

Technological innovation as a disruptor ?

the case of the cinema value chain at the digital age

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Session B3 « Innovation and digital disruption »

LOOKING FOR INNOVATION MODELS

- Among the historical creative industries, the cinema is the most technological-based.
 - Its history has been shaped by successive waves of technical innovations (sound, colour...).
 - The (paper) report explores some recent forms of innovation and observable configurations in the industry:
 - specific technological fields of the cinema,
 - innovations brought by young IT and digital companies,
 - the incremental and non-disruptive approaches promoted by the majors.
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- **The growing role of R&D and innovation and its consequences on new players**

R&D IN A PROJECT-DRIVEN INDUSTRY (1)

- **R&D expenditures are indeed highly unevenly distributed within the technology, media and telecom ecosystem:**
 - R&D is done primarily by equipment and service providers and IT companies, technology providers, like Akamai or Avid , being the most R&D intensive players.
- **The level of expenditures of the content sector, at least of the large firms remains very low.**
- R&D exists, but it is not concentrated in legacy areas such as content creation and production.
- **Being a project-driven prototype industry also means**
 - that the focus is on creation during a single, non-reproducible experience,
 - tilted toward the “artistic” dimension
 - and therefore quite different from a standard R&D based innovation model.

R&D IN A PROJECT-DRIVEN INDUSTRY (2)

- **Digitization ushers in a new role for technology and R&D that leads to a shift in the gravity center of the value chain.**
- **With digitization, combined with the growing related role of software and computer science:**
 - during pre-production (“previs”),
 - production (comprehensive computer based film editing systems)
 - and post-production (“visual effects-VFX”),
- **These relationships may also evolve in a more profound qualitative way.**

“A RATHER LARGE VILLAGE” (1)

- **The film sector clearly displays a complex set of players and relationships.**
- **Therefore, coordination is a key aspect involving of several kinds of expertise all along the value chain,**
 - although its scope may vary in time and space.
 - production costs are sunk costs as each film can be considered as a prototype.
- **As the animation company DreamWorks puts it:**

“It's no secret that it takes a rather large village to create an animated film”
- **Movie production no longer takes place within integrated structures: artists, technicians, technical suppliers, locations are all independent and each production requires a new project, new contracts...**

“A RATHER LARGE VILLAGE” (2)

- **A large part of the R&D in film industry takes place and is made**
 - through successive movies,
 - through the very collaboration of the different involved parties, within the “large village”
- **It is, therefore, difficult to accumulate the technical expertise and to capitalize on R&D:**
 - the mobilization of new technologies for creative innovations can be carried out only during a specific movie project.
- **This stimulates, at the same time, the creation and/or specialization of technical post production companies**
 - that invest specifically in certain equipment or technological solutions
 - and then improve them contributing on different feature films.



➤ **Disruptive vs incremental innovation models in CCIs and their impacts: the role of IT companies**



DISRUPTIVE CHANGES COME FROM TECHNOLOGICAL INNOVATIONS IN CULTURAL INDUSTRIES

Historically

- Sound movie
- Music industries
- TV
- ...



