

Alternative data sources to deal with innovation dynamics



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Team work



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The “menu” of the day

1. Innovation landscape and the rise of collaborative innovation
2. Business “angel-ing”
3. Theoretical issues and empirical challenges
4. TV programmes as a source of information/data
5. Discussion on research strategy and methods

Collaborative innovation is the “new mantra” for many firms, entrepreneurs and policy-makers

“increasingly using inflows and outflows of
knowledge to accelerate the internal
innovation process, and expand the markets
for external use of innovation”
(Chesbrough, 2006)



Several stakeholders are active, and substantial (financial) resources are used to design and set-up business incubators



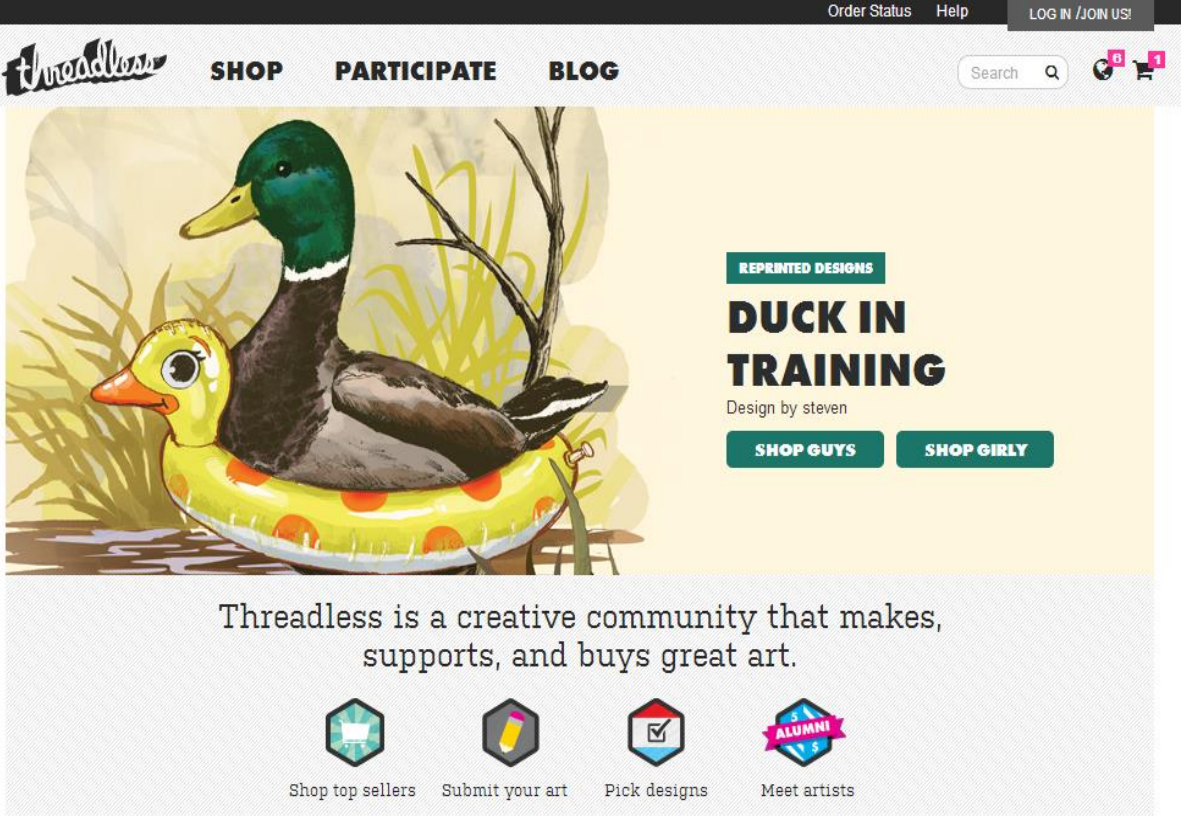
1. In 2012 there were over **1,250** incubators in the United States, up from only 12 in 1980. NBIA estimates that there are about 7,000 business incubators worldwide.
2. About **32 percent** of North American business incubators are sponsored by academic institutions. **25 percent** are sponsored by economic development organizations. **16 percent** are sponsored by government entities.
3. Only 4 percent are sponsored by for-profit entities.

