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***Knowledge Angels in B to B:
An ideal human resource for
innovation***

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Document linked to the presentation

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Knowledge Angels: fostering innovation in knowledge-intensive business services through creative individuals

Observations from Canada, China, France, Germany and Spain

Accenture award for research papers in economics and management of innovation, March 2013

To be published in *International Management* 2015

BETA (University of Strasbourg, France)

ISI (Fraunhofer Institute ISI, Karlsruhe, Germany)

Some articles related to the topic

- I. Miles *et al.* (1995): Knowledge-Intensive Business Services: Users, carriers and sources of innovation, *European Innovation Monitoring Systems, EIMS publication N°15* .
- E. Muller, A. Zenker (2001): Business services as actors of knowledge transformation: the role of KIBS in regional and national innovation systems, *Research Policy*, 30, 1501-1516
- P. Cohendet, J-A Héraud, P. Llerena (2013): A microeconomic approach to the dynamics of knowledge creation, *in* P. Meusburger *et al.* (eds) *Knowledge and the Economy*, Springer (Dordrecht)

Innovation as a central strategy for firms and other organizations

- Creating and developing new products, processes and/or markets is *increasingly a necessity* for the development of micro and macro entities (firms, institutions, cities, regions).
- Nevertheless only a minority of entrepreneurs consider creative/innovative activities as day-to-day business: it is a secondary concern because operational business issues claim the entrepreneur's full attention
- Therefore many ideas « stay on the shelf » due to lack of time, money, partners or knowledge
- Transforming “ideas” into “innovations” is an act of creativity that business services (particularly KIBS) can help to perform at firm's level.

Business services as central actors of innovation

- We can consider here all sorts of business services (BtoB), but we tend to focus on the ones that are particularly “Knowledge-intensive” (KIBS, following the definition of Miles)
- Nevertheless it is not necessary to be an R&D firm to contribute to innovation. Every sort of knowledge, even unformal, can be *creative*
- *Knowledge transfer* is the role of KIBS, but innovation is triggered by more complex processes. KIBS are more than pure knowledge transmitters. The cognitive process is not linear, but *systemic*.

Knowledge Angels as central actors of KIBS activity

- We will see how KIBS foster innovation by a series of *knowledge transformations*: this is fundamentally a *creative* activity.
- The knowledge transformation occurs through *translation* processes, involving a heterogeneous set of actors and contexts, outside and inside KIBS.
- Certain individuals have, more than others, the capacity to bridge knowledge systems: they can *translate*. Since translation always involves a form of transformation (adaptation to another context), it is potentially creative.
- Such a cognitive role cannot be performed by machines or organizations (the organization is a set of formal procedures or implicate routines). We need gifted individuals: KA.

Preliminary definitions

- What is **knowledge**? It is not pure *information* (that can be automatically transmitted and stored in databanks), because there is also a grammar organizing the items; a series of meta-information layers for processing the basic information.
- What is **innovation**? It is not only scientific *discovery* or technical *invention*, it is a complex process involving many factors and actors. In addition to new knowledge, it requires *entrepreneurship* (Schumpeter).
- What is **creativity**? It is *novelty* plus *relevance* (Sternberg). It is not restricted to the field of science and technology. It requires the capacity of *vision*, not only knowledge.
- In all three cases, how can we work without specific individual capabilities?

Florida's creative class typology

Creative Core	Directly involved in creative and innovation processes créatifs	R&D Intellectual Supply
Creative Pro	Manage and foster change and innovation	Entrepreneurs B to B Management
Bohemians	Directly involved in artistic productions	Arts, Culture Design Medias

Source: S. Chantelot

Sternberg's definition of creativity

- "*Creativity is the ability to produce work that is both **novel** (i.e., original, unexpected) and **appropriate** (i.e., useful, adaptive concerning task constraints).*"

(*) Sternberg & Lubart: *Handbook of Creativity* (1999, 2008)

« *Novel and appropriate* » ?

« Before you build a better mousetrap, it helps to know if there are any mice out there »

Mortimer B. Zuckerman, quoted by Williams&Yang in Sternberg *et al.* (2008) in the chapter on *organizational creativity*

Comments:

- If you invent a better mousetrap, you can patent it (this is *technological creativity*)
- But if there is little or no use of it, you will never get an innovation in the sense of Schumpeter (*economic creativity*)

How can KIBS be creative in problem solving activities?

They do not necessarily invent new solutions for *generic problems* (leading to patents, copyrights...) but:

