




# Addressing Nascent Worldwide Industries: From Dominant Logic to Disruptive Business Models



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## ✓ Introduction

Part one: What we learn from theory

Part two: Results of the research

Discussion and conclusion







Disrupting the music industry: what does it show?

Broadband internet access have acted as a disruptive innovation on the music industry. The transformative impact of digital distribution is strong for both the supply side and the demand side (Wunsch-Vincent and Vickery 2005).

Who really changed the way to do business in the music industry?

**Big actors from other industries: Information technology, mobile industry, computer industries.**  
**Example: Apple with iTunes.**


From music to drug industry: can we compare the industry evolution?


**Biotechnology + Bioinformatics + *Nanobiotechnology***  
**= several waves of disruptive innovation**

**The underlying business logic has not changed (yet).**

These two industries have been experiencing disruptive innovations, but the effects on the value chain of the industry are different.



**How and why do new business models emerge?**  
**How is it linked to the industry evolution?**







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## Technology and industry evolution: a life cycle

Emergence/growth stage	Shakeout stage	Mature stage	Discontinuities
<ul style="list-style-type: none"> <li>• Very few firms initially, followed by rapid entry by firms</li> <li>• High technology and demand <b>uncertainty</b></li> <li>• Experimentation with different approaches and product design</li> <li>• Emphasis on both product and process innovation.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Establishment of a dominant design,</b></li> <li>• Rapid decline in the number of firms from the peak</li> <li>• Increasing emphasis on process relative to product innovation,</li> <li>• Innovation conducted by large, established firms, which focus on economies of scale.</li> </ul>	<ul style="list-style-type: none"> <li>• Stable number of firms</li> <li>• Reduction in overall innovation rates relative to the earlier stages,</li> <li>• Innovation conducted by large established firms, which focus on economies of scale,</li> <li>• Well established complementary assets.</li> </ul>	



Adapted from Agarwal and Tripsas 2008












## Industry life cycle theories: a dynamic perspective

- ILC theories aim to understand the roles of incumbents and new entrants (Tripsas 1997), industry organization (Tushman and Rosenkopf 1992), the impact of technology evolution on the industry structure (Afuah and Utterback 1997).
- Empirical regularities have been giving information about innovative activities (Anderson and Tushman 1990), dominant designs (Utterback and Suarez 1993), technological discontinuities (Rothaermel and Hill 2005), number of firms (Klepper 2002) over the life cycle.

**ILC theories are dynamic and give many indicators of the firms' performance and the industry structure. However, the missing point is the business model which focus on how to do business.**


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## Business models of firms and the dominant logic of an industry

- **Business models** are the manner by which an enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profits (Teece 2010).
- **The dominant logic of an industry** refers to how firms «conceptualize and make critical resource allocation decisions - be it in technologies, product development, distribution, advertising, or in human resource management» (Prahalad and Bettis 1986). It is a system of value creation and value capture shared by actors.

**The dominant logic of an industry leads to the predominance of some business models.**


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## Bridging Industry life cycle and business models

Industry life cycle

dynamic

Business models

static

- How do business models challenge the dominant logic of an established industry? Which actors are able to do so?
- When a dominant design emerges, technological uncertainty decreases and new business models can be tested. This re-opening of the business models seems to be the key to disrupt the dominant logic of the industry.

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## Methodology (1): drawing on ten case studies of firms


**Choosing the firms:** Companies bringing new technologies to the drug industry + young companies (more than 4 years, less than 15)

**Characterizing firms' business models:** Interviewing each CEO, CSO and CFO, internal documents, external documents

**Analyzing data:** Within-case analysis, data reduction and cross-case analysis (Miles and Huberman 1994); selecting dimensions of the business models, and looking for within group similarities coupled with intergroup differences (Eisenhardt 1989)

**Understanding how new business models try to disrupt, or conform, to the dominant logic.**

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**Methodology (2): an expert study**

**Interviewing 22 experts of the drug industry:** Large companies (biopharmaceutical, bioinformatics), start-ups (biotechnology, nanobiotechnology, bioinformatics, drug device), public laboratories or public research centers, ministry representatives.

**Experts are asked to :**

- Describe the dominant logic of the drug industry
- React on the first findings
- Build scenarios of the future drug industry

**Understanding the forces threatening the dominant logic of the drug industry**





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## The dominant logic of the drug industry


**Complementary assets:** The market access and the ability to do end clinical trials are specific complementary assets enhancing value capture **for those who control them.**


**Strategic alliances:** Strategic alliances between incumbents and emerging start-ups is **a well established way** to discover, develop and commercialize drugs.

**Network orchestration:** Networks are orchestrated by **large players**, using their prominence and power to perform a leadership role in pulling together the dispersed resources and capabilities of network members (Dhanaraj and Parkhe, 2006).

