitalization of films. Reproduction of digital film and video material in Denmark has thus lost substantial market shares to neighbouring countries such as Finland and Germany, where more than 80 per cent of the physical production of Danish DVDs and videos is located.

Film and video distribution. Film and video distribution encompass companies deciding which and how many films should premier in Denmark. Their primary function is to market the films produced, but in recent years, distributors have also begun to participate in other activities such as buying their own cinemas and taking part in the actual production of films and videos through investment and consulting. The sector had 86 companies registered in 2003 and a total turnover of EUR 172 million, of which EUR 22 million came from export. The total employment was 225 full-time employees. In the area of distribution, Denmark is dominated by six key players: SF Film, Nordisk/Egmont, Sandrew Metronome, UIP, Buena Vista and Angel Films. These six distributors account for 97% of the Danish market. Table 5

⁶ PLS Rambøll (2001): *Film producers - an analysis of financing opportunities of Danish feature film production* (Filmproducenterne - Analyse af finansieringen af dansk spillefilmsproduktion) conducted for Danish Producers' Association.

gives an overview of the vertical integration, i.e. to what extent distributors also own cinemas.

Table 5: Film and video distributors owning cinemas in 2003

	Number of cinemas	Number of screens	Number of seats	Number of admissions (1000s)	Market share per cent
Nordisk	15	95	16,373	4,967	40%
Sandrew Metronome	2	16	2,717	928	8%
Grand Teatret /Camera Film	1	6	773	397	3%
Øst for Paradis	1	4	311	94	1%
Gloria	1	1	106	17	0%
Husets Biograf	1	1	57	7	0%

Source: Danish Film Institute (2004)

Video/DVD rentals generate a substantial part of the consumption of Danish feature films, and are an important part of Danish feature film production. Danish video and DVD rentals generated a turnover of EUR 88.8 million in 2003.

Cinemas. In 2003, cinemas had an annual turnover of EUR 101 million and employed 650 full-time workers. In Denmark, the number of films released in cinemas increased to 209 in 2003, up from 152 in 1993. Of the total number of releases, 103 (49 per cent) were films from the US, while Danish films accounted for 12 per cent of all films, representing a significant improvement in comparison with 1993 (7 per cent).

In Norway, in comparison, the number of total film releases jumped 18 per cent to 249 in 2003, of which local films accounted for 7 per cent of all first-run releases, but also for a record of 18 per cent of total admissions to cinemas. Meanwhile, 139 films released from the US claimed the majority of 70 per cent of total tickets sold last year, according to Film & Kino. In France, local films accounted for 43 per cent of total releases (513)—the highest annual tally for over six years. In addition, 160 films from the US claimed the majority (54 per cent) of admissions in France in 2003, representing a slight increase from the previous year. Meanwhile, the market share of French films at 35 per cent remains stable year after year.

Table 6: Number of feature film first-run releases in Denmark according to origin of film production for selected years

	Total Films	Films produced in Denmark (features)	Films produced in Denmark (documentaries)	Films produced in Europe (excl. Denmark)	Films produced in the US	Films produced in other countries
1993	152	11	...	27	109	5
1998	176	18	5	42	101	10
2003	209	24	9	53	103	20

Source: Danish Film Institute

Table 7: Number of admissions (1000s) in Denmark according to origin of film production for selected years

	Total admissions	Films produced in Denmark	%	Films produced in Europe (excl. Denmark)	%	Films produced in the US	%	Films produced in other countries	%
1993	10,222	1,761	17	752	7	7,370	72	339	3
1998	11,011	1,589	14	1,203	11	8,159	74	60	1
2003	12,297	3,167	26	1,246	10	7,591	62	293	2

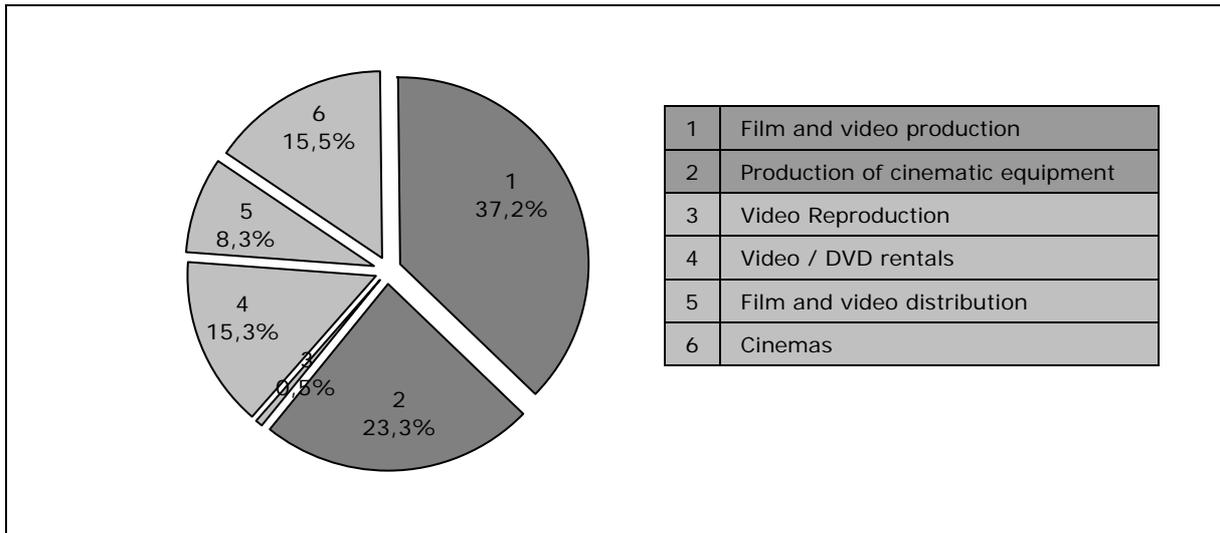
Source: Danish Film Institute

3.4 Employment

According to Danish Film Institute, there were 5,135 full-time salary jobs in the film industry in 2003, held by 1,847 woman and 3,288 men⁷. Jobs in the industry can be broadly classified into two different categories: the actual production of films, and the selling/distribution of films.

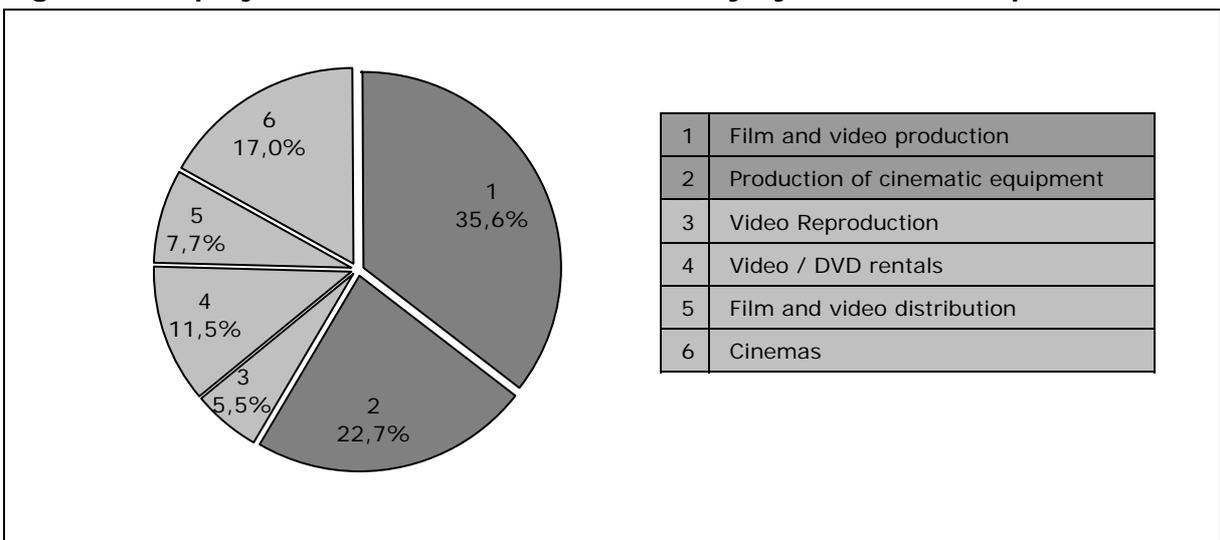
⁷ Note that this number is based on memberships of Danish Film Institute and is considerable higher than the number registered by Statistics Denmark.

