Institute of Information Systems

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School of Management & Tourism

Exploring the New Trends of Chinese Tourists in Switzerland

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OVERVIEW

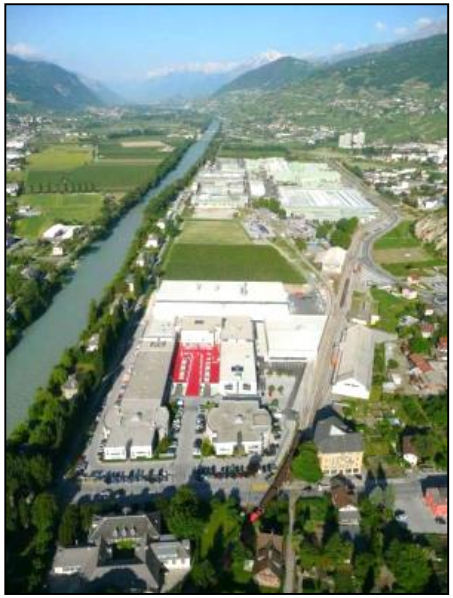
- Who Are We ?
- Motivation and Objectives
- Research Design and Methodology
- Main Challenges

WHO ARE WE ?

ALLEMAGNE
FRANCE
AUTRICHE
ITALIE
SCHAFFHOUSE
BÂLE-VILLE
BÂLE CAMPAGNE
ARGOVIE
ZURICH
THURGOVIE
JURA
SOLEURE
LUCERNE
ZOUG
SCHWYTZ
ST. GALL
LIECHTENSTEIN
NEUCHÂTEL
GLARIS
BERNE
URI
GRISONS
FRIBOURG
VAUD
TESSIN
GENÈVE
VALAIS

WHO ARE WE ?

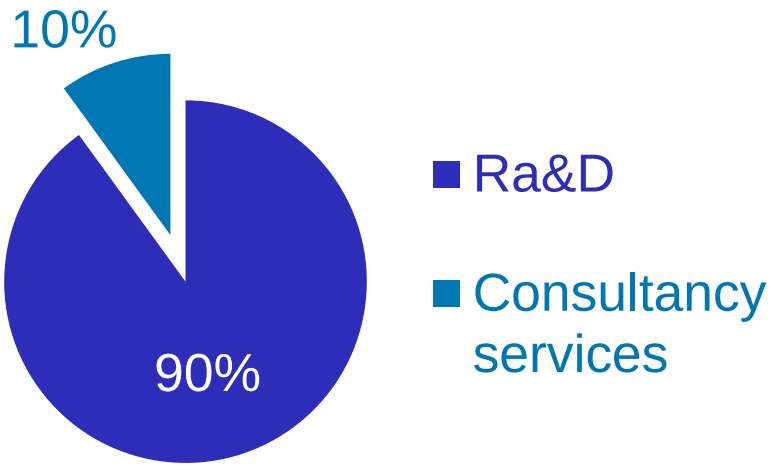
- **80 staff members**
  - 22 Professors
  - 18 Research scientists
  - 29 Research assistants
  - 11 Administrative collaborators and interns



