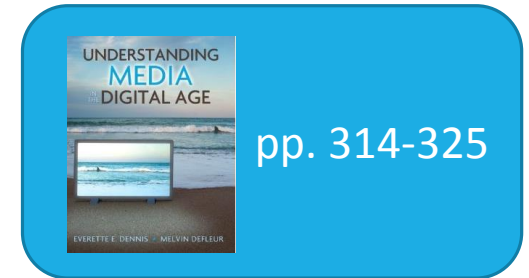


Computers and Media: Business Models & Digital Media Production

CSCI 1200

JAREK SZLICHTA



Business of Media

Business of Media

Media distribution

Business models

If the audience never
sees the media, it's the
same as if it was never
made.

Media Distribution

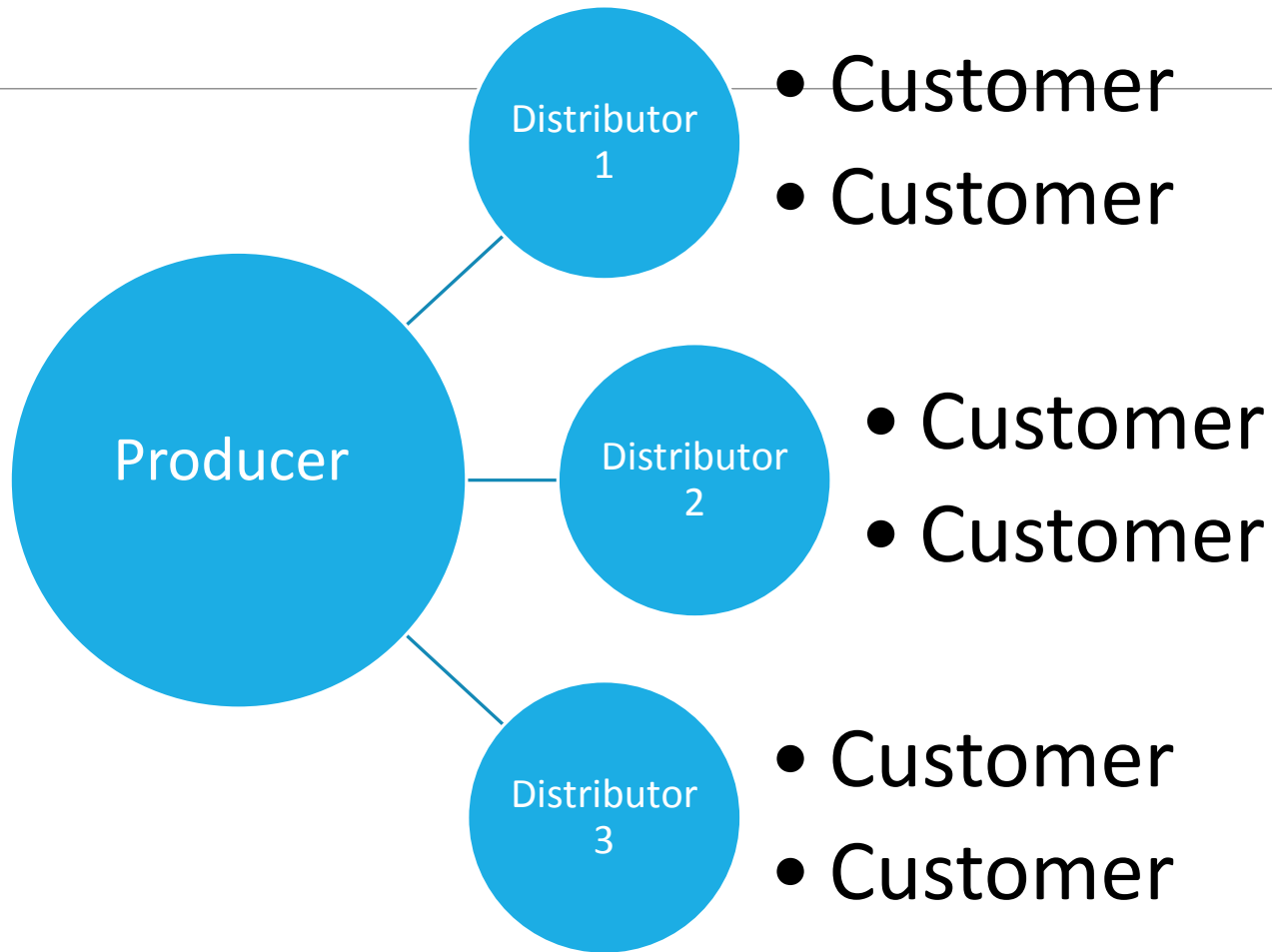
Media Distribution

Distribution is an important part of the media industry, how we get the media into the hands of the consumer

Two models:

- Distributor produces the media (e.g. newspapers)
- Independent distributor (e.g. movie distributors)

We are mainly interested in the case where the producer and the distributor are **different**



Monopolies Undesirable

If there is a single newspaper in a region it has a monopoly over information (ignoring other media for now)

The newspaper, or its owner can push its own agenda, this could be a political or a business agenda

There is no guarantee that the paper will be neutral (or of high quality)

Media Markets Prefer Competition

Many societies view this type of monopoly as undesirable, it gives one party an unfair advantage

If there are multiple newspapers in a region this situation is **unlikely to exist**

Papers are likely to take **different positions** to attract a greater number of readers, if all papers have the same viewpoint there are no competitive advantages

Controlling Monopolies

Over the past 50 years there has been an increase in radio and TV news, so the decrease in newspapers has not been viewed as a problem

There is a law in Canada that prevents the same company from owning multiple media outlets in the same market

For example, Rogers can own radio stations, but not broadcast TV stations or newspapers in the GTA

Consolidation Creates Monopolies

When one company buys another might end up with media monopoly

- When CTVglobemedia (CTV's parent) bought Chum they also got CityTV
- They were forced to sell CityTV

Since Toronto is such a large market, exceptions are quite often made, for example CTV and the Globe and Mail are owned by the same company

Music

In the case of music the distribution channels have changed drastically over the past 50 years

50 years ago there was a large number of independent record stores, plus a few chains

There were many sources of records, some with considerable musical knowledge

Music Industry Consolidation

The national chains started buying up the independents, then some of the national chains were bought out by international ones

Now have far fewer sources of music, controlled by large chains that may have limited knowledge of music

As music moves towards mass market, the small acts get pushed out, they don't move enough product

Chains want to concentrate on a few large sellers

Music Industry Consolidation

Large chains now want exclusive agreements with the most popular artists

Wal-Mart and Starbucks in the US now have exclusive agreements with several acts

Buying Music Online

Two forms of online retailers:

- CD sales – Amazon, Chapters, etc
- Download – iTunes

The first group is just an online version of the traditional retailers, need to wait for your CDs to arrive, only advantages could be price and selection

The second group gives instant delivery of music, no need to wait or drive to the store

The End of Physical Media?

