Data Semantics Lab

Hes·so// VALAIS WALLIS
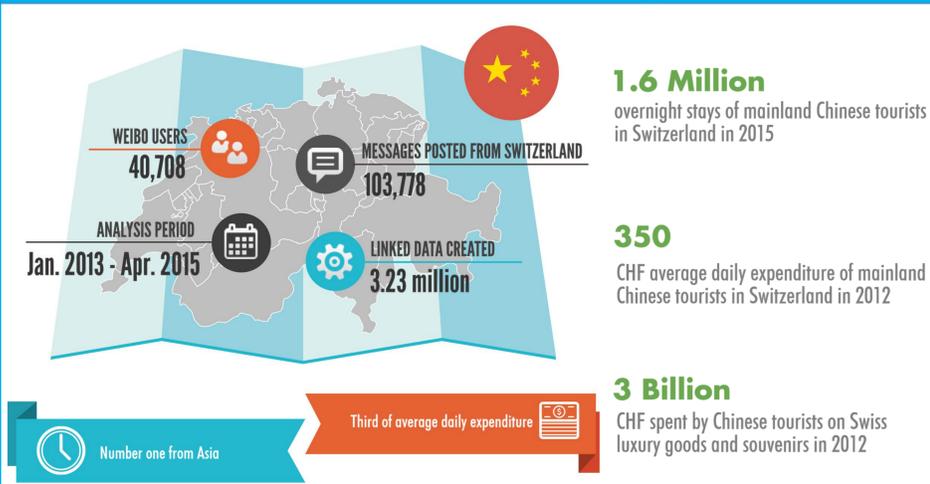School of Management & Tourism
Institute of Information Systems

SWICICO: Social Media Analysis Based on Linked Data for New Trends of Chinese Tourists in Switzerland

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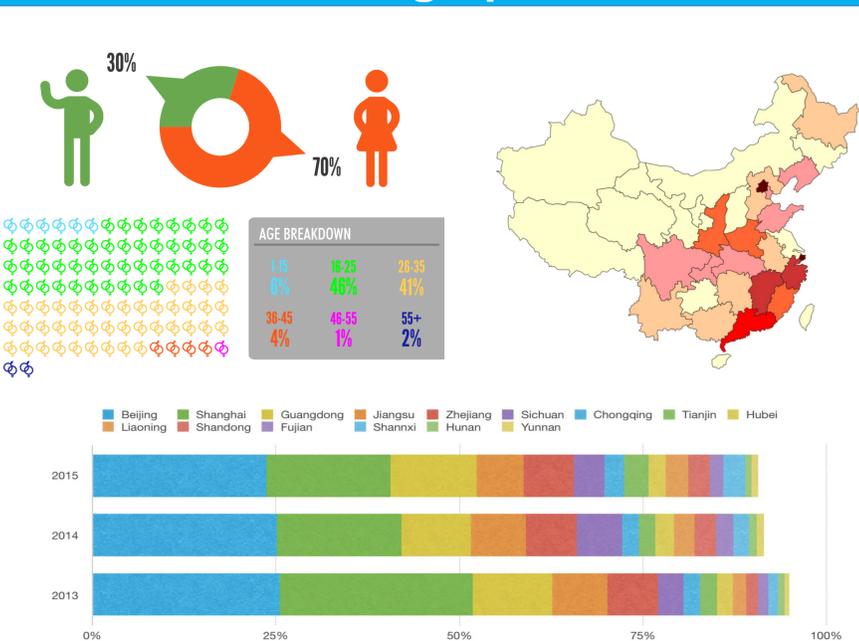
Introduction and Background

WEIBO USERS **40,708**

MESSAGES POSTED FROM SWITZERLAND **103,778**

ANALYSIS PERIOD **Jan. 2013 - Apr. 2015**

LINKED DATA CREATED **3.23 million**

1.6 Million overnight stays of mainland Chinese tourists in Switzerland in 2015

350 CHF average daily expenditure of mainland Chinese tourists in Switzerland in 2012

3 Billion CHF spent by Chinese tourists on Swiss luxury goods and souvenirs in 2012

Number one from Asia

Third of average daily expenditure

Research Questions

Who are these tourists and **where** do they travel in Switzerland? The real name registration applies to Weibo, it is possible to identify these tourists' characteristics, such as gender, age, etc.
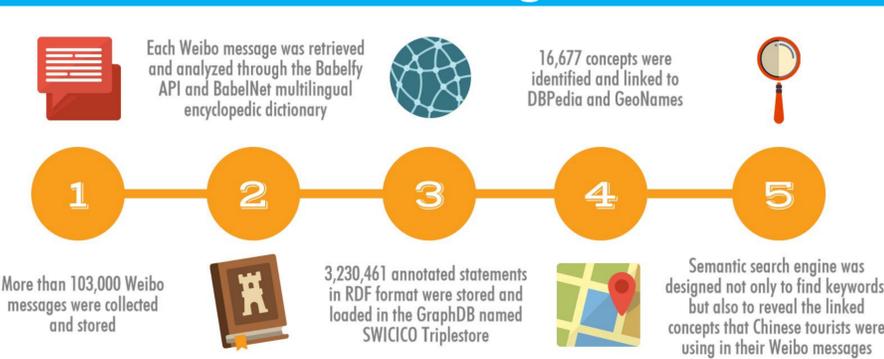
What are their **interests** towards Swiss tourism? This would provide valuable insights in determining Chinese consumption patterns in Switzerland.

