Open innovation
and the management of innovation

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Sources

- Ecole de Paris’s workshop on innovation management
  - Discussion on real stories, with the people who were involved
  - 116 meetings since 1997
  - [http://www.ecole.org](http://www.ecole.org)

- Futuris (foresight on the French research and innovation system)
  - 30 interviews of companies active in R-D
  - Work in progress

- REMI (network for innovation management studies)
  - Scholars from different organizations (mainly in Paris area)
  - Discuss work in progress

- Observatoire des pôles de compétitivité (clusters)
  - [http://www.obervatoirepc.org](http://www.obervatoirepc.org)

- Observatoire des sciences et des techniques
  - [http://www.obs-ost.fr](http://www.obs-ost.fr)

- Background research, research contracts, consulting
Paradox of industrial research

**Innovation**

- Source of competitiveness in developed countries (satiety, high salaries) where consumers have ‘anything they want’ (demand-driven)
  - Let them believe that they have dreamt of what you offer them
- Enables access to market in developing countries (bottom of the pyramid) where consumers cannot afford what is offered

**However, many companies cut on their R-D budget**
Management of open innovation

Outline

- The paradox of innovation
  - Increasing need of innovation vs. decreasing R-D budgets in many companies
  - Does R-D yield innovation? Can the yield be improved?

- From integrated firms to open innovation

- Managing for innovation in industry, what is it about?

- What kind of cooperation?
Will R-D make you rich?

- Loose correlation between wealth and R-D spending
- Bell Labs, IBM,… spent money in R-D when they were rich and shielded from competition
Getting rich through innovation?

Goal of the firm

Innovation way

One among many ways to make money
From integrated firms to open innovation

Yesterday, firms relied on their own bolts and nuts and ideas

Today
- They buy bolts
- They partners for sophisticated nuts
- They get most ideas through cooperation with academia and competitors
- They understand what to develop thanks to more intimacy with their customer

You may get money with your own ideas, or with other’s ones

Do you still need R&D?

To build a capacity for knowledge absorption and integration
But it may be a different R&D (goals, organization, people management)
What is management of innovation about?

Management of innovation =
Build, maintain and leverage a collective capability of innovation

Steer dynamic capabilities
E. Penrose, D. Teece, G. Dosi, R. Burgelman…

Coordination of innovation processes
(intelligence, design, R, D, learning, integration, transfer…)
Most of the management litterature, e.g. Allen, Tushman, Ch. Midler, A. Hatchuel…

Build and maintain cohesion
Capability of collective action
Shared agenda
Resilient, adaptative relationship
B. Segrestin; M. Suchman

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Some processes

- From R-D to dynamic management of capabilities
- Learning
- Realizing the potential of your knowledge outside your current business
Neither techno-push…
- when you found problems for your solution: synthetic polymers (Nylon), transistor, ICs, laser, recombinant DNA…

Nor market push
- When you found the knowledge to build upon ready ‘on shelves’

No possible ‘just in time research’: ≠ time horizon
- Strategy: which problem you’d like to solve
- Design: which knowledge you need
- Integration: how you get it and combine it (from inside or outside)
  - If you haven’t it yet, you’d rather find it outside
  - You’ll find it and integrate it more efficiently if you have internal knowledge (absorption capability)
Dynamic management of an inventory of capabilities (skills, knowledge, access to customer, technology, …) and ‘procurement’

- Research
- Development projects

Absorb (identify, fetch and integrate) knowledge and competencies from outside

Dynamic capabilities management (inventory and evolution)

Intelligence on technology, markets and competition

Foresight
Learning from one’s and others’ experience

- Research
- Development projects

Capabilities

Intelligence

Absorb (identify, fetch and integrate) knowledge and competencies from outside

Learning from projects
Knowledge building

Leveraging employee’s ideas

Learning about customer, markets, uses
6/ Realizing the value of technology (as well as of other capabilities)

- Intrapreneurship
- Spin-off
- Tech transfer, JV...
  - IP mgt

- Absorb from outside
- Leveraging employee’s ideas

- Research
- Development projects
- Learning from projects
  - Realizing the value of technological assets beyond our own market
- Learning about customer, markets, uses

- Capabilities
- Intelligence
Coupling strategy to capabilities: fields of innovation