Figure 1: Employment in the Danish film industry by sector of occupation 2003



Source: Statistics Denmark, General Enterprise Statistics

Figure 2: Employment in the Danish film industry by sector of occupation 1993



Source: Statistics Denmark, Enterprise Statistics

As can be seen from the figures above (1 and 2), around 60 per cent of workers in the Danish film industry in 2003 were employed in making the actual film, to which actors and the non-film specific suppliers must be added. Showing and distributing the films makes up the remaining approximately 40 per cent. This distribution of labour seems to be the same as it was 10 years ago. The only significant change is that employment in “video reproduction” has decreased considerably due to changes in technology and the digitalization that has occurred over the past decade.

The industry expects the demand for employment to rise in the future. Some parts of the industry estimate the increase to be insignificant, but others project an increase of up to 25 per cent. In comparison, a recent American analysis, “Employment in the Motion Picture and

Video Industries”⁸, forecasted the worldwide growth for jobs in the film industry to be 31 per cent between 2002 and 2012—that is, roughly double the 16 per cent growth projected for all industries combined. The job growth is estimated to result from the explosion of programming needed to fill an increasing number of cable and satellite television channels. Also, more films will be needed to meet in-home demand for videos, DVDs, and films over the Internet.

⁸ A summary can be downloaded from www.screendiget.com/publications

4 Industry structure

Like other creative industries, the film industry is oriented towards major hits, due to the high production costs and low reproduction costs involved in film production. In other words, a film becomes expensive because of the time and effort put into writing the screenplay, filming, adding special effects, editing, and the like (fixed costs). Once the 'prototype' is made, all subsequent copies (variable costs) are relatively cheap to produce—as opposed to, for example, a car, which is both costly to develop and to copy. Profit in the film industry is thus concentrated on hits, and is derived from various streams of profit, for example, sales of cinema admissions, videos, DVDs, PPV, pay TV and free TV. The film industry is a "prototype" industry, and a film could be considered a one-off purchase⁹. In addition to this "prototype" characteristic, films have other features identified in the economic literature:

1. Films enter and exit the market on a continuing basis.
1. Films compete against a changing cast of competitors.
2. Films have a short period of time to capture the audience's imagination, earning in general their maximum box-office revenues in the first week of release while the point of widest release for most films is the second week.
3. Few films have "legs", i.e. enjoy long runs and gain positive word of mouth.
4. Most films lose money. For example, of a sample of ten films, five will typically lose money, four will break even and one will generate a high return, making the average film box-office almost entirely dependent on a few extreme revenue outcomes, whose probability of occurrence is low.

The cost structure of the film industry pushes towards economies of agglomeration—clustering creates considerable advantages. This feature is particularly striking in the US (and may also explain one cost advantage of this country), where the entertainment industry service firms are concentrated in California, even if filmmaking may increasingly take place in other locations. There is a geographical clustering of a specialized labour force. On the global level, the film industry is dominated by major agglomerations—the Hollywood-style

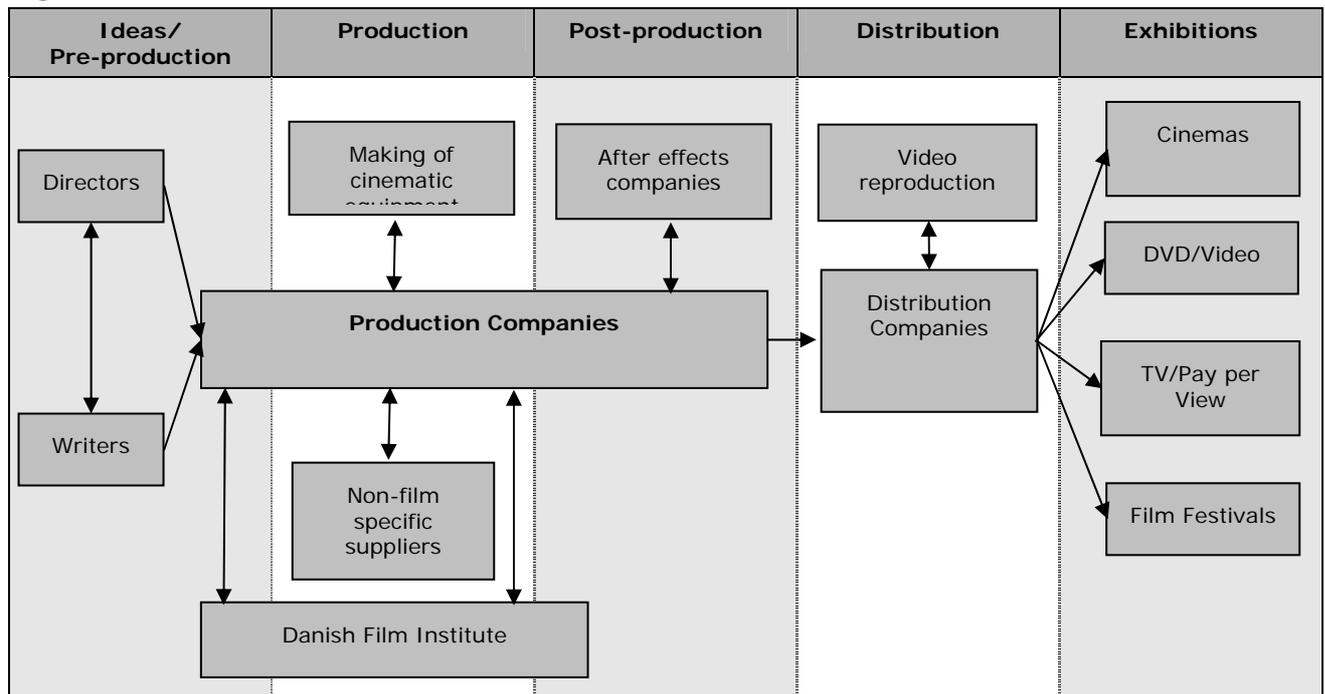
⁹ That is for example when people buy a product that is new to them and they cannot first engage in the process of sample testing. For example, in the case of toothpaste or soft drinks, the consumer may buy several different brands before settling on a favourite. By contrast, an audience cannot really compare a new film with another existing product and will not be able to sample it fully before having seen it

film studios. The cost structure combined with global distribution and ever increasing marketing budgets pushes the film industry towards economies of scale, where the dominance of an international distribution network becomes a powerful control mechanism and a key to economic success.