**Value proposal:** All actors follow a **product logic**. The value chain of the industry is highly regulated, codified and stable, to deliver drugs to the patients. Business models focusing on this value proposal are perceived as the **most profitable business models.**








## Result 1: Alternative business models, conforming to the established dominant logic

- Biotechnology and bioinformatics companies with new technologies or products have entered the drug industry conforming to the dominant logic: *technology platform business model, early phases development or discovery business models.*
- We observe the emergence of small firms taking a central role in networks. They play the role of orchestrators, and this way mimic large central actors.

*Example: the virtual activities business model.*

Many small new entrants have been entering the industry conforming to the dominant logic, particularly at the very beginning of technological waves.



## Result 2: Disruptive business models, upsetting the dominant logic

- We observe new type of alliances **with large diversifying entrants** from other industries. They bring new knowledge, new complementary assets that may make obsolete established specific ones: alliances with IT firms, equipment providers, aerospace companies.
- Some actors start reframing the value proposal from a product logic to a **service logic**: *the convergence of technologies bring together diagnostics tests with medical equipment, implanted diagnostics devices and therapeutics medicines.*

Large actors from other industries, allying with young actors of the drug industry are searching for disruptive technologies and new value proposals to break the dominant logic of the drug industry.

## Is there an emerging new logic?

### Specific complementary assets

End phases of the value chain of drug development, owned by large incumbents. → **New specific assets** requiring other competencies.

### Strategic alliances


Alliances between incumbents and small new entrants → Alliances between small young entrants and **large diversifying entrants** from other industries.

### Network orchestration



Large actors are at the center of networks. → **Small actors** are also able to orchestrate a network.

### Value proposal

A product logic, following a well know value chain of drug discovery, development and commercialization → A **service logic**, based on the convergence of technologies and the collaboration of new actors.




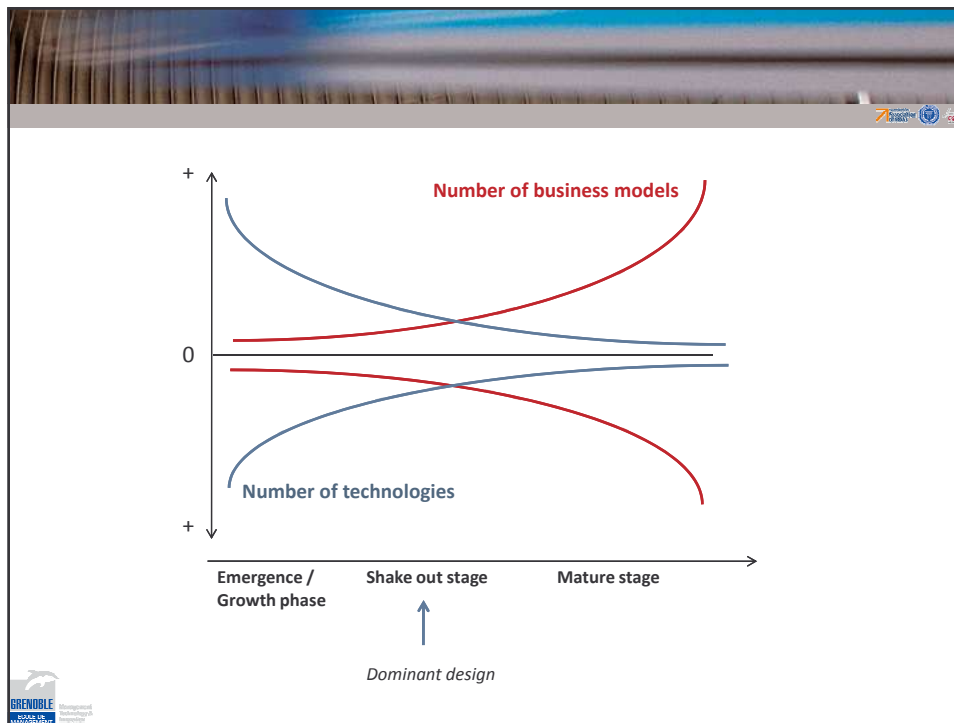
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What do we learn from the drug industry evolution?


- Technological discontinuities have not disrupted yet the drug industry because small entrants could not upset the dominant logic.  
*Technology is not the major force giving rhythm to industry life cycle, business models innovation is another important force.*
- Now the equivalent of a dominant design has appeared and companies test new business models.  
*Link between dominant design establishment and business models.*







## Conclusion

- The research suggests that all the conditions are there to disrupt the dominant logic of the drug industry.
  - When technological discontinuities come from start-ups, the dominant logic of the industry evolves slowly.
  - When technological discontinuities are supported by diversifying entrants, we may forecast a strong change of the dominant logic.
- Business models are influencing industry life cycle and are related to technological change. Further research should investigate the decrease of technological uncertainties due to a dominant design emergence, as a positive signal for innovative business models and their proliferation.



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## Thank you for your attention

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