

# Issues of Company Involvement in OSS Projects: The Example of Nokia Internet Tablet

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## Case study on Nokia Internet Tablets

- **State of the paper:** submitted to JMS special issue
- **Authors:** Sebastian Spaeth, Matthias Stuermer, Georg von Krogh, Ari Jaaksi,
- **Research question:** Why and how did Nokia reveal knowledge in the development of the Internet Tablet and what are the consequences for the stakeholders involved?
- **Data set:** 10 interviews with Nokia managers and developers, contractors and community members; over 12h of conversation; about 100p of transcripts
- **Method:** Grounded theory building; MAX.QDA for coding of texts; over 1000 codings in 80 categories

# Nokia Internet Tablet N800



## Hardware

- 800x480 Touch Screen, WLAN & BT
- 128MB RAM, 2 SD Flash Memory Slots
- 320 Mhz Texas Instruments processor

## Infrastructure

- Customized Debian GNU/Linux
- X Windows, GTK, GStreamer, D-BUS

## Applications

- OSS: VNC Viewer, Mapper, Ogg Player...
- Proprietary: Opera, Canola, Google Talk

## Statement of Nokia manager

*But we believe the world is changing and the competitive advantage comes from how many others can you get from participating in this network. This network becomes more important than trade secrets.*

*So it's really a fundamental strategy change we are executing. We believe that this will result in better products by revealing the code and letting others participate.*

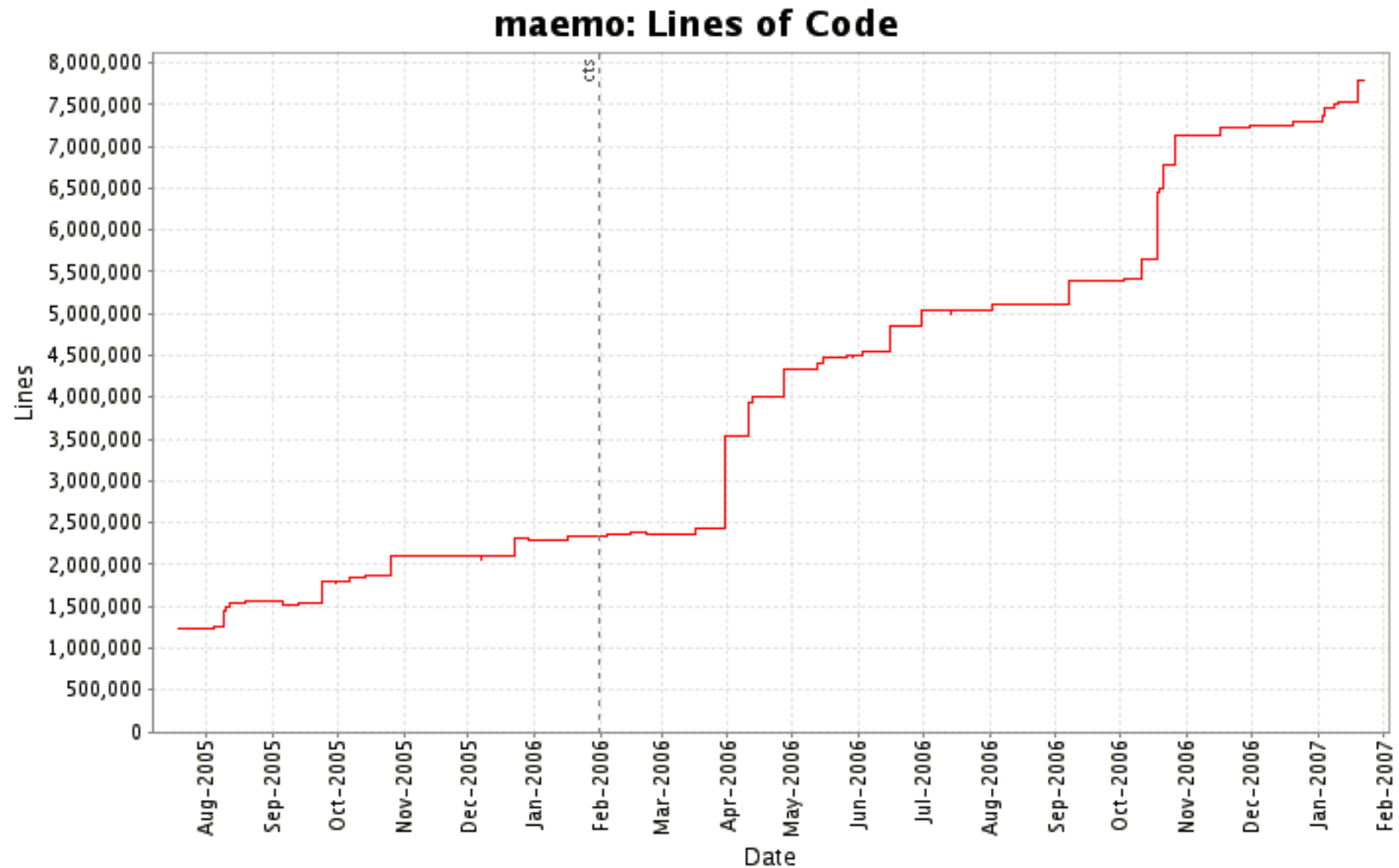
# Contractors of Nokia involved in development

