Triple Helix 2002
Track 5. Rethinking the role of professions in knowledge society.

How role perception and role attribution hinder successful university-industry and university-government interaction in cooperative research and development projects.

Main author: Walter Aigner, HiTec Marketing, Vienna Austria;
Email: wa@HiTec.at Tel ++4317182530 Fax: ++4317182530-50

Abstract:
Commercialization of new technologies seems to be especially slow in Europe. Some technologies' marketable outcome lags far behind what research funding agencies expect. This paper investigates GUI-related problems (government-university-industry) in commercialising remote sensing technologies.
While research and innovation management in large European collaborative research projects seems to have significantly improved in the last decades there remains room for further improvement from adapting new roles and hybrid organisational models.
Data source and study setting:
In the eyes of the European Space Agency (ESA) information services from satellite observation sources face severe adoption problems in Europe. Therefore in 2002 ESA has commissioned a study to investigate how research-communities can better interact with government communities. In most research projects there is a multitude of professions involved on both the researcher side as well as on the user side. Users of services from remote-sensing technologies are mainly regional and national governments.
The study approach was action-research-oriented participant observation and focused upon actual practices rather than processes (Brown, Wenger). The interdisciplinary study team was present in all user-requirements elicitation efforts of two ongoing remote sensing projects. These where typically presentations of early prototypes, interviews, seminars and two-day workshops. Qualitative interviews with representatives from all three communities (research, industry and government) helped to derive implicit role attribution effects.
The study unveils more than just dyadic interface problems in exploiting a consortium's research outcome.
As a result of these subtle perceptions and role-definitions the entirety of the typically modular process in research projects seems to be a main problem.
This paper reflects material from the extensively documented case studies as well as the reactions of researchers and governmental users. It suggests a toolkit of conceptual models for effective communication in technology related GUI-interactions. The specific ways how traditional professional roles fail to overcome non-effective communication in commercialising technologies are also documented and discussed.

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session: university - industry linkages

How role perception and role attribution hinder successful university-industry and university-government interaction in cooperative research and development projects.

Walter Aigner

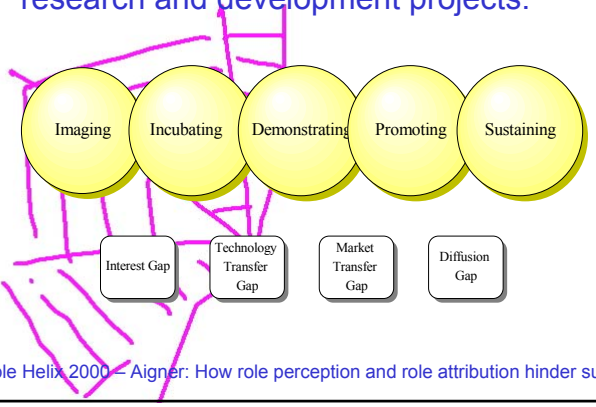
HiTec Marketing, Vienna Austria;

Email: wa@HiTec.at

Tel ++4317182530 Fax: ++4317182530-50

What is role-attribution?

How role perception and role attribution hinder successful university-industry and university-government interaction in cooperative research and development projects.



Linkages to Philippe Laredo's keynote

- We here look for existing bridges instead of forcing new ones – existing networks of academics
- Newly emerging multitude of public authorities who all have to find a role in the system
- The challenge to successfully identify groups of people who could be funded
- The importance of locally rooted universities

BREAKING BOUNDARIES • BUILDING BRIDGES

Linkages to other papers in our session

rethinking the role of professions
university - industry linkages

- Chair: Deborah Savage
- Rewriting the 'Research Assistant' in an Era of Innovation & Knowledge Jane Hobson, Gar Jones, Elizabeth Deane
- Faculty Outcomes from Industry-University Collaboration: A Multivariate Predictive Study. Beth M. Meagher, Denis O. Gray

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Context of the problem

Situation in Europe:

- GMES and Remote Sensing applications in the market are far 'behind' the US, India, China.
- Reframing of research funding for market development ('reality check+')

Complication:

- Most of this process is driven by research institutions
- Potential users are governmental organizations

Question:

- How can you increase user-involvement and 'develop markets' within traditional roles of researchers?