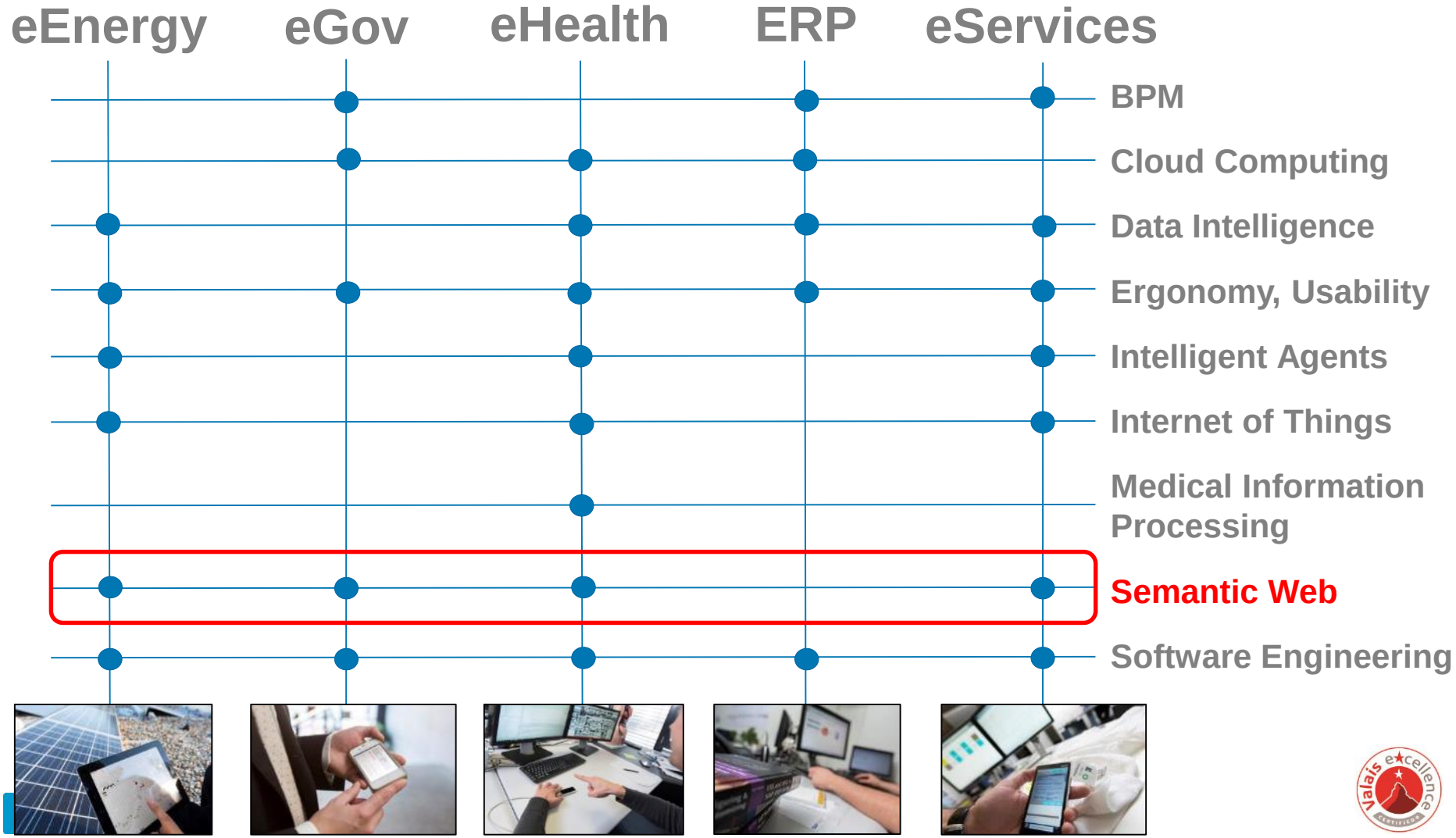
- **92 scientific publications**

- **343 projects (2014)**

- **CHF 7,44 millions (Turnover in 2014)**



CORE COMPETENCIES



MOTIVATION

Change in overnight stays by main countries of residence by continent from 2008 to 2013

	Variation in overnight stays (in %)					
	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013	2008–2013
Switzerland	**–2.5**	**2.2**	**–0.1**	**–0.4**	**1.3**	**0.4**
Total Foreigners	**–6.2**	**1.4**	**–3.5**	**–3.3**	**3.5**	**–8.2**
Europe (without Switzerland)	**–6.5**	**–2.0**	**–7.3**	**–7.7**	**1.8**	**–20.2**
Germany	–4.5	–3.6	–10.5	–11.2	–1.1	–27.6
United Kingdom	–18.6	–0.1	–8.3	–9.1	6.2	–28.1
France	–0.4	1.1	–3.8	–5.4	2.4	–6.2
Italy	–1.8	–5.6	–6.2	–3.5	0.9	–15.3
Netherlands	–5.0	–3.6	–14.4	–14.3	–2.3	–34.3
Other European countries	–6.7	–0.1	–2.2	–3.0	4.4	–7.7
Asia	**–1.0**	**16.7**	**13.4**	**11.8**	**9.9**	**61.0**
China (without Hong Kong)	26.8	48.8	47.3	24.9	20.3	317.2
Gulf States	–7.1	13.0	–1.1	23.9	20.1	54.4
Japan	–3.9	6.8	–5.4	6.3	–3.6	–0.5
India	–0.9	21.1	17.2	3.1	–1.5	43.0
Other Asian countries	–3.5	11.6	13.9	5.6	9.3	41.5
America	**–8.3**	**9.4**	**1.4**	**2.1**	**3.7**	**7.6**
United States of America	–8.9	8.9	–0.9	2.2	4.0	4.4
Canada	–2.8	8.6	1.3	1.5	–0.6	7.9
Brazil	–8.9	16.4	15.2	3.5	2.5	29.8
Other American countries	–9.1	7.8	7.5	0.7	7.5	14.0
Africa	**–10.2**	**–1.1**	**4.7**	**8.3**	**–3.3**	**–2.5**
Oceania	**–15.0**	**16.4**	**7.0**	**5.2**	**8.3**	**20.7**
Total	**–4.7**	**1.7**	**–2.0**	**–2.0**	**2.5**	**–4.6**