We have probably seen the end of the traditional music store

Wal-Mart and electronics stores may still stock high volume titles, but that will be it

Online is now the main source of music

The same thing has happened with movies

Movies are Streamed, not Owned

People rent movies, they rarely buy them, there is a big cost differential

People buy CDs, they don't rent music, they listen to music multiple times, not just once or twice

It makes sense to download music, burn a CD or transfer to MP3 player

The movie equivalent would be buying the movie so you could burn in onto a DVD

Media Distribution

There are several problems with this approach:

- The cost is much higher than renting
- People only watch a movie once or a few times, not like music that is played many times

So, online movie distribution uses on-demand streaming (Netflix)

What about Television?

TV is based on advertizing, rates based on number of viewers

A series doesn't make sense if you miss a few episodes the number of viewers will rapidly decrease, and so will revenues

Networks are moving to free streaming with advertising

- Let people catch up, so they can continue watching

From an advertising point of view doesn't matter if an ad is viewed on TV or online, so this just increases the audience and the revenues

- Maybe better for advertisers if viewed online – why?

Traffic Shaping Case Study

This was an issue when VOIP services started to appear on the Internet

Bell is an Internet provider, it is also a traditional phone company

Didn't want VOIP on their network since it would compete with their phone business

At one point phone companies were blocking VOIP traffic on their Internet services

They were taken to court and the blocking of VOIP traffic was declared illegal

Games Distribution

The main distribution channel for games is still retail, either through physical or online stores

The size of most modern games makes online delivery difficult

- Requiring physical media also enforces DRM

Most game companies work through a distributor that carries a wide range of games and has deals with most of the retail outlets

Paying for Placement

Most distributors buy shelf space from retailers, they pay them to display their merchandise prominently

Eye level shelves are the most expensive, no one wants the lower shelves, customers don't look there as often

This makes it difficult for small companies to break into the market and gives the large distributors an unfair advantage

Making Games Downloadable

Another approach is to make the games smaller so they can be distributed online

This segment of game sales is increasing dramatically due to ... ?

Online Delivery to Consoles

Microsoft, Sony, and Nintendo have developed online delivery mechanisms for their consoles

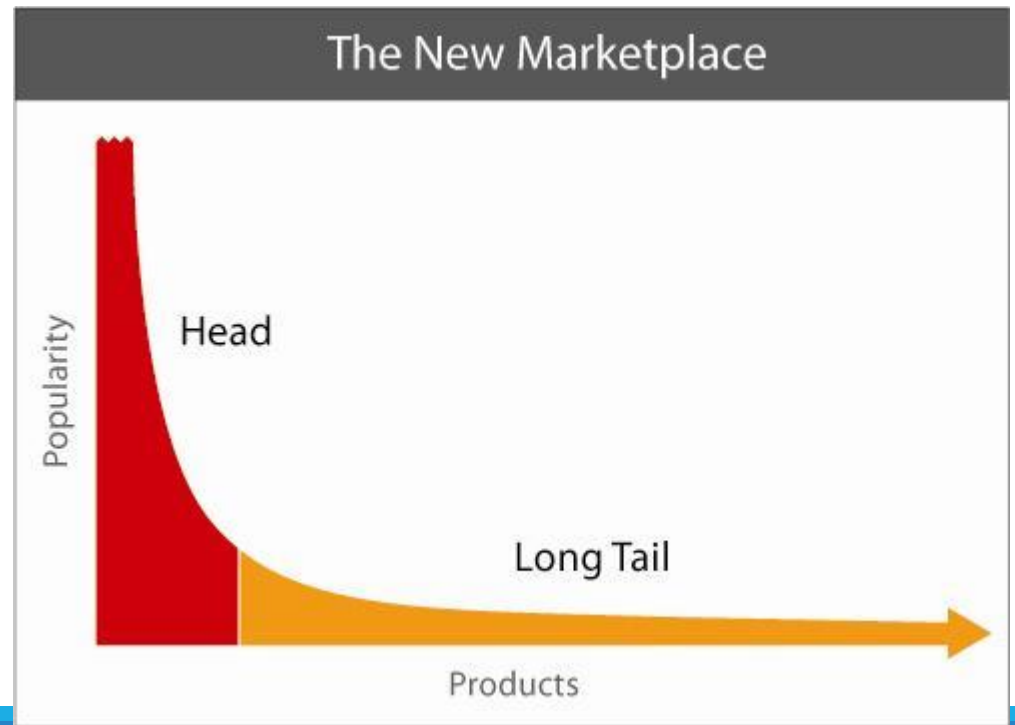
Gives them the ability to sell without going through retailers

Good for smaller, cheaper games

Long Tail Distribution

Small sales add up to something big

Amazon, eBay, Netflix advantage



<http://thelongtail.com/about.html>

“We sold more books today
that didn’t sell yesterday than
we sold today of all the books
that did sell yesterday.”