Recently

- Internet and digital technologies

But always emerging outside the cultural industries



NEW MODELS OF INNOVATION

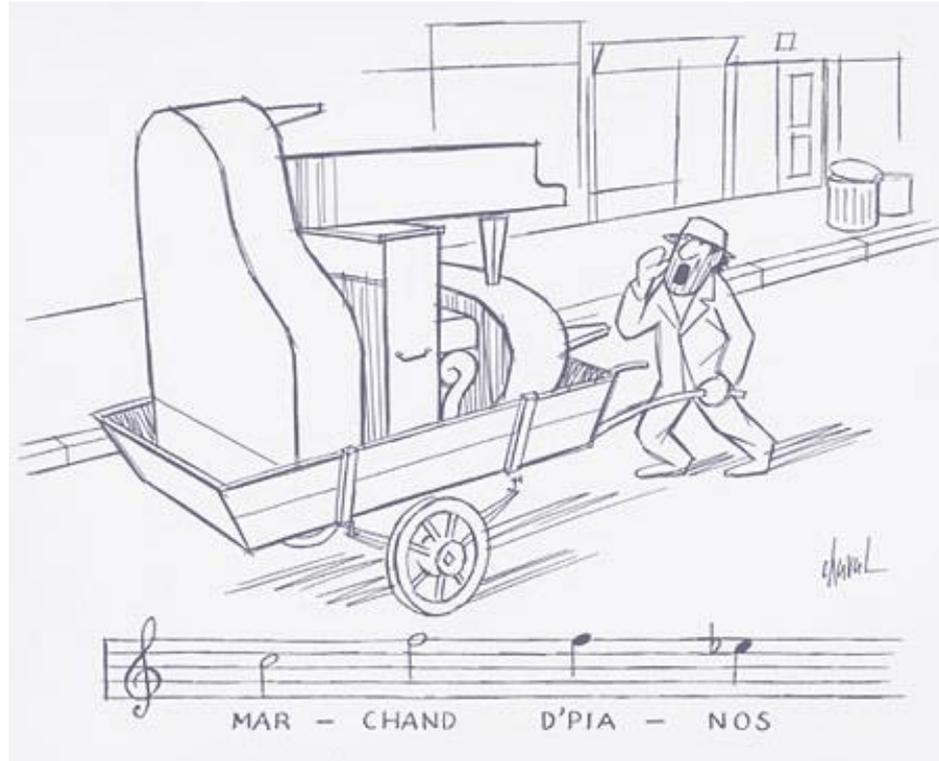
- **New distribution channels ushered in new forms of relationships between edited contents and consumers.**
- **This evolution towards new forms of intermediation is the main engine of the reorganization of cultural industries**
 - technological infrastructure plays a key role in the success of these new cultural intermediaries
- **The specific analysis of some companies and “iconic” clusters brings questions about their place in the economy of the sector:**
 - the nature of collaborations at different levels of the value chain (from the production stage to the exhibition stage in theaters),
 - the strategy to capitalize on competitive resources from mastering technologies (equipment, patents and know-how),
 - the investment economy (risk sharing and allocation of the created value),
 - the convergence with nearby sectors thanks to the multimedia developments and online distribution and the expansion towards other sectors of the economy.

IT PLAYERS SURFING ON INNOVATIONS

- **The digital revolution of media and content industries is largely a revolution of the intermediation in its various components.**
 - in creative industries just as in all the internet economics
- **A cross comparison of several CCI shows that young technological companies are strongly challenging legacy players with disruptive proposals**
 - original products, online and mobile channels of distribution, experimental business models, social media, data analytics.
 - IT players are bringing new kind of expertise and talents.
 - new forms of value creation compete with older modalities through the creation of contents with new aesthetics.
- **They offer unprecedented solutions**
 - for aggregating and distributing content,
 - designing original ways of marketing
 - and new types of transactions (free subscriptions, micro-payments, premium services).
- **These young companies have a real capacity to monetize these proposals by accessing a massive and global audience.**

They are keener to explore and set new forms of interactions with their customers.