Source: FSO – Tourist accommodation statistics

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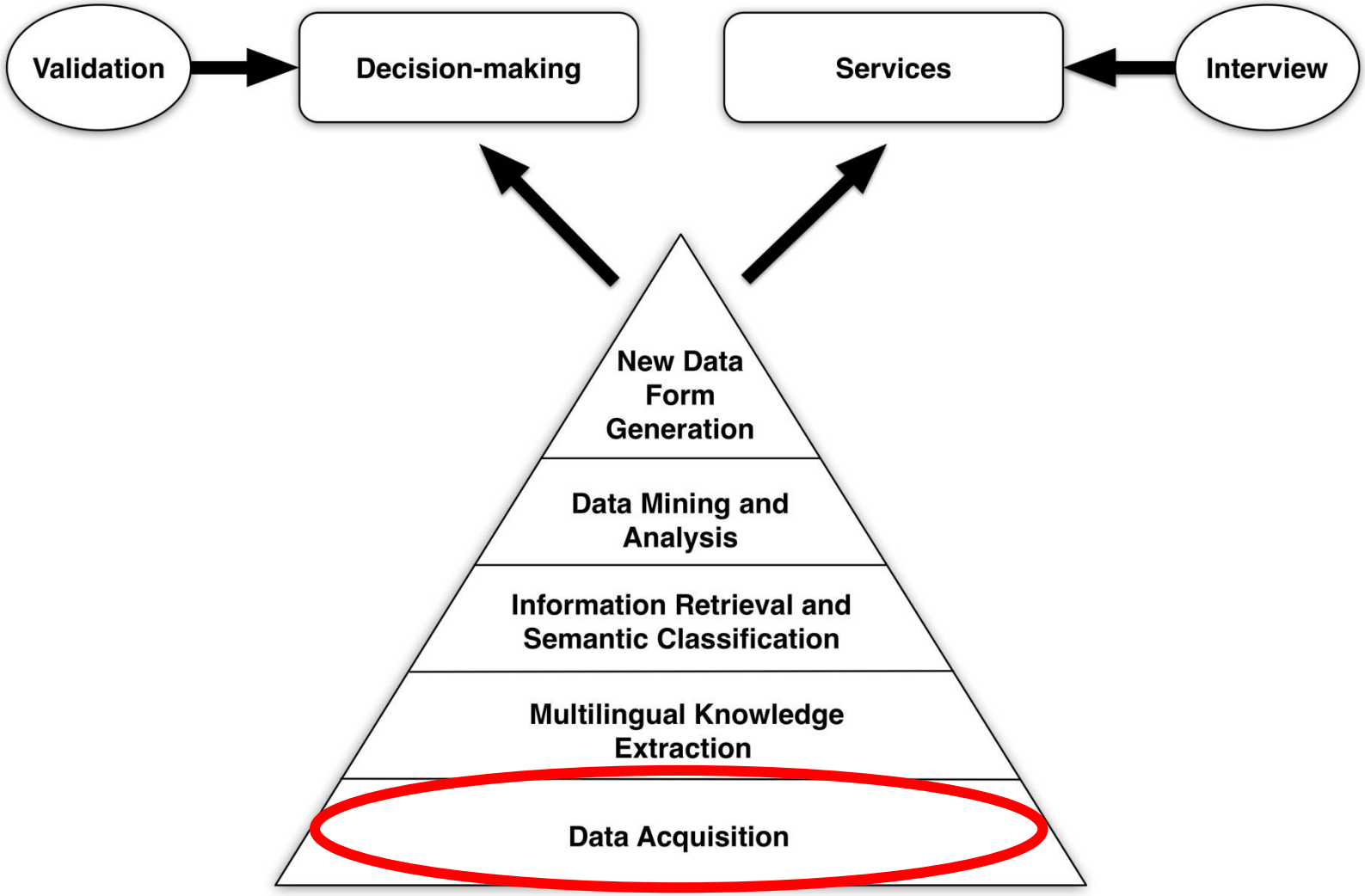
OBJECTIVES

- To build a framework on Chinese social media platform with a **large-scale qualitative analysis** with linked data by using the technologies of Semantic Web and Natural Language Processing

- To provide important guidelines to design a **decision support system** based on the exploring Chinese tourists' **attitude** and **behavior** towards Switzerland

FRAMEWORK FOR TOURISM DSS



DATA ACQUISITION

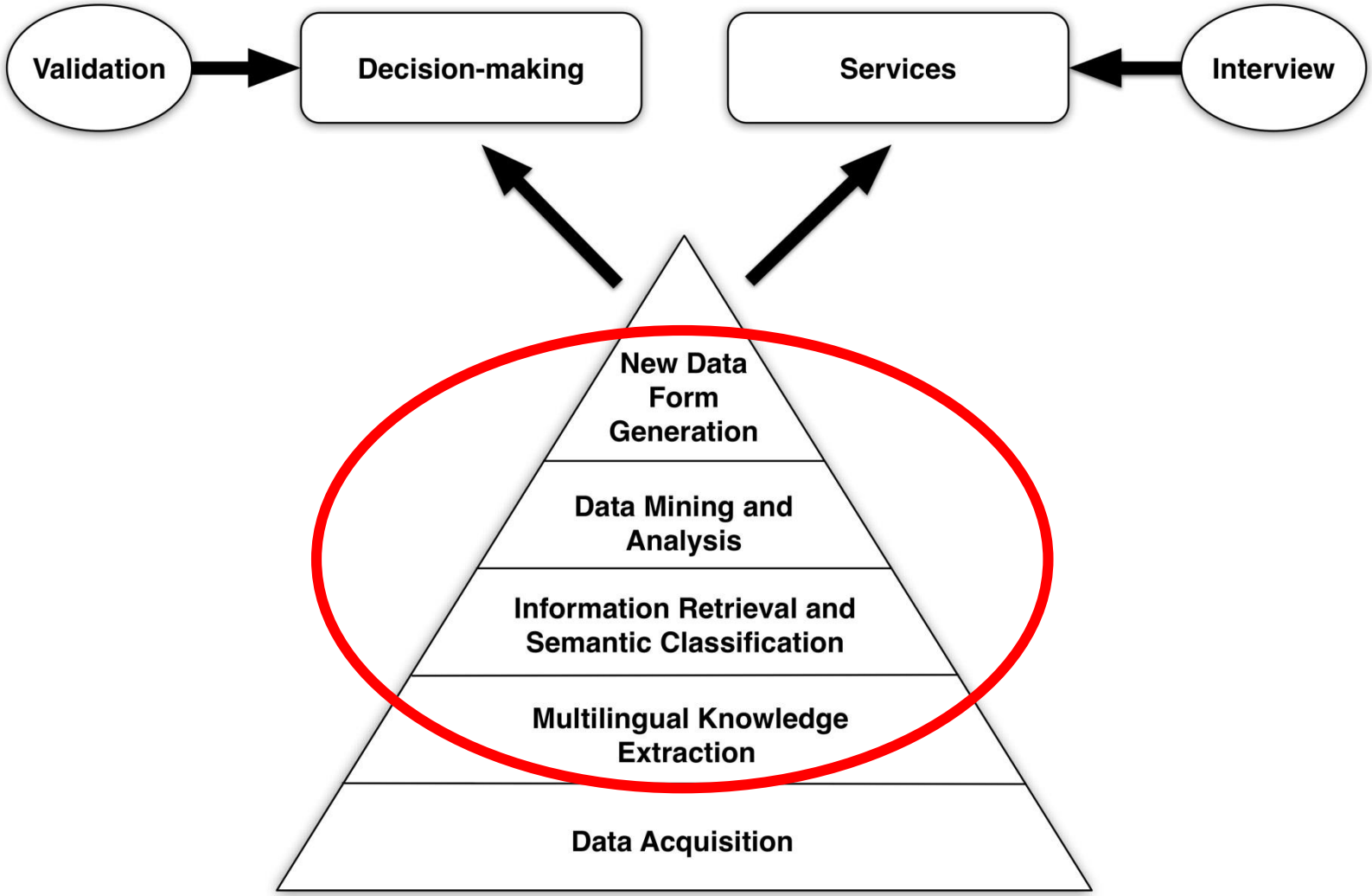
- The **largest** and **leading** social media platform – Sina Weibo, a hybrid of Twitter and Facebook

