Analyzing Interactions and Identifying Social Roles in a Brand Community on Social Media

Lamya BENAMAR   Christine BALAGUE   Mohamad GHASSANY

Telecom School of Management, LITEM, Institut Mines-Télécom

Research Context

- Social media provide a network-based power to customers. (Labrecque et al, 2013)

- When content concerns products and brands, social networks analysis becomes a key topic of interest for marketers.

Research Context

- Long trend of research on members' online behaviors:

    *communities typologies (Hagel and Amstrong, 1997; Porter, 2004)

    *members' characteristics analysis (Kozinets, 1999; Seraj, 2012),

    *motivations analysis (Bagozzi and Dolakhia, 2002; Ridings and Gefen, 2004)

- One main conclusion : members are heterogeneous, in terms of their orientation toward the community, way in enacting roles and meaning constructed in relation to the community

    The comprehension and integration of the different groups remain a challenge for research (Thomas and al., 2013).

- Social role : a key concept used by researchers to detect members' groups and explain their behavior in online communities.

Social role importance

- Central concept investigated in sociology and social psychology.

- Social roles positive effects:

  * facilitate the member's awareness of peer contributions and overall group performance (Strijbos and al., 2007).
  * have a structuring, coordinative and supportive function for the communities (Herrmann and al., 2004).

- Robust **Brand Communities** establish cultural foundation by enabling everyone to play a valuable role (Fournier and Lee, 2009)

- Roles contribute to the creation of a common value (Schau and al, 2009).

Three main conceptualizations

- **Functionalist** perspective (Linton, 1936):
  - Social role is the behavior resulting from the person's position in a social structure, the statute. It has an institutional value.

- **Interactionist** perspective (Mead, 1934):
  - Roles are situational as they emerge from interactions. The role is considered as a response or reaction to other's behavior.

- **Systemic** perspective, based on the *action theory* (Parsons, 1949).
  - Roles emerge from interactions, but these interactions are shaped by the structural system in which they occur.
  - Social role can then be defined as "*an organized pattern of behavior, related to a particular position of the individual in an interactional environment*" (Rocheblave-Spenlé, 1962).

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In Online Communities :

Methodology : quantitative and structural analysis

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In Online Communities :

Methodology : qualitative analysis

Three main conceptualizations

In Online Communities :

Methodology : (quantitative and qualitative) or (structural and qualitative) analysis

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  - Roles emerge from interactions, but these interactions are shaped by the structural system in which they occur.
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In online communities : Different conceptualizations and methodologies

Author	Concept and research context	Elements of conceptualization	Approach	Methodology	Detected taxonomies and other principal results
Turner and al. (2005)	Roles in newsgroups	Behavior patterns and structural position of member	Functionalist	Quantitative analysis of posting activity and structural analysis through visualizations.	5 member types: *answer person, questioner, troll, spammer, binary poster, flame warrior, conversationalist.*
Brush and al. (2005)	Social roles in newsgroups	Member activity	Functionalist	Quantitative analysis of activity type and intensity. 3 interlinked datasets: survey; usage log; social accounting data.	5 roles: *key contributors, low volume repliers, questioner, reader, disengaged observer.*
Nolker, and Zhou (2005)	Roles in newsgroups	Member behaviors, conversation, relationships, and social networks.	Functionalist	Predefined roles Quantitative analysis of activity and structural analysis of the social network.	Description of attributes and measures to detect key members: *leaders, motivators, chatters.*
Fisher and al. (2006)	Social roles in newsgroups	« …behavior of status occupants…oriented toward the patterned expectations of others »	Functionalist	Investigation of different types of newsgroups. Structural analysis at the collective and individual level.	A newsgroups' typology based on their network structures. Distinction between: *question/answer people* and *discussion people.*
Welser, and al. (2007)	Social roles in newsgroups	Structural and behavioral patterns of members' participation (role *signature*).	Functionalist	Structural analysis (visualization of local networks) across three usenets. Content analysis to validate the results	Development of a methodology to detect automatically the *answer person* role.
Golder and donath (2004)	Social roles in newsgroups	Member's communicative competence, participation level, strategies of 'self presentation'	Interactionist	Ethnography on 17 newsgroups Qualitative analysis of exchanged content.	6 roles: *Celebrity, newbie, lurker, flamer, troll, ranter.*
Waters and Gasson (2005)	Roles in collaborative learning context	Member's behavior on three learning dimensions: teaching, social and cognitive.	Interactionist	Experimentation and qualitative analysis of posts issued from exchanges between members	8 roles: *Initiator, contributor, facilitator, knowledge-elicitor, vicarious-acknowlegder, complicator, closer, passive-learner.*
Hermannan d al. (2004)	Social roles in collaborative learning context	Member's position; tasks and function; expectations; social interaction.	Systemic	Experimentation and case study Qualitative analysis of exchanges between members.	9 roles: *Author, guest, conclusion-maker, promoter of the procedure, decision-initiator, scaffolder, organizational-suporter, technical-suporter, conflict-mediator.*