Source: 2012 State of the Business Incubation Industry

“Start-up-ization”



Threadless: The Business of Community



The screenshot shows the Threadless website interface. At the top, there is a navigation bar with the Threadless logo, 'SHOP', 'PARTICIPATE', and 'BLOG' links. On the right side of the navigation bar, there are links for 'Order Status', 'Help', and 'LOG IN /JOIN US!'. Below the navigation bar, there is a search bar and icons for user profile and shopping cart. The main content area features a large illustration of a mallard duck and a yellow duck-shaped inflatable ring. To the right of the illustration, the text reads 'REPRINTED DESIGNS', 'DUCK IN TRAINING', 'Design by steven', and two buttons: 'SHOP GUYS' and 'SHOP GIRLY'. Below the illustration, a text block states: 'Threadless is a creative community that makes, supports, and buys great art.' At the bottom of the main content area, there are four icons with corresponding text: 'Shop top sellers' (shopping bag icon), 'Submit your art' (pencil icon), 'Pick designs' (checkmark icon), and 'Meet artists' (ALUMNI icon).

Giffgaff: Community-driven business model



How Crédit Agricole leveraged it's community to deploy their AppStore in 6 months



CA wanted to reinvent customer relationships in the digital world and boost their mobile channel



CASE Study

- *Crédit Agricole saw strong growth in mobile*
- *Realized that they where behind the competition. The competition introduced 'apps' already.*
- *Internal develop capability was insufficient resulting in long lead-times and too high costs*
- *Needed to boost their innovation strength while keeping it a self-funding project, close to their cooperative DNA*

The project's aim was to link CA's customers with developers for the co-creation of applications

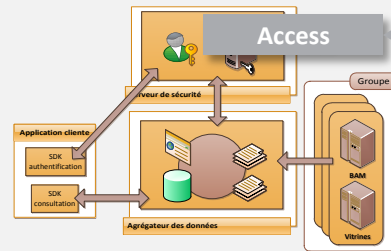


20 million clients



Co-creation
usage

A portal and
secure access



The Crédit Agricole
Store



Cooperative of
digital actors

Secure SDK
access



Co-development

However when it comes to engage in collaboration with actors operating in specific sectors (e.g. agribusiness) or types of innovation (e.g. radical) investors may be more reluctant

For example investors do not see venturing in farming like this



But rather like this



And investing in radical innovation not like this



But rather like this



Think about the business perfect storm:

- 1) Support new companies (venture creation)...
- 2) ... Dealing with (radical) innovations...



Challenge 1

Venture creation (Gundry and Kickul 2007):

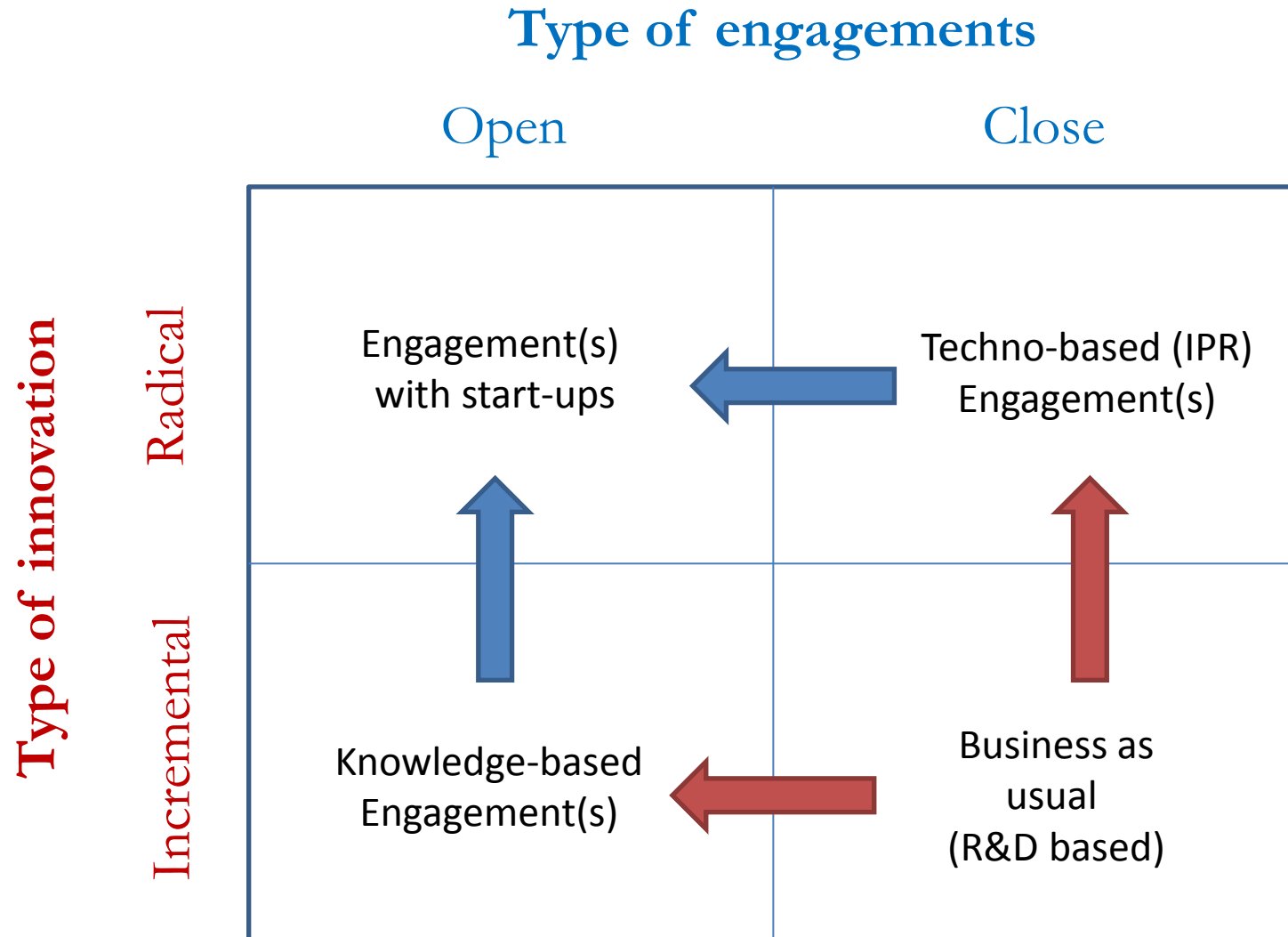
- (i) Team dynamics, cooperation and trust;
- (ii) Resource availability;
- (iii) Acquire knowledge and information;
- (iv) Ability to generate revenue.