- Data collection:
  1) **user's profiles**: which contain user's demographic information, and
  2) their micro blogs (**weibos**): mainly focusing on text message and Swiss location information

A WEIBO POST

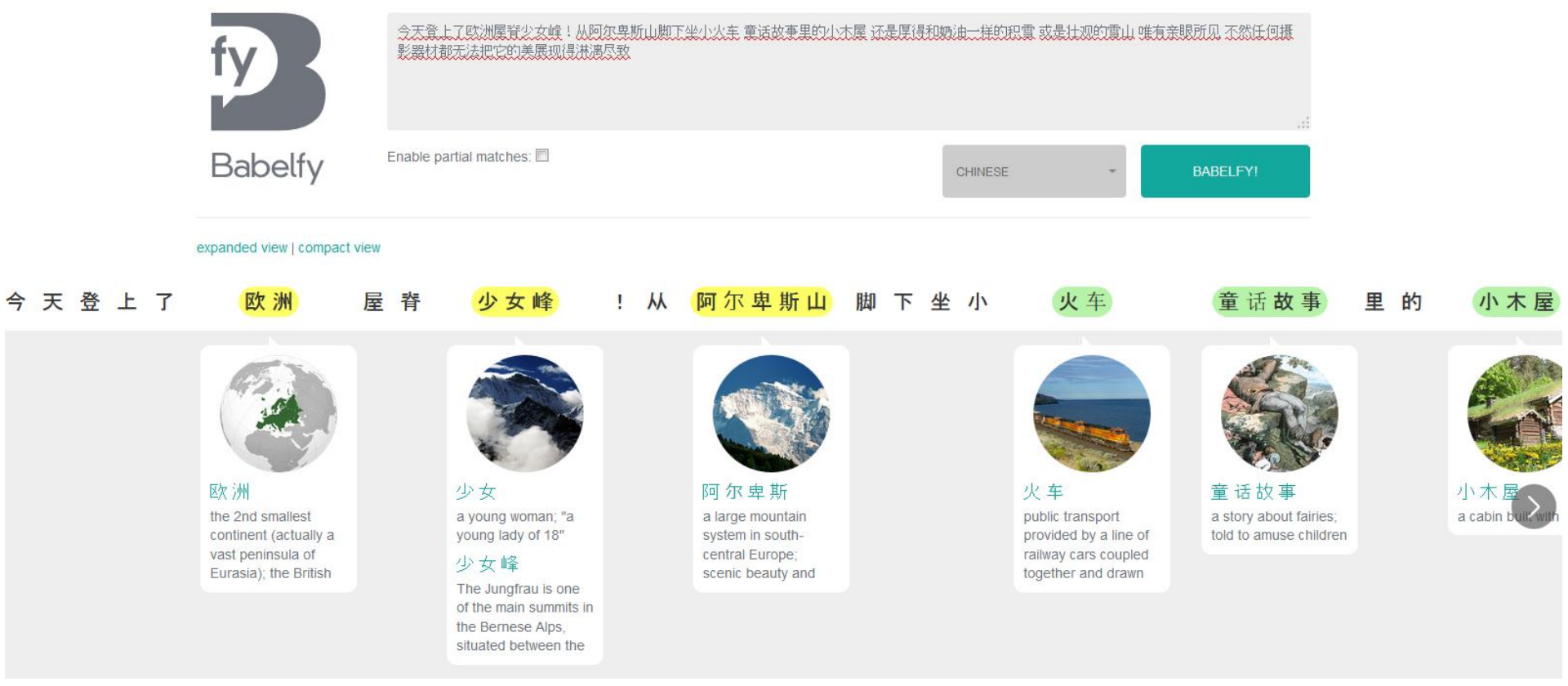
李聃1100：从Cully开始到Rivaz将近六公里的路程是瑞士旅游网站重点推荐的徒步路线之一，走得很辛苦，景致却最好，行进在半山腰的葡萄园间，放眼望去便是莱芒湖和雪山，想想人品还真不错，一是五月份山上还有雪，二是天气预报说有雨，结果走完这段才开始下
瑞士,Vaud,Montreux,Montreux,Place du Marché,1820 - 显示地图
5月7日00:14 来自iPhone客户端
转发 | 收藏 | 评论(3)
User's interpretation
User's photos
User's current location
Comments