Our conceptualization and methodology

- We use a Systemic approach.

- Role Definition: *a pattern of observable behaviors related to the member's position in the network and his interactions with other members.*

- We investigate :
  - *Activity type and intensity*
  - *Shared content*
  - *Position in the network*

Data Collection

- Social media based community, initiated by consumers on Facebook around a specific product (a **cooker** produced by one of the worldwide leaders in small appliances)

Period : Members' activity between Decembre 2013 to January 2015

# active members	13 814
# comments	137 483
# posts	16 173
# likes	120 680

Three step metholody

Activity

↓

Quantitative step : cluster analysis

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Detection of user profiles
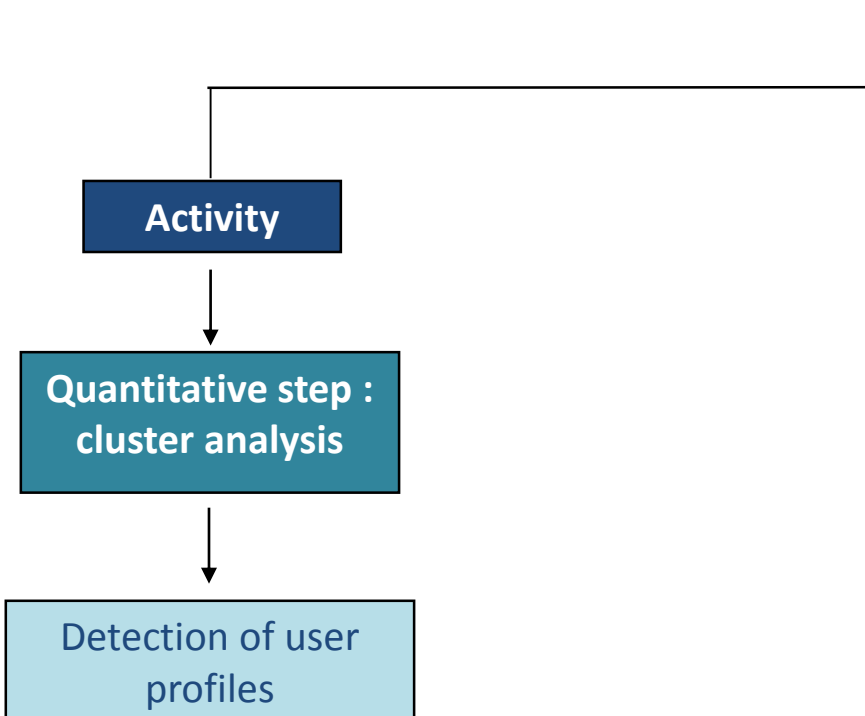
Step 1: users' activity analysis and community core identification