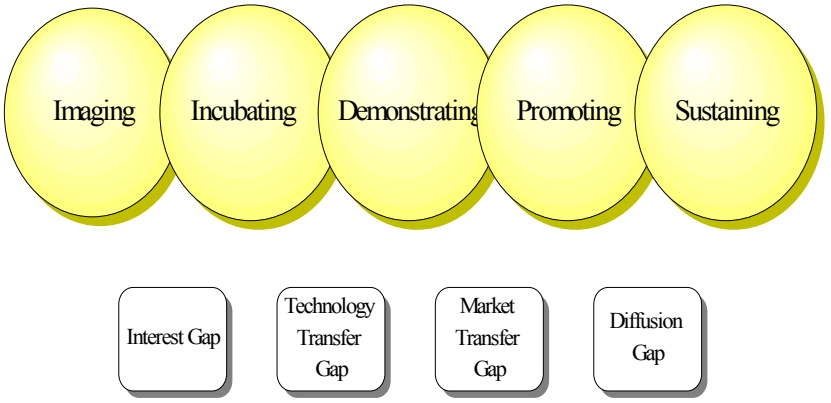
Outline

1. The problem seen through different research traditions
2. Role Conflict for researchers in Innovation research
3. Our project (Data-Method-emerging knowledge)
4. Illustration – statements / micro-stories
5. Consequences for (accompanying) innovation research
6. Managerial implications
7. Conclusions – for our session

The problem seen through different research traditions

1. Alignment of technology and structure through roles and networks (Barley; 1990)
2. Practice: The Social Life of Information – Brown/Duguid
3. User Involvement in Innovation Projects (information processing model) (Gales 1995)
4. Technology Communities and Innovation Communities (Lynn 1997)
5. Commercialising Technologies (Jolly 1997)
6. Interface between Research and Marketing (Gupta; Souders; ...)
7. Customer Centred Selling (Jolles)
8. Informal Social Network (Cross 2002)
9. Entrepreneurial University

Commercialising Technologies (Jolly; 1997)



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Role Conflict for (social) researchers in Innovation research

1. Clinical researcher

- **Quality of interaction**
- **Helper aspect**
- **'client's' problems have priority**
- **Might need to abandon research for the sake of the 'client'**

2. Ethnologer

- **wants to understand and describe**
- **Tries to avoid influencing the organisation**

3. GMES engineer

- **Capitalize on knowledge=same task new software / hardware**
- **Room for serendipity**

(innovation in the making;
Darsø, 2001; Guss, 1989; Schein, 1987)

Successful co-operations

In this context of explicit European Technology Programmes

1. Innovations, applications, services, products increase effectivity in terms of users (!)
2. General outcome / impact of projects becomes more visible and recognizable – without ex-post public relations
3. Researchers find new and interesting fields for personal growth while maintaining their excellence in their respective field of activity and get a fair share of the feedback loop

Our project ‘increased user-involvement in GMES‘

1. Data
2. Method
3. Results
4. Limitations
5. Problems during the research project
6. Surprises
7. Emerging new not yet explicit knowledge

Extremely wise principal in Austria

Emerging new not yet explicit knowledge

- It works – without Marketing or brainwashing
- They (researchers) may be right in their ‘resistance’
- Nobody (GUI) knows or thinks in terms of the Triple Helix
- ‘peripheral-experts’ rather need encouragement
- Reduce impact of non-reflected role-attribution wherever possible (integrate non-for-profit boundary role spanners)
- Allow professional(?) self-regulation to extend / emerge
- Make arrangements for addressing typical blind spots of professional self-regulation
  - Task-oriented / time-oriented hierarchies in governmental user organizations
  - ‘organizational-requirements’ / organizational barriers
  - Market development versus acquisition for innovative engineering