- Amazon employee, text p. 321

Key Points

Media distribution

- Monopolies
- Physical retail / mail order
- Streaming media
- Long tail retail

Media business models

Business Models

Business Models

Basically how we plan to make money

The mechanism or techniques that we use to collect money off of media

This is an important part of the business process, since without money we really don't have much of a business

At some point we must have a revenue stream or the business will fail

Business Models

When a company starts they typically have no revenue, they need to develop their product first

The initial round of funding should get the company to the point where it can generate revenue

We need to generate more revenue than expenses, i.e.. a profit, otherwise the company won't last very long

Business Models

The business model basically states how we plan to generate the revenue, we won't get far without one

One common business model is **retail** where we produce a product that is sold through a store

Business Models

Advertising

Sponsorship

Viral Marketing

Product Placement

Subscription

Software Service

Bundling

Advertising

The main revenue source for many forms of traditional media, radio, TV and newspapers

In these media the cost of an advertisement is based on the **number and type of viewers** and the **size of the advertisement**

For newspapers easy to determine the number of viewers, the number of newspapers that are sold

Why Track?

Solid numbers help price advertising

Ads targeting the specific audience should pay higher rates

Tracking Viewers

Newspapers keep track of the number sold of each issue, update advertising rates based on these numbers

With radio and TV determining the number of viewers is much harder, the media is free, so there is no accounting

Several techniques have been used, the simplest is to call a random set of people and ask them what they are currently watching

Tracking Viewers

An alternative is to pay people to tell you what they are watching

This is the basis of the Nielsen ratings, which is mainly in the US

Nielsen uses two mechanisms to measure the number of viewers

The first is a special set top box that is attached to all the TV sets in the house, tracks the channel that is currently viewed

Nielsen Ratings

Each night the data is collected from the boxes and sent to Nielsen

This tracks what the TV set is doing, but doesn't determine the number of viewers

Example: two TVs in the same house

- One has 5 viewers
- Second has 1 viewer
- Both are counted as the same, even though the first one has 5x the number of viewers

Tracking Viewers with a Diary

Households are sent a paper diary where they record the shows they watch, usually for a week

Records **who** was watching **what, when**

Sent back to Nielsen at the end of the week

This is much cheaper than monitoring the TV sets, but it is not as immediate, need to wait several weeks for the results

Problems with the Nielsen System?

Problems with the Nielsen System

First, it only samples a small part of the population, hard to tell how this relates to the total population

Second, TV fanatics are the ones most likely to respond, they watch more TV and their viewing habits may not match the general population

Third, it is open to manipulation, if a network knows when Nielsen will be surveying they may broadcast their best shows then, called sweeps

Digital Tracking

Cable and satellite companies can do the same thing based on their set top boxes

Done automatically for a large number of viewers

Privacy – requires permission

Advertising Online

Advertising is used extensively on the web, this is the business model used by Google

Started with banner ads, simple image or text based ads that are placed on web pages

Could **estimate the number of views** based on the number of times that the page was read, can easily be tracked by a web server, used as the basis for advertising rates

Click-Through Ad Tracking

This was replaced by the click through ad

Advertisers wanted to know how effective web advertising was, did anyone pay attention?

A click through takes the viewer from the current website to the advertiser's website

Can easily count “click throughs”, and the advertiser knows whether the ad was actually read

Click Through Pricing Model

Host website gets a payment for each click through, can be as little as a few cents to several dollars, depends upon position of the ad

Could base payment on whether something was purchased from the advertiser, this is more of a commission model than an advertising model

A more accurate measurement of the effectiveness of an advertisement

Click Fraud

Click fraud: host site has someone, or a program, follow the click through

- Each click generates revenue, but in this case the advertiser doesn't benefit

Reaping the Benefits

Anyone can work with Google to have advertisements placed on their own website and share in the profits

Google provides all the infrastructure and the advertisers **which match your content**, you provide the web space and traffic

Online Advertising

Online advertising was worth \$26 billion in the US in 2010

Advertising revenue for traditional media was \$200 billion, so we are looking at about 13% of the market

But online advertising is increasing faster than other forms of advertising

<http://www.grabstats.com/statmain.asp?StatID=1454>

Increasing the Cost Per Click

Google and Facebook can now charge more per click.

Why?

Increasing the Cost Per Click

Google and Facebook can now charge more per click.

Reliable demographics about the person clicking:

- Friends
- Interests
- Age
- Occupation
- Web search history, types of things written about in emails, profile

More likely to respond to relevant advertising

Sponsorship Model

The sponsorship business model is related to advertising and is often used with other ways of producing revenue

The idea is to get a major company to pay for all or most of the production costs, in return their name is associated with production

This has long been the case with many sports and arts events

Product Placement

Product placement is a similar idea, a company pays to have their product prominently placed in a media piece

Could vary from the product appearing at some point in the production to it playing a major role



Splinter Cell by Ubisoft



"American Idol" judges Randy Jackson, Paula Abdul and Simon Cowell, with Coke glasses

Fox

Indirect Marketing

Network shows with the most product placements in the first quarter of 2008

Program	Network	Number of occurrences
The Biggest Loser	NBC	3,977
American Idol	FOX	3,291
The Apprentice	NBC	1,646
Deal or No Deal	NBC	1,603
Extreme Makeover Home Edition	ABC	1,011
Big Brother 9	CBS	1,011
CW Now	CW	929
Pussycat Dolls Present	CW	805
America's Next Top Model	CW	574
One Tree Hill	CW	557

Source: Nielsen Media Research

Product Placements on Websites

Product placements are also a possibility for websites and digital media productions

The revenue from a product placement depends upon the number of viewers and how long it is shown

The low end is around \$20,000 and it could go to well over \$1 million for a major movie or production

Suggested Reading

<http://www.nytimes.com/2010/06/13/weekinreview/13goodman.html>

The New York Times

Week in Review

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH S

Now in Blogs, Product Placement

By J. DAVID GOODMAN
Published: June 12, 2010

Welcome to quid pro post.



When a marketer representing Absolut Vodka first offered to sponsor her annual blog festival, Louise Crawford guessed how the other bloggers might react.

“Some of them are going to call me a sellout,” Ms. Crawford remembered thinking. Nevertheless, Ms. Crawford, who writes Only the Blog Knows Brooklyn, accepted the deal, and the festival promoted a “Brooklyn” vodka. [Spike Lee](#), the filmmaker, also spoke at [Brooklyn Blogfest 2010](#), since he, too, was a sponsor. Absolut also offered gifts, including a bottle of the new vodka and a small digital video camera, to bloggers in exchange for coverage.