Activity type	Number	Weight	# Post.	#Com.	#Likes	Activity weight	#Received likes	#Received com.	Weight of received actions
Exclusive post	442	3.20%	495	0	0	0.18%	992	461	0.58%
Post + like	396	2.86%	439	0	1411	0.69%	1616	519	0.85%
Post + com.*	1 062	7.68%	1 823	6 925	0	3.24%	8 551	14 285	9.13%
Post+like+com.	4 274	30.93%	13 418	110 909	83 044	76.91%	101 891	122 219	89.58%
Exclusive like	3280	23.73%	0	0	9 202	3.41%	0	0	0
Exclusive com.	1 426	10.32%	0	3 807	0	1.14%	0	0	0
Like + com.	2 938	21.26%	0	15 934	22 234	14.15%	0	0	0
Overall activity	1 3818	100%	16 175	137 575	115 891	269 641	113 050	137 484	250 170

*Com. : Comments

- Focus on PCLs

- TwoStep cluster analysis, as recommended by previous researchers (De Valck et al., 2009) on six variables:

       *number of posts (member's engagement);
       *number of likes and comments (member's reactions);
       *number of received likes and comments (member's influence);
       *average number of received comments per post (feedback density);
       *average number of given comments per post
       *self-comments

Step 1: users' activity analysis and community core identification

Activity type	Passive contributors	Commentators	Self-centered	Active contributors	Highly actives
size	2 459	465	786	510	51
#Posts	1.44	2.69	4.71	7.32	22.57
#Given Com.	7.23	37.37	23.26	50.06	615.2
%Self-oriented com.	36.08%	17.14%	50.22%	49.49%	27.44%
#Commented posts	4.21	21.43	10.68	21.19	246.78
Density of com.*	1.71	1.74	2.18	2.36	2.5
#Given Likes	5.45	62.5	10	24.14	389.55
#Received comments	3.48	3.61	27.8	71.33	306.04
Density of received com*	3.72	3.74	5.9	9.74	13.55

*Density of com.: Average number of comments per commented post
*Density of received com.: Average number of comments received per post

Three step metholody

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Activity   **Shared content**

Quantitative step :   **Content analysis of posts of**
cluster analysis   **core community's members**

Detection of user   Identification of core members'
profiles   roles
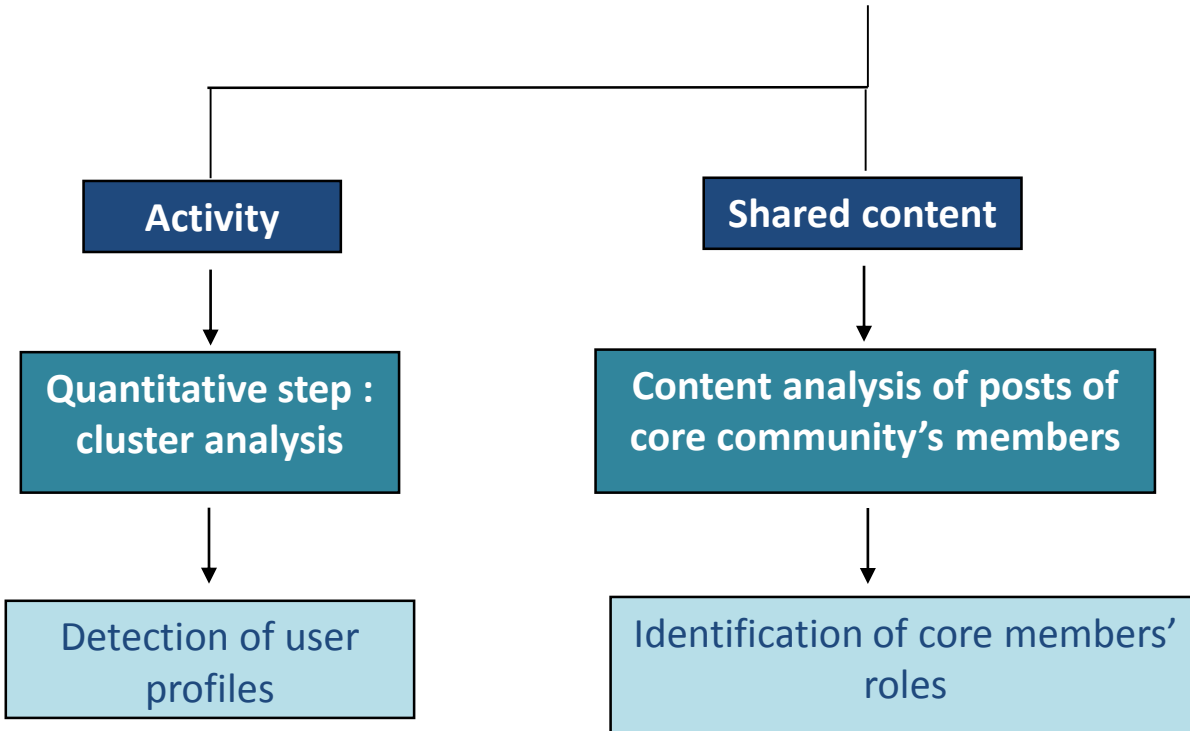
Step 2: role detection among community core users