NEW SPECIALIZED TECHNOLOGICAL SUPPLIERS



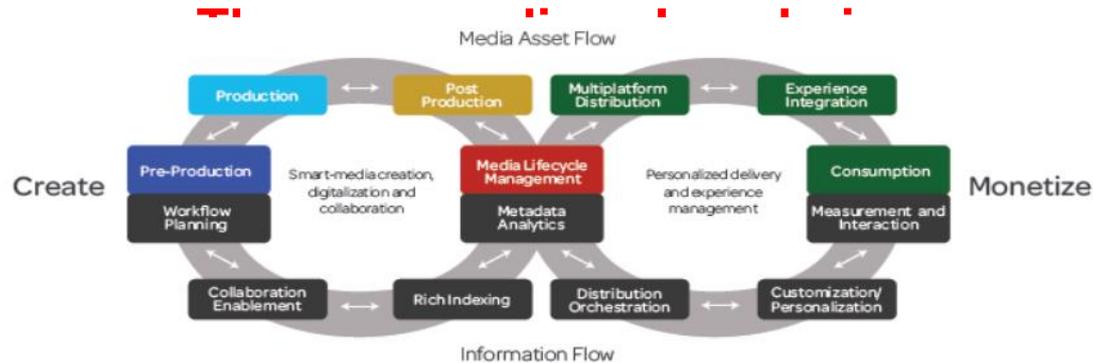
Source: Chaval

NEW SPECIALIZED TECHNOLOGICAL SUPPLIERS

- **A variety of case studies shows the growing role of specialized technology companies.**
 - The specific study of the cinema industry sheds some additional light
 - Many high-tech companies have emerged and persisted in the field of cinema
 - ✓ contributing thereby, to some extent, to a renewal of the historical technical industries of the cinema.
- **These new specialized technological suppliers (STS)**
 - are medium sized companies.
 - **They master global ICT skills**
 - but are active and specialize themselves in a small number of technical areas.
 - New mediations are emerging,
 - ✓ which can even be revealed by the explicit responsibility of a new role, a Supervising Technical Director, who liaises between the core film team and the technical IT crews
- **Their growth model places particular emphasis**
on specific operations - rather unusual in this area –
such as the management of assets, patenting e.g., and the innovative technological spill-over to other industries.

NEW VALUE NETWORKS/ NEW INTERACTIONS

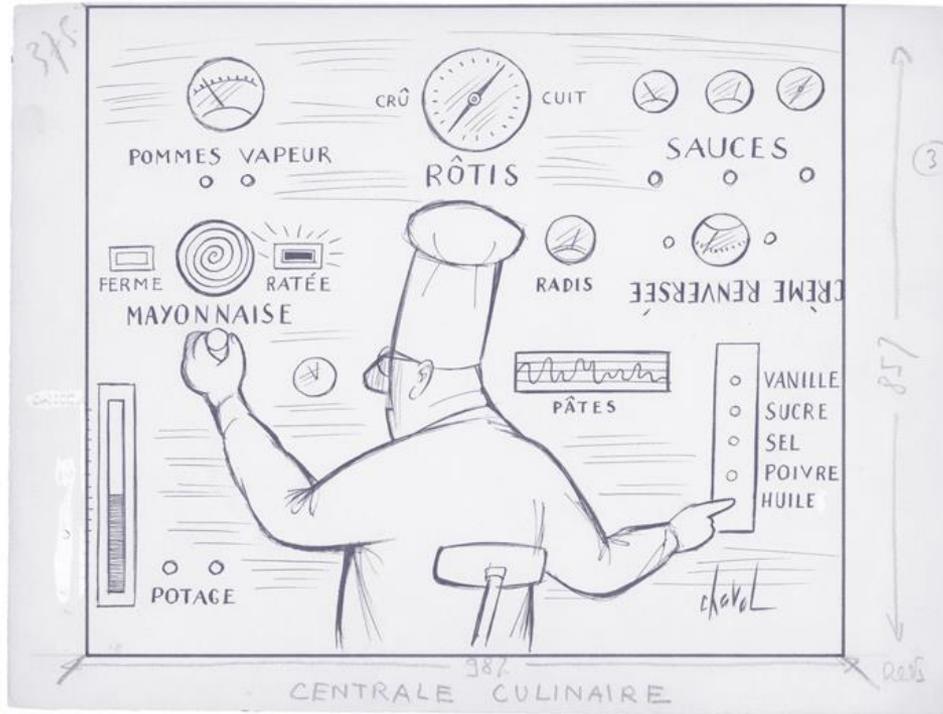
- These new players display specific value networks, including numerous technical intermediaries in contrast with past linear value chains.
- The very notion of a linear value chain in each industry fades away.



Source: Avid White Paper (2014).

- The outputs (books, CDs, films, videogames) result from new cooperation models between several actors (aggregators, distributors, technology providers...) with different professional specializations.