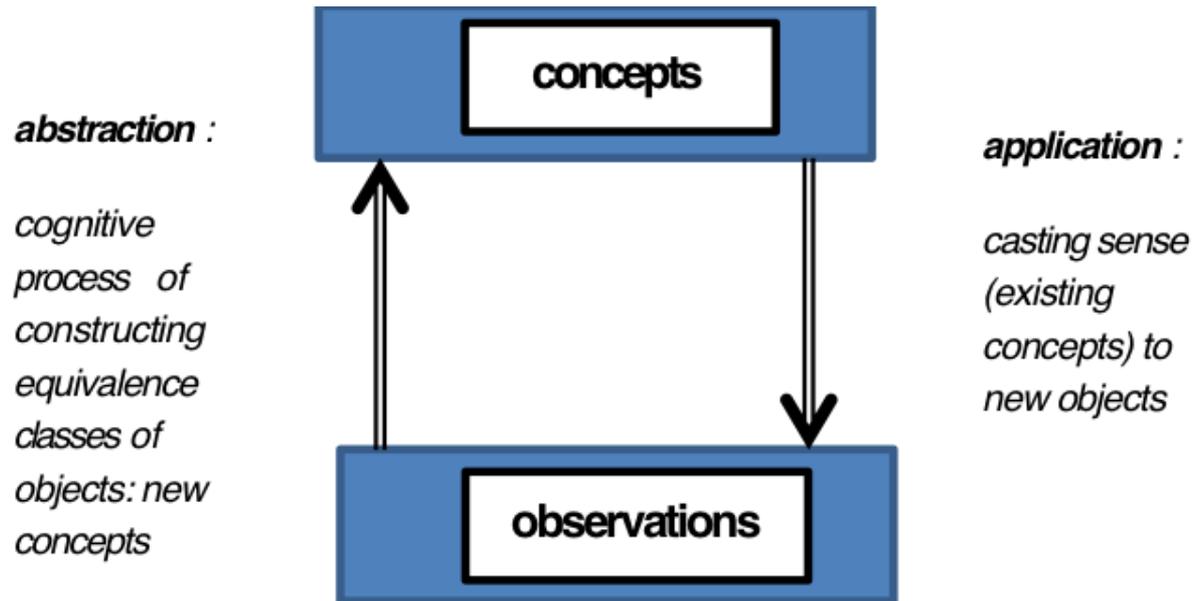
- If a consultant applies a good solution observed in a context to another context, it is a form of *novelty*.
- Furthermore, if the consultant is a good professional, the application will be *adapted* to the new client's context: the solution is *appropriate*.
- This is not simple knowledge transfer (ordinary problem solving), but *creative adaptation that could lead to innovation at the client's level*.

Are consultants simple knowledge brokers or knowledge translators?

- Metaphore of the **language**
 - To translate is not to copy-paste in another language
 - In translating you learn : because the process raises questions about the subject, defies your own language; can lead to errors (and there is always something to learn from errors); etc.
- Translation is also creative because it forces to abstract from a context before applying to another. You get closer to the essence of things.

Cognitive scheme

Observations are not purely recycled, they must be conceptualized



How can some individuals be vectors of creativity in the KIBS business?

- Some individuals have to a high degree the capability to recognize that a particular problem or a particular solution belongs to a **general pattern**. This pattern is the link between different concrete situations. A process of translation is now possible.
- Such a **wisdom** (it is more than pure knowledge) allow them to propose the **translation from one context to another**:
 - **Problem A is perceived as similar to problem B in a certain way; therefore an existing solution for A could maybe be adapted to B.**
 - **Solution X seems to have general properties; why not adapting it to other contexts?**
- This is the specific way in which **KIBS can be very "innovative"**. (Of course, the final innovation will be at the level of the client firm, as well as its implementation and the economic risk).

Models of knowledge creation

- A superficial vision of *creativity* tends to depict innovation with a biological model of genetic crossing:
 - New ideas are recombinations of existing ones (like gene crossing produces new species)
- In such a vision, KIBS are just intermediary actors : they benefit from their access to many firms' knowledge bases (and other sources of knowledge too, like research institutions) for reformulating new sets of knowledge (the Lego model). A pure organizational setting (if not a good computer) could implement a research procedure of that kind.
- We consider KIBS can be creative in a more conceptual way. And for that, human capabilities are crucial.

Empirical observations: the Kairos enquiry

- ISI (Karlsruhe)-BETA(Strasbourg) enquiry with colleagues from Spain, Canada, China (2007-2009)
- Selection of KIBS
- Identification of key individuals (potential KA)
- 45 personal in-depth interviews in Alsace (region of Strasbourg) and Baden-Württemberg (region of Karlsruhe), and in Barcelona, Montreal and Beijing agglomerations

Typical profile of KA

- Observations not very surprising : relatively conform to expectations from the theory
- Individuals with strong implication and devoted to the KIBS, but very *autonomous* and belonging to multiple *communities* within and outside the firm (sometimes multiple competencies like engineering and management)
- They have a close relationship with strategic management of the KIBS but want to be often on the field (visiting client firms, research centers, policymakers, etc.) and like do the work (projects) by themselves
- Other key words:
 - Freaks, vision
 - Freedom at work; trust co-workers
 - Multi-tasking
 - Acceptance of risk and potential failure
 - Relying (also) on intuitive decision

Individual characteristics

- ambitious engagement in different fields (internal/ external)
- motivation, fun, ambition, autodidactic learning capacity
- communication + networking skills, "all-rounders"
- openness, flexibility, curiosity
- search for "optimal" working environment (self-realisation + corporate benefit)
- vision-building, problem-solving (sometimes in unconventional ways)
- "multi-tasking"

Corporate characteristics

- niche markets, competition
- project organisation, interdisciplinarity
- dynamics, teams of "freaks" and "craftsmen"
- flexible project management, flat hierarchies
- knowledge accession and diffusion, small / medium size
- creativity as organisational paradigm
- degrees of freedom, trust
- acceptance of possible failure, risk-taking, quick decision-making, intuition

Locational characteristics

- location in larger cities (China: capital region)
- satisfaction with location, "arranged with city/ region"
- integration in networks with regional actors
- location: no strategic choice
- appreciation of potentials and openness of location
- good living conditions and employment opportunities

National bias

- KA profiles revealed relatively similar in every region, but slightly biased towards certain aspects of the theoretical profile:
 - China: “solution provider”
 - France: “idea giver”
 - Germany: “knowledge broker”
 - Spain: “facilitator”
 - Canada: “business pusher”

As a conclusion: some sort of hazardous philosophical digression

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Many thanks for your attention

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