Challenge 2

Radical innovation --> New to the world products (Markides and Geroski, 2005):

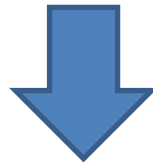
- i) They offer **new value propositions** that radically change existing consumer habits and behaviour.
- ii) The markets they create undermine the competences and complementary assets on which competitors built their success.

Two (challenging) dimensions → The storms



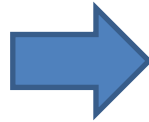
Objective

Understand “engagements” between professional investors and entrepreneurs (start-uppers) from an organizational economics point of view



Organizations of professionals
(type of hybrid form)

Organizations of professionals



Specific issues to consider (and discuss):

- 1) Co-development competence and manage appropriability
- 2) Collaboration through IPR protection (i.e. JV and patenting)
- 3) Develop/ implement “*business angel-ing*”



What is a Business Angel?

- Reported 726,000 active in the USA today
- \$100 billion Market



Peter Thiel



Real Time Net Worth

\$2.2 Billion

↑ \$886 K | 0%

As of 12/8/2014 @ 12:00PM *

+ [Follow](#) (134)

Partner, Founders Fund

Age	47
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Source Of Wealth	Facebook, Self Made
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<u>Self-Made Score</u>	8
------------------------	----------

Residence	San Francisco, CA
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Citizenship	United States
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THE SOCIAL NETWORK

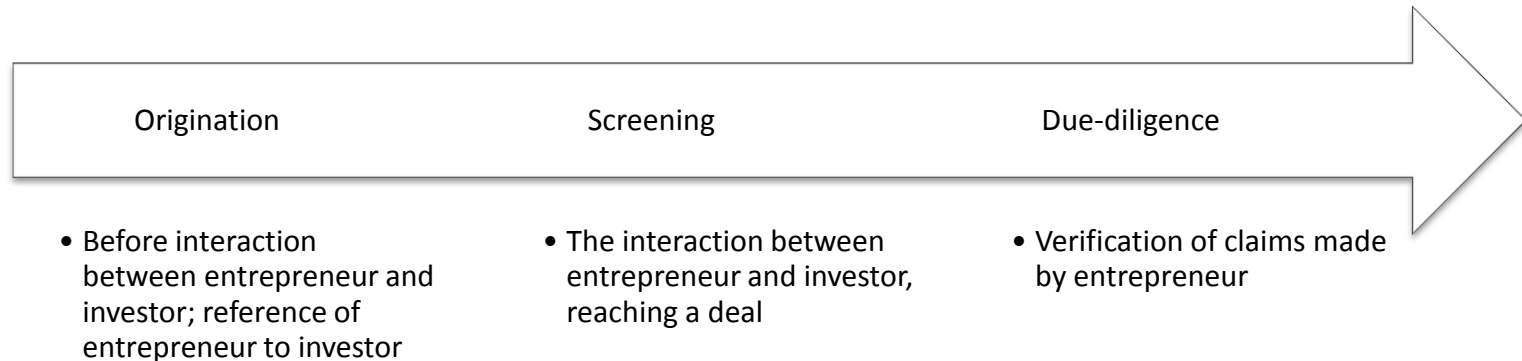
Any others?