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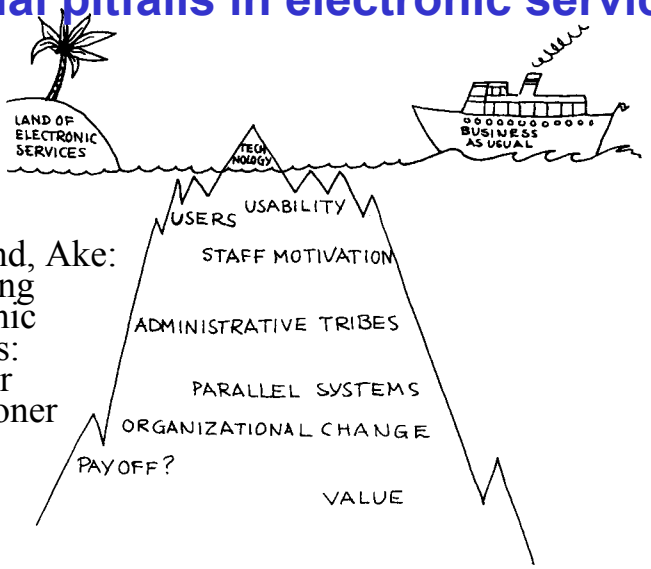
Consequences for Innovation research

- Gathering (bottom-up) actually action relevant categories, filters, concepts (even professional self-regulation)
- Multi-level analysis instead of linear 'surface' impacts
- Social Network Analysis
- Networks and Communities of Practice do not go together with 'Relationship Marketing'
- Process of opportunity framing / service concept definition / fuzzy innovation front end in truly excelling academic research communities
- Raise awareness for modern innovation theories on policy level
- Explicitly integrate hybrid organizations

Usual pitfalls in electronic services



Grönlund, Ake: Managing Electronic Services: Springer Practitioner Series, London 2000.

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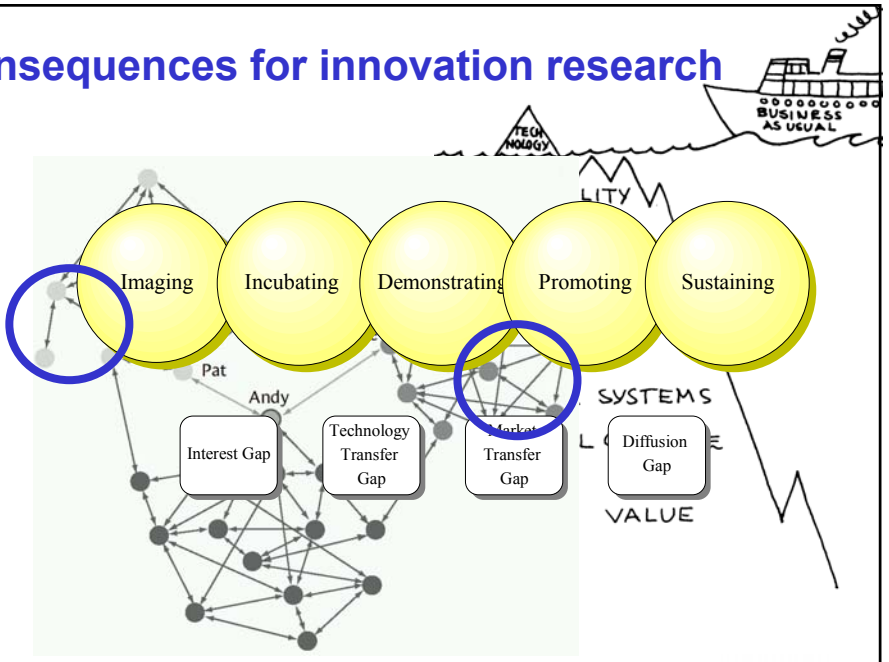
Consequences for innovation research



