



Aalto University
School of Electrical
Engineering

MoMIE Seminar

Modeling of Mobile Internet Ecosystem

momie.comnet.aalto.fi

Introduction

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Department of Communications and Networking

Worlds of People and Things

12+ TBs
of tweet data
every day



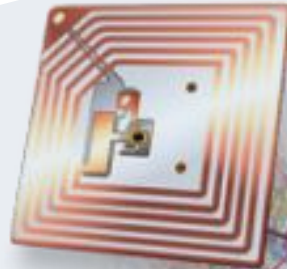
? TBs of
data every day



25+ TBs of
log data every
day



30 billion RFID
tags today
(1.3B in 2005)



4.6
billion
camera
phones
world wide

100s of
millions
of GPS
enabled
devices
sold
annually



76 million smart
meters in 2009...
200M by 2014

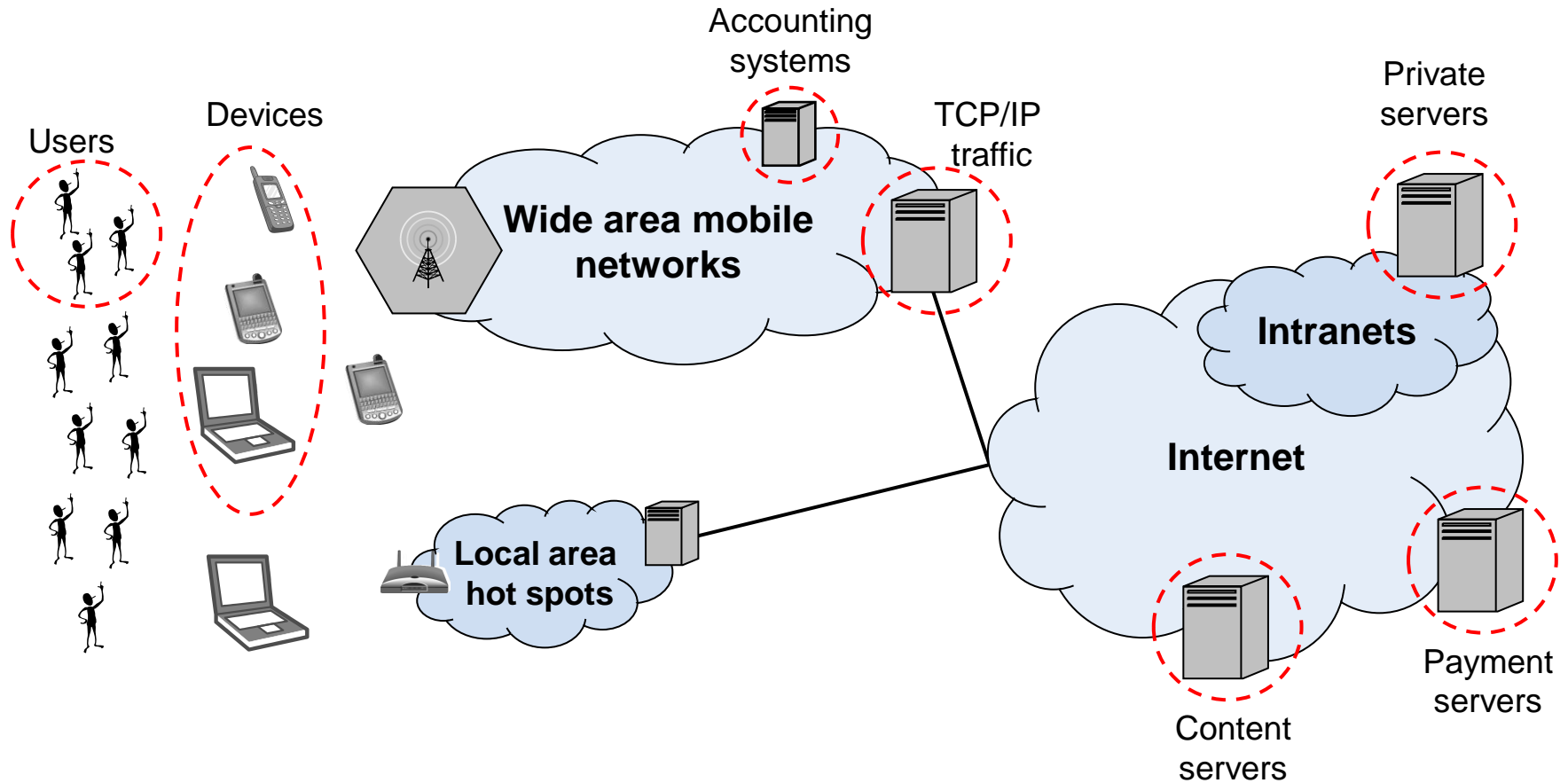
http://www

2+
billion
people on
the Web
by end
2011

MoMIE Project and Academic Results

Task	Journal papers	Conference papers	Doctoral theses	Master's theses
1: Diffusion modeling	3+2	1	A.Kivi +1	
2: Mobile user behavior	1+0	2	+1	3
3: Social network modeling	3+2	4	(J.Karikoski) +1	1
4: Handset energy efficiency	1	6	M.Heikkinen	2
5: Reliability of connections	0	2		
6: Techno-economics of Mobile Internet	2+1	2	T.Smura	2
7: Real-time business optimization	1+1	2	+1	0+1
8: Effects of Mobile Internet on society	0+1 (and a book)	1		1+1