4.1 The value chain

The following sections review the evolution of the Danish film industry according to the structure of production, distribution and exhibition stages.

Figure 3: The value chain of Danish feature films



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Ideas and pre-production. A feature film starts out as an idea. Producers are the people that look for ideas that they believe can be turned into lucrative film projects. They may see films, read hundreds of manuscripts, and maintain numerous contacts with literary agents and publishers. Before a film moves into the production phase, the screenwriters turn the idea into an actual script. Usually screenwriters work closely with producers and directors to make the script, which can be developed either from an original idea or from an existing work (usually books, but also computer games, comic books, TV series, or even TV commercials might be used) and adapted into a screenplay or television plot. Pre-production is the entire planning phase, which also includes budgeting, casting, finding the right location, preparing and approving the set and costume design, constructing the set, scheduling etc. Pre-production ends with a “shooting script” with instructions pertaining to shots, camera angles, and lighting. Frequently, screenwriters have to make changes to reflect the directors’ and producers’ ideas and desires. The work, therefore, requires not only

creativity, but also an ability to write and rewrite many versions of a script under pressure. Although the work of feature film screenwriters generally ends when shooting begins, writing for television series is usually a continuous process. Once the “shooting script” is ready, the film can move into the production phase.

Production is the actual making of the film. The number of people involved in the production phase can vary—from a few, for a documentary film, to hundreds, for a feature film. It is during this phase that the actual filming is done. The most significant workers in the production phase are the actors, whose job it is to entertain and communicate with the audience (consumers) through their interpretation of dramatic or comedic roles. Cinematographers, camera operators, and gaffers work together to capture the scenes in the script on film. Cinematographers compose the film shots to reflect the mood that the director wishes to create. They do not usually operate the camera; instead, they plan and coordinate the actual filming. Camera operators handle all camera movements and perform the actual shooting. Assistant camera operators check the equipment, load the camera, operate the slate and clapsticks used to record the beginning of a scene, and take care of the equipment. Gaffers, or lighting technicians, set up different kinds of lighting needed for filming. They work for the director of photography, who plans all lighting needs.

Sound engineering technicians and boom operators record dialogue, sounds, music, and special effects during the filming. Sound engineering technicians are the “ears” of the film, supervising all sound generated during filming. They select microphones and the level of sound from mixers and synthesizers to ensure the best sound quality. Boom operators handle long booms with microphones that are moved from one area of the set to another. Because more filming is done on location and the equipment has become compact, lighter, and simpler to operate, one person often performs many of these functions. Multimedia artists and special effects artists create the film “magic”. Through their imagination, creativity, and skill, they can be asked to create anything required by the script, from talking animals to flaming office buildings and earthquakes. Many begin as stage technicians or scenic designers. They do not only need good imaginations, but must also be part carpenter, plumber, electrician, and electronics experts. These workers must be familiar with many ways of achieving a desired special effect, because each job requires different skills. Computer skills have become very important in this field. Some areas of television and film production, including animation and visual effects, now rely heavily on computer technology. Although there was a time when elaborate computer animation was restricted to blockbuster films, much of the three-dimensional work being generated today is carried out in small to medium-sized companies. Some specialists create “synthespians”—realistic digital humans—which appear mainly in science fiction productions. These digital images are often used when a stunt or scene is too dangerous for an actor. When all the scenes from the shooting script have been shot, the production phase is finished, and the film moves into post-production.

Post-production. By far the most important task in *post-production* is editing. After a film has been shot and processed, film and video editors study footage, select the best shots, and assemble them in the most effective way. Their goal is to create dramatic continuity and the right pace for the desired mood. Editors first organize the footage and then structure the

sequence of the film by splicing and resplicing the best shots. They must have a good eye and understand the subject of the film and the director's intentions. The ability to work with digital media is also becoming increasingly important. Strong computer skills are mandatory for most jobs. However, few industry-wide standards exist, so companies often look for people with skills in the hardware or software they are currently using. Assistant editors or dubbing editors select the soundtrack and special sound effects to produce the final combination of sight and sound as it appears on the screen. Editing room assistants help with the splicing, patching, rewinding, coding, and storing of the film. Sound effects editors or audio recording engineers perform one of the final jobs in post-production: adding pre-recorded and live sound effects and background music by manipulating various elements of music, dialogue, and background sound to fit the picture. Their work is becoming increasingly computer driven as electronic equipment replaces conventional tape-recording devices. Most individuals are specialized in specific tasks and only work within small parts of one of the phases, but some individuals work in all three phases.

The most significant worker is usually the producer. Producers are responsible for all of the financial aspects of a film, including finding financing for its production. The producer usually works closely with the director on the selection of the script, the principal members of the cast, and the filming locations, because these decisions greatly affect the cost of the film. Once financing is obtained, the producer works out a detailed budget and sees to it that the production costs stay within that budget. In a large production, the producer also works closely with production managers, who are in charge of crews, travel, casting, and equipment.

The Danish production landscape is quite different from the situation in the US. In Denmark, most producers are not organized in any commercial structure that could properly be called a "studio" in the American sense of the word. Small independent producers make the majority of Danish productions in a highly fragmented industry where most companies produce no more than one film a year. In parallel to the fragmentation of the independent production sector, the larger production companies are starting to look towards the US market, with pre-sale and distribution agreements with the major players.

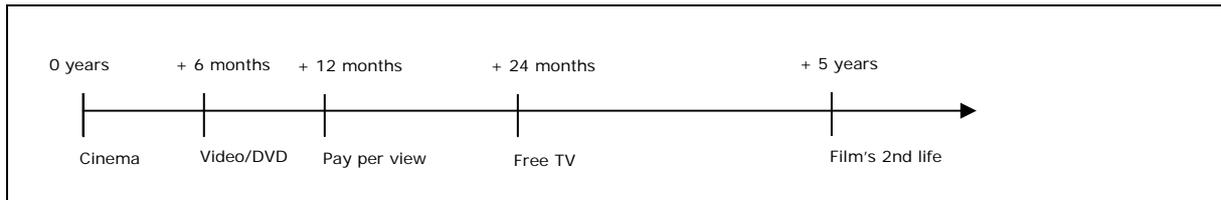
Distribution. In the film industry, distribution and exhibition are two distinct operations. The distribution segment should be considered an international market with different "exhibition or profit release windows", i.e. cinema, video/DVD, PPV, pay TV and free TV. Since 1980, a trend of vertical integration has been observed all over the EU and the US, with the large US distributors gradually increasing their market share, but with a strong national bias in the EU. The growth of concentration could raise competition issues requiring the definition of the "relevant market". In other words, it may become necessary to consider the different windows as separate product markets and to define the geographical market. In order to maximize the probability of success when releasing a film, distributors have to define a strategy on the basis of the following parameters:

- the cost of the marketing and promotion campaign,
- the time of release in cinemas,
- the number of prints released,

- the number and location of cinemas (subject to the availability of screens and the existing relationship with exhibitors), and
- the sequence of release across the various profit windows.

The policy in terms of release windows is affected by technological developments, for example, the introduction of pay-per-view or video on demand, affecting the potential time of exploitation and the revenue associated with each segment.