- Interpretative content analysis of the 1150 posts shared by community core members

- 24 themes grouped in six categories

- Group description:

Theme occurrence
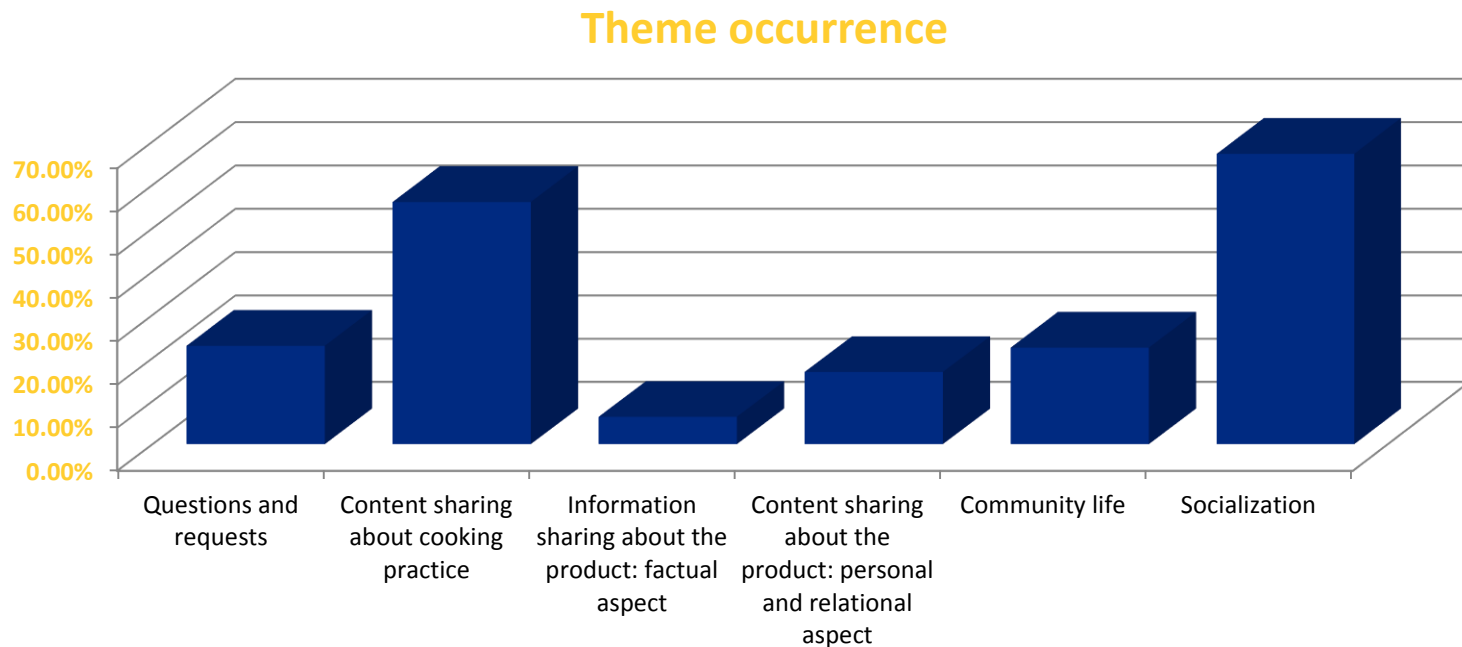
Step 2: role detection among community core users

- Individual description: for each category, difference between its frequency in individual posts and the mean observed in the entire group (Pfeil and al., 2011)

    ➡️ Identification of ten roles

Step 2 results: 10 Social roles (1)

1-*The mentor*: central member in the group, ensures the proper functioning of the community, by specifying or recalling the technical aspects of navigation and group's use, **strong knowledge and skills related to the cooking practice**

2-*The gatekeeper:* pillar of the community, **preserves group's identity** , rules and values.

