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Venturing relationships in Open Innovation paradigm: case studies from automotive manufacturers and suppliers

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› Theme: External search in innovation

The « Open Innovation » model = an overall comprehensive framework offered for analyzing all collaborative innovation practices.

A wide range of possible practices...

... But , most of the empirical studies focused on traditional innovation data (innovation survey, R&D investment, licensing, patents...)

Main issue :

Designed a exploratory research whose purpose is to demonstrate how **transaction financial data (venturing relationships)** can enhance understanding of Open Innovation adoption practices.

› Application Case : Automotive Industry

An interesting case study

- **Innovation pressures** (*Ili S. et al., 2010*) due to market's state of maturity, self-reinforcing legislation, industry's changing modes of consumption
- **A complex product system** (*Sako M., 2003*). Innovation process is distributed between a vast array of actors, starting with carmakers and suppliers.

How leading international industrials open up to other external actors in their efforts to sustain some inventive strategies, through financial transactions?

A Multiple-case studies : 8 automotive actors studied

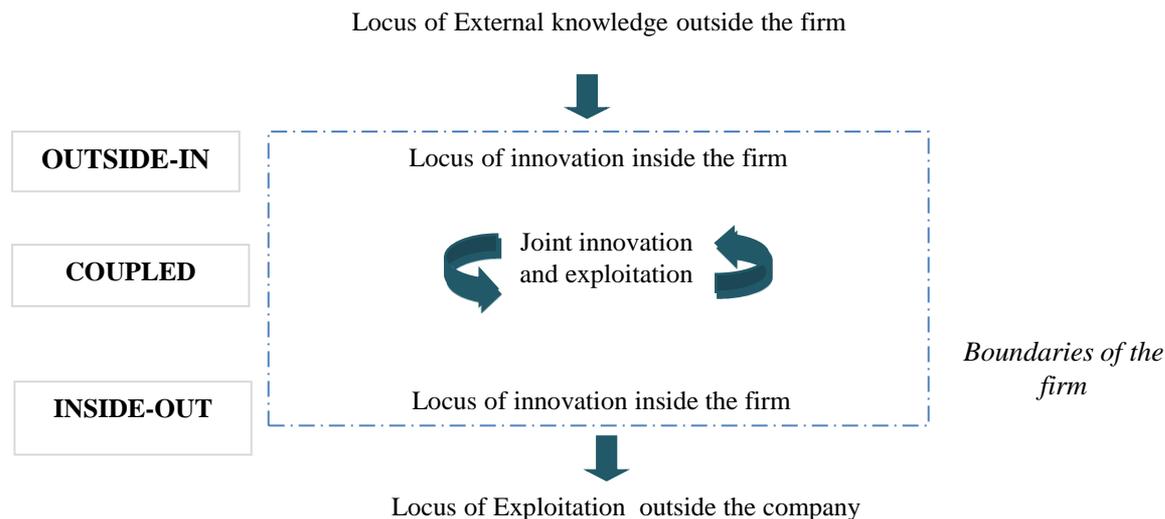
4 Suppliers : Valeo, Bosch, Delphi and Faurecia

4 Carmakers : BMW, General Motors, Volkswagen and Renault-Nissan

Open Innovation and this adoption by firm

- › The question « how » : what are the practices of adoption of Open Innovation in the case of search strategy
 - Direction of Opening
 - Modes of inter-firm relationships
 - Governance structure of inter-firm relationships