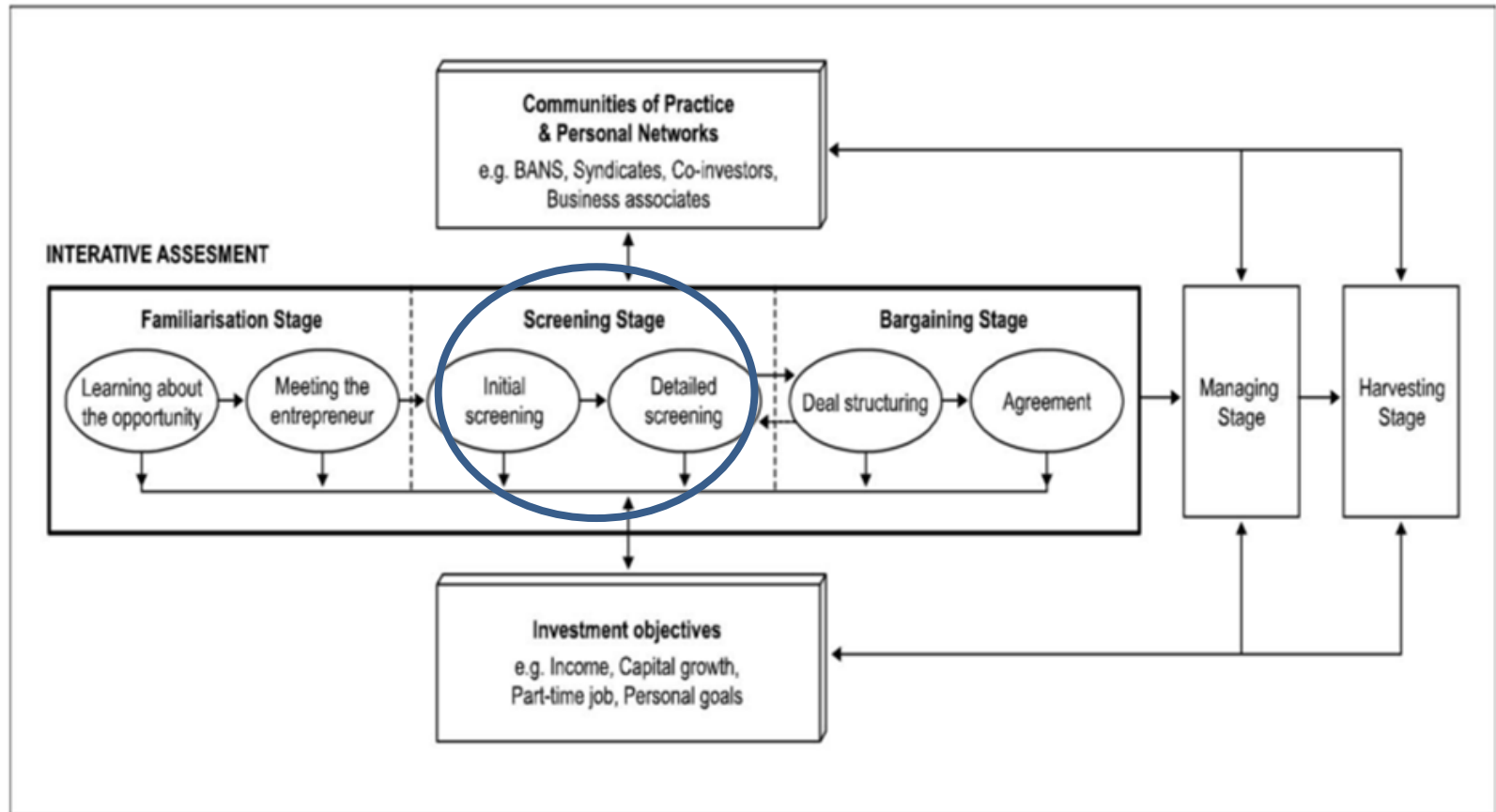


Novelty/relevance of “business angeling”

- New venture creation generally benefits economy and offers stage for innovative products/services
- Investor-investee dyad generally focuses on VC-entrepreneur relationship instead of angel-entrepreneur relationship
- Either demand- or supply side oriented research
- Agency risk is more a threat than market risk → important to review BA-entrepreneur relationship (Fiet, 1995)
- BA-entrepreneur relationship is also important for exit strategies

In the screening stage “angel” investors and entrepreneurs try to set up a “trust-based” contract eventually leading to formation of an organization of professionals





Source: Paul et al., 2007

What can lead to/facilitate its formation?