Figure 4: Timeline for production of a typical feature film



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Exhibition. In Denmark (and the rest of the EU), the recent evolution of cinema attendance has been stimulated by modernization of programmes in cinemas and by the creation of multi- and megaplexes. Attendance in Denmark has experienced a near-recovery since 1993, after reaching its lowest point in 1992 with 583 million admissions. Audiences have been growing rapidly in the UK, Spain and Germany, as well as in Luxembourg and in Ireland. France remains the most important market but the gap has been decreasing in comparison with Germany, the UK and Spain. The European market is still only slightly above half the size of the American market, even though the European population is around 40 per cent larger than the US one. Average annual cinema-going in the EU is 2.2 admissions per person versus 5.4 in the US, although this difference cannot be explained by structural reasons alone (even though the fast development of new support for audiovisual product in the US market has sustained the demand for new content, especially new films, showing a complementary rather than substitution effect between cinema attendance and new digital support).

Although the size of the Danish video software market, i.e. the video and DVD markets (sales and rentals), has been relatively stable in recent years, this market is facing important reorientation of its activities from video to DVD. While DVD accounted for less than 1 per cent of turnover in 1998, this share increased to around 8 per cent in 1999, and is over 50 per cent today, reflecting the take-up of DVD hardware and the sustained activity in the DVD markets.

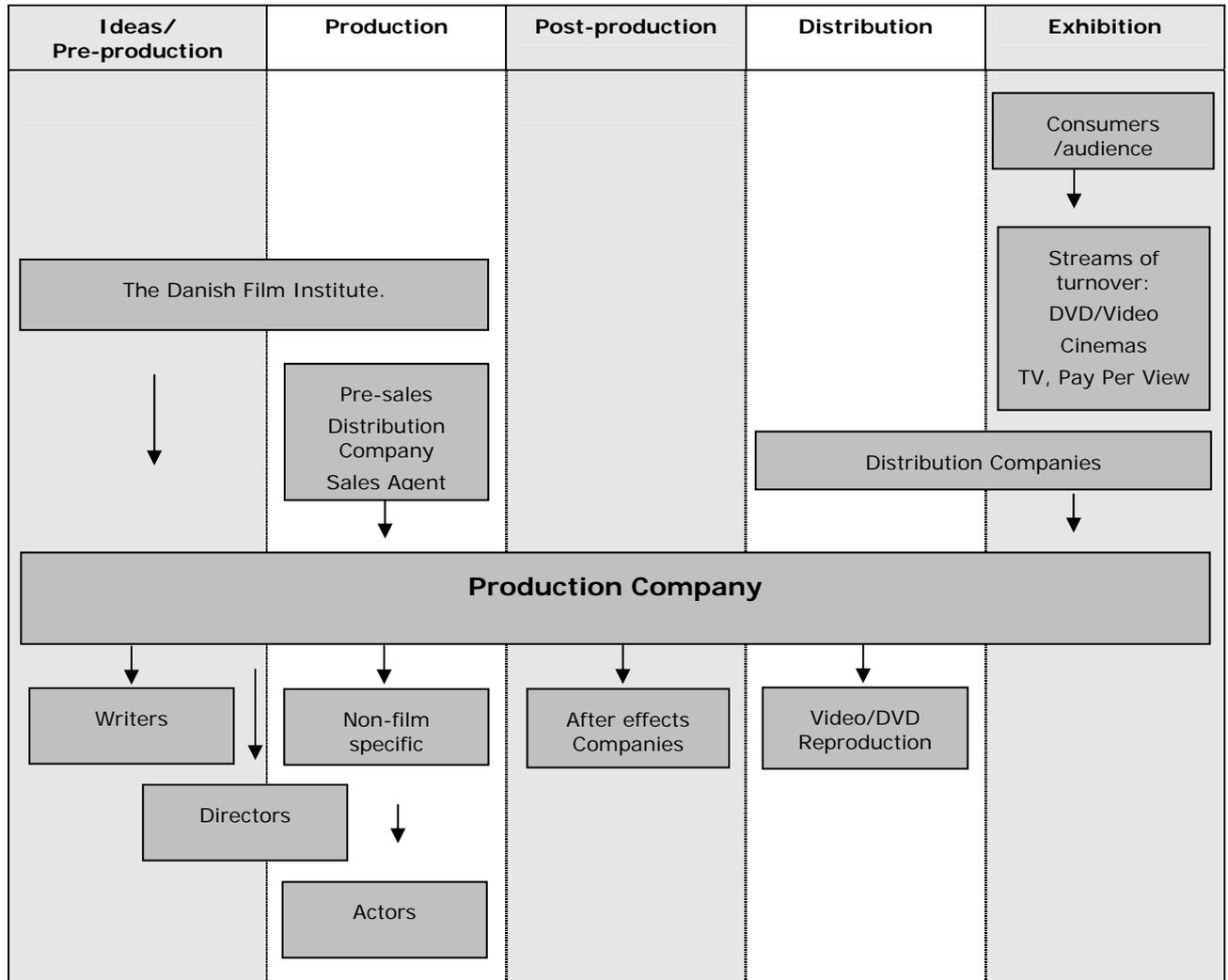
4.2 Monetary flow

Financing of the film industry has a series of features in common with financing of R&D, notably to cope with the high level of intangibles and risk involved. The recourse to different financial instruments is required, depending on the stage of development of the companies, the funding needs and the risk associated with each market segment. For instance, venture capital might be more appropriate for financing projects addressing the development or pre-

production of film goods. Furthermore, the film industry is characterized by complex interaction among the various players and different sources of funds.

The following figure 5 seeks to schematically represent the main monetary flows in Danish feature film production.

Figure 5: Monetary flow in Danish film production



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Financing a film requires a large investment that is sunk and entails a palpable hazard of loss. The “nobody knows” property implies a high variance of gross profits from film to film. Large budgets are not necessarily an indicator of success—a simple correlation analysis between the film budget and box office success of top US films shows a weak correlation. Stars (actors, directors) or producers with a good track record do not guarantee box office success either. They essentially attract rents which might help make the film “bankable” as they increase the likelihood of debt repayment by increasing the expected gross revenue, but do not reduce the risk of gross profits.

The financing of film production is subject to Parkinson's Law, with the number of projects expanding to absorb all capital available, regardless of quality and virtually without regard for the quantity of other films scheduled for completion and release at around the same time. This "law" is particularly relevant in an industry where the films produced are essentially financed by lenders' money and or government money. In addition, costs unavoidably rise at least as fast as anticipated revenues, meaning that the existence of new windows would not necessarily lead to higher profitability of a film over its life cycle.