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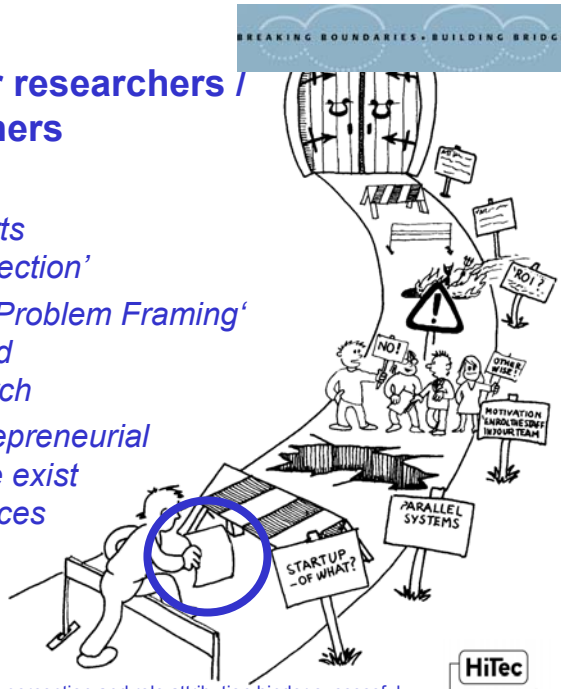
Consequences for researchers / teams of researchers

- *Peripheral Experts rather need 'protection'*
- *Interactive GUI-,Problem Framing' is part of qualified academic research*
- *Even within entrepreneurial universities there exist alternative practices*



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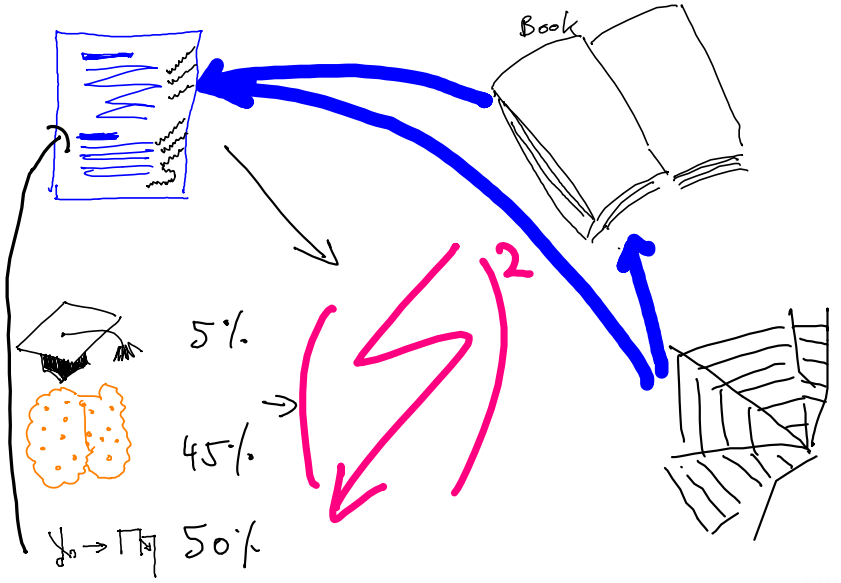
Conclusion