- Research
  - Leveraging employee’s ideas
- Absorbing from outside
- Feeding strategic process
- Implementing strategy
- Building strategy

Capabilities

Intelligence

- Development projects
- Learning from projects
- Realizing the value of assets
- Learning about customer, markets, uses
Current trends

Framing trends
- Globalization + specialization > leadership on a narrower scope
- Providing complete solutions to customer > integration of supplier’s inputs
- Teaming to build or access new markets
- Market of technologies, reshaping supply chains

Open innovation
- R closer to sources of knowledge (subcontracted, pooled)
- D closer to customer (decentralized in BUs) > complete, contextual solutions

Simultaneous exploration of technology and markets (© Gastaldi 2007)
- Impact on the steering, organization of research and HR management
Rationale for cooperation

- Access to most advanced science and technology
- Share risks
- Negotiate norms and standards
- Access to markets
- Explore user’s (potential) ‘needs’
- Realize the potential of technology
- Propose a new architecture of the supply chain
- Control technology and its evolution
- Benefit from thriving local ecosystems
- Benefit from thriving local ecosystems

Cooperation
Summing up

Managing innovation is about
- nurturing an inventory of capabilities that can be tapped by innovation projects
- generating and handling promising projects
- maintaining coordination and cohesion
  through
- Monitoring environment to understand what you need
- Developing a learning organization and managing knowledge
- Absorbing technologies from others
- Realizing the potential of these capabilities and found their renewal

Neither pure technology push nor market pull: concurrent exploration of technology and market
- Steering research: managing a project portfolio: balance BU/corporate, inside/outside
- Organization: Project vs. Expertise, Open innovation
- HR: promote networking, reward team players, encourage diversity and risk taking

Increasing cooperation of multiple kinds
- Access to technology, markets, standards, exploration of customer practices and latent needs, cost and risk sharing, rearranging the value chain,…
Discussion
Steering

Setting the budget of R-D, managing the project portfolio
- Difficult economic assessment of a project, no reliable ROI or EVA
  - New products, new technology, reusable knowledge, new concepts, feed-back on customers and users
- Analysts and finance people buy results rather than a good process (a new drug at approval stage) and benchmark you with the free riders
- Real option paradigm > nice concept but hard to implement

Trends in successful innovative companies
- Balance strategic flexibility vs. lasting commitment to develop core competences
- Involvement of CEO
- CTO in executive committee
- Manage portfolio of projects, positive and negative risk assessment
- Repeated, sustained innovation (not a single shot), lines of products
- New combinations of existing technologies, new concepts
- Concurrent exploration of technology and markets
- Going beyond customer’s expressed demands, looking at their own customers (in B2B)
- Shield radical innovation from short term stress for profitability
Balancing corporate and BU R-D, linking R-D and markets
- Involvement of Bus in corporate portfolio management
- Involvement of CTO in BU R-D management
- Balance of funding
- Budget for exploration

Project vs. technological or scientific field of expertise
- Projects efficient to improve time to market and integration
- Accumulation of knowledge in technical communities

Open innovation
- Platforms, common projects, clusters, ecosystem development
- Be clear on what can be shared and what cannot
HR management

- Promote networking behaviors, gatekeeping
  - Reward team players, beyond individual targets
  - 360°, bonus on collective achievements
  - Hire and develop T-profiles (broad and locally deep), gatekeepers

- Deal with knowledge workers
  - Act as an impresario or a coach rather than a directive boss
  - Ensure researcher are well informed on company strategic goals
  - Discuss targets, do not impose means (professional and libertarian culture)
  - Allow free exploration time, with ex post evaluation
  - Right level of interaction on exploration tasks (concerned but trustful mgt)
  - Encourage cultural diversity and channel the resulting tensions
  - Tolerate failure and deviance, encourage risk taking
Public policy concerns

Does innovation mainly come from

- Academia
- Small businesses
- Large firms

And which way should we focus on?

- Different, complementary innovations
- You need the whole ecosystem
  - But may temporarily focus on the weak link
What is management of innovation about?

Managing Research Programs

Supporting the company's development projects

Absorbing (acquiring and integrating) external pieces of knowledge and technology

Learning from projects

Feeding strategic thinking

Realizing the value of techno. assets

Dynamic management of an inventory of internal COMPETENCIES and technological assets

Monitoring technology and markets

Implementing strategy

Building strategy

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