FRAMEWORK FOR TOURISM DSS

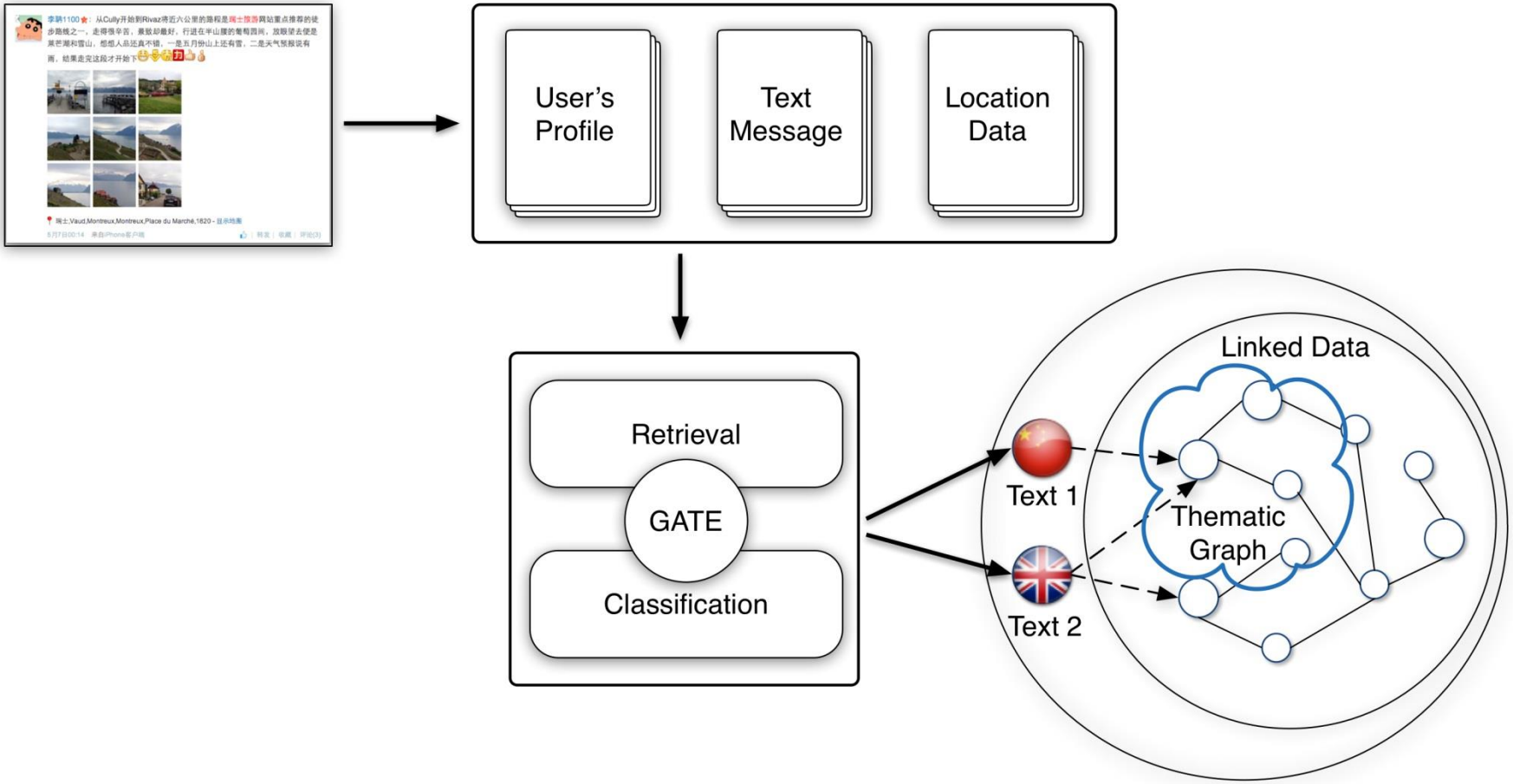


MULTILINGUAL KNOWLEDGE EXTRACTION

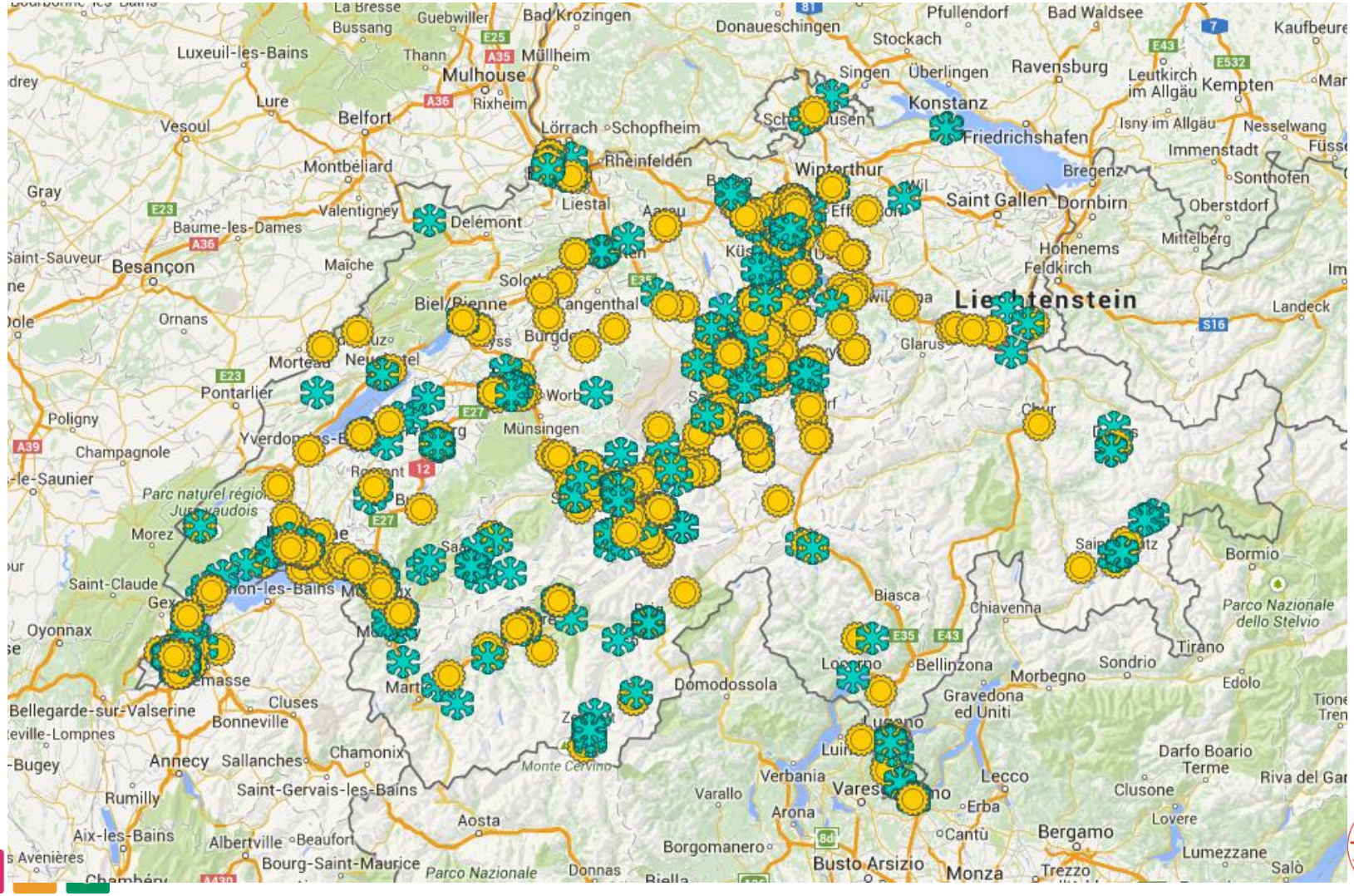
- Ontology based dictionary includes two languages: Chinese and English
- NLP algorithms: machine learning and controlled vocabulary (e.g. wikipedia, babelnet, babelfy)