Table 8: Average investment in feature films in million EUR

	2001	2002	2003
USA	15,1	22,1	20,2
New Zealand	10,3	5,2	11,6
UK	8,5	5,9	8,9
Germany	4,6	4,9	5,7
France	3,3	3,3	5,0
EU	3,2	3,1	4,6
Ireland	3,5	3,4	4,3
Japan	3,6	3,5	3,8
Canada	3,2	3,0	2,8
Netherlands	2,5	2,6	2,6
Denmark	1,1	1,2	2,6
Italy	1,4	1,6	2,4
Switzerland	1,6	1,9	2,3
Belgium	2,3	1,4	2,3
Spain	1,7	1,8	2,1
Sweden	1,1	1,1	2,0

Source: Variety

Note: Exchange rate of 01.07.2004 of USD 1 = EUR 0.82

On a global level total investment in feature film production rose 10.3 per cent to hit \$22.4 billion (EUR 18.4 billion) in 2003, a record total in US dollar terms, according to data from Screen Digest's Cinema Intelligence in June 2004¹⁰. The total value of production investment in Western Europe increased 57.3 per cent to \$5.1 billion (EUR 4.2 billion) up from \$3.29 billion (EUR 2.7 billion) in 2002. The increase in dollar terms was partly driven by the recent strong rise of the EURO, which propelled the value of the dollar to its highest ever level in 2003. In Eastern Europe, production spending surged 24.4 per cent to \$59.4 million (EUR 48.7 million). However, spending was higher back in 1995 in US dollar terms. Likewise, production spending also rose by 2.8 per cent in all Asian territories to hit \$2.0 billion (EUR 1.6 billion). Total production spending in the US accounted for 65 per cent of the total

¹⁰ Screen Digest (2004): *Global Film Production and Distribution. Worldwide film production at record levels.*

investment poured into feature films across the globe in 2003. This proportion has, however, fallen slightly from the 71 per cent of all spending registered in 2002.

Globally, the average budget per feature film reached \$5.49 million (EUR 4.5 million) in 2003, up 8.4 per cent in US dollar values from \$5.06 million (EUR 4.1 million) last year. The average investment per film in Western Europe reached \$5.47 million (EUR 4.5 million) in 2003, up a massive 51.1 per cent year on year and the highest ever total in US dollar terms. Meanwhile, there was a slight decline in the average budget per feature film in North America, which fell to \$22.42 million (EUR 18.4 million).

For Denmark, the investment needed for making major blockbusters—including financing of the American “star system”, which means paying a single major film star an amount corresponding to the total cost of making five average budget films—is out of reach at least for now. However, there is still room for Danish producers who wish to explore the international market, especially since Danish films are very cost effective.

Table 9: The cost of Danish feature films in 2003

Low budget films	EUR 0 - 1.6 million (total of 6 films in 2003)
Middle budget films	EUR 1.6 – 3.4 million (10 films in 2003)
High budget films	EUR 3.4 – 20.2 million (1 English co-production + 1 animated film in 2003)
Average	EUR 2 million (Low budget + middle budget)

Source: Danish Film Institute (2004)

Note: Exchange rate of 01.07.2004 of DKK 1= EUR 0.13460.

The distributor’s services involve the acquisition of sufficient prints of the film, planning and executing the promotion and advertising campaign, and physical distribution the film through its network of sector offices. The distributor’s compensation takes two forms:

- (i) overhead charge deducted from gross rental (the payment received from exhibitors) estimated at around 40 per cent, and
- (ii) cash inflow net of the overhead charge to recoup the distributor’s cost of prints and advertising.

If the distributor has participated in funding the production, the interest on loans has first claim. The distributor bears a substantial part of the risks, giving him a strong incentive to promote the film, given the existing compensation structure.

Another common way of financing films is to pre-sell exhibition rights to national and foreign distributors, for a pre-defined period of time and for a specified geographical area. The producer can use the guaranteed minimum payment from distributors to obtain additional financing from lenders or investors (i.e. providing promissory notes discountable in banks). This scheme offers more creative freedom to the producer, but the latter loses in terms of internalizing the spillover benefits from a film’s promotion at each stage because

these are retained by the distributor(s). Indeed, distributors can profit from a price discrimination policy by managing the promotion on the basis of the rights they have obtained both in terms of duration and geographical coverage. The pre-selling of rights to several independent distributors makes it difficult for the producer to benefit from the interdependency between the various exhibition “windows”. However, at the same time, the producer benefits from greater creative freedom since the dispersion of the bargaining power among various distributors curtails their ability to make artistic choices. Finally, this scheme implies another form of risk sharing due to the absence of “cross-collateralization”, since each agreement with a distributor is independent of any others.

In general, due to their reliance on pre-sale strategies, producers manage to reduce their downside risks while giving away much of the substantial upside profits and cash flow potential from hits. Producers will still usually need interim loans to cover cash outlays during the period of production. Producer could also pre-sell the rights to the film to national or regional TV channels. This mechanism shares some similarities with the pre-sale of exhibition rights, since the producers could discount the TV channel contracts to banks in order to finance the production of their films. In most cases where TV rights are pre-sold, i.e. where the rights are sold before the film is finished, the TV channel is a co-producer, which may hand over some control over the artistic package (script, “bible”, trailer (if needed), director, cast) to the channel.

The Danish market is still quite different from the US market in terms of financing schemes, private funding being strongly supported by public funding. The Danish situation reflects the existing structure of the European film industry, which is characterized by a lack of economies of scale due to diverse and heterogeneous national European markets (mainly for cultural and linguistic reasons), by the lack of sufficient know-how especially at the development stage, by inadequate promotion and advertising budgets, and by the difficulties in offering competitive conditions to creative workers (international recognition, salaries, profit participation). Therefore, the potential for and the probability of significant returns on Danish films through worldwide exploitation is quite limited. This, in turn, leads to weaker funding of producers and distributors.

The resulting vicious cycle could be partially alleviated by the emergence of pan-European distributors able to sustain co-production-distribution deals. For instance, domestic and emerging pan-European distributors in a “split-rights” arrangement might contribute to a film’s production costs and be entitled to distribution fees earned in their respective territories. Agreement needs to be reached on “cross-collateralizing” profits and losses to solve the issue of differences between distribution costs and box office appeal depending on the national market.

The increased participation of TV channels in co-production schemes (partially due to legal obligations of investing in cinema productions) has made more funds available to film production. In general, a broadcaster provides a significant part of the funding in return for rights. Another form of support from broadcasters is through the pre-sale of rights for the broadcasting of a film. However, a distinction must be made between cinema theme channels and generalist channels. Indeed, generalist channels might be less interested in

maintaining a significant film budget since this unique creation can only marginally contribute to the completion of their programme planning. In some sense, the role of end-users is becoming more important in film financing, which is also partially reflected by the fact that exhibitors, in order to obtain exhibition rights for prospective blockbuster films, may agree to commit to making other risk-exposed payments.

Usually a Danish film is financed with funds from the following sources:

- Funding (Danish Film Institute and other funds)
- Sale of broadcasting rights (*DR*¹¹ and *TV2*)
- Pre-sales distribution rights
- Producer + co producer (including bank loans, facility and payment investments)

¹¹ DR (Danish Broadcasting Corporation) is Denmark's oldest and largest electronic media enterprise. It was founded in 1925 as a public service organization.

Table 10: Sources of finance of Danish-produced Danish-language feature films supported in 2003

Source of finance	Amount in EUR	%
The Danish Film Institute	848,650	43
DR/TV2 Invest	151,290	8
DR/TV2 pre-sales	211,460	11
Pre-sales	183,330	9
Producer	339,190	17
Foreign co-producer	50	2
Other foreign investment	60	3
Funds etc.	130	6
Total	1,959,780	100

Source: Danish Film Institute (2004), figures based on 17 films supported in 2003.

