

# The Secret to Successful User Communities – An Empirical Analysis of Computer Associates' User Groups

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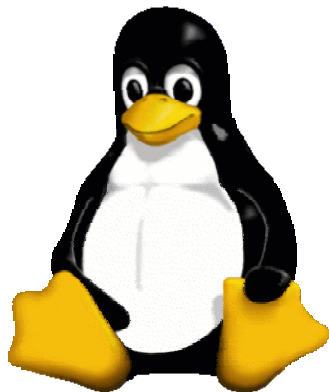
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# Motivation



Linux



YouTube



Second Life



STATA



Apple Macintosh



Ducati



# Motivation

- User communities can be leveraged for innovation management (Verona, Prandelli & Sawhney 2006, Jeppesen & Frederiksen 2006; Prügl & Schreiber 2006).
- Rational individuals will only participate in and contribute to their user community if they perceive personal benefits (Olson 1965).
- User communities should be organised such that users benefits are maximised.

What are the determinants of successful user communities?



# The Logic of Collective Action

- The characteristic and primary function of organizations is to advance the common interests of groups of individuals (Olson 1965).

In the absence of coercion and some separate individual incentive, rational self-interested individuals in a group will seek to maximise their personal welfare and not act to advance the interest of the group to which they belong to.



# Incentives

- Extrinsic Motivations

- A separable outcome (or indirect reward) that is attained when an activity is done (Ryan and Deci 2000).
- Monetary rewards, signalling motives for career advancements, skill improvement, active peer review


- Intrinsic Motivations

- The inherent satisfaction of the doing of an activity (Ryan and Deci 2000).
- Enjoyment, reciprocity, reputation, altruism



# A Central Authority

- Individuals may not possess sufficient intrinsic and/or extrinsic motivations to voluntarily contribute to the group (Olson 1965, Hardin 1982).
- A central authority (formal organisation, group leader or management committee) can encourage members to contribute to the group by
  - promoting a collective identity and social norms.
  - establishing control mechanisms to monitor contributions and enforce penalties against free-riding.



# What are Successful User Communities?

User communities are groups of individuals who all use a similar product and who learn how to use it better as they interact on a regular basis.

Successful user communities are groups whose members have benefited significantly from their acquisition of information and knowledge from their user community.

# Determinants of Successful User Communities

Hypotheses	Expected Effect on Success
<b>H1:</b> Number of Strong Ties	+
<b>H2:</b> Investment in Learning Abilities	+
<b>H3:</b> Face-to-Face Communication	+
<b>H4: Open Communication</b>	+
<b>H5:</b> Number of Star Members	+
<b>H6: Exclusivity</b>	+

Individual-specific

Group-specific



# Open Culture of Communication

- An open exchange of information within groups can limit conflict between members (Lau and Murningham 1998).
- Shah (2005) finds that open communication amongst users in innovation communities can increase the diversity of expertise in problem solving and allow the results of trial-and-error experimentation by multiple parties to be exchanged.

H4: Users benefit more from user communities that have an open culture of communication.



# Exclusivity

- In the theory of clubs exclusion mechanisms are used to monitor users' rates of utilisation and to bar non-members and/or nonpayers (Cornes and Sandler 1996).
- These exclusion mechanisms are expected to provide incentives for members to join, to contribute to the group and to pay dues.

H6: Users benefit more from user communities that have exclusion mechanisms.



# Official CA User Groups

- Over 300 CA user groups
- Minimum of 20 individual members from at least 8 companies per group
- Communication: On-line and off-line (at least 1 physical meeting annually)
- Groups have the freedom to choose their members
- Goals: to network, learn and share information (user-generated “innovation”) with each other
- Organise user feedback to existing and new products for CA



# Research Methodology

- Sample – individual users in CA user groups
- ~ 30 Explorative Interviews
- Collection Method: Web-based Questionnaire
  - 19th July – 19th Dec. 2005 : Email with a link to the survey was sent to committee members of CA user groups.
  - Request to forward the link to their members and encourage them to participate.
- Total of 1055 responses received from individuals in 203 different CA user groups



# Success Measure – Time Saved

- User Benefit = Amount of time individual users were able to save in the course of the last year by making use of the information they received from their user group
- 22 % of the respondents indicated the amount of time they saved as an interval
- Interval Regression with heteroscedasticity-robust standard errors in the presence of intra-cluster correlation

