

EXPERTISE IN TECHNOLOGY AND ECONOMICS

Towards Global Market-Driven Software Development Processes: An Industrial Case Study

Sami Jantunen, GSD 2006, May 23rd, 2006



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MARKET ORIENTATION (MO): DEFINITION

“Market orientation can be shortly defined as gathering, sharing, and using information about “the market” in order to make decisions.”

Mohr, J., S. Sengupta, and S. Slater Marketing of High-Technology Products and Innovations. Pearson Education Inc., New Jersey: 2005.

OVERVIEW OF MARKET ORIENTATION

FINDINGS FROM EXISTING LITERATURE

- MO has a positive effect on the company's performance dimensions (profitability, innovativeness, growth of sales,...)
- All organizational functions should participate in establishing a market-driven culture within a company.
- Several viewpoints to MO exist
 - Most of them focus on managerial and cultural aspects of MO
 - Only few studies focusing on MO in practice (market-driven software product development)

PURPOSE OF THIS RESEARCH

- To gain better understanding on the practical aspects of MO when developing software products into the global marketplace

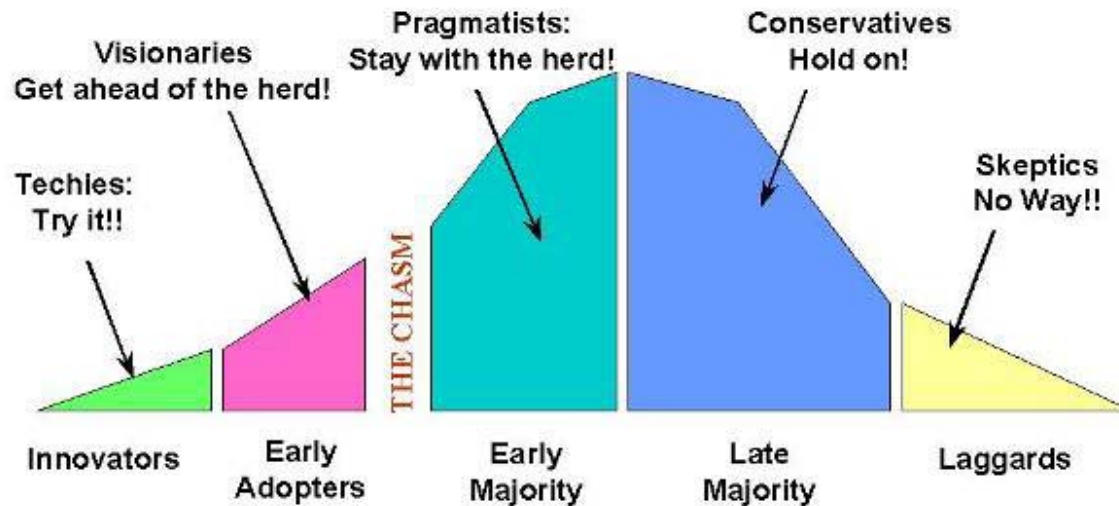
THE CASE COMPANY

(code-name: STRUCTURES INC.)



- Offers a product for structural building information modeling
 - Globally available. Sold in over 70 countries
 - Single product but offered to 4 customer segments
- Has faced a complicated product development environment
 - Motivated to become more attentive towards market information

DIMENSIONS OF COMPLEXITY: GLOBAL PRESENCE



Geographical regions:

- Are on different stages of maturity
- Have unique needs

DIMENSIONS OF COMPLEXITY: DIFFERENT CUSTOMER SEGMENTS



How to maintain the integrity of a product and:

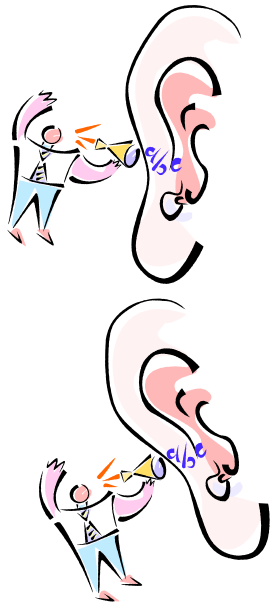
- Serve pragmatic segments and emerging segments at the same time?
- Secure strong position in one segment while trying to gain more competitive position in others?