Related

Approval by a Blogger May Please a Sponsor (July 13, 2009)

Nine accepted the vodka and eight got cameras, said an Absolut spokeswoman.

- RECOMMEND
- TWITTER
- LINKEDIN
- SIGN IN TO E-MAIL
- PRINT
- REPRINTS
- SHARE

Advantages of Product Placement

Viewers can skip over advertisements, or they can leave the room while they are on, no guarantee that they will be viewed

On the other hand placements are part of the action, the viewer has to watch them to follow the show, quite often they don't know they are even viewing them

Viral Marketing

In this case people pass the advertisement, like a virus, from one person to another usually unaware that its an advertisement

For example, many free email systems include an advertisement for themselves in every email sent through them, the iPhone and Blackberry also do this by default

Viral Marketing

Viral marketing is based on social networking, people who are happy with a product will tell their friends

Try to find the alpha consumers that are more likely to spread the message to a large number of friends

Messages could take the form of emails, videos, games, websites, etc

Viral Marketing

It's not clear how we could convert a viral marketing scheme into revenue for our productions

Producing the media for a viral marketing campaign could be a source of revenue

Possibly mentioning it in a media piece like a product placement might be another revenue source

Subscription Model

A popular business model for some Internet media is subscription

The user pays a monthly or yearly fee for access to the website or content

Some newspapers use this model where they provide access to basically all of the editorial content of their daily papers on a website

Most of the print advertising is usually not present, but there is typically some online advertising

Subscription Model

This approach has also been used by some video and music websites

For a monthly fee you can view anything on the website, this may include downloads, there may also be maximums

Subscriptions allow websites to offer multiple levels of content

Example: most newspaper sites provide headlines for free, but you need to pay to get the full story

Advantage of Subscriptions

Most important with subscription you know what your cash flow is, and you usually have it in hand at the start of the subscription period

You can now produce the product based on the available revenue, and make sure that you have a reasonable profit

This isn't possible with retail, revenue only flows after the product has been produced, have to be able to predict sales

Advantage of Subscription

At the start may need to invest more than revenue to get the numbers up to a reasonable level, but once you have reached steady state budgeting is easy and predictable

In some ways this is the safest of the business models

With cash flow from subscriptions its easier to get bank loans, and at a better rate, this can be hard to do with retail, since there is no cash flow until the end

Subscription + Advertising

Subscription can be combined with advertising to increase revenue, particularly for popular sites

Also have the ability to offer multiple levels of service, better suit the product to what people are willing to pay

The main problems with this model is that it doesn't work with all forms of media and you need enough subscribers to pay for the basic service

Service Software

A model related to subscription is service

This is when a fee is paid whenever a service is performed

A good example of this is Amazon, a leader in the online retail business

Amazon has some of the best software for online retail, a small company would never be able to develop similar software, it would be far too expensive

Service Software

Amazon, as a service will set up a retail site for other companies

This could be part of the Amazon site or it could be an independent site

The company pays Amazon for this service, usually as a percentage of their sales and they don't need to worry about providing an online retail site

Amazon is already developing and maintaining the software for itself, so this is an extra revenue stream that doesn't cost very much

Service Software

Google ads can be viewed in a similar way on multiple levels

Google is providing a service to the advertiser, and the sites carrying the ads are providing a service to Google

Another good example of this is tax preparation websites

Most people use income tax software once a year, why bother buying the software for one use, just use it on a website

Service Software

For preparing one income tax return these websites are cheaper, so they are attractive to some people

The service model works best when you already have the expertise or product and can sell its use to others at a cost lower than they can develop it themselves

Its a good business decision to use your service, saves money and provides a superior product

Bundling

This is basically a retail product that you don't sell through the regular retail chain

Instead you sell it to another company that sells it with their retail product

Example: a mobile game company develops several games that Nokia then includes with all of its phones

Sometimes PC games will be bundled with graphics cards or game controllers near the end of their retail life

Bundling

For a pure bundle model it completely avoids the retail chain

The product is sold once and you can go on to the next project

This could take the form of a cash up front sale, where the bundler gets the rights to the product, or it could be on a royalty basis where you receive some fraction of the retail sales

Bundling

The main advantage of this approach is you can minimize the sales and support part of the business and concentrate on producing the product

This makes bundling very attractive to small companies, its one less person that you need to hire

For PC game companies its a way of unloading unsold product, get some money out of a game that is no longer selling

Summary

Advertising

Sponsorship

Viral Marketing

Product Placement

Software Service

Bundling

Marcel the Shell

<http://www.youtube.com/watch?v=VF9-sEbqDvU>

Digital Media Production

Introduction

Start by looking at the production process, basically the same for all media

This will give us our vocabulary and a general overview of how media is produced

Then examine how various forms of digital media are produced and the impact of digital media on more traditional media

Production Process

The production process for all media forms can be divided into three stages:

- **Pre-production** – planning, budgeting, finances, etc
- **Production** – the production of the raw media, filming, photography, animation, etc
- **Post-production** – packaging the final product, fixing the mistakes made in production

You will find these three stages in **all media projects**

Production Timelines

The length of the stages depends upon the **type of media**

Pre-production is almost always long, it can be the **longest part** of the project

For traditional media, like film, production can be relatively short – 10 weeks out of a 3 year project

For games **production is relatively long** and post-production can be quite short

Pre-Production

Ideation: come up with the initial idea for a project

Need to find money – make a proposal

- The initial idea should be refined into a concise statement, the shorter the better, but not more than a paragraph

Pre-Production

There are two important things to consider at this point:

- The audience
- The delivery channels

Both of these are important for budgeting and who you pitch the project to

The Audience

For mainstream media, the audience should be as wide as possible

- “lowest common denominator”

In some cases we want to hit a particular demographic (appeal to advertisers)

The size of the audience often determines the revenue, either from advertising or ticket sales

Producers expected to **estimate their audience size** before they get funding

Distribution Channel

Several decades ago the distribution channel was easy to specify, a film would be shown in a theatre and TV

This has all changed over the past decade, films make less money from ticket sales than DVD sales

Some films going directly to DVD, this is not a sign of low quality (sometimes it is), or to TV and skip the theatre

Cross-Platform Marketing

There are other possible products, which can bring in a significant revenue stream:

- Toys, either movie or TV characters
- Cross marketing deals, for example with fast food restaurants
- Games, games based on films, and films based on games
- Books based on films
- Others?