My giants' shoulders!!



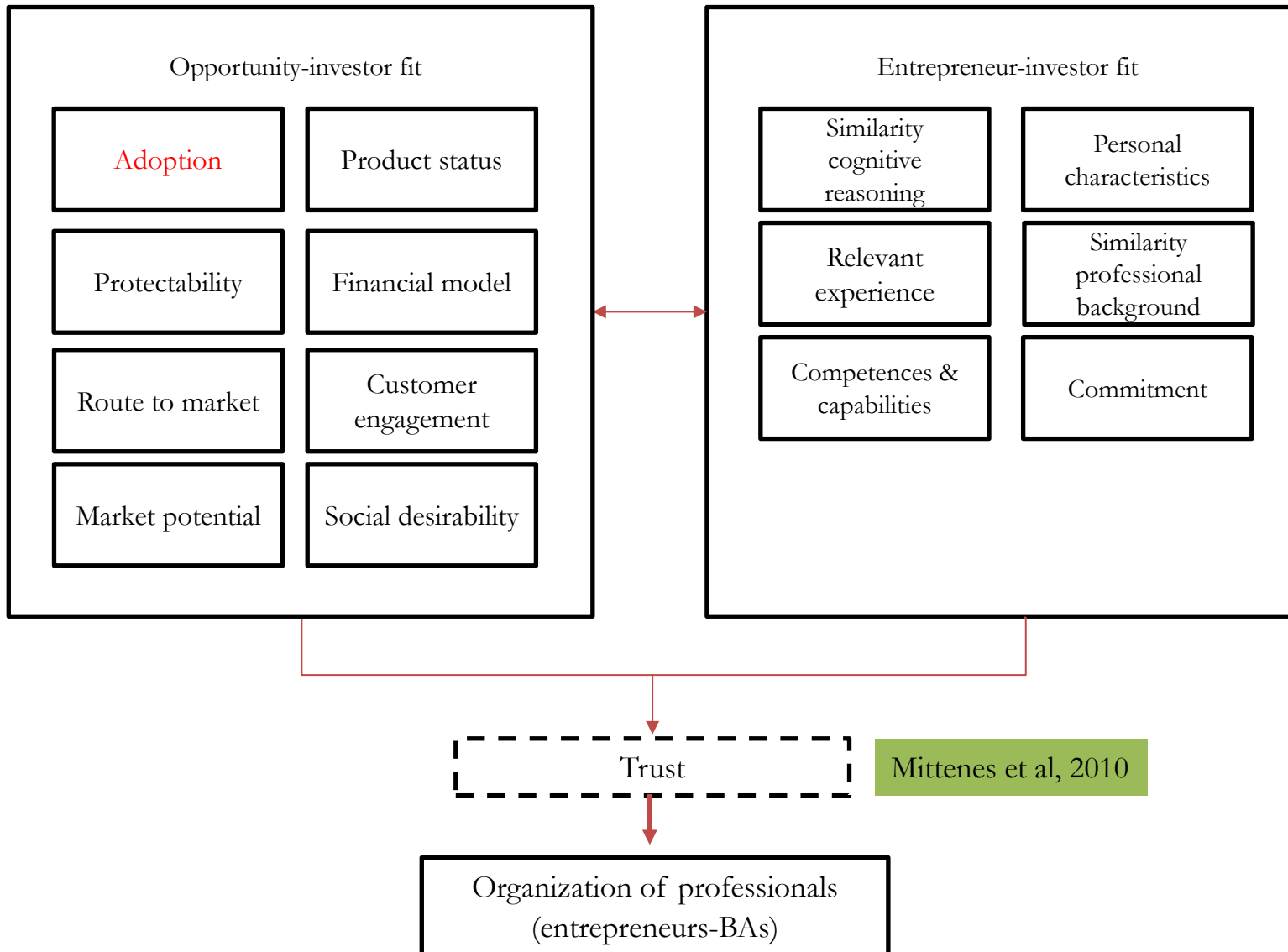
Challenges when forming “organizations of professionals” in the innovation process/dynamics

- Output of financial capital investment in innovation and invention is (highly) dependent on entrepreneurs’ prior knowledge/skills (unknown to the BAs)
- Receiving return on investments is difficult
- Non re-deployable assets (knowledge- relational- specific investments/ IPRs issues)
- Agency problems (Information asymmetry, moral hazard)
- Limited due diligence insight