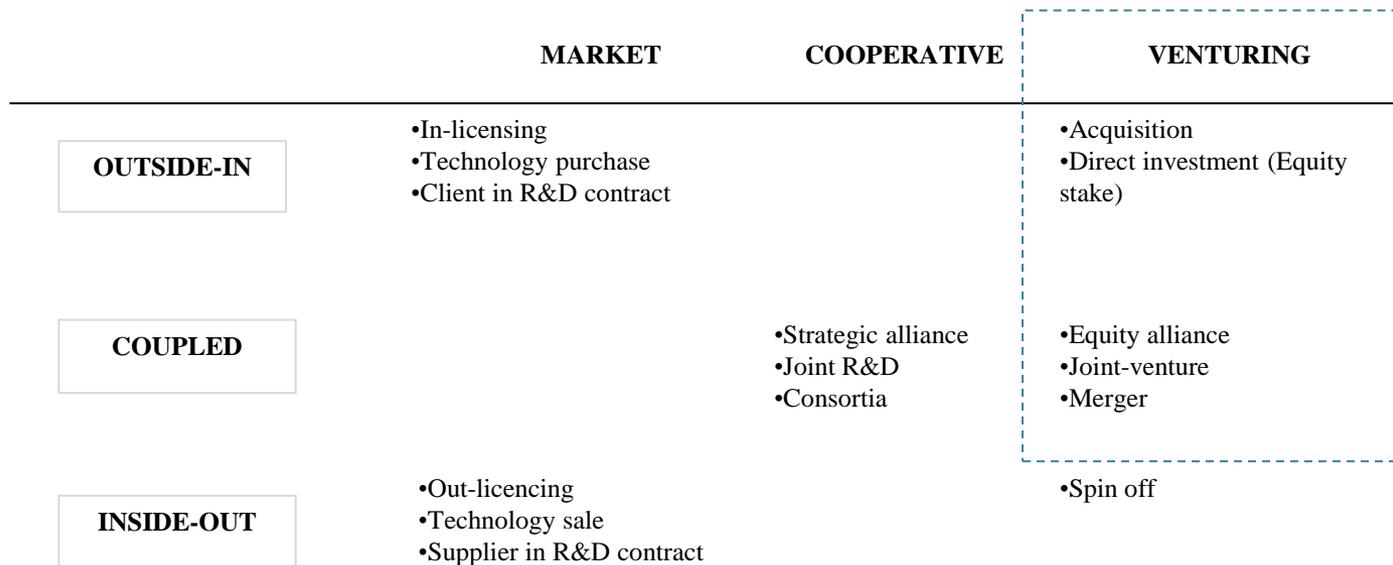
Open Innovation core processes



Source: "De-coupling the locus of innovation process": Gassmann O. and Enkel E (2004)

Open Innovation and this adoption by firm

Governance structure of inter-firm relationships in Open Innovation



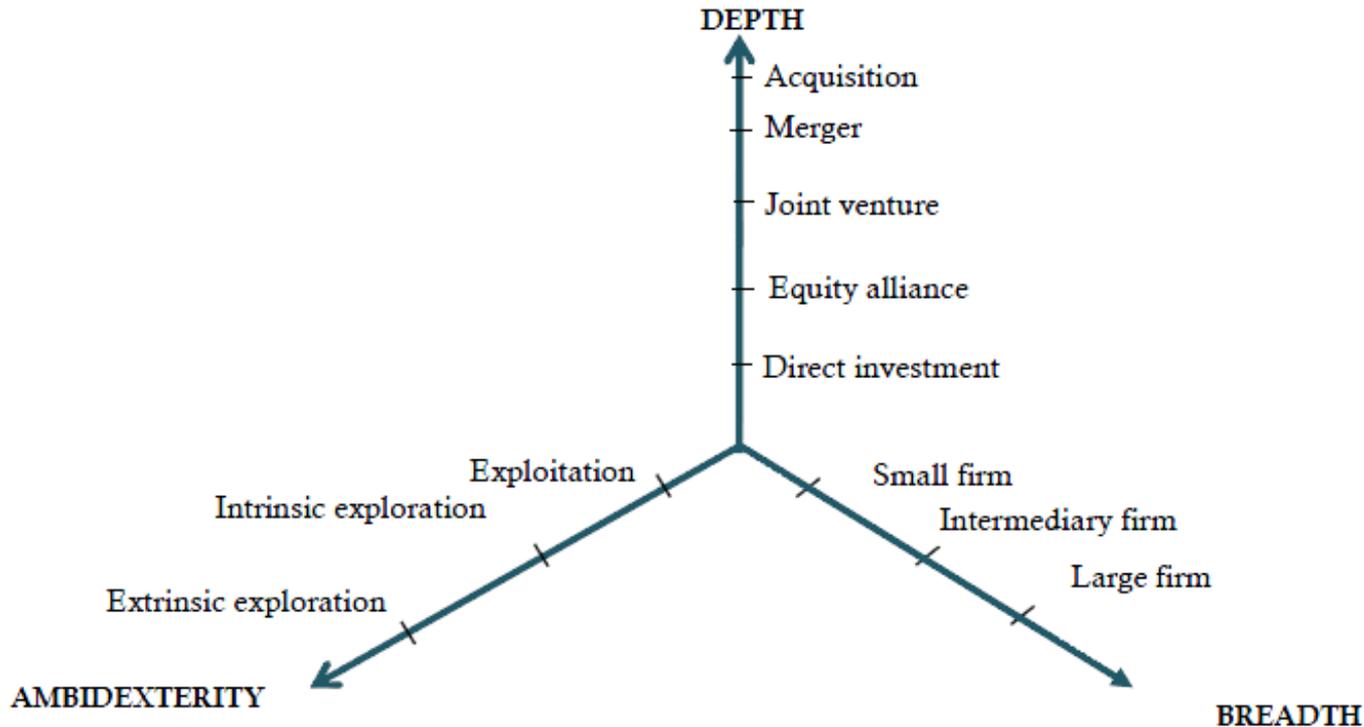
- **Market relationships** : involve arms' length transactions
- **Cooperative relationships** : involve a sharing of resources (knowledge, know-how, etc.) and process capabilities
- **Venturing relationships** : involve a unilateral, cross or shared ownership of capital, whether or not a cooperative relationship is in place.