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Questions to discuss

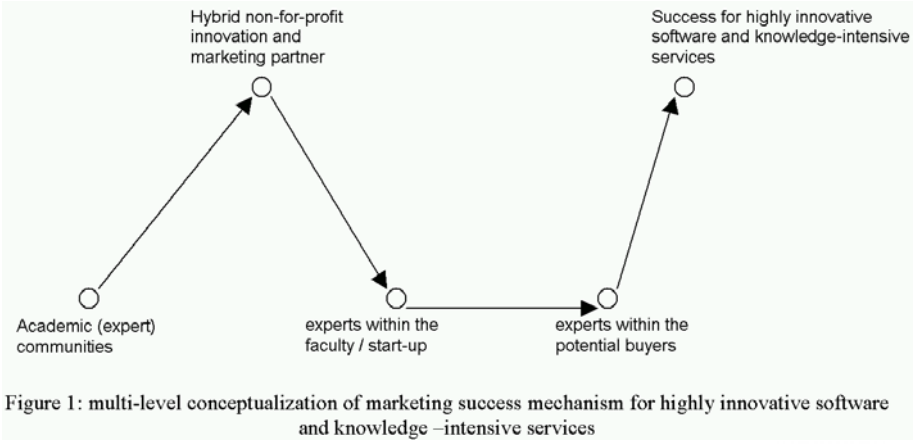
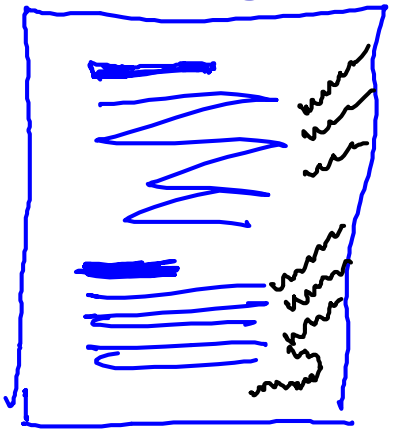
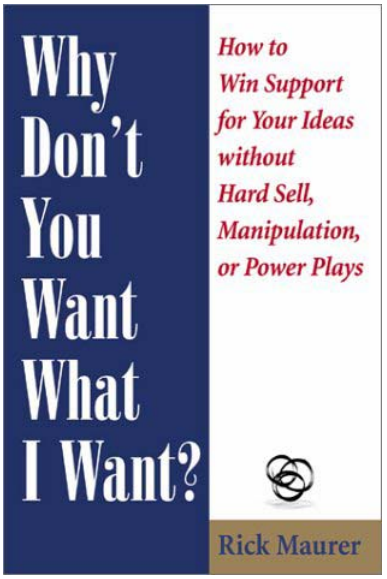


Figure 1: multi-level conceptualization of marketing success mechanism for highly innovative software and knowledge –intensive services

Suggest some remarks for the margin



The problem seen through generic eyes



The problem seen through traditional eyes 1

BREAKING BOUNDARIES • BUILDING BRIDGES

The Alignment of Technology and Structure through Roles and Networks

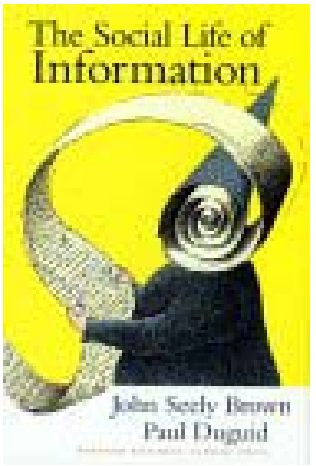
Stephen R. Barley
Cornell University

This paper outlines a role-based approach for conceptualizing and investigating the contention in some previous research that technologies change organizational and occupational structures by transforming patterns of action and interaction. Building on Nadel's theory of social structure, the paper argues that the microsocial dynamics occasioned by new technologies reverberate up levels of analysis in an orderly manner. Specifically, a technology's material attributes are said to have an immediate impact on the nonrelational elements of one or more work roles. These changes, in turn, influence the role's relational elements, which eventually affect the structure of an organization's social networks. Consequently, roles and social networks are held to mediate a technology's structural effects. The theory is illustrated by ethnographic and sociometric data drawn from a comparative field study of the use of traditional and computerized imaging devices in two radiology departments.*

Few organizational scholars would dispute the claim that the structures of organizations and occupations are related to the technologies they employ. Until quite recently, however, organizational theorists have largely ignored the dynamics of technical change, the question of how and why such relations arise. Instead, most have adopted the perspective of contingency theory.