Could make more from this than the film or TV show itself

New Media Cross-Marketing

Ring tones, based on popular song or film theme, this can be significant

YouTube videos

Media intended for a phone can be of significantly lower quality than film or TV, could greatly reduce production costs

Computer games and animations can share digital assets, again reduces production costs

Pre-Production Proposal Document

The proposal is a short document that is used to obtain the initial funding

Typically around 10 pages, concise writing style

Should cover the following things:

- Idea
- Potential competition
- Any marketing information
- Projected revenues
- Budget
- Schedule
- Production staff

Notice: no mention of script, actors, directors, etc.

- this may help but is not necessary

Sample?

New media and rapid prototyping allows you to make your *own* sample without much money

Sample?

New media and rapid prototyping allows you to make your *own* sample without much money

Examples?

- Sh*t my Dad Says

<https://twitter.com/shitmydadsays>



Sources of Funding

The proposal is shopped around to various sources of funds:

- Banks
- Production funds
- Production companies
- Venture capital

Often need to combine several funding sources, funding may be conditional on other partners, funding distributed over length of project

Pitching Well

Many more proposals than funds, need to **sell your project**

Must catch the readers (viewers?) imagination within the first page or two

Securing the first round of funding may take months to years

Once the funding has been secured can start **production planning**

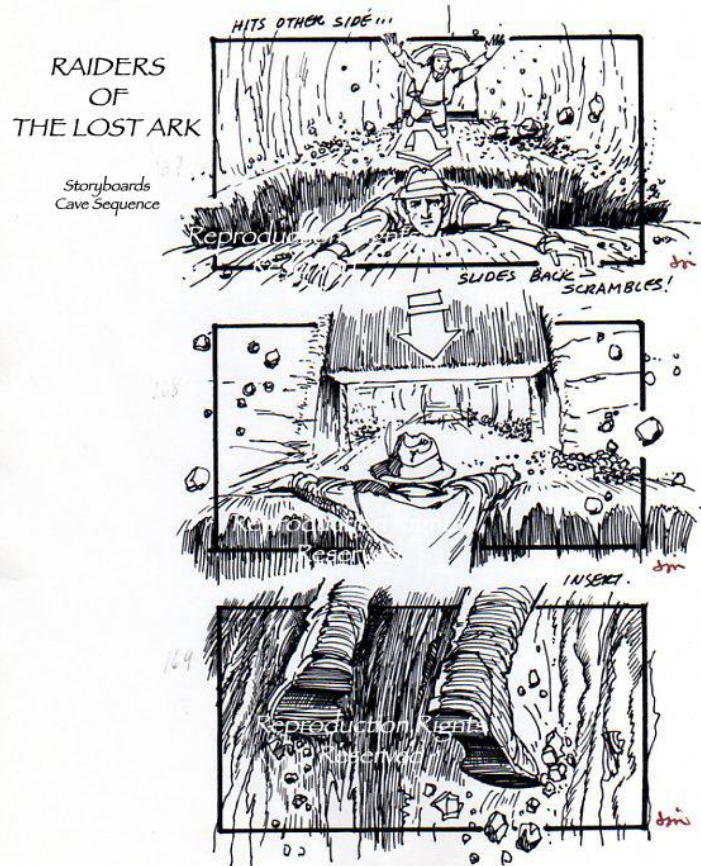
Production Planning

At this point a script must be written, if it hasn't been already

The script is then converted into a more detailed description of the piece called a **story board**, the director usually becomes involved at this point

A story board looks like a comic strip, there is one image for each key point in the piece, at least one per minute of finished product

Storyboards



David J. Negron

WEBSITE



Storyboards

Story boards are usually quite rough, intended to guide the planning and production process

The story board guides the following activities:

- Character development
- Site selection
- Costumes and props
- Sequencing, production is rarely in time order

Asset Management

Key activity at this point, identify **anything that can be used more than once**

This is particularly important for series and animation, lots of opportunity to reuse work

This can be an incredible cost and time saving, there is usually one person on the production staff assigned to asset management

What sorts of things can be reused?

Moving to Production

At this point it should be possible to put together

- a detailed schedule for production
- tasks assignments
- detailed budget

Can now hand off to the production team, each member will get there own set of instructions along with one master document (a spreadsheet) containing the complete production plan

Production

This is when the raw material for the piece is produced: filming, recording, animation, programming, etc.

For a film there is typically only one or two production crews, some work can occur in parallel

Very expensive to reshoot mistakes, so make sure you have everything right the first time

Dailies

At the end of each day, or first thing the next morning review everything that was done that day

Called a daily, check to see if everything is correct while still on site with the actors

For animation and games typically have many crews working in parallel, reduce the time to completion – gather all the assets together in the daily

New Media – Games & Animation

In this case want to produce as little material as possible, nothing should be wasted

Easy to redo things that aren't quite right

Try to **reuse** as much as possible

Post-Production

Assemble the material that was produced in production to get the final product

Can **fix** some of the production mistakes at this point

This is where the **special effects** are added to films

Can sometimes start the special effects in the production stage, but must wait to post-production to finish them

Editing

For film the main activity here is editing

Select the film clips from production and put them together as a final film

Typically over 100 hours of material and not shot in the final order

Editing can take months and is usually a close collaboration between the editor and the director, sometimes production staff are also involved

Sound

Sound effects and music are added close to the end of the editing process

Need to know the final timing of the scenes, when the sounds should occur and how long they should be

Usually done at a mixing console in a small theatre while the film is being shown

Hint: for best viewing sit in the middle of a theatre, this is where the editors are when they are editing the final version of the film

New Media Post Production

In the case of games, multimedia and websites the main post-production activity is **testing**

Check that the piece works correctly in all situations

Test on a **wide range of computers and displays** to ensure that it will look right for all viewers

Test on different types of network configurations, etc.