Company	Expertise	Country
KernelConcepts	GPE and Embedded Linux	Germany
OpenedHand	Matchbox	United Kingdom
Collabora	Telepathy	United Kingdom
Imendio	GNOME and D-BUS	Sweden
Fluendo	GStreamer	Spain
Movial	Scratchbox	Finland

# Model of Private-Collective Innovation Through Corporate Knowledge Disclosure

	Advantages	Challenges
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>• Knowledge Reuse</li> <li>• Distributed Technology Expertise</li> </ul>	<ul style="list-style-type: none"> <li>• Guarding Business Secrets</li> </ul>
<b>Organization</b>	<ul style="list-style-type: none"> <li>• Network Collaboration (maintenance outsourcing)</li> <li>• Recruiting Benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Reducing Network Entry Barriers</li> <li>• Balancing Control</li> <li>• Organizational Inertia</li> <li>• Organizational Learning</li> </ul>
<b>Competitive Advantages</b>	<ul style="list-style-type: none"> <li>• Time to Market</li> <li>• Counter Uncertainty with Flexibility</li> <li>• User Contributions</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty to Differentiate</li> </ul>

# Quantitative descriptive statistics (I)



## Quantitative descriptive statistics (II)

- Maemo Dev mailing list:

	Nokia	Non-Nokia	Total
Threads	183	1,670	1,853
Replies	932	4,010	4,942
Ratio	0.196	0.416	0.375