INFORMATION RETRIEVAL AND SEMANTIC CLASSIFICATION



NEW DATA FORM GENERATION



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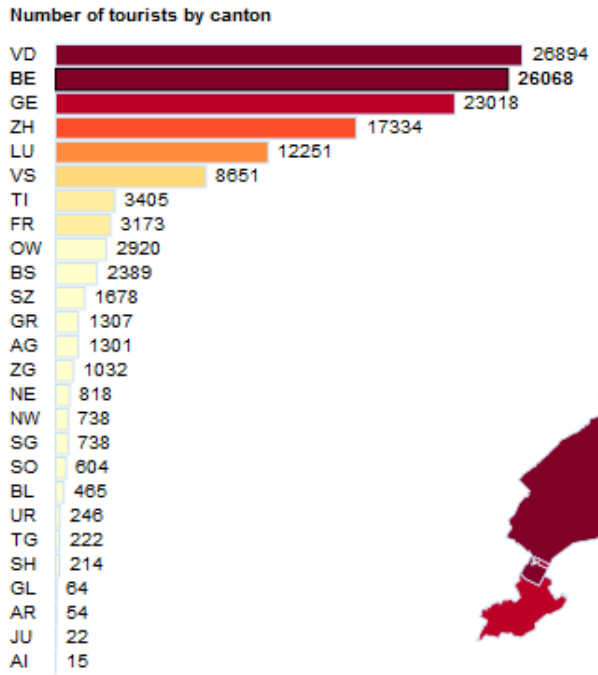
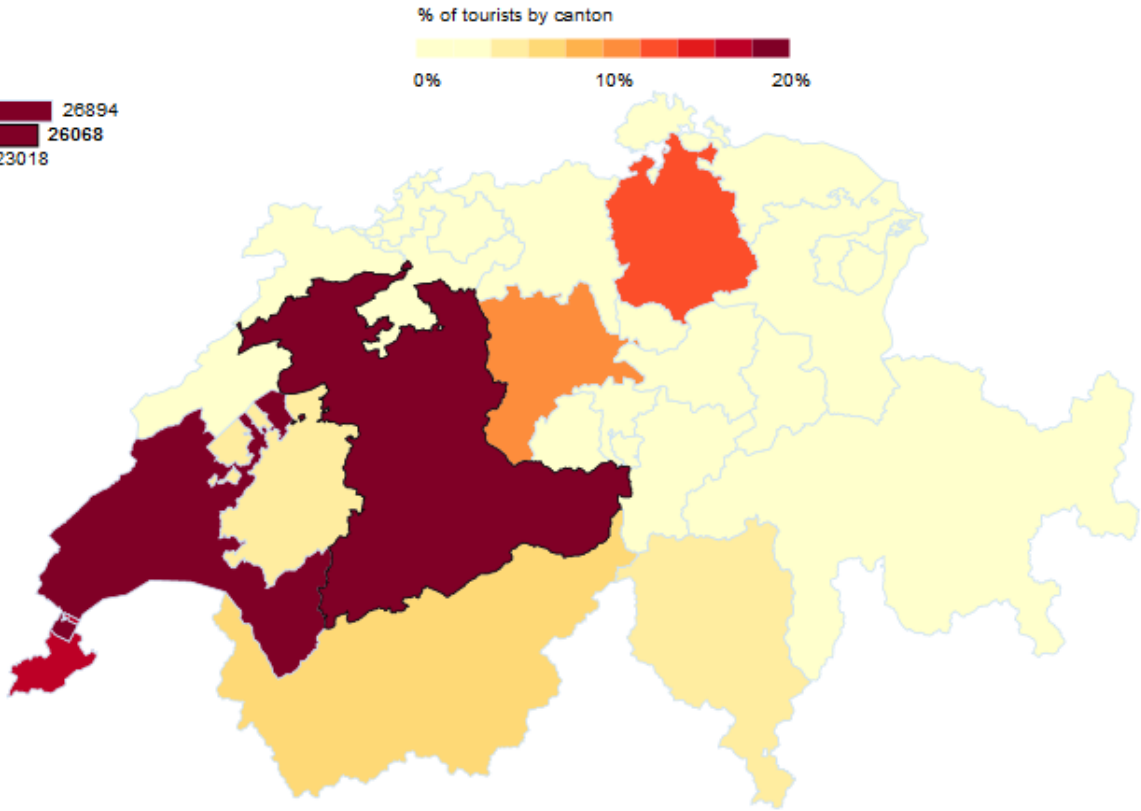
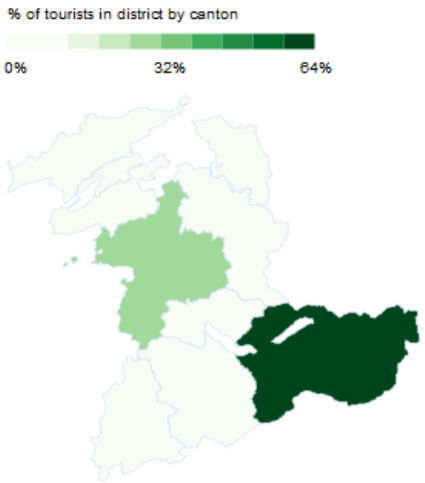
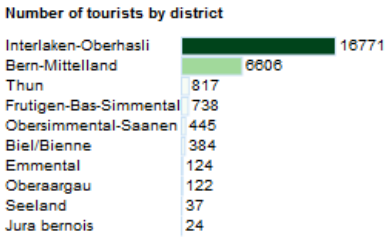