TRUST is a key-element

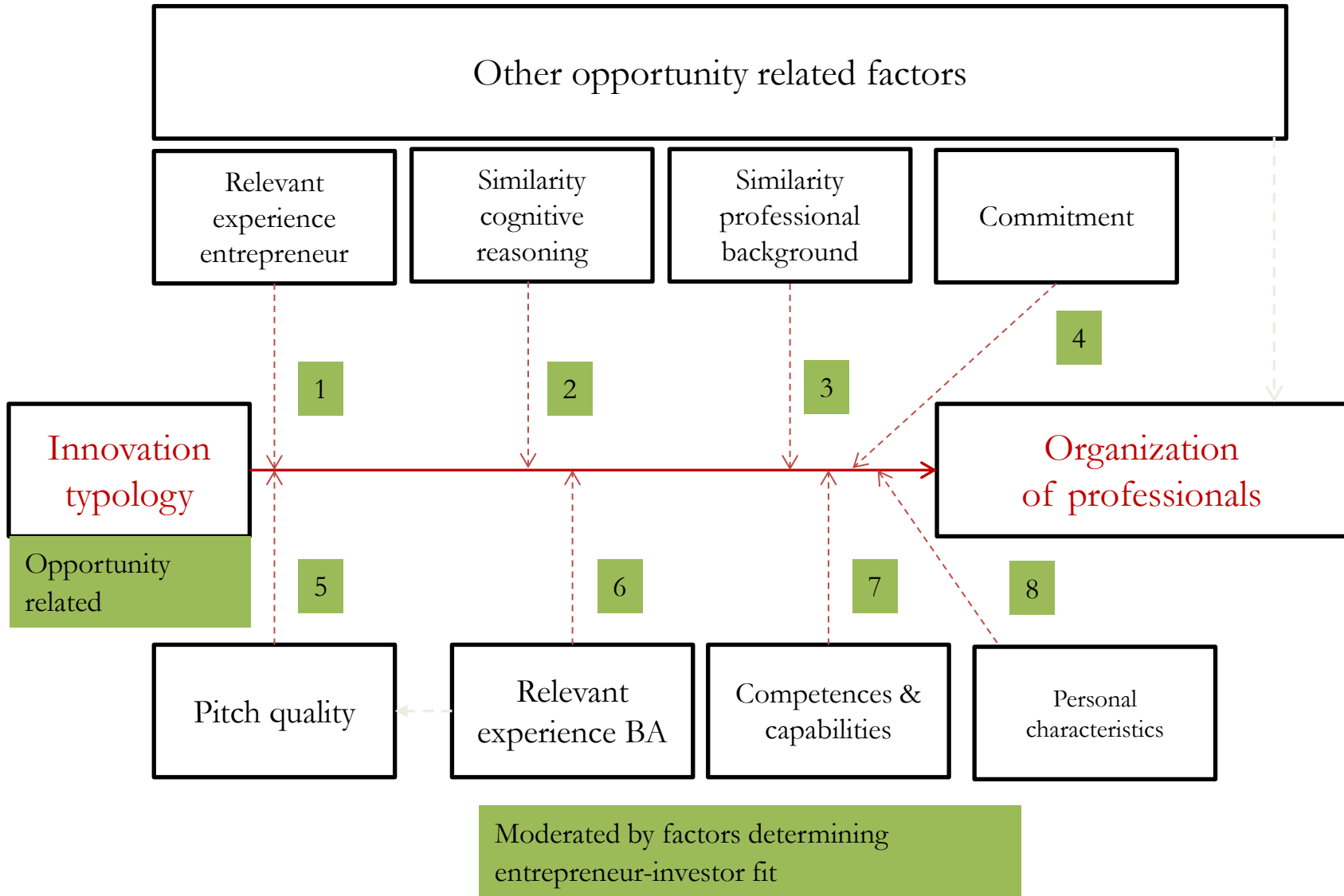
Decision criteria employed in screening phase

(Maxwell, 2011; Franke et al, 2006; Feeney et al, 1999; Murnieks, 2011; Bengtsson et al, 2010)



Complementarity of assets between Bas and entrepreneurs (Madill et al, 2005):

- Advice about management of the business
- Contacts/networking
- Hands-on assistance (legal- and accountancy advice, resources)
- Providing business and marketing intel
- Take a seat on the board
- Prepare firms for raising VC
- Provide credibility and validation (reputation)



Empirical challenge

How to get empirical evidence to support/develop concepts?

Deductively: for hypothesis testing

Inductively: for theory-building



What would you do?

