

Who will join and who will decline?

An analysis of factors predicting a firm's decision to join a university-based industrial consortia

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Study Purpose



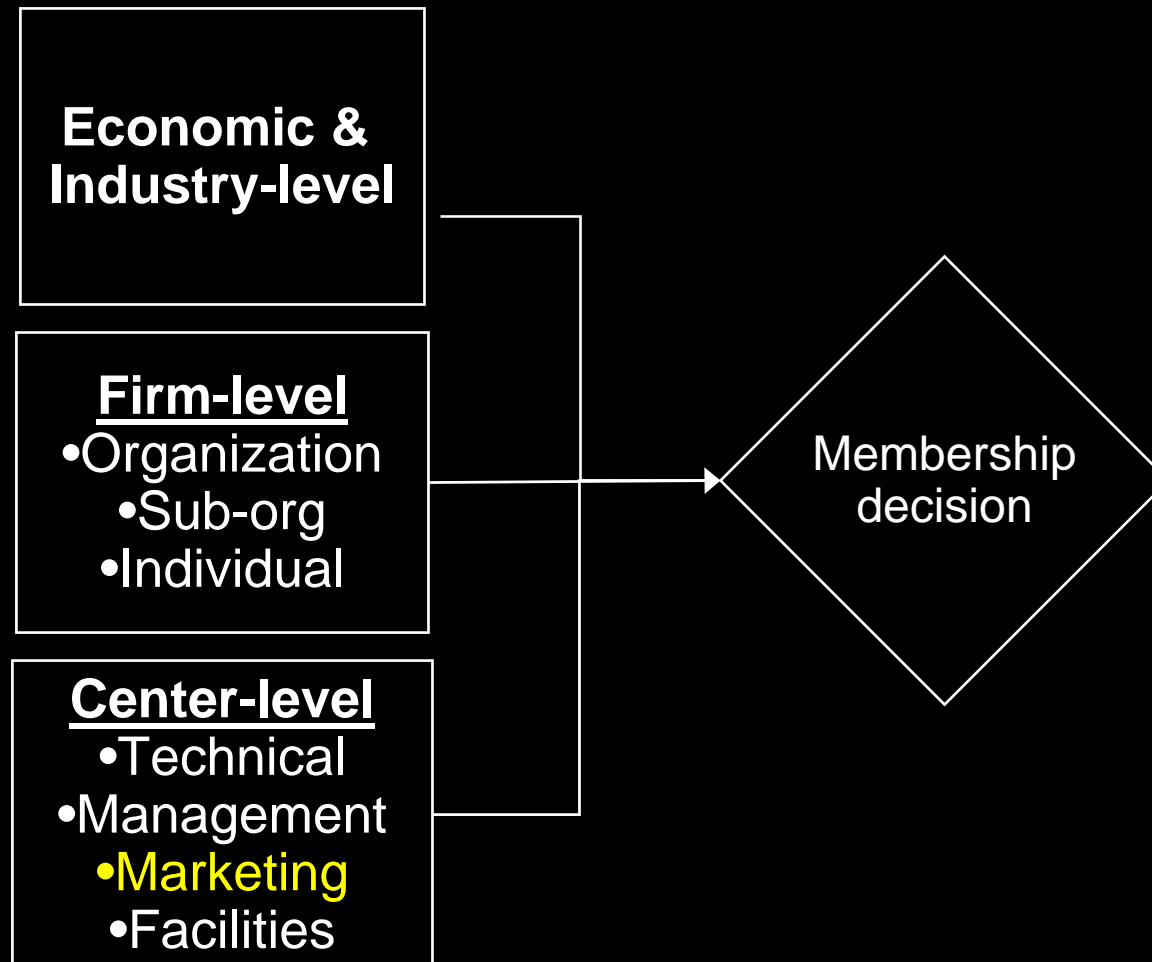
- Help center directors and others understand which firm characteristics (sub-organizational and personal) and center marketing approaches have the biggest impact on a firm's decision to join a center, so that the center can:
 - More clearly define the target market
 - Adjust the marketing approach
 - Structure the research program to optimize industry support
- Add to the scholarly understanding of the factors that support and/or undermine cooperative research

