Business models in Open Innovation and Commercialization – a static and a dynamic approach

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The static approach:
Understanding the role of BMs in OI
Technology has no value in itself
Value is determined by its BM

* **DYNEEMA: DSMs strongest fiber** (20 times stronger than steel)

- Customers are not interested in technical characteristics of the product
- Translate **product characteristics** into sales arguments
  = show value of the product in the customer’s value chain
  (e.g. Dyneema in fishing nets: stronger, smaller fibres, less resistance, less fuel costs, OR higher speed, higher fishing productivity)
- Make sure you can convince the whole value system the final customer (Dyneema in airbags)

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Why business models are hard to manage: Mapping across domains

**Business Model**
- target market
- value prop.
- key attributes
- value chain
- how paid
- value network

**Technical Inputs:**
e.g., feasibility, performance

**Economic Outputs:**
e.g., value, price, profit

Measured in technical domain
Measured in social domain
The Business Model

- Identifies a market segment
  - Users to whom the technology is useful and the purpose for which it will be used

- Articulates the value of the proposed offering
  - Value created for users by the offering based on the technology

- Focuses on the key attributes of the offering

- Defines the value chain to create and deliver that offering (+ complementary assets)

- Creates a way for getting paid
  - Cost structure and target margins

- Establishes the value network / eco-system needed to sustain the model

What is Open Innovation?

“Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively.”

Chesbrough, Vanhaverbeke, West

A Closed Innovation System

Science & Technology Base

Research Investigations

Development

New Products/Services

The Market - BM

Source: Henry Chesbrough

Current Market - \(BM_0\)

Internal Technology Base

External Technology Base

External research projects

Technology in-licensing

Technology acquisition

Venture investing

Technology Insourcing

OI: Growing new businesses and profiting from others’ use of your technology

Internal Technology Base

External Technology Base

Technology Insourcing

Licensing

Technology Spin-offs

Other Firm’s Market - BM₂

New Market - BM₁

Current Market – BM₀

Evaluation of business opportunities

High Attractiveness

Low

High Fit with DSM

Low

High

Low

Abandon
Donate
License or Sell
Joint Venture/Spin out
Develop New Business
Donate at Present Business

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The best BM for a technology?

- Glowing carpets: LEDs in carpets
  - What is the best application / market? Hotels?
  - JV with one carpet manufacturer?
  - Creativity: wisdom of communities
- Different BMs / application as a technology becomes less experimental
  - 3D TV
  - Quick detection substances in liquids: first not in medical applications but interesting for traffic controls

Non-consumers are the ideal initial target
The open innovation and commercialization

Company vision

- Identify strong innovations
- Use partnerships to accelerate R&D

External R&D sources
Internal R&D sources

Discontinuity

Identify potential markets

New
Existing
New

Breath of potential markets with similar BMs

Research → Development → Commercialization

Adapted from: A. Gaule (2006), Open innovation in Action

Open commercialization

Value added created by a value network:
group vs. group competition
The Flavr Savr tomato ripens on the vine – resulting in fuller flavor. It is modified so that it remains firm after harvesting.

The traditional tomato must be harvested while it is still green and firm so that it is not crushed on the way to the supermarket.

The traditional tomato is sprayed with ethylene after shipping to induce ripening.

Ripe and increased flavour + longer shelf live

Supermarket

Ripe but decreased flavour.

Supermarket

Two examples from Calgene: Flavr Savr tomato

Value proposition:
Better taste for 2.5 to 3.5 times the price

Fresh tomato market: $5 billion
Flavr Savr:
30% of premium + 15% premium of superpremium = $375 million. How realistic is this?

Motivation?
Why would they partner with Calgene?
Value proposition?

Lots of channel partners required

Why take on channel partners?
- to assure supply
- to reap retail margins
Two examples from Calgene: Bromotol Cottonseed (herbicide resistant)

- Consumers
  - Clothing
- Retailers
- Distributors / Manufacturers
  - Cotton
- All growers
  - seeds
- Calgene

No changes for these groups

Value proposition
- increased yield
- increased market share

Result:
- increased margin
- increased market share

Value constellations from a management point of view

Competing offerings
- Existing and new

VC-wide value creation
- Rel. attractiveness of product offering
- Configuration of VC
- Value drivers
- Etc...