61/Administrative Science Quarterly, 35 (1990): 61–103

The problem seen through traditional eyes 2



The problem seen through traditional eyes 3

ELSEVIER

J. Eng. Technol. Manage. 12 (1995) 77–109

Journal of ENGINEERING AND TECHNOLOGY MANAGEMENT JET-M

User involvement in innovation projects: Toward an information processing model

Lawrence Gales *, Dina Mansour-Cole

College of Business Administration, Dept. of Management, University of Cincinnati, P.O. Box 210165, Cincinnati, OH 45221-0165, USA

The problem seen through a community eye

ELSEVIER

J. Eng. Technol. Manage. 14 (1997) 129–145

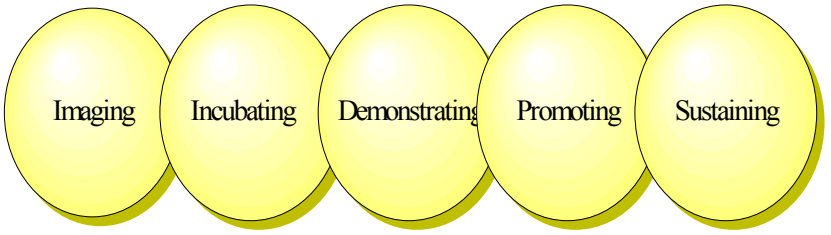
Journal of ENGINEERING AND TECHNOLOGY MANAGEMENT JET-M

Technology communities and innovation communities

Leonard H. Lynn *, John D. Aram, N. Mohan Reddy

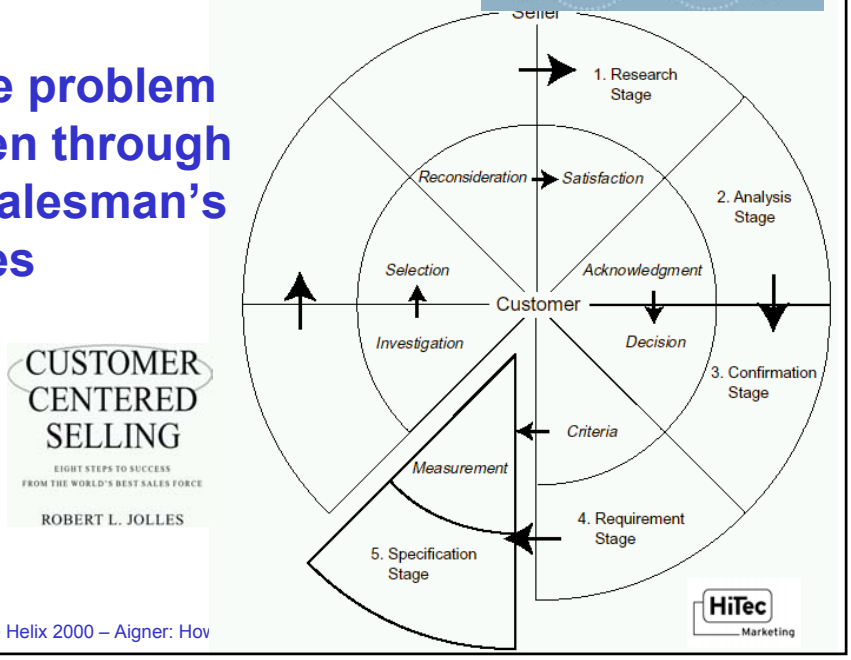
Weatherhead School of Management, Case Western Reserve University, Cleveland, OH 44106, USA