3-*The product ambassador*: Essentially **product** oriented, real ambassador of it, mainly through **sharing information** to improve other members' knowledge about it.

4-*The generalist*: mainly involved in the community life and social interactions with others, but at a lower level than mentors or gatekeepers. He also exchanges around the product and/or practice, without having an expert or an amateur profile.

5-*The friendly product fan:* characterized by a strong relationship with the product, expressed through affective attachment to the product, or storytelling around its use.

Step 2 results: the 10 social roles (2)

6-The amateur: shares his "achievements" (successfully prepared meals), showing his real interest about the practice, but in a social perspective.
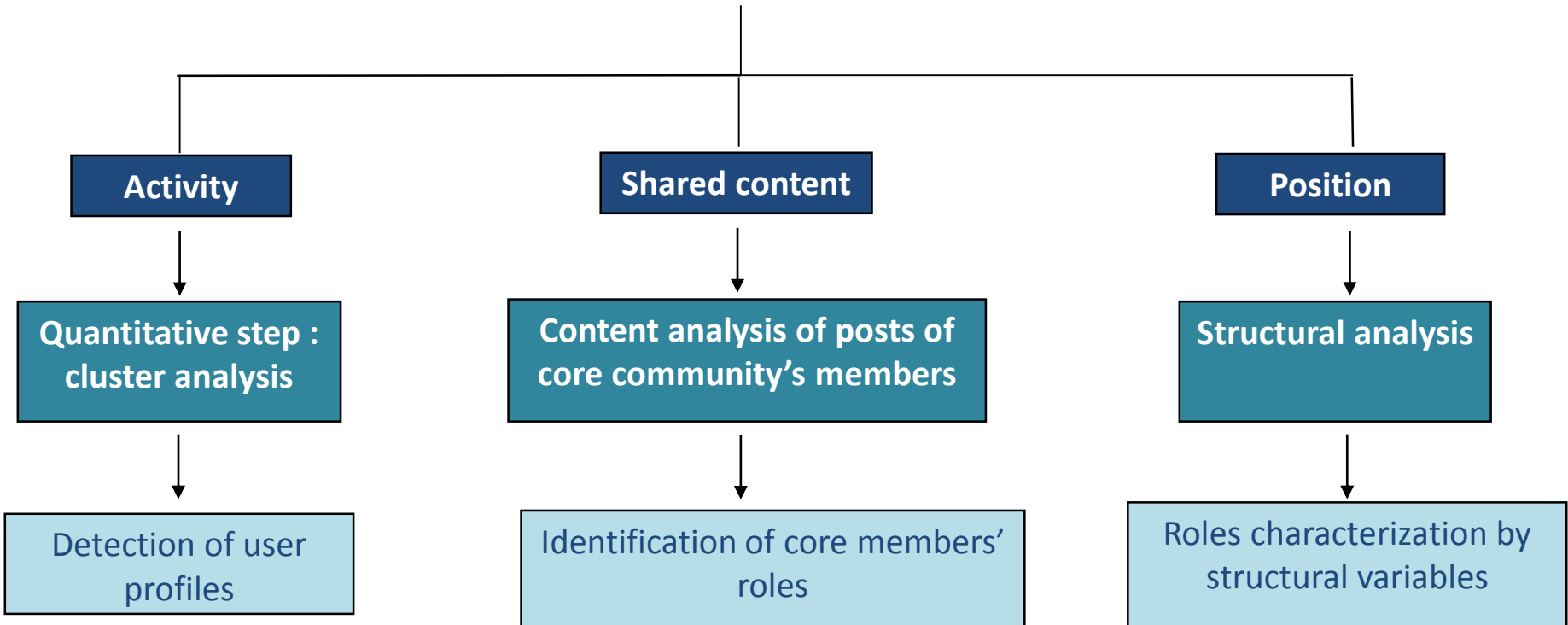
7-The product fan amateur: characterized by a socializing behavior around the practice, but also expresses an affective attachment to the product.