Study Plan

1. Literature Review → ➤ Ongoing
2. Assessment of marketing practices at NSF-supported cooperative research centers → ➤ Complete
3. Qualitative interviews with industry representatives: joiners & decliners → ➤ Wrapping up
4. Quantitative survey of industry representatives → ➤ Design begins this Fall; assessment begins early next year

Membership Factors Model

Factors at different levels influence membership decisions



Center Marketing Study- Summary of findings

Relationship marketing model application



Key Factors

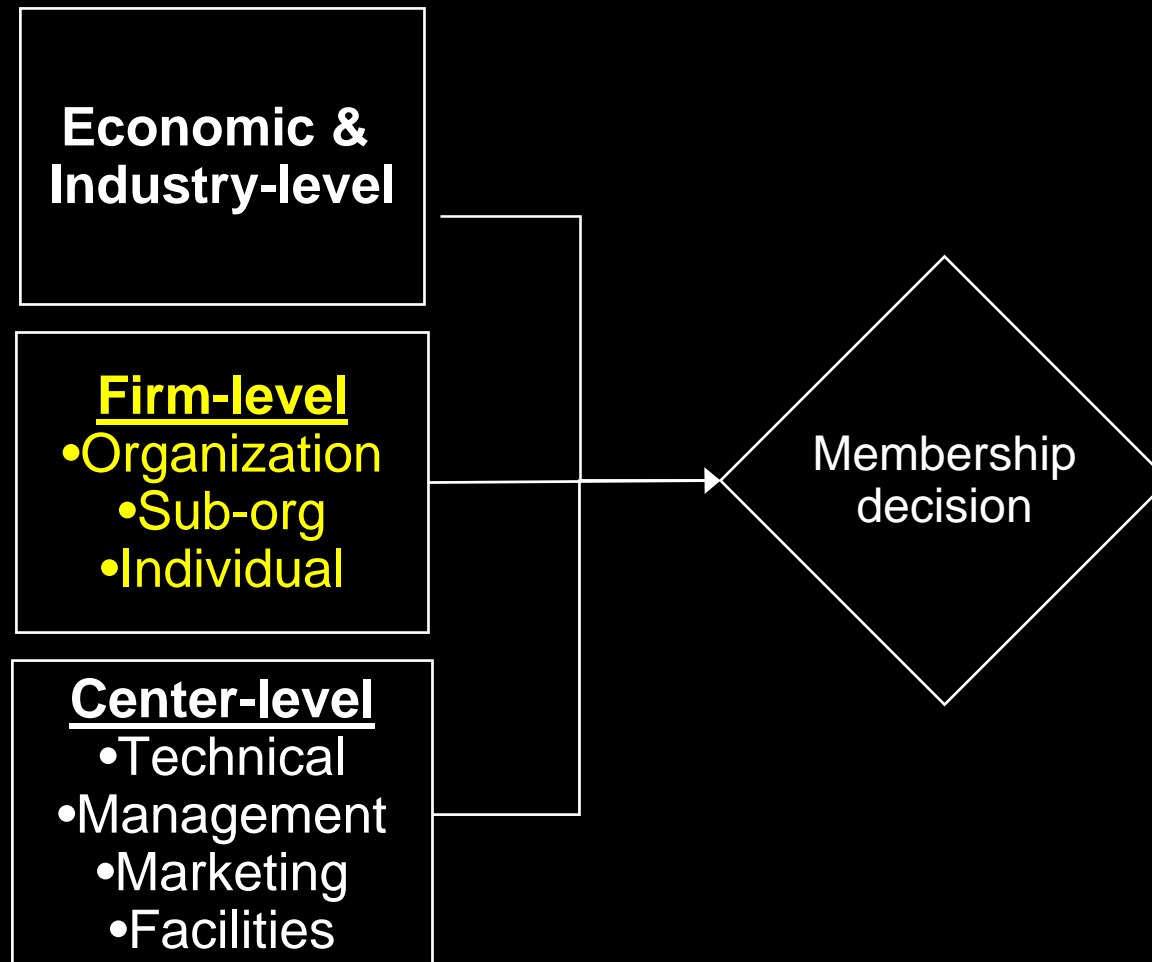
- Director experience
- Recruiting budget
- Relationship networking
- Conference & tradeshow presentations
- Involving other site stakeholders
- ? Recruitment strategy