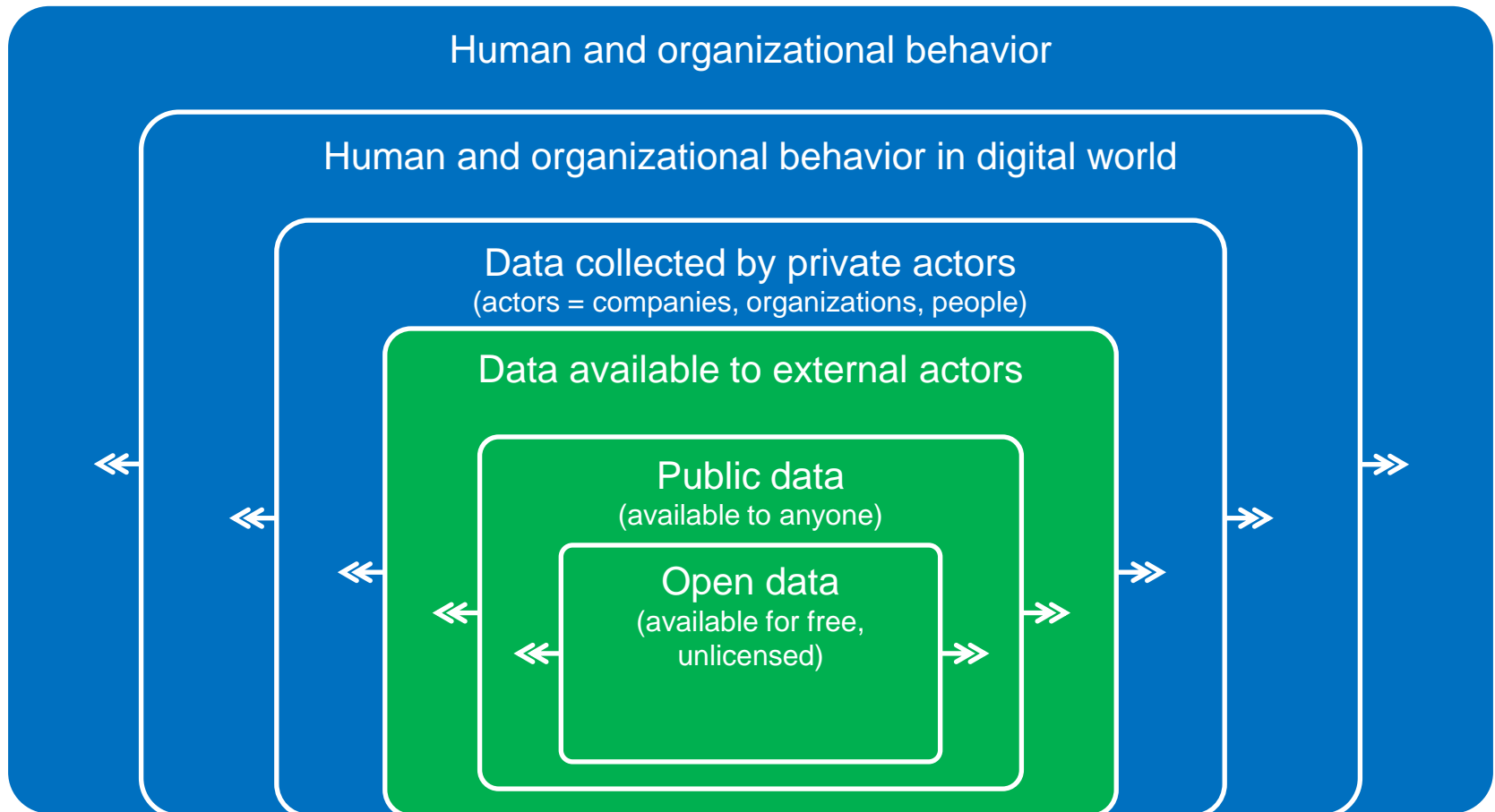
Behavioral Data Sources



Source: MoMIE project, 2013

From private to public to open data

Framework for data



Source: Smura, 2012

Team Collaborations

Research, foreign

Kungliga Tekniska Högskolan, prof Jens Zander
University of Zurich, prof Burkhard Stiller
Chalmers University, prof Erik Bohlin
MIT, Dr David Clark
Delft University, Dr Harry Bouwman
UC Berkeley, prof John Chuang
Waseda University, prof Hitoshi Mitomo

Research, Finland

Turku School of Economics, prof Juuso Töyli
Aalto, COMNET professors
Aalto, SCI, profs Martti Mäntylä, Kimmo Kaski
Åbo Akademi, prof Christer Carlsson

Aalto Network Economics Team
Prof Heikki Hämmäinen

Industry, foreign

Sasken Technologies, Dr V. Sridhar
GfK, Dr Antero Kivi
Arbitron Mobile, Tero Lindberg
KDDI, Takeshi Kitahara

Industry, Finland

Nokia, NSN, Ericsson,
Elisa, TeliaSonera, DNA, Finnet
Sanoma, YLE,
MINTC, Ficora,
Accenture, JoikuSoft

Team People

- Heikki Hämmäinen, professor *
- Kalevi Kilkki, docent *
- Timo Smura, post doc *

MSc students

- Görkem Cakmak *
- Selam Kebede *
- Jony Rabiul
- Ud Din Fawad *

PhD students

- Thomas Casey
- Juuso Karikoski *
- Mike Katsigiannis
- Pekka Kekolahti *
- Tapio Levä
- Antti Riikonen *
- Tapio Soikkeli *
- Henna Suomi
- Nan Zhang
- Benjamin Finley *

Communications Ecosystem Master's students

- Class 2010 (6 students)
- Class 2011 (9 students)
- Class 2012 (6 students)