BEYOND “FILM AS LAB”

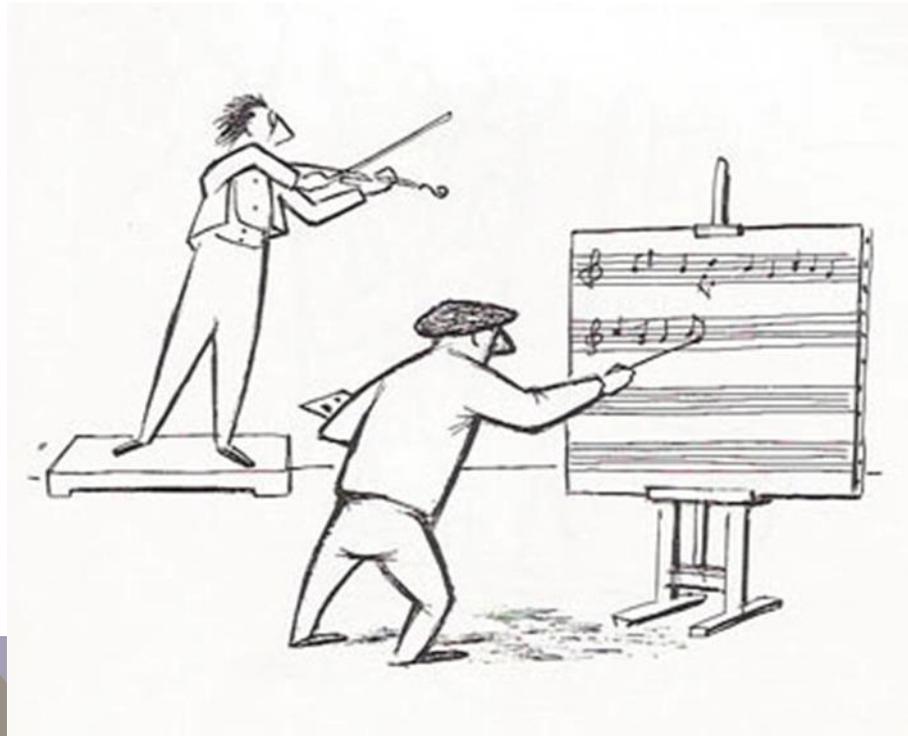


Source: Chaval

BEYOND “FILM AS LAB”

- **Innovation models, brought about by those industrial technology brokers**
 - seem to offer a change in the business culture of the cinema sector.
- **The industry evolves from the "project-based model" (concentrated on the production of the movie),**
 - its core model since the 40's.
 - to a "business-based model".
 - R&D and technological accumulation can take place via technology companies,
 - ✓ even if they are mainly financed by the film production budget.
 - A growing role of R&D means that it may bring the cinema industry closer to more standard forms of innovation,
 - ✓ built on the accumulation of R&D and the ability to re-use/reproduce the same innovation for other projects.
 - **The lab model (“film as lab” illustrated by companies like Dreamworks, Zoetrope) has shown some pioneering examples of such opportunity**

➤ Conclusion



Source: Chaval

A REBALANCING OF RELATIONS

- **Digitization ushers in a new role for technology and R&D that leads to a shift in the gravity center of the value chain.**
- **Technology-oriented shift may offer an opportunity**
 - to move away from the “doom” of stranded investments in tailor-made but non-reusable technologies.
- **Technological innovation in the production stage in "business-based model“**
 - brings a rebalancing of internal relations within the sector:
 - ✓ redefining the competitive conditions on the one hand, reorganizing value chains,
 - ✓ challenging the domination of the distribution networks (mainly by large IT companies) for the benefit of stakeholders in the production stage (the content producers and creators).
- **Both upstream and downstream stages are actively transforming rather than submitted to the unilateral dominance of one or the other.**

AN APPARENT DISCREPANCY BETWEEN TWO TRENDS (1)

- **On the one hand, a disruptive innovation model is brought by the ICT industry newcomers,**
 - introducing and mandating their own standards and business culture, in terms of film distribution, replacing the incumbents.
- **Accordingly, IT companies exemplify original means to use technological resources,**
- **on a completely different way from the traditional content industries.**
 - Instead of merely enhancing the legacy production process of contents, users' interface or distribution channels, they build their strategy around their activities and ICT-enabled services:
HBO with “Game of Thrones”, Netflix reinventing the video rental business.

AN APPARENT DISCREPANCY BETWEEN TWO TRENDS (2)

➤ **On the other hand, an incremental innovation model emerged with specialized suppliers of the ICT industry**

- building mutually beneficial collaborative relationships with the cinema industry at the production stage,
- promoting some sort of relationship "Art meets Science" which could even shift the film industry from a project based approach to a more stable business logic.