- Involving other site stakeholders (consultant)
- Face time
- Visiting the organization
- Hosting visits to the center

- Demonstrating technical relevance
- Future technology transfer
- Justifying benefits relative to costs
- Neutralizing IP concerns
- Facilitating within firm decision making

Membership Factors Model

Factors at different levels influence membership decisions



Membership Decision Study



- Purpose:
 - To identify organizational, suborganizational and individual level factors that predict a firm's decision to join/not join an IUCRC
 - » Shed some light on industrial factors that might affect decision
- Design
 - Known groups multiple case study: joiners vs. decliners
- Approach
 - Solicit nominations of recent joiners/decliners from local directors
 - » Target N = 10 joiners; 10 decliners
 - Unstructured → Semi-structured taped telephone interviews
 - Multiple case study content analysis with pattern matching, etc.

Sample



- Progress (23 contacts)
 - 10 completes (6 joined, 4 did not join)
 - 2 outright refusals
 - 7 no response to multiple attempts
 - 4 expressed interest but still unable to schedule
- Target: 20 interviews

Variable Domains



- Topics covered in the interviews
 - Position and background
 - Responsibilities regarding external partnerships
 - Decision making process as relates to IUCRC
 - » Initiation
 - » Milestone events leading to decision
 - » Roles/responsibilities of those involved
 - » Decision criteria
 - Universities in overall R&D strategy

Today's Highlight



- Preliminary thoughts on membership decision making process
- Emergent IUCRC Business Model

Initial Sample



Company	Status	Contact title
Construction, small, private	Join	Product group director
Semiconductors, small, international	Join	R&D Director
Paper, Large, public	Join	Manager of sponsored research
Aerospace, large, public	Not join	Director of Engineering
Communications	Not join	Director-level, Systems engineering
Chemicals, large, public	Not join	Senior research fellow
Textiles, start-up, private	Not join, but engaged with Center	Owner and VP of R&D
Semiconductors, large, international	Joined, dropped out, did not return	Director-level, technical support function
Specialty chemicals, large, international	Joined, dropped out, did not return	Project leader, Performance Materials
Semiconductor, mid-size, public	Joined, dropped out, joined	IP Manager