Empirical challenge

Data gathering strategies:

	Reductionism	Contextualism
Direct observation	Experimentalism	Case study analysis
Remote sensing	Multivariate statistics	Historical analysis

Adapted from: Ingram, Rao and Silverman, 2012

Empirical challenge

- Contextualised approaches:

Case studies based

Qualitative

Limited generalizability and replicability

- Multivariate statistics:

Subject to typical “survey” biases:

Social desirability (among others) → Angels will be less likely to reveal features that are not socially desirable (e.g. gender preferences, etc.)

Empirical challenge

- Experimentalism:

Pros

Having a “controlled” or “natural” experiment about the formation of an organization of professionals or at least its screening stage

Cons

Complex design

High stakes

Very costly to ensure incentive-compatibility

Empirical challenge


- (i) Is designing this type of experiment feasible?
- (ii) Do we have experimental data already available?

Alternative data sources: using information from TV programs



BBC

Do you need cash
for your business idea?



DRAGONS' DEN

Dragons' Den gives entrepreneurs the chance to pitch their proposals to a panel of the UK's most successful business people. They have pledged to invest their own money in the best ideas.

If you are an entrepreneur, with a fantastic business idea or product that is investment-ready, then we want to hear from you.

For an application form:
email: dragonsden@bbc.co.uk
visit our website: bbc.co.uk/dragonsden
or write to: Dragons' Den, BBC Manchester, M60 1SU

BBC TWO



Alternative data sources: using information from TV programs

“TV game shows provide a natural avenue to observe real decisions in an environment with high stakes” (Harrison and List, 2004; *Journal of Economic Literature*, 42(4), p.61)

Few examples:

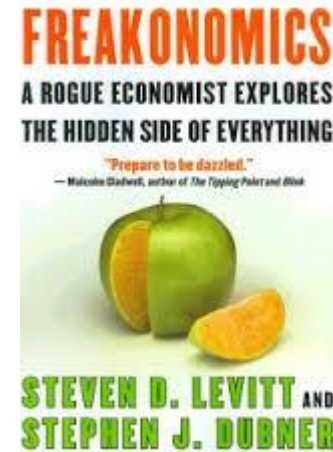
Berk et al. [1996] and Tenorio and Cason [2002] study contestants' behavior on *The Price Is Right* to investigate rational decision theory and whether subjects play the unique subgame perfect Nash equilibrium.

Gertner [1993] and Beetsma and Schotman [2001] make use of data from *Card Sharks* and *Lingo* to examine individual risk preferences.

Levitt [2003] and List [2003] use data from *The Weakest Link* and *Friend or Foe* to examine the nature and extent of disparate treatment among game show contestants.

And Metrick [1995] uses data from *Jeopardy!* to analyze behavior under uncertainty and players' ability to choose strategic best-responses.

Alternative data sources: using information from TV programs



**TESTING THEORIES OF DISCRIMINATION:
EVIDENCE FROM *WEAKEST LINK****
STEVEN D. LEVITT
University of Chicago
Journal of Law and Economics, vol. XLVII (October 2004)

Alternative data sources: using information from TV programs



The Review
of
Economics and Statistics

Friend or foe? A natural experiment of the prisoner's dilemma.
List, J. A. (2006). *The Review of Economics and Statistics*, 88(3), 463-471.

Alternative data sources: using information from TV programs



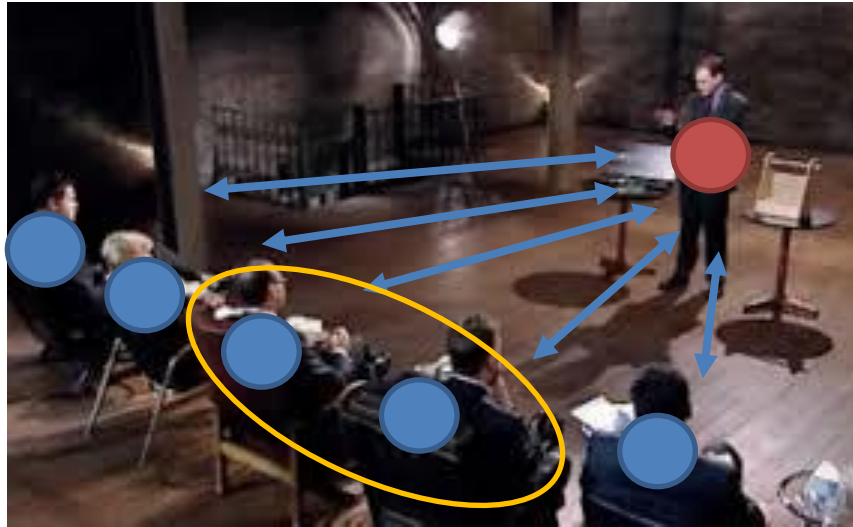
Decision making under risk in Deal or No Deal

Nicolas de Roos and Yianis Sarafidis

Journal of Applied Econometrics

[Volume 25, Issue 6](#), pages 987–1027, September/October 2010

This is the “den”



The show allows several entrepreneurs an opportunity to present their varying **business ideas** to a panel of **five investors** (the *Dragons*) and pitch for financial investment offering a **stake** of the company in return.