Of the 17 films supported by Danish Film Institute in 2003, four had a foreign co-producer, which resulted in support from other film institutes for three of the films. Other foreign financing normally comes from pre-sales to Scandinavian TV stations, which have resulted in financing from Nordic Film and TV Fund in six cases. Three films have received funding from regional funds (FILMFYN), DaneAge Association (Ældresagen), and the EU Media Plus programme. In one case a Danish film received support from foreign regional funds and English tax mechanisms.

The bigger Danish film productions and especially the English-language Danish produced films have used the following international sources of finance: Nordic Film and TV Fund, EURImages, foreign film institutes and funds, pre-sales to foreign territories, international tax regulations (especially UK sale-and-lease back), tax-based financing, higher royalty gains, and lower director and actor payments. The average investment needed in order to earn returns is EUR 2.8 million.

Table 11: Sources of finance of Danish-produced English-language feature films supported between 2001 and 2003

Source of finance	Amount in EUR	%
The Danish Film Institute	814,870	9
DR/TV2 Invest	197,050	2
DR/TV2 pre-sales	157,620	2
Pre-sales	155,600	2
Producer	873,290	10
Foreign co-producer	1,561,360	18
Other foreign investment	3,254,900	37
Funds etc.	1,877,810	21
Total	8,881,990	100

Source: Danish Film Institute (2004), figures based on 7 English-language films supported between 2001 and 2003.

4.3 Earnings of Danish feature films

Earnings of Danish films include the earnings of the producers and all ownership partners in the film funding. The owners are typically, directors, writers, composers, actors, and sometimes also co-producers, TV stations, DFI, funds, investors and others. The earnings usually come from the distributors' and/or sale agents' calculations along with the parties responsible for the direct turnover to end consumers.

The following streams of turnover are typically found:

1. The cinemas rent the film from the distributors, who in turn—after deducting a distribution fee (normally 20%), P&A costs (marketing and copying), and a presale warranty—pay the producer.
2. Video/DVD sales and rentals in stores and over the Internet (mail order rental and sales and video on demand (Internet) yields a solid price to the distributors, who after deducting a distribution fee (normally 40%,) production costs marketing costs, and the costs of pre-sale arrangements, pay the distributor.
3. Sales to pay TV stations and later, free TV stations, paying for a number of broadcasts in a given period to the distributor (or, if the film has not been pre-sold, to the producer, after deducting a distribution fee (30%)).
4. Sales of rights to merchandise, remakes, etc.

Export (outside Scandinavia) is usually handled by sales agents selling directly to local distributors, often with several intermediaries involved. Selling to foreign countries typically follows two models:

- a) A given amount for a given “exhibition window” in a given period and a given territory (the most common model).
- b) As a pro-rate share of the turnover the film generates.

The choice of model depends on the relation between the producer and sales agent, and of course, the amount of risk the buyer/seller is willing to take. From an economic point of view it is usually “bad business” to sell the film at a fixed cost (usually pre-sale), which means that if the film turns out to be successful the producers will not see any of the money because they have already sold the rights to the sales agents.

The main point about selling films is, of course, that it is almost impossible to determine the demand curve. The following factors affect the earning potential:

- The film's playability (ability to create “word-of-mouth”)
- The film's marketability (ability to create interest)
- Marketing
- Target groups
- Use of language with international appeal
- Competitive situation

- Market penetration
- Reviews and international prices

To a certain extent, it is possible to predict these factors, whereas other factors like weather, luck etc. are unpredictable, but also important.

5 Dynamics of the market

Global film production edged up 1.7 per cent in 2003, to reach a new record of 4,087 feature films produced worldwide, 68 more films than in the previous year, according to Screen Digest. Levels of global film production have been continually increasing for the past five years, leading to a total increase of 710 additional feature films annually compared with 1998—a growth rate of 20.9 per cent. In 2003, a significant proportion of the annual rise (58 new productions) came from Western and Eastern Europe, resulting in a total of 1,071 European feature films. The relatively large number of European motion picture productions in 2003 did not result in a corresponding number of economic successes—the so-called “blockbusters”. That market is almost totally dominated by American films both in Europe and the US.

North American production levels experienced a slight resurgence in 2003, bucking three years of consecutive decline, whereby total films increased by 8.7 per cent to reach 662 features. Meanwhile, there was a larger 18 per cent increase in the number of South American features made, giving a total of 118, the highest level in this region for over 12 years. The overall gain from Europe and America masked dwindling levels of production in the Asia Pacific regions in 2003. Film production levels across all Asian regions fell 3.9 per cent to 2,064 films from 2,145 films the year before. The fall came despite an 8.3 per cent boost the previous year and rising levels of production over the last four consecutive years.

Total film production for Western Europe rose 4.7 per cent to 952 features, while Eastern European nations experienced a 9.1 per cent increase to 179 full-length films. In Western Europe, the lion’s share of the increase came from the UK, where levels of feature production rose 47 per cent to 175 films in 2003. Other major European film producing nations, however, experienced a diminishing output in 2003, as the numbers of films produced in Germany, Italy and Spain fell to 107, 117 and 110 films respectively, representing a combined year-on-year fall of 49 features. On closer inspection, however, the overall decline can be accounted for by a drop in the number of film collaborations. The total number of co-productions for Germany, Spain and Italy, slid to a combined 87 projects, compared with 136 projects in 2002. In France, the number of films produced reached a new record of 212 films in 2003, while there were also significant production increases in Denmark (24 films) and Sweden (27 films). In addition, smaller European film producing nations such as Belgium, Austria, Ireland and Netherlands all increased their production, albeit by one or two films only.

A publication from Screen Digest¹² regarding the number of tickets sold in the EU compared to the US shows that the market in Europe is approximately half the size of the US market (1.4 billion compared to 750 million tickets sold). It should be noted that the number of tickets sold is increasing in both the EU and the US. In the EU the growth from 1992-2003 was 6 per cent per year. Denmark, in comparison, experienced only a moderate growth of less than one per cent a year in the same period.

¹² Screen Digest (2004): *Global Film Production and Distribution. Worldwide film production at record levels*, Screen Digest Cinema Intelligence

Table 12: Top twenty releases in Denmark 2003

	Title	Country of origin	Distributor	Admissions (1000s)	Share of total Admissions (%)	Gross Box Office (MILL EUR)	Share of total Gross Box Office (%)
1	LOTR: Return of the King	USA / NZ	SF Film	620	5.04	7.47	7.07
2	LOTR: The Two Towers	USA / NZ	SF Film	600	4.88	6.78	6.42
3	Die Another Day	UK	SF Film	458	3.73	4.17	3.94
4	The Matrix Reloaded	USA	Sandrew	406	3.31	3.67	3.48
5	Inheritance	DK	Nordisk	374	3.04	2.71	2.57
6	Anja After Viktor	DK	UIP/BV	346	2.81	2.80	2.64
7	Finding Nemo	USA	UIP	318	2.58	2.47	2.34
8	Pirates of the Caribbean	USA	UIP/BV	311	2.53	2.87	2.72
9	Bruce Almighty	USA	SF Film	309	2.52	2.72	2.57
10	Nasty Brats	DK	SF Film	298	2.42	2.19	2.07
11	Stealing Rembrandt	DK	Nordisk	278	2.26	2.02	1.91
12	The Jungle Book 2	USA	UIP/BV	269	2.18	1.89	1.79
13	The Green Butchers	DK	Sandrew	262	2.13	2.22	2.10
14	About Schmidt	USA	SF Film	251	2.04	1.71	1.61
15	8 Mile	USA	UIP	248	2.02	2.16	2.04
16	Terminator 3	USA	Nordisk	237	1.92	2.16	2.05
17	The Matrix Revolutions	USA	Sandrew	217	1.77	2.06	1.94
18	Bad Boys II	USA	Nordisk	184	1.50	1.72	1.63
19	Move Me	DK	Nordisk	179	1.46	1.39	1.31
20	X Men 2	USA	SF Film	172	1.40	1.55	1.47