Decision process: Initiation

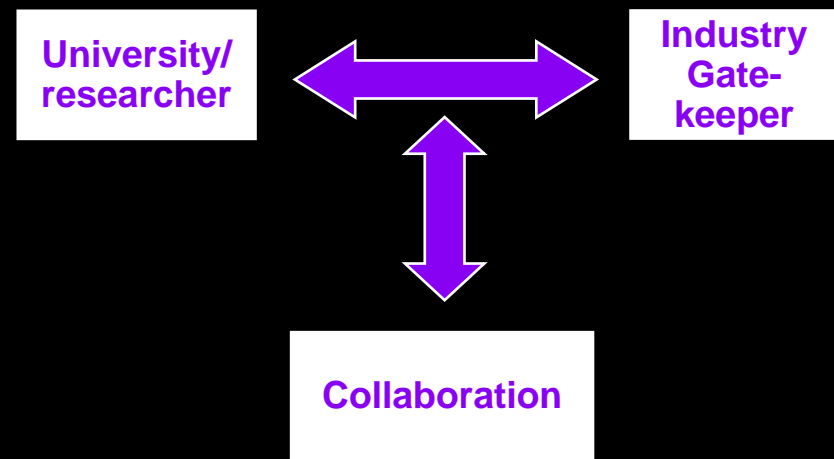


- Eight out of 10 interview contacts reported a previous, non-center relationship with the Center Director or the University
- Cases of existing relationships:
 - Organization had R&D center near university. R&D manager had been networking with local university researchers, who extended invitation to join the Center. (mid-size, public semiconductor firm)
 - Contact and Center Director had met at scientific conferences (both had served as presenters); Contact invited Director to speak at his organization; Director later sent marketing materials to organization members.
- Case of non-existing relationship:
 - US sales manager discovered the Center and informed the R&D Director (contact) based in Europe); Contact did Internet research on Center, then invited Center to speak at their US office staff meeting.

Network undercurrents

Dynamic interplay between universities and industry

- Emergence of informal linkages
- Ongoing exchange
- Opportunities emerge
- Evaluation
- Acceptance or rejection of formal linkage
- Engage in formal partnership
- Ongoing evaluation
- Termination
- Return to informal linkages



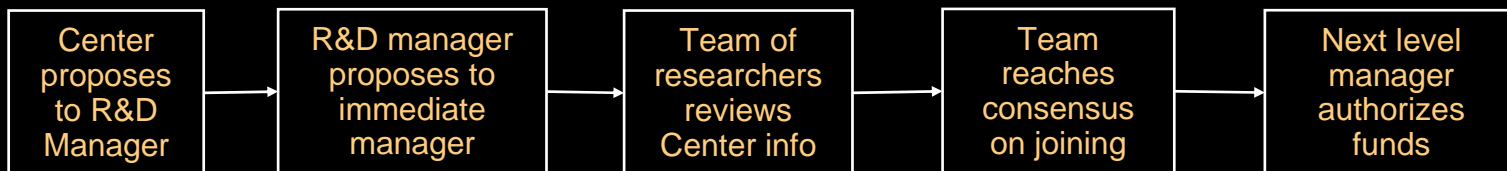
Decision process: Milestones

Decision process milestones following initiation

- Case: Non-joiner (Large aerospace firm)