➤ **The discrepancy is perhaps even more complex than it seems.**

- Actually, new distributors slip gradually into the shoes of producers (case of Netflix, Amazon most recently), or reversely producers succeed in imposing an innovative technology to the distributors (3D).

➤ Appendix: The cinema industry at the digital age: a snapshot of companies



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(1/2)

<u>Company and year of creation</u>	<u>Sector</u>	<u>Country</u>	<u>Key characteristics</u>
<u>Akamai</u> (1998)	Content distribution	USA	Provides services to content providers bringing their contents closer to the customer. It is the leading provider of cloud services for delivering, optimizing and securing online content and business applications.
<u>Avid</u> (1987)	Cinema technical industries	USA	A company specializing in video and audio production technology; specifically, digital non-linear editing systems, management and distribution services.
<u>Aaton</u> (1967)	Cinema Manufacturing	France	A motion picture equipment manufacturer that went bankrupt in 2013.
<u>Double Negative</u> (1997)	Cinema technical industries	UK	One of the world's largest providers of visual effects for film with facilities in London, Mumbai and Vancouver.
<u>Dreamworks</u> (1994)	Cinema Motion Picture Producers and Studios	USA	The company creates "high-quality entertainment", including computer-generated animated feature films, television specials and series and live entertainment properties. It is an interesting example of a firm combining technology and the "artistic" dimension for the creation of full features animation films. It has been acquired by Reliance in 2009.
<u>Image Metrics</u> (2000)	Cinema technical industries and video games	UK	The company focuses on advancing consumer applications around computer vision, facial analysis and recognition technologies.

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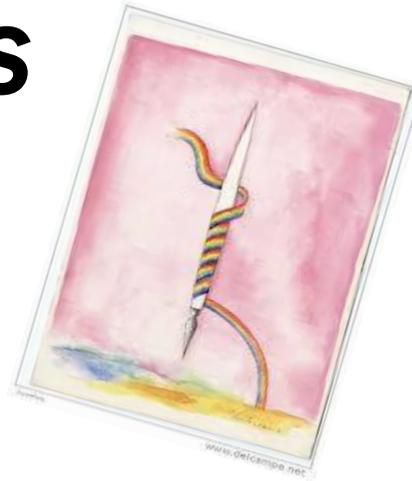
Company and year of creation	Sector	Country	Key characteristics
Éclair (1907)	Cinema technical industries	France	An historical company and a pioneer of digital post-production that went bankrupt in 2015 and was bought by Ymagis.
Netflix (1997)	Distribution company of home entertainment	USA	A niche provider, initially using a very antiquated distribution channel (the mail) to send VHS then DVD, later morphing into a global company. It is the world's leading Internet television network.
Prime Focus (1999)	Cinema technical industries	India	A commercial post-production facility providing top-tier technology solutions (visual effects, 3D conversion, and animation) with offices in London, Los Angeles, Vancouver and New York.
Reliance Entertainment (Reliance BIG Entertainment Private Limited), (2005)	Entertainment (net and new media, film entertainment, and TV broadcasting services)	India	Produces movies animation films. It also operates movie studios, a social networking platform for Web and mobile; FM radio; online gaming; mobile gaming; home video; and theme parks. It provides music, sports, and Internet and mobile portals, as well as user-generated content.
Technicolor formerly Thomson (2010)	Cinema technical industries	France	A former equipment manufacturer and provider of audio-visual services. It refocused on core service activities after having been renamed Technicolor.
Ymagis (2007)	Cinema technical industries Digital distribution	France	Assists cinema exhibitors by providing financing to help them bear the costs of the transition from 35 mm to digital projection. The company provides assistance to producers, distributors and exhibitors (encryption, valuation, duplication and transport).
Zoetrope (1969)	Cinema Motion Picture Producers and Studios	USA	A "deviant studio" founded to conceive and implement creative, "unconventional approaches to filmmaking" founded by directors Francis Ford Coppola and Georges Lucas.

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THANK YOU FOR YOUR ATTENTION! ANY QUESTIONS



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