Source: Danish Film Institute (2004)

Note: Exchange rate of 01.07.2004 of USD 1 = EUR 0.82

In addition, American films also dominate the European market. American films have a market share of 75 per cent in the EU. Of the European productions, Danish productions have a very limited market share. Of releases in Denmark, only six Danish films and one European film (the James Bond film "Die Another Day", which was a US co-production) can be found on the top twenty list in 2003. The highest ranked Danish film is "Inheritance" (*Arven*), directed by Per Fly, which was number six, with 374,000 tickets sold. Even though traditional American blockbusters have long had the largest market share for motion pictures, the American dominance has been reduced in recent years.

6 Critical conditions for growth

In addition to drawing attention to the lack of integration between the various stages of the production life cycle in the fragmented Danish feature film market, this review has also made it possible to identify specific factors affecting each stage. In the first five chapters, the Danish film industry has been examined from various economic perspectives, and the results are summarized in the following strengths and weaknesses of the Danish film industry.

6.1 Strengths and weaknesses

Strengths of the Danish film industry. Danish feature films, TV series and short films, receive considerable and valuable international attention, and Denmark is generally recognized for its artistic standards. Denmark has a large mass of talent in all areas of film production, both artistic (writing/directing) and technical. The educational level at the Danish film school is among the highest in Europe, and several independent filmmakers are also doing well. The Danish Film Institute and the several funding and consultancy mechanisms it administers function very well.

Weaknesses of the Danish film industry. Danish films are extremely dependent on public funding. More than half of all investments come from public sources, and this leaves the producers vulnerable to political change. The film industry is based upon what could be referred to as “a project culture” rather than a continuous company culture. Accordingly, there is an investment tradition involving the consideration of film projects one at a time, which increases the investment risk and scares potential investors away. This makes it almost impossible to develop long-lasting relations to foreign companies and consequently, most players in the film industry lack know-how and access to an international distribution network. The industry does not quite possess the critical mass to keep talent in Denmark and cannot support all of the specialized work tasks necessary to retain talent. The film industry also has one of the highest rates of unemployment, periodically up to 35 per cent, according to Danish Film Institute. It seems probable that the significant risk involved in film production scares people away from the business.

The following weaknesses and potential strengths at the various stages of the Danish film industry value chain can be pointed out:

Development stage

- Lack of investment by producers at this stage in comparison to the US market.

- Lack of acceptable standards for “prototype” industries due to under-capitalization of producers and shortage of external funds.
- High rate of continuation of projects resulting in too many unviable films going to the production stage.

Production stage

- Sufficient film production in the EU creates a risk of over-supply (higher than in the US in the last three years), but also ensures diversity in the supply of films in terms of cultural and linguistic aspects.
- Increased supply in European TV fiction, which denotes the greater interest of viewers for national TV programmes.
- Fragmentation of the national European market, not compensated for by an increase in the number of films produced through co-production schemes.
- Lack of adequate financing, partially compensated for by the existing public support, which may, however, reinforce the market segmentation.

Distribution stage

- Strong market position of national distributors in their own markets and total absence of EU wide studios, while US majors have distribution subsidiaries in most of the European countries allowing them to ensure optimal release policies of the films across markets.
- Low rate of distribution of films outside the national market as well as limited circulation of national TV productions to other European non-national channels.
- Upstream adverse effects on production of the lack of European integration at the distribution stage, since few distributors commit themselves to pre-sell European non-national films until they have demonstrated their commercial potential on their national market.
- Ability of US distributors to amortize their promotion costs on their domestic market and hence to invest sufficiently in the promotion and marketing of the film (P&A costs), whereas European distributors have to adapt their strategy to each national context.
- The ability to sell rights on successful European TV reality/game shows to US channels.

Exhibition stage

- Strong investment, partially initiated by US exhibitors, led to a modernization of the existing “fleet” of cinemas, namely with the building of multi- and megaplexes. Consequently, most European cinema markets, with the exception of Italy and Spain, have become saturated and are highly indebted to exhibitors, reducing their flexibility to adapt to new/future exhibition technologies.
- An increase in the television transmission rights to major sport events and to a lesser extent, films.

- High potential for the technological development of new AV services (video-on-demand, interactive services) and the entry of new specialized TV channels benefiting from the development of digital cable and satellite transmission, generating additional demand for AV works.

In the grey zone. Several characteristics of the Danish industry are situated in a grey zone, functioning as both strengths and weaknesses. An example is the Danish language, which is a barrier when it comes to international distribution. That is, since the 'official' film language is English, foreign distributors will almost automatically consider Danish films to belong to an 'art house' genre. This makes it difficult for Danish films to enter the commercial market. However, the fact that Danish is conceived of as 'exotic' enhances the success for Danish films in the art house genre.

Another example is the prevalence of small independent film producers. On the one hand, the Danish producers do not obtain the same economies of scale as the American studios. On the other hand, it becomes possible to enjoy some sort of economies of scope—small independent film producers are able to join flexible networks with various mixes of competencies. "Filmbyen" built up around Zentropa could function as an example of this.

6.2 Financing

The financing of the production of films and TV programmes rests on various sources of funding: presale of rights to TV channels and video/DVD distributors, minimum guarantee payments from domestic or international cinema distributors, cash investment from the production companies and public support from national and/or European authorities. TV channels play an important role in the financing of European AV works. Indeed, European TV channels have become a major contributor to film financing and have sustained the production slates of independent producers in terms of TV series. However, the involvement of TV channels and/or distributors in the financing of AV works generates a major drawback for the producer, in the form of the loss of control over the rights associated with the film or TV programmes. Indeed, especially in the case of production companies which are undercapitalized, producers are obliged to pre-sell all the distribution rights associated to their films and therefore cannot expand and diversify their activities.

Financial needs vary between phases. In the development phase, the film should be financed by equity or specialized financial institutions backed by a letter of intent from a TV channel or distributor; whereas in the production phase, the film should be financed by short or medium-term debt (as well as subordinated debt). Film financing is similar in nature to project financing since repayment does not come from the production company's ability to generate cash flow but rather from its ability to complete the film within a given budget and to generate necessary revenues to repay the debt. The European film finance market is characterized by a relatively narrow lending capacity reflecting its expert nature and the deterrence effect of past mistakes.

In contrast to the US market, European banks mainly discount contracts from TV pre-sales and minimum guarantees and do not provide true gap financing unless they are financing US film productions. The securitization of a future slate of completed films (a portfolio approach) is playing an increasing role in film financing. In terms of risk diversification, there is an interest in the financing of portfolios of films rather than the financing of single films. The remaining risk in the financing of a portfolio of films is essentially a revenue or market risk since the profitability of the investment will depend on the sales forecast through the various distribution channels. The main risk associated with any single film is the non-delivery of the film and cost overruns that postpone delivery. These risks could be partially mitigated by finding new distribution contracts or reducing the remuneration of the producer. Another major difference between the European and US markets is the importance of public support in the financing of European films and TV programmes.