Value distribution among VC-players
- Everyone should be better off than in competing offerings

VC-management
- External transaction management
- Supporting activities
- Specialized assets
- Etc...

Set up strategies
- Thin market problems
- Risk sharing (contracts)
- Etc...

Government
- E.g. environmental policy
License scheme of Bekaert & Continental
(technical standards)

100% 60%: compensation for licensing activities 40% 100%

- Supplier
- Client
- Other suppliers
- Other clients

Proposal:
- X = …% of net sales value of supplied product
- Supplier collects royalties
- Cross-license agreement between client and supplier implying:
  - Supplier to supply "other clients" at X%
  - "Other suppliers" to supply the client at X%
  - Supplier grants sublicenses to "other suppliers". The latter can supply to "other clients" at 2X%

The dynamic perspective:
Linking OI to long term growth
Linking OI to long term growth
Starting with:

Corporate growth strategy

Philip's objectives
Sales in 2005 30 billion Euro
5-6% CAGR
2-3% average organic growth in the next 5 years ≈ 3.1 – 4.8 billion Euro
10-15% operating profit

Profit & growth consequences new launches
Based on business launches of 108 companies

Source: Kim and Mauborgne – Blue ocean strategy
Corporate growth strategy

Growth
- Organic growth
- Acquisitions
- Venturing

Current applications / products

Future opportunities

Venturing as an integral part of the growth strategy

Growth
- Organic growth
- Acquisitions
- Venturing

Internal
- New Business Development
  Examples: Melapur, Solutech, PUFAs
- Venture capital funds
- Direct investments
- Spinning-in (e.g. DSM Biologics)

External
- With other companies or universities
  Examples: Aspartame, Dyneema, Stanyl

Alliances
Creating new businesses

Structuring dynamically new businesses

**H1:** Businesses are well established but competitive pressures increase and profits evaporate.

**H2:** Rapidly growing business; expected to contribute significantly to revenue and income in near future.

**H3:** Emerging businesses; cutting-edge technologies (e.g., 3D TV at Philips).
LT strategy at DSM:
Four innovation pockets

Societal trends
- Global networking
- Individualization
- Environment, health & safety awareness
- Age & World population growth

DSM Performance Materials
Oil Course Fall 2007

Strategic scope – DSM 2005-2010
Defining the EBAs
Selection criteria for EBA

- Field driven by global mega and technology trends
- Building upon DSM capabilities: market and technology
- Perfect fit with the corporate portfolio priorities
- Generate multiple business opportunities
- Positive impact on DSM profile
Organizing for ambidexterity: DSM Organization

Different time frames

- Business Groups:
  - Launching products to exploit unmet market needs
  - 1-4 years.
- Cluster NBD:
  - Extending business / technology into emerging spaces
  - 3-7 years.
- EBA’s/Incubator:
  - Exploring and developing options for the future
  - 5-10 years.
How to understand LT OI strategy?

1. Trends, customers techn. development
2. Enabling LT strategy
3. Searching for external partners
4. Corp. strategy formation process
5. Which capabilities to build?
6. LT opportunity recognition
7. CV, incubating, etc...
8. Strat. focus for internal & external venturing
9. OI contacts (e.g. universities, start-ups, etc...)

Which capabilities to build?

Enabling LT strategy

Searching for external partners

Corp. strategy formation process

LT opportunity recognition

CV, incubating, etc...

Strat. focus for internal & external venturing

OI contacts (e.g. universities, start-ups, etc...)

Implementing and organizing open innovation
Practicing Open Innovation

- Websites
  - http://www.openinnovation.net
  - http://www.openinnovation.eu
  - http://www.openinnovatie.nl
  - On-line open innovation scan

- Seminars
  - Customized management courses about OI
  - Cases and management tool development

- European Center for Open and Collaborative Innovation

- Masterclass CE and OI at High Tech Campus (24-28 November 2008)