Intentionally try to **create error situations**

What sorts of tests
would you do for a
new game?

What sorts of tests
would you do for a
new e-commerce
website?

Post-Production Marketing

Planning for the marketing campaign is often done **in pre-production** and some may occur in production

Sometimes special marketing clips will be done in production, called **trailers**

As release comes close need to **generate hype** for the production, need to carefully plan so it peaks at release time

Post-Production Marketing

Usually start with a website, this could be 6 months to a year ahead of release

Build the website as release comes closer, add trailers for films, demos for games

As release gets closer start print and TV advertisements

For films schedule actors for talk shows, plan opening nights, etc.

Social Media Marketing

[http://www.1/...](#)

 Like · Comment · Share · about an hour ago · 

**Muppets**

"There is only one Miss Piggy and she is moi!" - Miss Piggy



Wall Photos

 Like · Comment · Share ·  1,920  109  324 · about an hour ago · 

More stories ▼

Edit options

Post-Production: Distribution

Also need to consider distribution, how the piece will actually get to the theatres and store shelves

Typically need to have a distribution company in each country or region

Also need to get the **piece rated and possibly approved by censors**

Need to have a lot of local knowledge for this, usually work with the distribution company

Marketing to Distributors: Shows

Film festivals & shows are good for selling to distributors

There are about 8 or 10 major international film shows each year

Film showing is only the tip of the iceberg, most of the activity occurs behind the scenes

Most film shows also have an exhibit floor where production companies can show their latest films

Film *Show* along with Festival

Each company has a booth with the posters for their films, some will show trailers for their films

Post-production and equipment companies also have booths

Show typically runs for 4 or 5 days

Usually make initial contact at show and then make deals off site

Game Shows

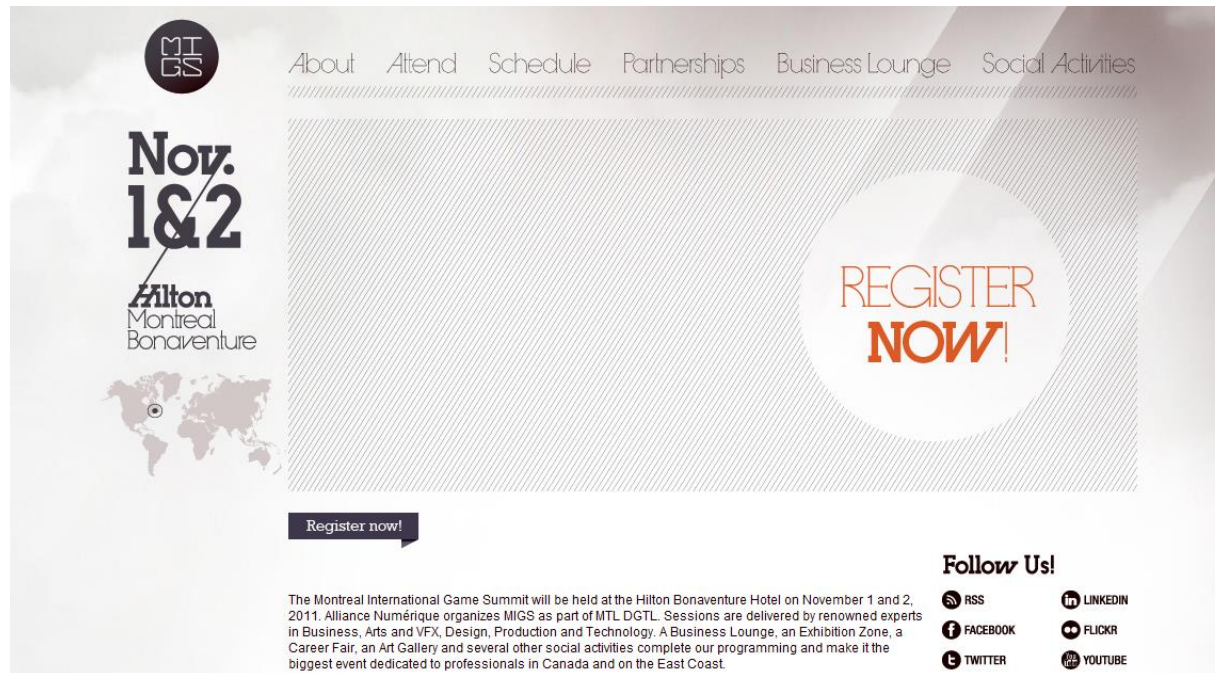
There are also several major international shows for games

Typically open to the public for part of the time, other times reserved for the industry



Montreal International Game Summit

<http://vimeo.com/32271142>



The banner features a navigation bar with links: About, Attend, Schedule, Partnerships, Business Lounge, and Social Activities. On the left, it displays the event dates 'Nov. 1&2' and the venue 'Hilton Montreal Bonaventure' above a world map. The center contains a large circular graphic with the text 'REGISTER NOW!'. Below this is a 'Register now!' button. At the bottom, a paragraph describes the event, and a 'Follow Us!' section lists social media links for RSS, Facebook, Twitter, LinkedIn, Flickr, and YouTube.

MTGS

About Attend Schedule Partnerships Business Lounge Social Activities

Nov. 1&2

Hilton Montreal Bonaventure

REGISTER NOW!

Register now!

The Montreal International Game Summit will be held at the Hilton Bonaventure Hotel on November 1 and 2, 2011. Alliance Numérique organizes MIGS as part of MTL DGTL. Sessions are delivered by renowned experts in Business, Arts and VFX, Design, Production and Technology. A Business Lounge, an Exhibition Zone, a Career Fair, an Art Gallery and several other social activities complete our programming and make it the biggest event dedicated to professionals in Canada and on the East Coast.

Follow Us!