Indicators of Opening

Introduction of three angles of study of search strategy :

DEPTH - BREADTH - AMBIDEXTERITY

Schematic representation of indicators framework



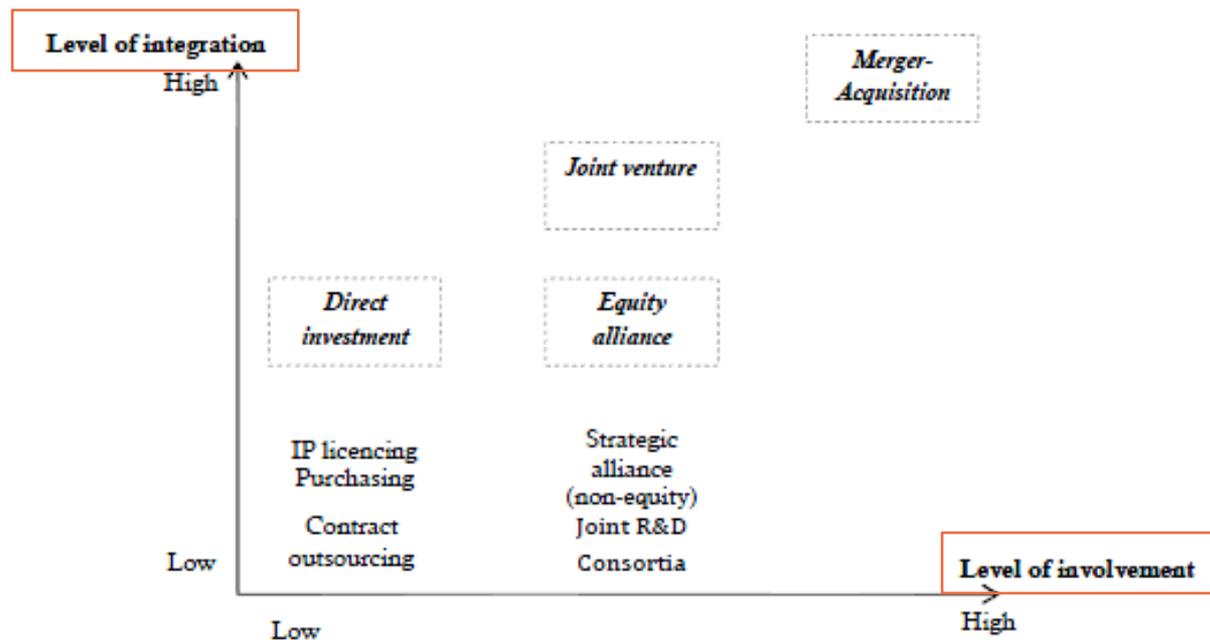
Indicators of Opening

› Depth dimension

The intensity with which externally sourced resources are used. (Laursen K. and Salter A., 2006).

It then helps to assess the interaction processes involved

Organizational modes of Open Innovation and related level of integration and involvement



Hypothesis 1 : A firm's degree of openness depends on its ability to establish several forms of venturing relationships.

Indicators of Opening

› Breadth dimension

Diversity of external sources used (Laursen K. and Salter A., 2006).

Factor firms' inventive performances, since each partner category can be perceived as a unique source of enrichment

Distinction be made between three classes of external sources, reflecting the size of the target firm: large; medium; small.

Hypothesis 2 : A firm's degree of openness depends on its ability to be associated with any and all other kinds of firms, regardless of their size

› Ambidexterity dimension

Ability to simultaneously manage exploration and exploitation tensions, such as they are defined by March J.G (1991).