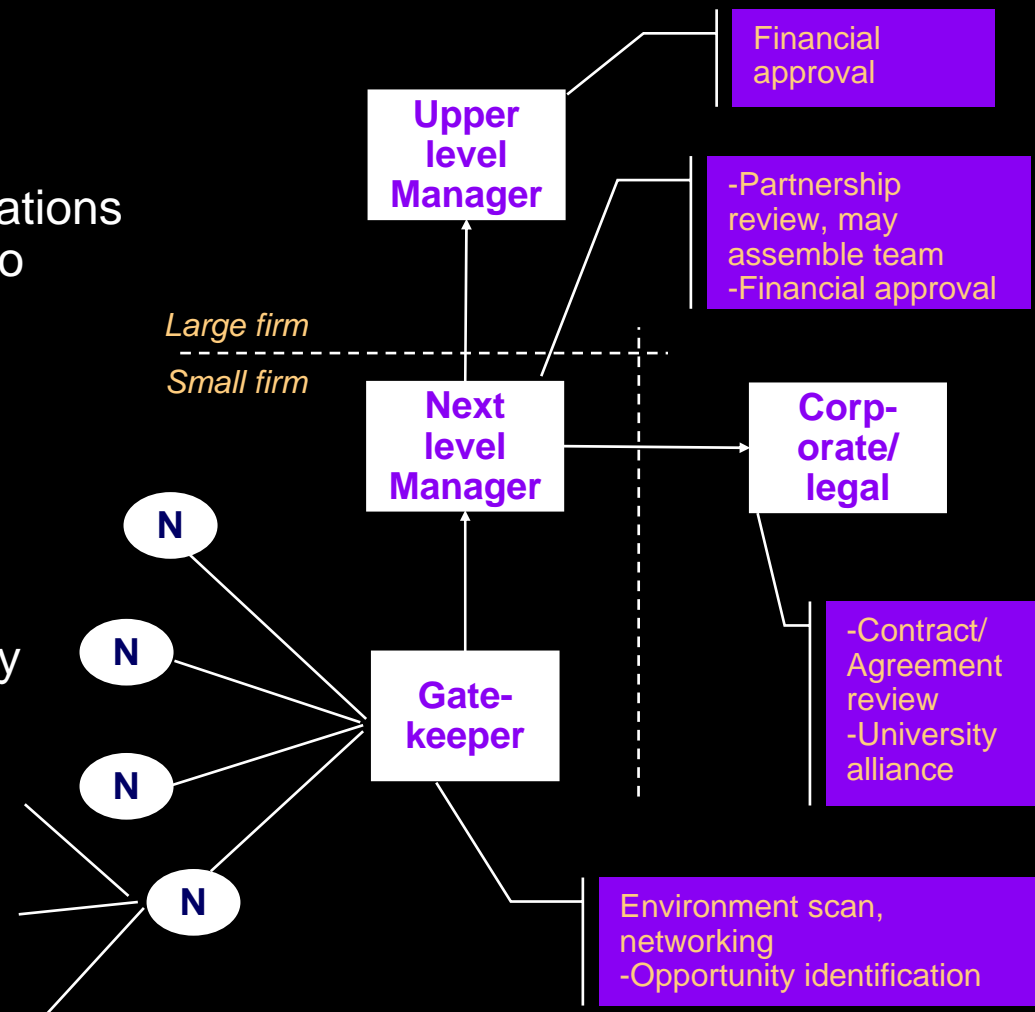


- Case: Joiner (Mid-size semiconductor firm)



Decision Process Overview

- Gatekeeper establishes and maintains relationships with universities and researchers
- Potential projects or collaborations are identified and proposed to immediate manager
- If accepted, then additional approvals may be required:
 - Financial
 - Legal
- Return on investment is a key criteria for most firms
- For smaller firms;
 - No formal role
 - No formal process