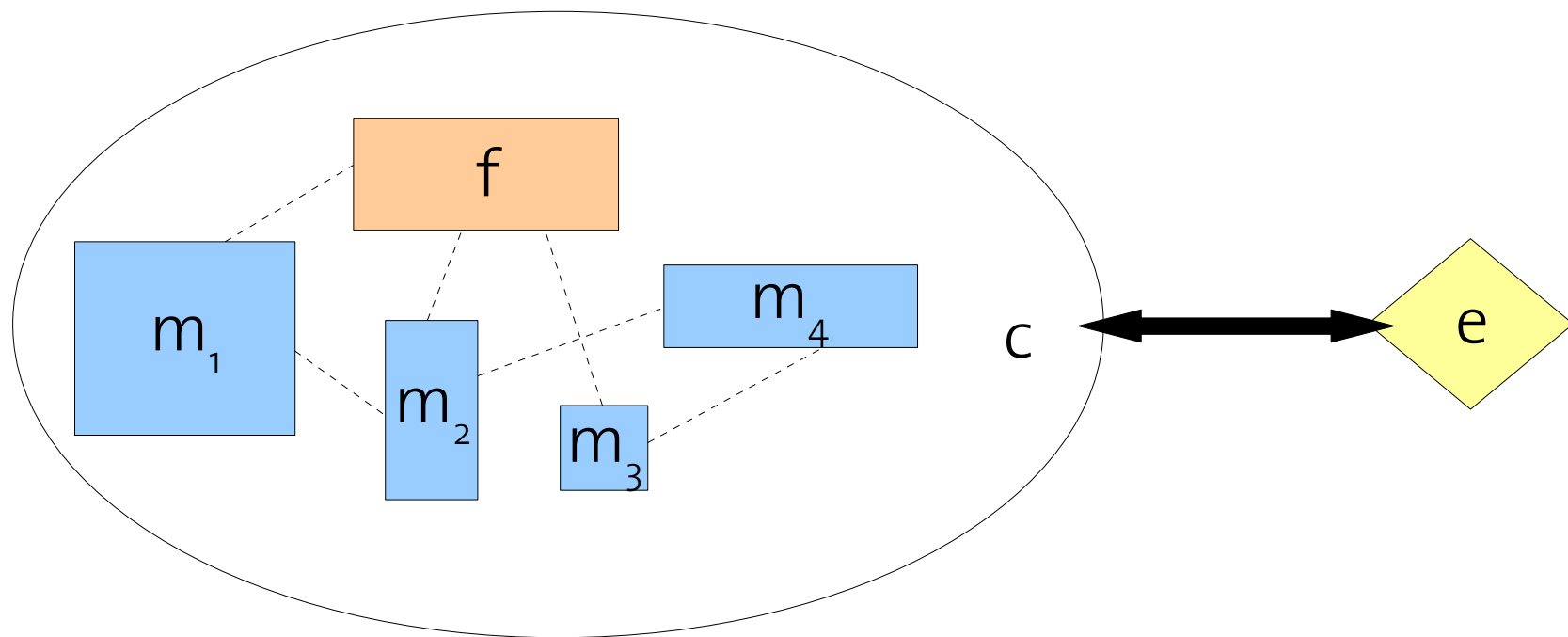
- Maemo User mailing list:

	Nokia	Non-Nokia	Total
Threads	29	775	804
Replies	220	1,510	1,730
Ratio	0.132	0.513	0.465

## Limitations and future research

- Internal and external **validity** of Nokia case
- **Internal:** better quantitatively testing influence of Nokia
  - Distinguish contractors on mailing lists
  - Correct Nokia employees using private email account
  - Longitudinal analysis of mailing list activities
- **External:** multiple case study testing other OSS projects
  - How to operationalize measures?
  - How to distinguish different types of OSS projects?

# Issues of Company Involvement in OSS Projects: Tricky Questions and Preliminary Hypothesis



# The quest for indicators

- How large is the **influence** of company interests in established OSS projects and what are their **effects**?
  1. *Measure “size” of company influence*
  2. *Measure impact of company influence*
- What are the **benefits and threats** for a community project if firms start to sponsor it or employ key developers to continue working on it?
  1. *Define key developers*
  2. *Measure sponsorship and employment*
  3. *Measure influence of hired developers*

## Some answers from the Nokia case (I)

- What type of contributions are most likely to be **sponsored** since no volunteers are motivated to do them?
  - *Integration and optimizations for particular hardware*
  - *Large, complex applications; tools such as SDK*
- What types of OSS projects and which tasks are attractive for **voluntary** contributors?
  - *“Scratching a developer's itch”*
  - *Porting of applications*
  - *Experiments (swap on flash memory, VNC Viewer...)*

## Some answers from the Nokia case (II)

- What are **best and worst practices** of behavior by firms within OSS communities?
  - (+) *Behave humble even if you're big.*
  - (+) *Collaborate with upstream project, don't fork.*
  - (-) *Don't follow the rules. (GPL)*
  - (-) *Break backwards compatibility.*
- What option of **sanctions** possesses the community?
  - *Withdrawal of love and switching of partner*
  - *Forking*

## Panel discussion

- **Independent** variables:  
Indicators of firm involvement and openness?
- **Dependent** variable:  
Indicators of firm impact in OSS projects?
- Other topics of research:
  - **Forking** success
  - **Competing** firms active in the same project
  - **Crowding-out** effects with extrinsic reward systems