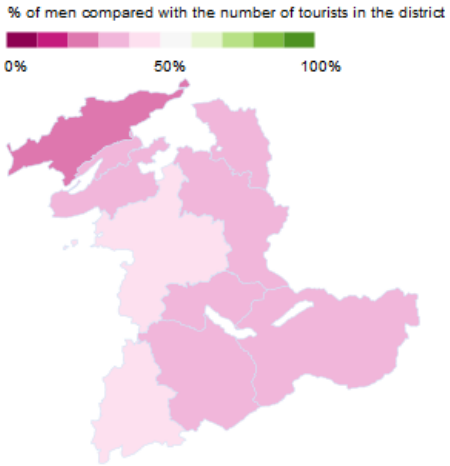


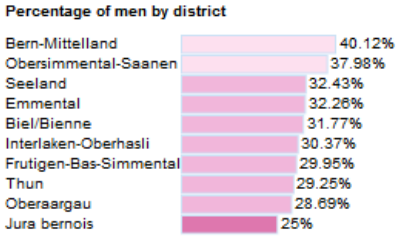
NEW DATA FORM GENERATION

Details for canton: Bern









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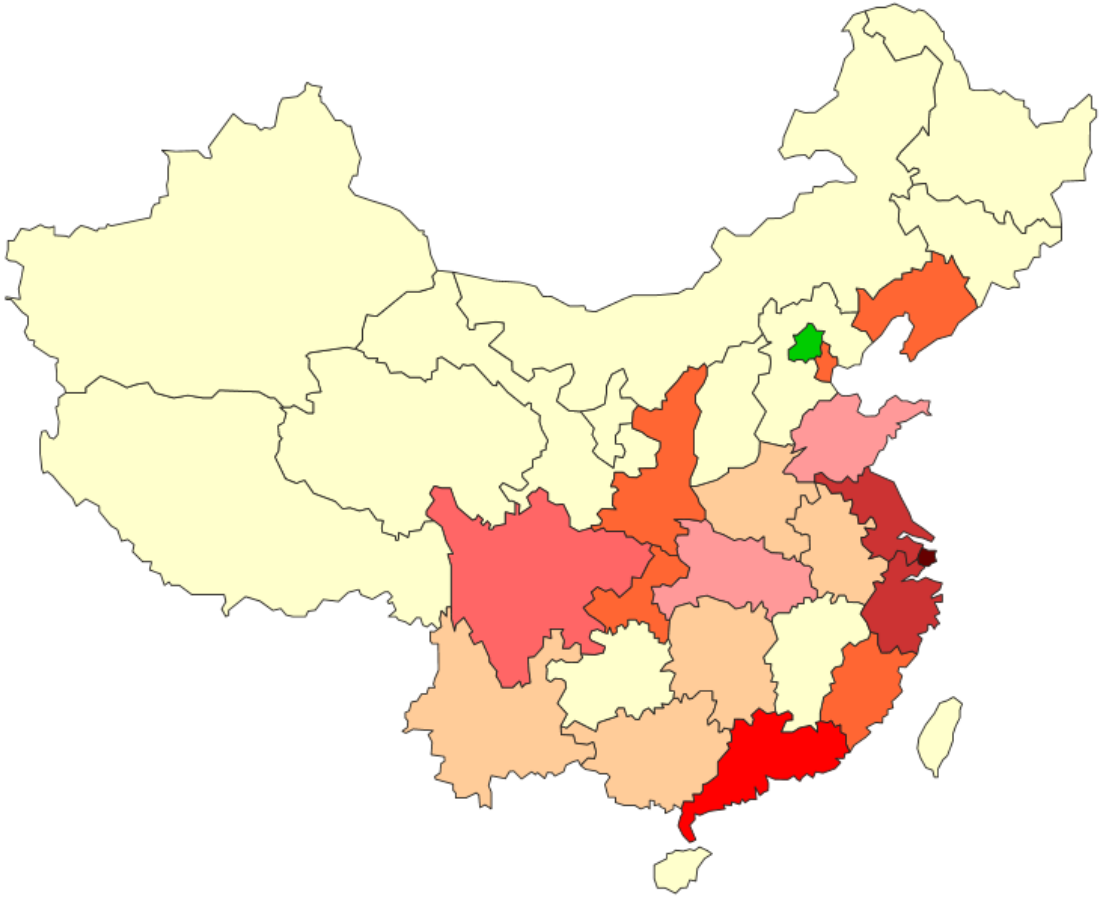