IUCRC Business Model



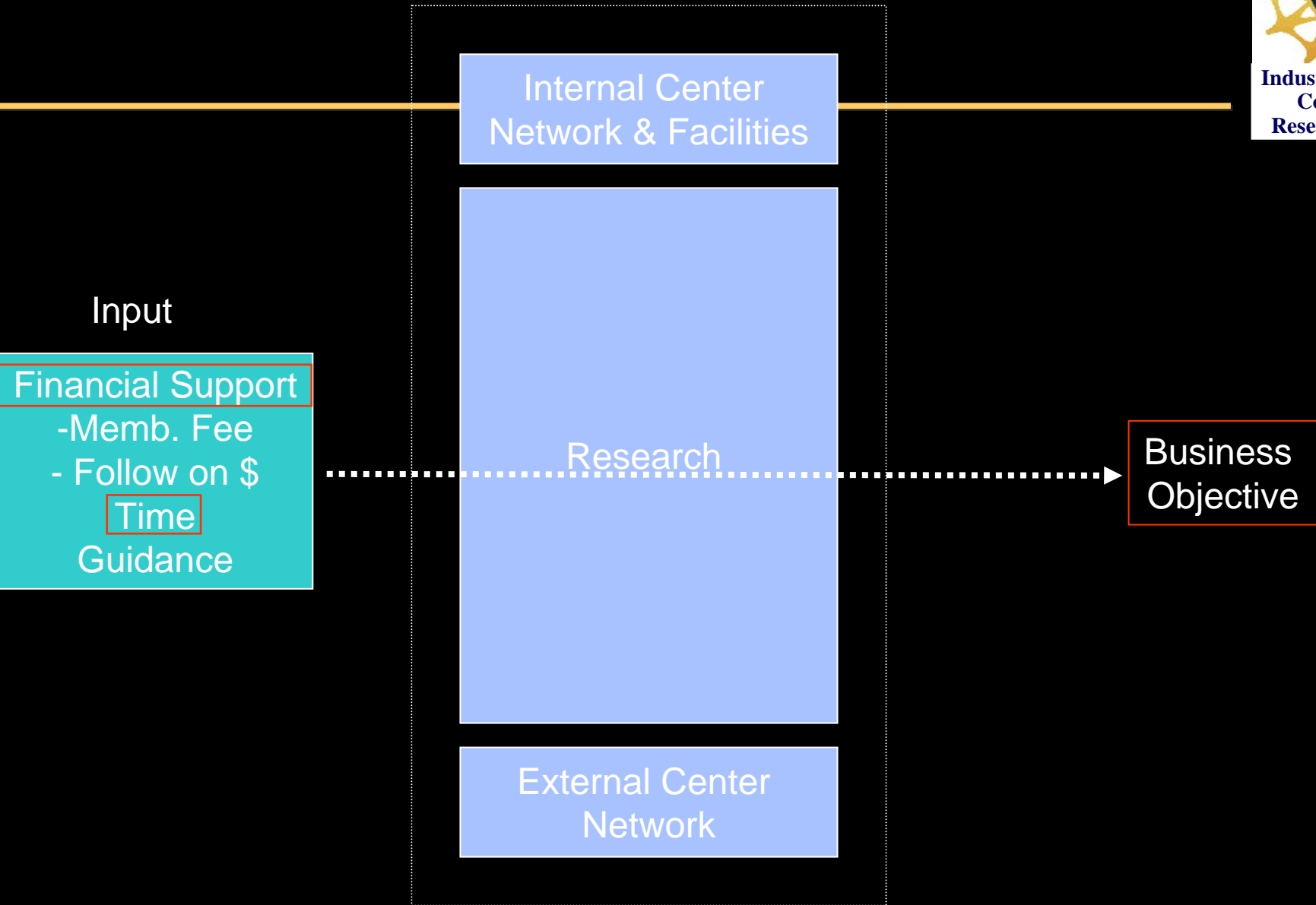
- Want to understand what factors influence the decision to join/not join
- In parallel with this study have been working on an “IUCRC Business Model”
 - IAB member said he needed a “business model” to convey the center value proposition; challenged me to develop one
 - Model explains what the member gets or might get from participation
 - Emergent model
- Proposed business model draws from our current study and earlier studies

Assumption



- IUCRC provides an opportunity to access a portfolio of benefits
 - Individual member companies tend to weight the significance of specific benefits differently
 - » Firm A might want something very different than Firm B
- Value obtained by a member depends in large part on the investment they make in the center to obtain their desired benefit

IUCRC



IUCRC

Faculty, Students and
Extended Networks;
Facilities

Internal Center
Network & Facilities

Research

External Center
Network

Highly Leveraged (~20-1)
Multidisciplinary
Research Program

Other members
(competitors,
supply chain,
customers,
suppliers)
regulatory agencies

Input

Financial Support
(Memb. Fee +)
Time
Guidance



IUCRC



Exceptional Graduate
Students

Informal Consulting

Entrée to Other
Scientists

One-of-a kind
Facilities

Research

External Center
Network

Strategic
reconnaissance
and alliances

- Ideas & Feedback
- Enhanced recruitment of new employees
- Broadened scientific network
- Access to unique Facilities
\$???

Consensus on Industry
Problems/Issues
Identify/Influence
Partners & Supply
Chain

\$???