The problem seen through a maturing technology / commercialization eye



Interest Gap | Technology Transfer Gap | Market Transfer Gap | Diffusion Gap

The problem seen through a salesman's eyes



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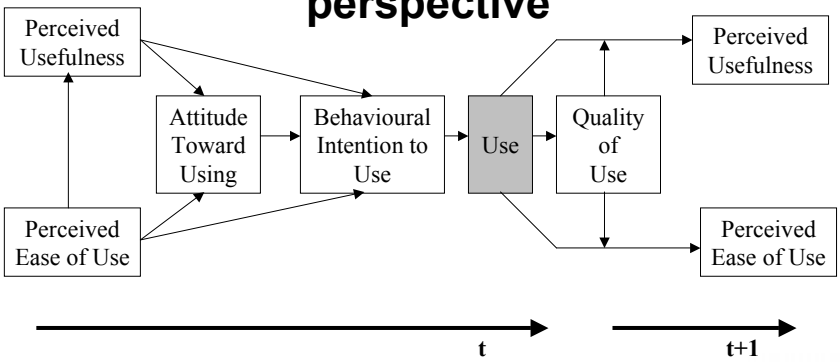
BREAKING BOUNDARIES · BUILDING BRIDGES

Emerging new way of looking at User requirements an individual and an institutional perspective



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New way of looking at latent / future service needs

Assessment of hidden and future customer needs in Finnish business-to-business companies

Hannu Kärkkäinen,[1] Petteri Piippo,[2] Kaisu Puumalainen[3] and Markku Tuominen[1]

[1] Dept. of Industrial Engineering and Management, Lappeenranta University of Technology, Box 20, FIN-53851 Lappeenranta, Finland
[2] R&D Center, Valtra Inc., Box 557, FIN-40101 Jyväskylä, Finland
[3] Telecom Business Research Center, Lappeenranta University of Technology, Box 20, FIN-53851 Lappeenranta, Finland

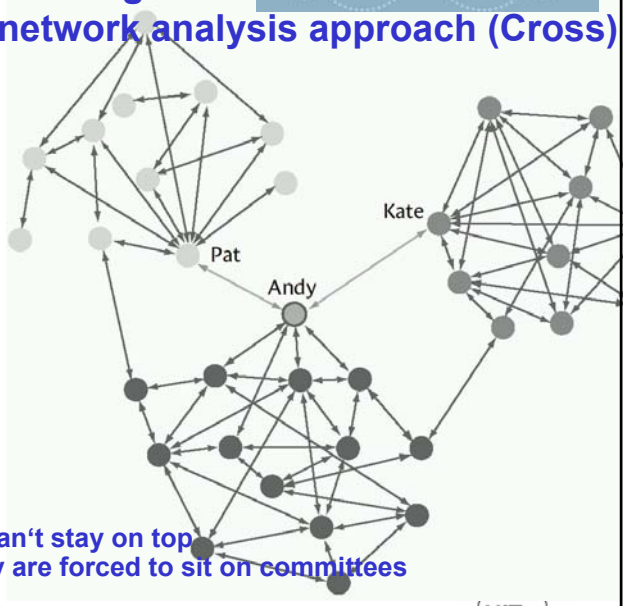
R&D Management 31, 4, 2001. © Blackwell Publishers Ltd, 2001.

The development of new products should be based on the needs expected to exist even several years ahead – at the moment of market introduction and during the whole lifecycle of the product. To develop successful new products in the toughening business environment, companies should be able to surpass customers' expectations and to assess emerging customer needs proactively. Early, thorough understanding of the customer's real needs, including the assessment of hidden and future customer needs and requirements, plays a very important role in the successful development of new products.