8-The product fan learner: both emotionally close to the product and interested in improving his competencies by asking questions and seeking information about product practice. For this member, the group is both a place of exchange around the product and of new knowledge and skills acquisition.

*9- The amateur learner*: This member is both passionate by cooking, sharing his achievements and interested in learning and improving his knowledge about practice or product use.

10- The friendly learner: this member is involved in knowledge acquisition, particularly in the cooking field; he is also involved in the creation of social ties with other members of the community.

Three step metholody

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        ▼                 ▼                 ▼
   ┌─────────┐      ┌──────────────┐   ┌──────────┐
   │ Activity│      │Shared content│   │ Position │
   └─────────┘      └──────────────┘   └──────────┘
        │                 │                 │
        ▼                 ▼                 ▼
┌─────────────┐   ┌──────────────────┐ ┌──────────────┐
│Quantitative │   │Content analysis  │ │  Structural  │
│  step :     │   │of posts of       │ │   analysis   │
│cluster      │   │core community's  │ │              │
│analysis     │   │members           │ │              │
└─────────────┘   └──────────────────┘ └──────────────┘
        │                 │                 │
        ▼                 ▼                 ▼
┌─────────────┐   ┌──────────────────┐ ┌──────────────────┐
│Detection of │   │Identification of │ │Roles             │
│user profiles│   │core members'     │ │characterization  │
│             │   │roles             │ │by structural     │
│             │   │                  │ │variables         │
└─────────────┘   └──────────────────┘ └──────────────────┘
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Step 3: network position of community core users