RESEARCH METHOD

- Exploratory case study with one revelatory case
- Grounded Theory (currently proceeded to axial coding)
- Theme-based interviews
 - 9 persons with varying responsibilities interviewed
 - Recorded (total of 10 hours and 32 minutes) and transcribed to text
- Additional material related to Company, processes and product

ELEMENTS OF MARKET ORIENTATION

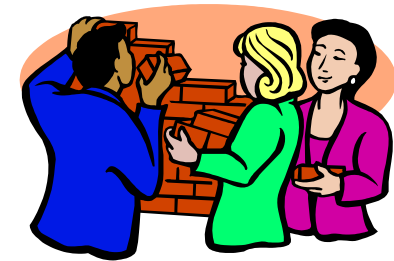
Sensing the Market



Making Sense of the Market



Acting upon Knowledge



SENSING THE MARKET

Sources of Market Information



**Listening the staff
on the front line**



Listening the periphery

SENSING THE MARKET

Examples of listening the staff on the front line

Listening while selling:

Salesman in a sales case



Pre-Sales engineer in a sales case



Listening while serving:



Training existing customers



Providing technical support



Listening the staff on the front line

SENSING THE MARKET CHALLENGES



Low contribution from sales:

"We have not yet succeeded in having the sales people systematically involved on eliciting customer needs. We receive, in general, very little information from that side."

-Product Manager, Structures Inc.



Customers are shortsighted:

"The customers typically give ... information only about the current situation (such as: this is not working, that is not working). It is very difficult to get visionary views related to the product from the customer."

-Manager, Structures Inc.

SENSING THE MARKET

Examples of listening the periphery

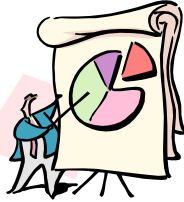
Analyzing changing technological environment



Analyzing competitors



Analyzing changing business environment



Analyzing the market place

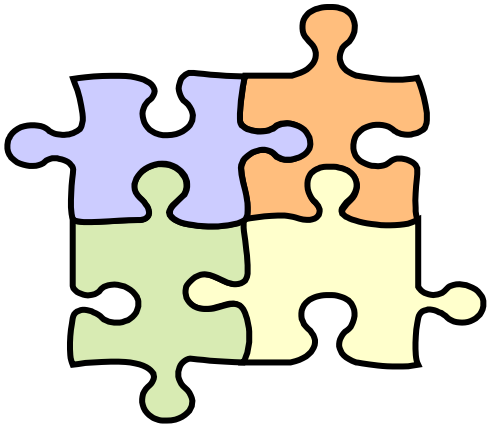


Analyzing adjacent segments



Listening the periphery

SENSING THE MARKET CONCLUSION



- Numerous sources of market information exist.
- Each of the sources can be considered as a single piece of a puzzle.
 - They are incomplete alone

→ In order to build superior ability to understand, attract and keep valuable customers, company needs to sense simultaneously several sources of market information

MAKING SENSE OF THE MARKET

- Classifying, sorting and simplifying the market information and distilling usable knowledge out of it
 - "Packing the shared knowledge base with undigested information is about as useful as reading an encyclopedia cover to cover"*
- Complicated process that requires diverse set of tacit knowledge
 - "There does not exist any equation that can determine the priorities of market needs correctly. It takes certain touch, hunch and experience to understand the priorities. This knowledge has just been built into the organization. [...] The more we have made business, the more we have gained this tacit knowledge."*

MAKING SENSE OF THE MARKET

Examples of needed viewpoints

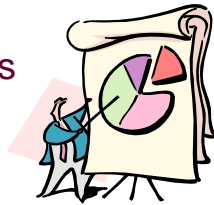
Technician, who knows what is technologically possible



Guardian, who protects the integrity of a product



Business Manager, who sets commercial targets



Geographical Experts, who brings the domestic knowledge of market areas



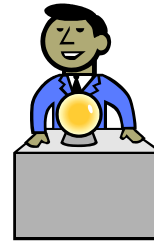
Finder of latent needs, who thinks beyond the imagination of customers



End user, who has the practical experience of a product



Visionary, who has the long term view of a product



MAKING SENSE OF THE MARKET CHALLENGES

Insufficient information makes prioritization more difficult

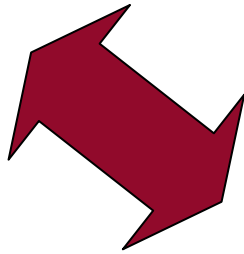
”Typical problem we are facing with market information is that the business implication behind the customer need is often missing. In such case, we have difficulties on prioritization. We might not be able to see that focusing on other request would actually benefit us much more. We have a horn of plenty on receiving market information, but understanding the priority of information often gets lost in the abundance of technical details.”