Parkinson's law must also be taken into account when considering the financing of film production. If a line of intervention aims at backing national systems of public support for film production (in order to be able to sustain small independent national producers), this could induce a vicious effect: either an increase in the number of projects financed, which means financing marginal producers of low-quality products, or an inflation in the budget size of films, all other things being equal. Moreover, this type of intervention will not encourage the circulation of European productions in the EU. To avoid this drawback, interest is growing in developing a pan-European scheme, which would also permit the internalization of cross-border effects and contribute to the support of specialized financial institutions able to screen, assess and monitor the film projects.

6.3 Recommendations

There are basically two strategies for reaching the critical mass needed to keep people with specialized talents in Denmark and create more work for the unemployed within the film industry: producing more films or supplying foreign film producing countries. According to the film law of 2002, the targeted production level from 2002 to 2006 is between 80-100 films (around 20-25 a year). 10 years ago this would have been an ambitious goal indeed, but given the current growth rate, it seems that there might be a commercial market for even more Danish films.

The largest bottlenecks are created by the distribution and the screening in cinemas. This is due to the seasonal changes: in the spring and summer it has proven almost impossible to attract people to darkened cinemas, while films that open in the autumn and winter have much better track records. Since there are only a limited number of good weeks in which to premier a film, the competition for these weeks is fierce, and there is reason to believe that if two or three Danish films are released the same week, they would cannibalize each other. Still, ticket sales are roaring, and some distributors might be persuaded to take the chance of opening either in the spring/summer or coordinate with other distributors, so films with entirely different target audiences could open the same week. Several distributors have expressed interest in this, and it is estimated that there is room for six to ten more Danish films each year. That is, of course, if the quality is not compromised.

The question is whether the pool of creative talent has the capacity to increase the number of productions by approximately 25 percent? According to the producers, the answer is a resounding yes. The representatives of the Danish industry involved in this research stated that they had plenty of excellent projects just lying around, waiting to find financing. This is somewhat contradicted by the Danish Film Institute, which claims that it hardly ever turns down a promising film project due to lack of funding. It would be difficult to determine whose opinion is closest to the actual truth, but given the extensive unemployment in the creative sector as a whole, and the great interest in entering the film industry in particular, it seems that the talent would be fairly easy to find and mobilize.

Another market that has been opened to the Danish film industry in the last decade is the international film market. As mentioned above, Hollywood blockbusters dominate the international market for commercial feature film productions. The reason for the success of Hollywood has been much debated, and even though it is hard to point at a single factor, the ready access to vast amounts of resources, and the huge domestic market (both summer and winter) make up a big part of the explanation. In Hollywood, it is possible to produce a film with a budget of more than \$50 million (EUR 41 million) and nevertheless to expect excellent earnings on the domestic market alone, with the rest of the world as an added bonus. Clearly, Denmark cannot compete with this, but Europe could possibly.

The challenge for the Danish film industry is to point out what Denmark can offer the international film market and what it can do that the major Hollywood studios cannot do equally well. Co-production may be a way around this problem. The Danish film industry could tie up with an international player and together they could develop more ambitious film projects aimed at the international market. This is not an easy task, and the first few attempts at tackling it have proven this, and have resulted in low economic returns. This has dissuaded several producers from pursuing this strategy, but given the limited number of attempts made as yet, it seems premature to abandon the idea entirely. However, it also seems clear that the risk involved is too great for most Danish film producers to bear alone. Some sort of commercially oriented venture capital fund might help.

Another important task is to build and strengthen collaboration with international sales/distribution networks in order to increase the sales of Danish films outside the country. This will probably require some form of collaboration across the industry since only one or two companies have the critical mass and turnover required to build a department dedicated to foreign sales. The idea of developing a business for "raw ideas" or concepts or manuscripts has also been considered. The obvious advantage is that from an economic point of view, the risk involved is small compared to the production of an entire film. The idea of getting paid for coming up with new and creative ideas and concepts, and then letting the Hollywood business do the actual selling also seems to appeal to the Danish film industry. However, trading concepts and manuscripts have yet to come since there is no experience to draw upon for future models.

7 Epilogue

The Danish film industry has shown exceptional growth during the past decade, and there is no reason why it should not produce equally good results over the coming decade. The global demand for entertainment is soaring, and it would be foolish not to be a part of this. The obstacle is that filmmaking is an expensive business, and average production costs of EUR 2.7 million do not leave much room for failure. More than half of all Danish films do fail, but sometimes a successful Danish film sold to foreign countries earns its own production costs more than tenfold. However, to win at this game, the business needs venture capital so that the people involved can keep trying until they learn, even if the first two or three films do not turn out to be cause for celebration.

Denmark is a small country with a population of five million people and modest financial resources. Three decades ago there was nothing that could even be called a film industry. Today, the Danish film industry has won multiple film awards and attracted internationally acclaimed stars like Nicole Kidman, John Turturo, and Clare Danes. What happened, how did it happen, and most important of all, how do we systematize and profit from this success? Several factors may explain the success. For example:

- **Patience.** Film is a gamble. The international market is highly competitive and unforgiving. Only about 10% of the writers and directors who receive support get features into production. And only about 10% of these achieve success. The only way to find outstanding talent is by having the courage to accept a high level of commercial and critical failure in the belief that success will eventually blossom.
- **Money.** The Film Commission started in 1969 with an annual budget of less than EUR 205,000. Today the budget is about EUR 40 million. Next year it will increase to EUR 45 million.
- **Creative freedom.** The international film industry is rife with tales of financial backers rather than directors having the final say about what appears on screen. The same commercial imperatives could have a greater influence on Danish filmmaking.
- **National identity.** It is no accident that many of Denmark's most successful films are based on Danish literature, for example "Pelle the Conqueror", "Babette's Feast" and "Smilla's Sense of Snow". Danish culture is the well from which filmmakers draw their inspiration to create unique cinematic images that are also internationally accessible—universal stories told from a culturally specific viewpoint.

- Entrepreneurial spirit. Support from the Danish Film Institute could be provided as investments, rather than grants. To receive the investment for any film, which is not wholly financed by Danish Film Institute, producers and directors have to construct deals and relationships with parties from different countries. "Dogville," the latest film from Lars Von Trier, had eight partners in three countries, each with their own set of laws and tax regulations. All this requires filmmakers to have the confidence, contacts, determination, experience and patience to pursue such deals if they really want make their films.
- Thinking globally. Denmark must play on the international scene. The country's fledgling filmmakers are like athletes whose only opportunity to compete in their first major race is the Olympics. Yet, this is also one of the key reasons for the success of Danish filmmakers—they either succeed or fail early in their careers. They have to be talented, very ambitious and very resilient.
- Backing from the top. The government's commitment to support the arts is vital, also to future growth. However, this study argues that what is needed is help in giving birth to films rather than help in adoption.

Though the Danish film industry has come far, there is still a long way to go. A growth strategy should involve leveraging large, high-profile co-productions, positioning the Danish film industry so as to attract foreign productions into the country, and expanding support for domestic films.

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