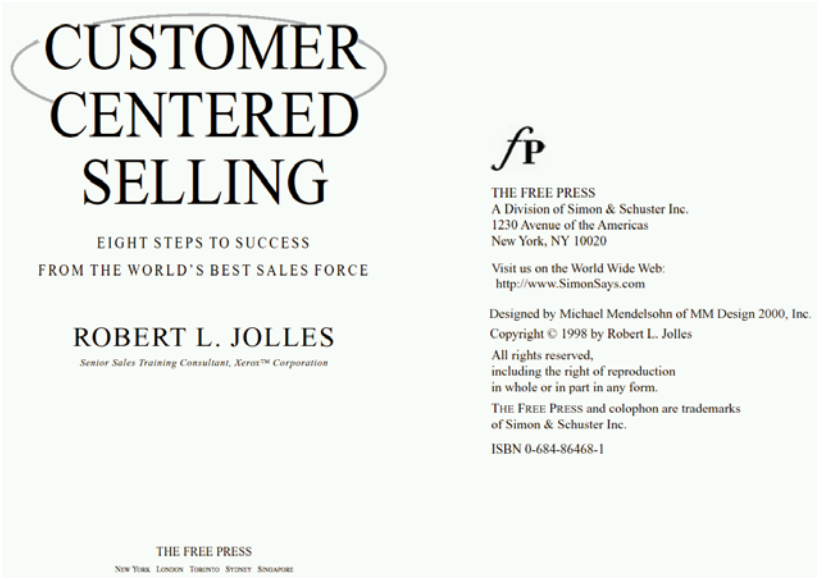
The purpose of our paper is to study the assessment of new (hidden and future) customer needs for product development in Finnish business-to-business companies. We have carried out a survey in 93 Finnish business-to-business companies and SBUs to study their common problems in the assessment of unrecognized customer needs and potentially effective ways in clarifying new customer needs and dealing with important problems. On the basis of the results, we propose several possible ways to facilitate the assessment of unrecognized customer needs.

The problem seen through a generic informal network analysis approach (Cross)

- Peripheral expert
- Connector
- Boundary Spanner
- Information Broker



Peripheral expert – they can't stay on top of what they do when they are forced to sit on committees



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FROM THE WORLD'S BEST SALES FORCE

ROBERT L. JOLLES

Senior Sales Training Consultant, Xerox™ Corporation

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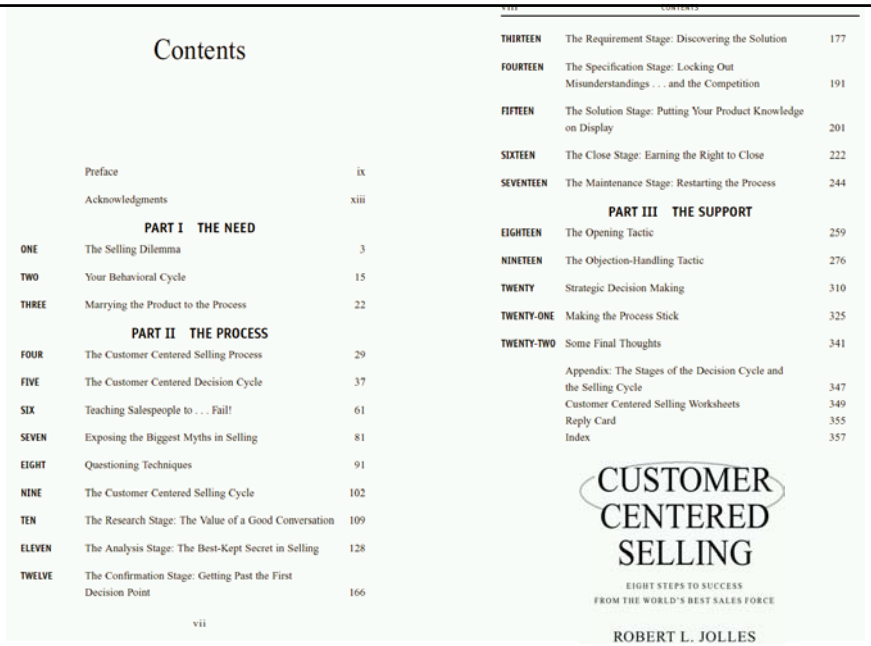

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Walter Aigner, wa@HiTec.at
++43 1 71 825 30 15

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