-Manager, Structures Inc.

ACTING UPON KNOWLEDGE RELYING ON THE MESSENGER



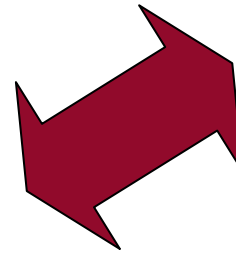
Sales



Product Management



R & D



ACTING UPON KNOWLEDGE

RELYING ON THE MESSENGER: Symptoms

- Ignorant employees

"We have had difficulties on informing the customers about the practical meaning of new product features."

-Product Manager, Structures Inc.

"Our marketing department has not been able to write anything related to the new product until the product has been implemented."

-Product Manager, Structures Inc.

- Misinformed employees

"The R&D department has only been able to see a planning window of one third of a year. Because of this, they do not know what features are to be implemented on the next version."

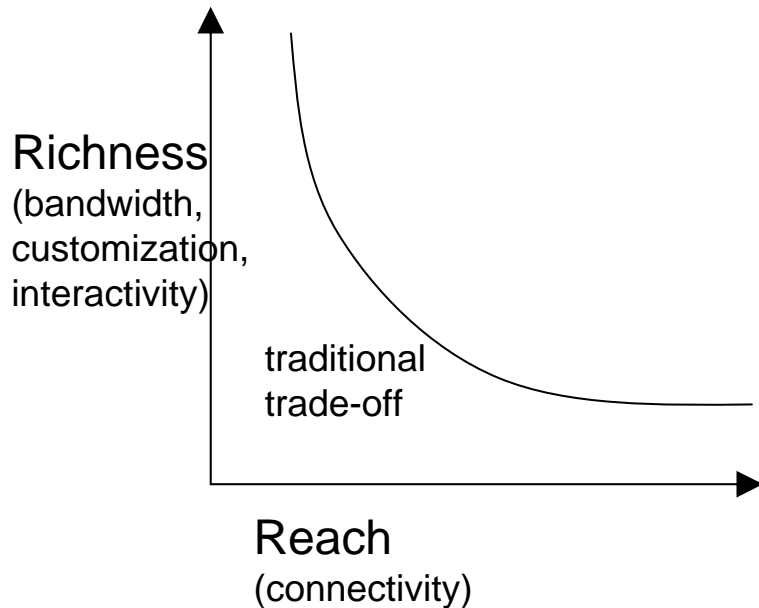
-Product Manager, Structures Inc.

"In many cases, knowing the plans for the future versions would have an impact on the design decisions. If we would know that a certain requirement is actually laying a foundation to something forthcoming, we would implement the requirement differently."

-Software Engineer, Structures Inc.

FOCUS AREAS

FROM RELYING TO THE MESSENGER TOWARDS BEING A PARTICIPANT



- Visible shift from clear-cut hand-off points of job assignments to active participation
 - More diverse skills (marketing, teamwork,...) needed from Software Engineers
 - Challenge to find optimal combination of participants

FOCUS AREAS

SEEING THE FOREST FROM TREES (USE OF ROADMAP)

- **Roadmap as a planning tool** that helps in planning the content and the schedule of the forthcoming releases.
- **Roadmap as a market sensing tool** that helps in opening the discussion with potential and existing customers in order to get early feedback about the chosen direction of the product.
- **Roadmap as a communication tool** that helps in taking the plan of the next release into action and in communicating the forthcoming features and business implications behind them to all relevant stakeholders.

FUTURE WORK

Sensitizing the Market

How to act upon knowledge?

- What knowledge is important to communicate
- How the knowledge can be effectively communicated?
- Who should be informed?



Market information collected?

- In what way?
- By who?



How to utilize market information?

- What processes are needed?
- What should be the outcome?
- What types of knowledge is needed in decision making (who should participate)?
- How to increase innovativeness in a company?