RSS FACEBOOK TWITTER LINKEDIN FLICKR YOUTUBE

Impact of Digital Media

Impact of Digital Media

Digital media has had a major impact on all forms of media production

It has transformed the way that media has been produced

Examine two areas where digital media (and communications technology) have changed the production process:

- News gathering, reporting
- Movie production

News Gathering

Before digital media reporters worked close to their office, used typewriters to write the story, film cameras for pictures

Must physically deliver the story to the newspaper, either develop the film themselves or have photo department do it

Could use FAX if it was only a written story with no pictures

Reporters needed to be within a one hour commute of the office

Global Reach

Can now report from virtually anywhere in the world, has drastically changed news gathering

Reporters can use word processors to prepare their stories, then send to office using email

Can attach digital photos and videos to the stories, no need to develop the film, just cut and paste into the story

Connect live via satellite, submit stories where there is no Internet access

Immediate form of News

This has been extended to TV news

Small digital cameras can be used to record the story, video editing can be done on a laptop and then submit the story electronically

This makes the news more immediate, can be on the TV moments after it happens, and distance is no longer a factor

Satellite Reporting



7E Communications Talking Head System for satellite news reporting



Effect of Immediacy

Immediacy of news reporting has increased over the past 40 years, has an impact on public opinion

Vietnam war was the first example of this, nightly news directly from the war zone

Now expect this of all major news events

Has been blamed for the trivializing of many news stories, not enough reflection on the real issues

Movie Production Changes

Digital media has changed movie production in many ways:

- Film replacement
- Non-linear editing
- Special effects

Has changed both the production process and the economics of movie production

Digital Video

Digital video has replaced film in many productions

There are a number of problems with film:

- Expensive
- Hard to handle
- Not immediate
- Environmental hazard

We can avoid all of this with the use of digital video

Changing the Workflow

Removed the requirements for dailies, can immediately view the results of the shoot without need for developing the film

Can store and catalogue digital video in computer based systems, easier to find clips, greatly reduces need for storage space and movement of film

Changes in Editing

One of the greatest advanced in last 50 years is non-linear editing (NLE)

Film editing is done by physically cutting film and then taping or gluing it back together

Work at a small table with a smaller viewer, viewer has a sharp knife for cutting the film

Do the paste on the table and then view the results

Film Editing - Steenbeck



Linear Editing Drawbacks

This is a slow process that involves a lot of physical work

Hard to fix mistakes, difficult to keep track of film sequences

With NLE all the film sequences are converted to digital form for editing

This can be a direct conversion from a video camera, or film can be digitized for entry in the NLE system

Digital Editing

Once in digital form the editing process is done on the computer

Can quickly go through each shot and divide it into clips that will be used for editing

Can then paste the clips together, add transitions, and in some systems view the results in real time

A much quicker process

- Even available on YouTube!

Avid Symphony Nitris DX



Digital Supports Non-Linear

Why is it called **non-linear editing**?

With film editing need to run through the entire clip to find the edit points, must wind the film from one reel to another

This can take a considerable length of time

With non-linear editing can directly go to the edit point, no need to go through the entire clip first

Special Effects

Computer based special effects have changed the face of movies

Special effects in first Star Wars film were all done with miniatures and drawing on the film

All the space ships were models filmed from close up against painted backgrounds

This is expensive, particularly when things explode, only have one chance to get it right

Models became animations

Models take a long time to build and can be very expensive

Now do all of this using digital techniques, started in the 1980s with a few movies, now common practice

Most post-production companies capable of special effects, most movie projects contract this out to specialized companies

Most Memorable
Special Effect?

Combining Live and Digital

How do we combine live action with special effects?

If the actor is in a virtual environment they are shot in front of a **green or blue screen**

Constant colour that is easy to extract digitally, just leaving the actor in the sequence

Can then easily add the actor to the virtual environment - compositing

Movie Production



Source: E-spaces.com

Compositing

A single shot can be made up of multiple layers of imagery, either real life or computer generated

The process of combining these layers is called compositing

Compositing can be done with film without the use of computers, but this can be quite difficult

Became common practice after the introduction of NLE and special effects

Virtual Characters

For virtual characters produce a computer based model of the character

This is done by an animator using computer animation software

Rendering software is then used to produce a full colour image of the character using appropriate lighting

This can be composited into a live sequence

Animation



Source: The Lord of the Rings: The Visual Effects that Brought Middle Earth to The Screen, SIGGRAPH 2004

Movie Production

An animator can produce the characters motion using animation software

Can also base the motion on a real actor, motion capture

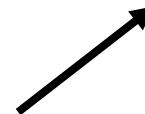
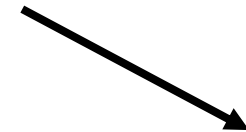
The actions of the character are captured digitally and then used to drive the character's motion

This can produce very realistic characters

Motion Capture



Movie Production



Source: The Lord of the Rings: The Visual Effects that Brought Middle Earth to The Screen, Siggraph 2004

New Media

New media, games, websites and animation, obviously depend on digital media for production

Pre-production is basically the same for these projects, the main difference is in the production stage

The production of these media is often divided into two parts:

- Art
- Technical

Art & Technical Combined

The main challenge is to get the art and technical people to work together

Historically, they have come from very different backgrounds, look at the world in very different ways

Quite often have trouble talking to each other, but they need to in order to complete the production

There is a strong interaction between the art and technology

Games Don't Exist without Artwork!

For games, the artwork is part of the game, it must work with the **game engine**

Must be able to get the artwork into the game in the right form
(technical challenge)

Animation is similar, some of the animation and the rendering are technical processes

Artwork must work with these processes to get the final product

Technical Artists

New position, technical artist, a person with both artistic and technical training, understands both sides of the production process