Exploitation : external sources belong to the same technological field

Exploration : external sources belong to different technological fields :

intrinsic exploration : strategy to directly improve the parent firms' products or services

extrinsic exploration : strategy to indirectly encouraging demand for the parent company's services or products

Hypothesis 3: A firm's degree of openness depends on its ability to combine these different strategies : exploitation, extrinsic exploration and intrinsic exploration

To obtain a comparable measure for each industrialist for each level of analysis, a standardised Hirschman-Herfindal index

$$IHH = \sum_{i=1}^n s_i^2$$
$$\text{Standardised IHH} = IHH^* = \frac{(IHH - 1/n)}{(1 - 1/n)}$$

with n = number of different classes (3 for breadth and ambidexterity, 5 for depth), s_i = number of transactions undertaken in class i .

Source of data : Van Dijk's Zephyr financial database

Scope of our study to transactions between January 2002 and March 2014

We exclude transactions which :

- Affecte other sectors of activity where the actor operate
- Solely aimed at maximising ROI, i.e. with purely financial motives
- Serve others purposes than Innovation (increase production capacities; enter promising markets abroad; achieve economies of scale)

Total : 69 transactions
50% - 50% : supplier - carmaker

Depth Dimension

Transaction distribution summary

Unit: number of transactions, IHH- Depth

	acquisition	merger	joint-venture	equity alliance	direct investment	IHH Depth
Total supplier	21	0	8	5	0	0,32
Total carmaker	2	0	8	24	1	0,41

Average IHH* depth numbers for the two groups quite similar : 0,32 for total supplier and 0,41 for total carmaker).
But, choices of venturing relationship vary significantly :

- **Suppliers** opt for a more aggressive approach to technological sourcing : acquisition.

External growth race in order to become mega-suppliers and reinforce their product ranges.

- **Carmakers** displayed a collaborative approach (coupled process) through mostly equity alliances (70% of total).

← *Results consistent with the changing structure of the automotive industry resulting from the increased integration of modularity principles*

Breadth Dimension

Transaction distribution summary

Unit: number of transactions, IHH- breadth

	small	intermediary	large	IHH Breadth
Total supplier	2	15	14	0,17
Total carmaker	14	9	12	0,02

Carmakers and suppliers' average IHH* breadth relatively low, in spite of significant differences between carmakers and suppliers' strategies, in terms of the role that small firms play in these actors' inventive strategies.

- **Carmakers** have on several occasions already established links with small firms - BMW, GM and Volkswagen alone having signed around 15 such agreements, exclusively equity alliance.

Example : BMW's singular strategy is worth detailing. 70% of its transactions have involved a small firm, most of whom satisfied the defining criteria for a start-up

- It is not the case for **suppliers**.

← *Results contrast with the widespread vision of an automotive industry characterized by a pyramid organization where small companies hidden behind large suppliers are relegated to tiers that are at a great distance from the carmakers themselves.*

Ambidexterity Dimension

Transaction distribution summary

Unit: number of transactions, IHH-ambidexterity

	exploitation	intrinsic exploration	extrinsic exploration	IHH ambidexterity
Total supplier	32	2	0	0,83
Total carmaker	17	14	4	0,11

Ambidexterity dimension features the greatest disparities between carmakers and suppliers

- **Objective of suppliers** : improve the technologies on offer by creating associations with other automotive industry specialists. 95% of the transactions involved exploitation investments
- **Carmakers** : strategy more widespread whose investment perimeters seem to have been very diverse.
45% of the transactions involved non-automotive specialists.
Importance of extrinsic exploration transactions focused for example on the infrastructure network that their new hybrid and electric vehicle models require.

← *Results consistent with the fact that carmakers must adapt to consumer preferences more than ever (Ili S. et al., 2010), suppliers are not subject to the same constraint.*

Discussion and future research

› In short ,

The present study has tried to show how financial data might enhance understanding of firms' inventive strategies from an Open Innovation perspective

Carmaker : greater openness than supplier, in terms of :

- variety of partners (breadth)
- capability to source in new idea with actors technologically distant and not systematically for the car product (ambidexterity)

› Some limits :

Financial data do not allow to see relationships with other major sources such as universities

› Future research :

- Venturing relationships are only one of some means of external sourcing of firms
So compare with more traditional innovation data : these data provide a similar or different perception of practices to those that can be accessed through financial data?
- Evaluate the performance capabilities of each inventive strategy highlighted

Questions ?
Thank you for listening

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