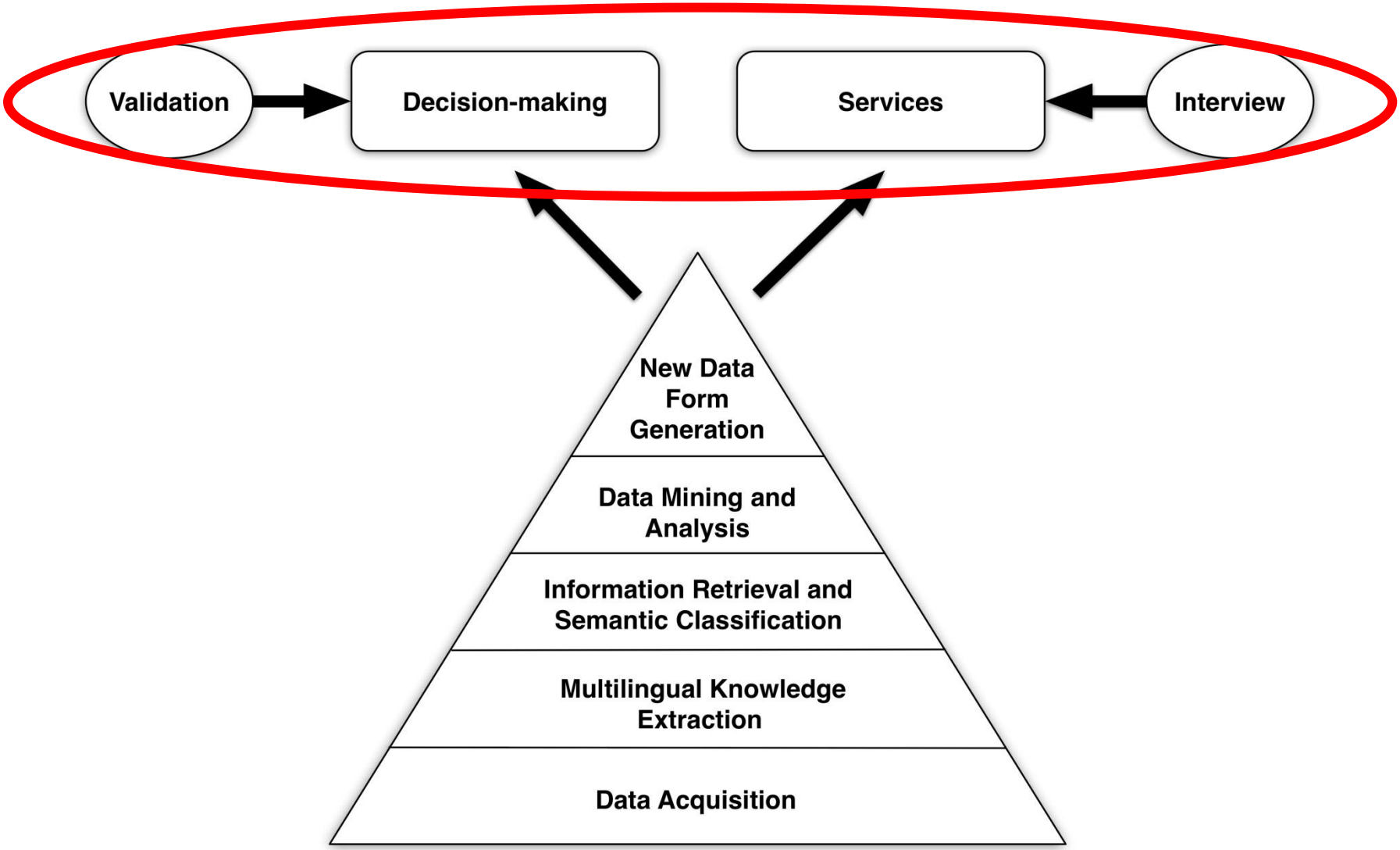
Distribution of the number of visitors

Beijing

21.95% of the total visitors

NEW DATA FORM GENERATION

FRAMEWORK FOR TOURISM DSS



DSS AND SERVICE

- Communication with the tourist destination managers and service providers
- Decision making support system for tourism destination managers and end users
- Validations
  1) Individual interviews
  2) Fous group interviews

MAIN CHALLENGES

- How to make a **representative sample** from a large overall dataset, both in terms of users and Weibo messages?
- How to extract the **multilingual knowledge** from very large collections of natural language texts?
- How to conduct a **qualitative analysis** on the tourism domain and Chinese behaviour patterns?