What are the **new trends** among Chinese tourists in Switzerland? For example, what are their travel habits in Switzerland, and what are their impacts on tourism destinations?
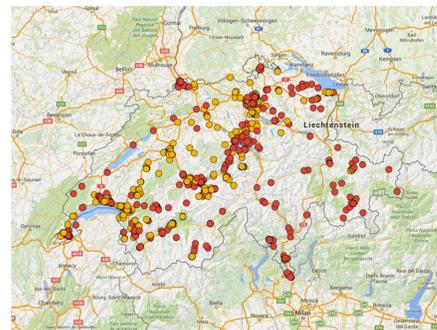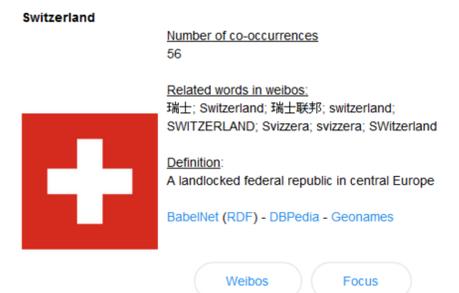
Demographics

30% / 70%

AGE BREAKDOWN

1-15	16-25	26-35
5%	48%	41%

36-45	46-55	55+
4%	1%	2%

Beijing, Shanghai, Guangdong, Jiangsu, Zhejiang, Sichuan, Chongqing, Tianjin, Hubei, Liaoning, Shandong, Fujian, Shannxi, Hunan, Yunnan

2015 / 2014 / 2013

0% 25% 50% 75% 100%

Methodologies

Each Weibo message was retrieved and analyzed through the Babelfy API and BabelNet multilingual encyclopedic dictionary

16,677 concepts were identified and linked to DBPedia and GeoNames

1 More than 103,000 Weibo messages were collected and stored

2

3 3,230,461 annotated statements in RDF format were stored and loaded in the GraphDB named SWICICO Triplestore

4

5 Semantic search engine was designed not only to find keywords, but also to reveal the linked concepts that Chinese tourists were using in their Weibo messages

Key Findings

First time vs. multiple time visitors

Zurich Airport, Wine, WiFi, Price, Fondue, Buildings, Hotel, Bedroom, Air, Diner, Swissair, School, Swan — Geneva, Lucerne, Bern, Cities, Water, Lake, Landscape, Chocolate, Breakfast, Restaurant, Train, Weather, Weibo — Alps, Davos, Zurich, Jungfrau, Snow Mountain, Switzerland Tourism, Cable Car, Photos, Castle, Church, Airplane — Interlaken, St. Moritz, Lausanne, Montreux, Schilthorn, Glacier, BaselWorld, Gift, Friends, Cheese, Auto Show, Coffee

Semantic search

Matterhorn, town, Alps, Switzerland, Interlaken, Zermatt, train, Jungfrau, Lucerne, skiing

Switzerland
Number of co-occurrences
56
Related words in weibos:
瑞士; Switzerland; 瑞士联邦; switzerland; SWITZERLAND; Svizzera; svizzera; SWitzerland
Definition:
A landlocked federal republic in central Europe
BabelNet (RDF) - DBPedia - Geonames
Weibos | Focus

Most frequently appearing nouns

TRENDS	2015	2014	2013	NOUNS
→	1	1	1	Switzerland
→	2	2	3	Snow Mountain
↗	3	6	8	Zurich
↗	4	5	7	Geneva
→	5	4	5	Town
→	6	7	4	Hotel
↗	7	9	13	Feeling
→	8	10	6	Snow
↗	9	11	14	Lucerne
↗	10	12	15	Alps
↗	11	18	17	Weather
→	12	14	10	Jungfrau
↘	13	8	9	Train
↗	14	16	16	Interlaken
↗	15	17	19	Lake
↘	16	15	12	Landscape/Nature/Scape
↘	17	13	11	Weibo
↗	18	20	19	Mountain
↗	19	24	27	Chocolate
↗	20	22	-	Basel
⟳	21	-	-	WeChat
↗	22	25	20	Bern
↗	23	30	21	Breakfast
↗	24	29	24	Restaurant
→	25	26	23	Lausanne
⟳	26	-	-	Watch
↗	27	28	22	Richness
⟳	28	-	-	Montreux
↘	29	21	25	Swan
⟳	30	-	-	School

Distribution map
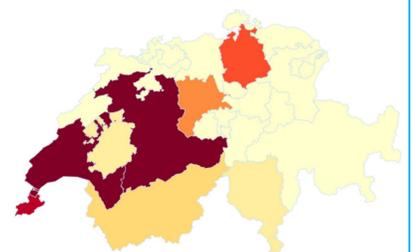
Post pattern analysis
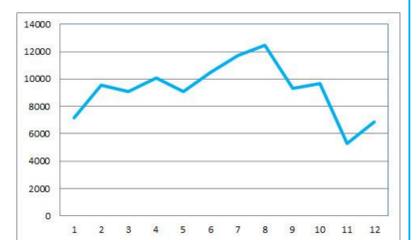
Conclusion and Implications

Filled an important gap in the literature on Chinese consumers' behaviors in Switzerland based on social media platforms by using **Linked Data** technologies.

Classified and analyzed massive datasets from Sina Weibo, **advanced visualization** and **semantic search** features facilitated the discovery of interesting places and activities in Switzerland.

Provided a simple way to help Swiss tourism agencies obtain **valuable insights** into tourism marketing strategies, especially to communicate with individual tourists.

For More Information

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