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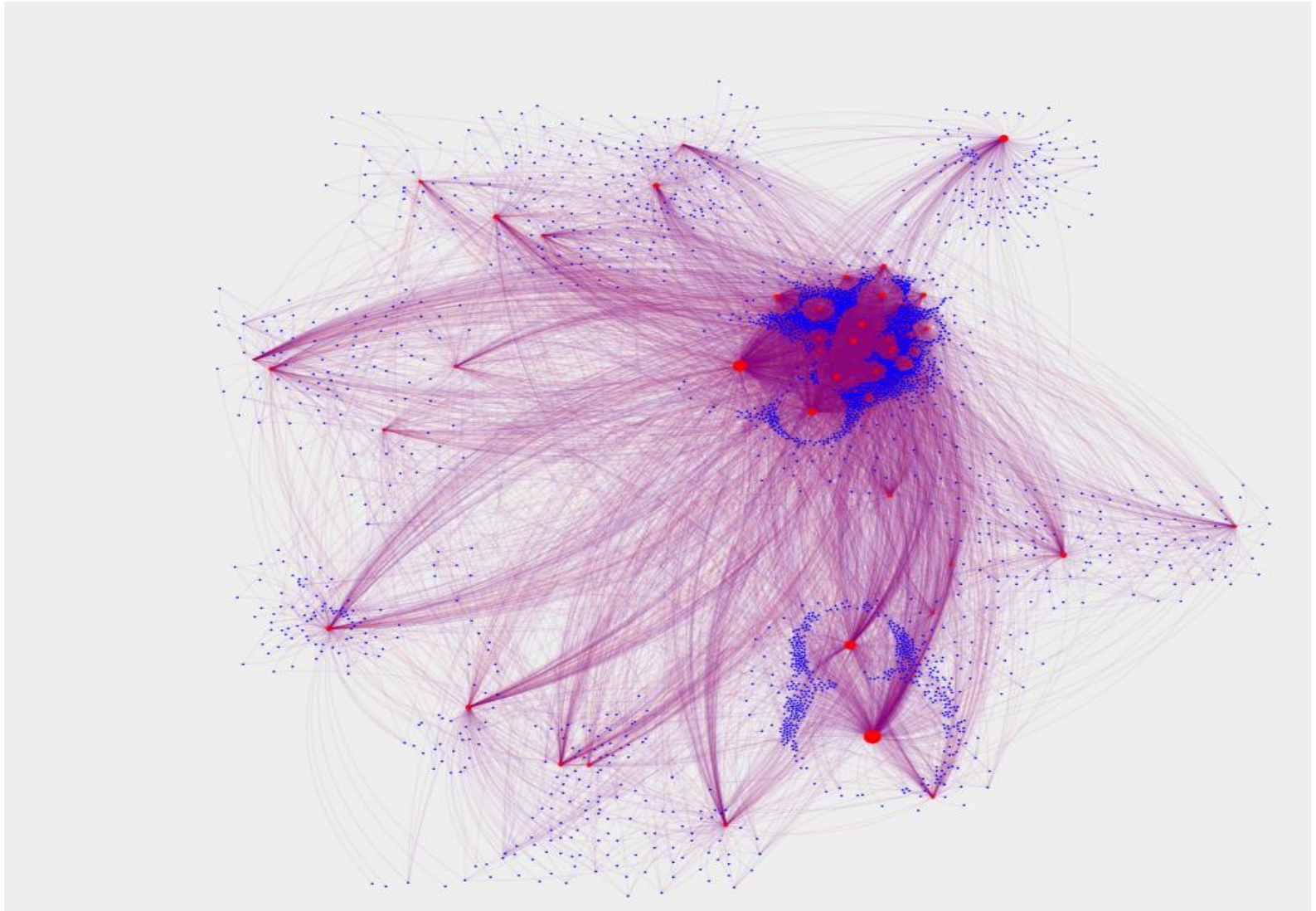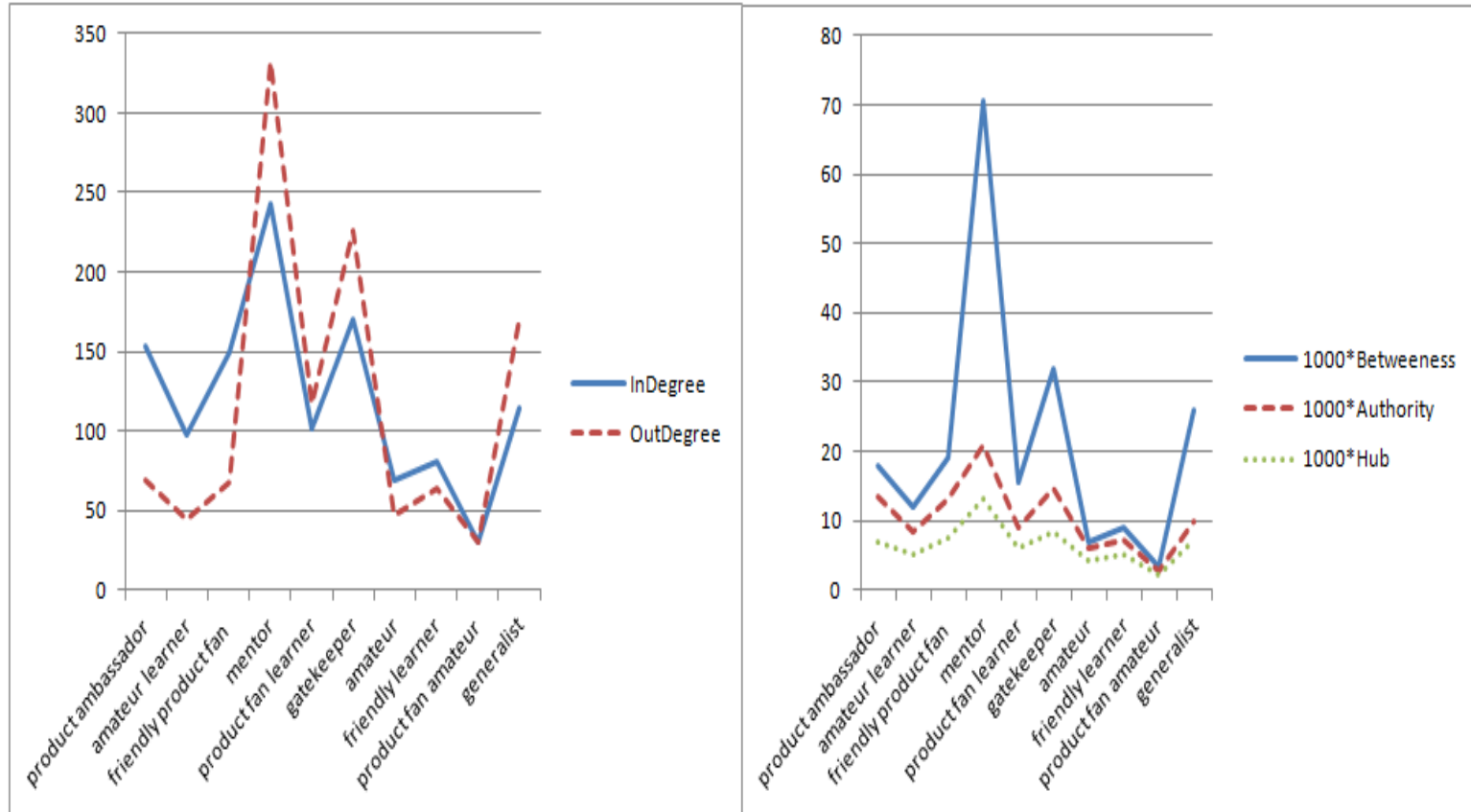
Influence of social roles on the community