The interface between the two groups, can speak both languages

Handles the process of getting the artwork into the technical production stream

Does some programming, mainly understands all the specialized tools

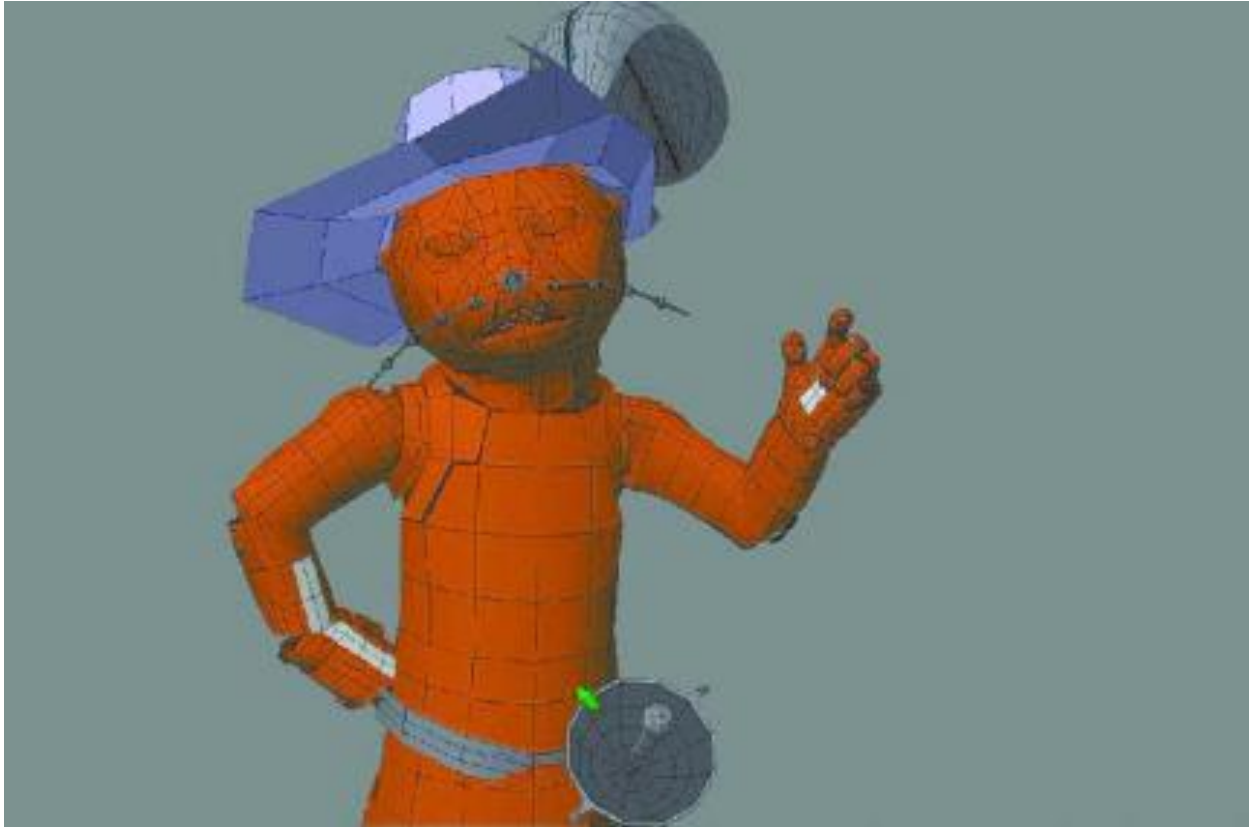
Animation Production

For animation start with producing geometrical models for the characters in the animation

This is done by the animators using animation software, [on the art side](#)

Also need to do all of the background images, this is typically done in something like Photoshop

Basic Geometrical Model



Source: Art-Directed Technology: Anatomy of a Shrek2 Sequence, Siggraph 2004

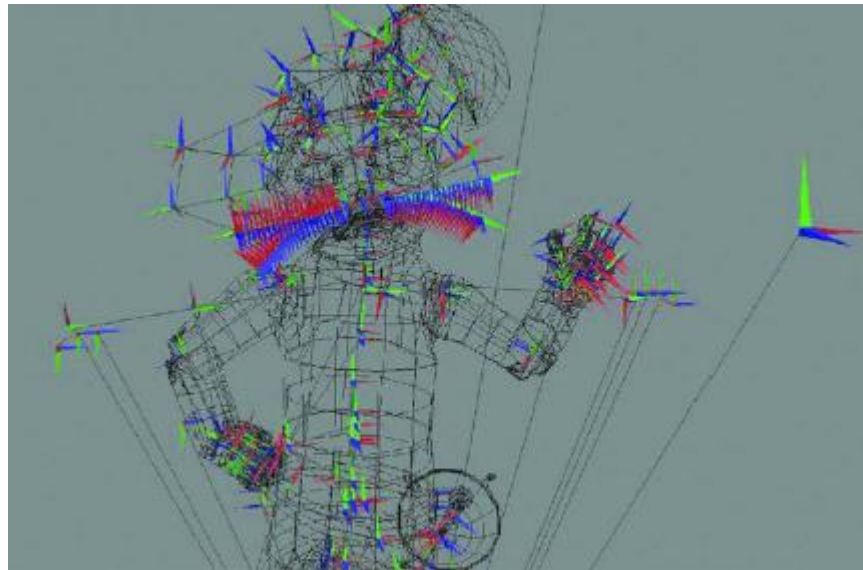
Controlling Characters

The animator and technical artists will work together to add the animation controls to the character

How the animator will control the character's motion

This could involve some programming if the character has sophisticated behaviours or must be **physically realistic**

Animation Handles



Source: Art-Directed Technology: Anatomy of a Shrek2 Sequence, Siggraph 2004

Technical Challenges

Usually the technical team will produce specialized rendering techniques for particular animation sequences

- This part of the process is the domain of the technical artist and the technical team



Explore! http://www.disneyanimation.com/library/list_p.xml
<http://www.disneyanimation.com/projects/bighero6>

Final Appearance



Source: Art-Directed Technology: Anatomy of a Shrek2 Sequence, Siggraph 2004

New Media Needs New Skills!

New media producers must have a good understanding of both the technical and artistic processes

Know how to take advantage of both, combine them in effective ways

This is the domain of generalists, can understand the big picture and think outside of the box

Summary

Examined the production process used for all types of media

Examined the impact of digital media on the production of traditional media

Examined how new media is produced, how the production process is organized, the role of the technical artist

Presentation Day (Production)

- Divide into groups of 2
- Create the presentation about chosen movie/game describing different phases: pre-production, production and post-production
 - Focus on novelty and how technology enhanced the production process
- Presentation should be 7 minutes
 - You have 30 minutes to create a presentation
 - It is encouraged to include pictures and short videos (≤ 30 seconds)
 - Include references.
- Part of your participation mark will be based on the quality of the presentation