From watching episodes to set-up a database

- 1) Randomly selected a number of episodes
- 2) We identify a set of variables and develop a “rubric” based on literature review and iterative observations
- 3) Rubric and variables identification have been subject to validation → several observers performed the same tasks of “quantify” variables based on observations
- 4) Extensive collection of information and “datification”
- 5) Ex-post validation with key-informants

From watching episodes to set-up a database

11 seasons (2005-2014)

1811 interactions

Some 130 variables organized in 7 sub-sets (rubric):

- Episode identification
- Type of idea/innovation (and food-related innovation)
- Entrepreneur(s)
- Pitch
- Investment proposal
- Outcome

Table 1: Highest investments per series

Series	Single investment	Combined investment
Series 1	£175,000 (Peter Jones)	£150,000 (Duncan Bannatyne & Peter Jones)
Series 2	£75,000 (Peter Jones)	£225,000 (Theo Paphitis & Duncan Bannatyne)
Series 3	£100,000 (Richard Farleigh)	£200,000 (Deborah Meaden & Theo Paphitis)
Series 4	£85,000 (Duncan Bannatyne)	£160,000 (Duncan Bannatyne & Richard Farleigh)
Series 5	£200,000 (Theo Paphitis)	£150,000 (Duncan Bannatyne & James Caan)
Series 6	£200,000 (James Caan)	£250,000 (Deborah Meaden & Theo Paphitis)
Series 7	£120,000 (James Caan)	£150,000 (Peter Jones & Theo Paphitis)
Series 8	£200,000 (Duncan Bannatyne)	£150,000 (Duncan Bannatyne & Peter Jones)
Series 9	£100,000 (Duncan Bannatyne)	£120,000 (Deborah Meaden & Theo Paphitis)
Series 10	£250,000 (Theo Paphitis)	£100,000 (Deborah Meaden & Theo Paphitis)
Series 11	£100,000 (Piers Linney)	£100,000 (Deborah Meaden & Peter Jones)
Series 12	£100,000 (Piers Linney)	£200,000 (Duncan Bannatyne & Peter Jones)

Table 2. Deals per Dragon per series

Series	1	2	3	4	5	6	7	8	9	10	11	12		
No. of episodes	6	6	8	6	10	8	8	10	10	12	12	12		
Duncan Bannatyne	2	1	2	3	4	4	2	6	3	4	2	3		
Peter Jones	3	3	2	4	5	6	6	6	4	10	3	2		
Deborah Meaden			4	4	6	4	3	5	4	4	2	4		
Kelly Hoppen											3	2		
Piers Linney											2	2		
Hilary Devey									4	4				
James Caan					6	5	4	3						
Richard Farleigh			2	5										
Theo Paphitis		4	4	5	6	5	5	5	5	6				
Rachel Elnaugh	4	1												
Doug Richard	2	0												
Simon Woodroffe	1													

Some preliminary results

Propositions consistent with current academic literature

- The propensity of a BA to invest in a new venture is primarily influenced by the quality of the presentation delivered by the entrepreneur, inadequate preparation and unrealistic business valuations proving detrimental
- The propensity of a BA investing in a new venture increases by the degree of innovativeness of pitches stimulating BA's imagination
- The propensity of a BA to invest in a new venture is directly influenced by their previous experience in that particular field which may exert a positive or negative influence.
- The propensity of an entrepreneur selecting a specific BA to support their project is primarily conditioned by the potential benefit to be gained from the BA's expertise, relevance of their business contacts along with the degree of financial investment

Some preliminary results

Propositions *contradictory* with current academic literature


- The propensity of a BA to invest in a new venture is primarily conditioned by the degree of innovativeness of its product/service and business model with highly innovative ventures providing a strong incentive for investment
- The propensity of a BA investing in a new venture decreases with the degree of social orientation of the project, as potential investors seem disinclined to invest in those with a charitable status

Future research opportunities

- 1) Cross-country comparison (Shark tank – US; DDs Canada)
- 2) Validation with BAs
- 3) Long-term effect → “Where Are They Now?”



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