# Interval Regression

Dependent Variable: Time Saved	Coefficient	S.E
ln (number of strong ties + 1)	0.224***	(0.060)
time spent 2 (0/1)	0.268**	(0.121)
time spent 3 (0/1)	0.663***	(0.210)
no participation (0/1)	-0.375***	(0.119)
no face-to-face (0/1) <b>H4</b>	-0.065	(0.164)
open culture of communication (0/1)	0.274**	(0.111)
ln (number of stars in group + 1)	0.206**	(0.102)
open membership (0/1)	0.146*	(0.076)
membership fee (0/1)	-0.207**	(0.084)
Control variables	Jointly significant	
Number of observations	924	
Minimum number of observations per group	1	
No. of user groups	161	
Log pseudolikelihood	-1652.259	

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

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# Multivariate Analysis

Based on a total of 924 responses from individuals in 161 different CA user groups

Hypotheses	Results
<b>H1: Number of Strong Ties</b>	✓
<b>H2: Investment in Learning Abilities</b>	✓
<b>H3: Face-to-Face Communication</b>	✗
<b>H4: Open Communication</b>	✓
<b>H5: Number of Star Members</b>	✓
<b>H6: Exclusivity</b>	✗



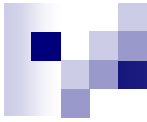
# Importance of “Openness”

- Users in groups with an open culture of communication were able to benefit more from their user groups.
- Users in groups with less restrictive open membership requirements were able to benefit more from their user groups.
- “Openness” is a potential solution to the free-rider problem



# Conclusion

- Management implications:
  - Promote an open culture of exchange
  - Open membership
- Implications based on a proprietary software producer.
- First insight as to how groups of users can be organised.
- A symbiotic relationship between firms and their user communities can provide conducive conditions for firms to constantly leverage their communities for innovation management (Dahlander & Magnusson 2005)



# Thank You



# Individual-Specific Determinants

- Number of Strong Ties (Granovetter 1973, 1983)

*H1: Users who have a larger number of strong ties to other members benefit more from their user communities.*

- Investment in Learning Abilities (Ellis 1965; Cohen & Levinthal 1990)

*H2: Users who invest more time in improving their learning abilities benefit more their user communities.*

- Face-to-Face Communication (Sally 1995; Polyani 1958)

*H3: Users benefit more from face-to-face interactions as compared to other forms of communication with their communities.*



# Group-Specific Determinants

- Open Culture of Communication (Shah 2005)

*H4: Users benefit more from user communities that have an open culture of communication.*

- Number of Star Members (Crowston et al. 2006; Zucker & Darby 1996)

*H5: Users benefit more from user communities that have larger number of star members.*



# Group-Specific Determinants

- Exclusivity (Buchanan 1965; Cornes & Sandler 1996)

*H6: Users benefit more from user communities that have exclusion mechanisms.*

*H6a: Users benefit less from user communities with memberships that are open to the general public.*

*H6b: Users benefit more from user communities that require their members to pay a membership fee.*

## Summary Statistics (N = 924)

Variable	Mean	S.D	Min	Max
geo. mean time saved (hrs)	22.29	38.53	0	600.5
time saved – lower bound (hrs)	20.49	37.65	0	600
time saved – upper bound (hrs)	25.31	51.60	0	1000
number of strong ties	3.49	8.81	0	200
time spent 1 (0/1)	0.39		0	1
time spent 2 (0/1)	0.30		0	1
time spent 3 (0/1)	0.10		0	1
no participation (0/1)	0.22		0	1
face-to-face (0/1)	0.73		0	1
no face-to-face (0/1)	0.05		0	1
open culture of communication (0/1)	0.87		0	1
number of stars in group	6.78	4.07	0	25
open membership (0/1)	0.37		0	1
membership fee (0/1)	0.17		0	1



## Summary Statistics (N = 161)

Variable	Mean	S.D	Min	Max
open culture of communication (0/1)	0.84		0	1
number of stars in group	6.38	4.38	0	25
open membership (0/1)	0.35		0	1
membership fee (0/1)	0.13		0	1

No. of responses per user group	No. of user groups	% of 924 responses
1	33	20.50
2	22	13.66
3	14	8.70
4	21	13.04
5	12	7.45
6	7	4.35
7	10	6.21
8	9	5.59
9	9	5.59
10	6	3.73
11	2	1.24
12	2	1.24
13	2	1.24
15	3	4.3
17	1	0.62
18	2	1.24
19	1	0.62
23	1	0.62
27	1	0.62
28	1	0.62
35	1	0.62
40	1	0.62
Total	161	100

# Number of hours saved per year (N = 924)