Internal Center
Network

Not relevant to
this firm

Near
core
compet-
ence

Very relevant, would
do yourself within 1-2
years

Research
Amplification

Highly relevant, would
like to do if you had
more time or money

Emerg-
ing/
Competitive
Tech.

Outside core
competence but might
be helpful or
destructive

External Center
Network



Internal Center
Network

Near/
core
compet-
ence

Very relevant, would
do yourself within 1-2
years

Cost avoidance
~\$200K
Center IP

Research
Amplification

Highly relevant, would
like to do if you had
more time or money

Dead ends to avoid
Shortened/accelerated
progress on current projects
Promising new areas or paths
to pursue
IP inside firm
\$?????

Emerg-
ing/
Competitive
Tech.

Outside core
competence but might
be helpful or
destructive

Anticipate and respond to
transformational or destructive
Technologies
\$?????????

External Center
Network



IUCRC

Internal Center Network

Near Core Competence Research

Research Amplification

Emerging/Competitive Technologies

External Center Network

- Ideas & Feedback
- Enhanced recruitment of new employees
- Broadened scientific Network

Equipment use

Proximate

Near

Later

- Early access to ...
- New knowledge
 - New analytical tools and methods
 - Tacit knowledge about techniques
 - IP within Center

- R&D
- Dead ends to avoid
 - Shortened/accelerated progress on current projects
 - Promising new areas or paths to pursue
 - Emerging threats and opportunities

Commercialization

- IP/Trade Secrets inside firm
- Improved/New
 - Products
 - Processes
 - Services

Strategic reconnaissance and alliances

Preliminary themes



- Industry maintains networks with university researchers
 - Supported by marketing study findings
 - Industry is proactive in seeking out potential projects/ partnerships (via conferences, publications, web searches, referrals, direct relationships)
 - Dynamic relationships: ongoing evaluation of the partnership
- The consortium model has benefits (and shortcomings) beyond what could be achieved through working independently with faculty
 - IUCRC Business Model**
- Some themes in decision criteria
 - At least one prominent benefit
 - Relevance of research to organization: core or non-core
 - Reputation of universities and researchers
 - Generating or improving business through IAB network
 - IP agreement is barrier

"Most of our R&D into base, core technology is actually taking place in Europe, and part of the reason for that is that government, university, industry relationships in Europe are much easier to manage (than in the US). ... The real problem we have with funding research directly at universities in the US is, to be honest, the intellectual property ownership."

--IP Manager, mid-size semi-conductor firm

Preliminary themes



- Industry developments/ changes impact R&D strategy
- Larger firms tend to have formal positions for managing relationships (University Alliances, Sponsored Research)
- Decision processes ranges from informal to formal, with varying degrees of resource intensiveness (e.g., review process, people involved)
 - More formal processes appear to be more fragile to manage
- Return on Investment is either taken for granted, considered impossible to measure, or assessed with a structured method

"To be frank, [the organization] typically does not regularly weed out monies externally. We're very cost conscious and budgetary conscious. ...so there was a review... but when it came down to trying to evaluate the value in terms of how it may add to [organization] earnings in the future, then it was kind of fuzzy, because we were fairly early on [in the research]."

-Senior researcher, large chemical company

- Dynamic relationships: ongoing evaluation of the partnership

"It was more the question whether a) do we have the money that we can put in there, because it has to come from a project and b) is there added value for us. We'd been in the center for three years so we knew what was going on, and at that time we felt that we'd seen everything we needed to see. ... We learned ourselves, we were able to set up our own research."

-Project leader, international specialty chemical company

Remaining work



- Continue with industry interviews
 - Recent joiners
 - Recent decliners
 - Undecided
 - » More formal qualitative analyses
- Conduct quantitative study (12-18 mos. timeframe)
 - Instrument design
 - Data collection
 - Analysis

Study Implications



- Help center directors and others understand which firm characteristics (sub-organizational and personal) and center marketing approaches have the biggest impact on a firm's decision to join a center, so that the center can:
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