- According to Bucklin (2010), a social network user is an influencer if his activity level has a significant effect on the other members' activity level.

	#received comments		#received likes	
	Mean	Standard Deviation	Mean	Standard Deviation
amateur learner	243	134	189	117
amateur learner	196	177	179	195
product fan amateur	103	138	99	138
product ambassador	603	491	537	749
friendly learner	370	439	209	215
gatekeeper	873	932	880	819
mentor	1140	1120	1183	1317
product fan learner	341	268	278	254
friendly product fan	354	299	364	302
the generalist	555	318	547	392

- Anova with number of comments and likes as dependent variables and roles as independent variable. Results show a significant effect of roles on other members' behavior for comments: $F(9,37)=1.929$, $p<.05$. For likes $F(9,37)=1.915$, $p<.05$.

Marketing science 2016, Shanghai

Main Contributions

- We clarify the social role conceptualization for product community and articulate a definition based on a systemic approach.

- By relating conceptualizations and methodologies to detect members' roles, we design a three steps methodology based on :
  - a quantitative analysis of members' activities,
  - a qualitative analysis of shared content,
  - a structural analysis measuring members' positions in the network.

- We investigate a facebook community initiated by consumers around a product.

- Our role typology is different from those proposed previously in the literature as it incorporates three key aspects:
  - the object of interest (product, practice, and community)
  - the main contribution type (sharing information and seeking information)
  - the individual orientation (factual, emotional).

Identifying social roles according to three key characteristics

	Activity	**Connectivity**	**Sociability**	**Expertise type**
the mentor	very high	very high	very high	practice
the gatekeeper	very high	very high	very high	community life
the product ambassador	high	high	moderate	product
the generalist	high	high	high	no expertise
the friendly product fan	moderate	high	high	product affective link
the amateur	low	very low	high	own practice
the product fan amateur	very low	very low	high	product affective link, own practice
the product fan learner	moderate	moderate	moderate	product affective link/ questioner
the amateur learner	low	low	moderate	own practice/questioner
the friendly learner	moderate	low	moderate	questioner

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Further research

- Using machine learning techniques to automatize content analysis and define roles for all the community members.

- Dynamical analysis to investigate the evolution of members' roles.

- Methodology based on experimentation to investigate the impact of roles on the communities.

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Thank you, questions?