Baidu Big Data and its Applications in Official Statistics

Oct, 2014

Bai du 百度

Baidu Big Data: What We've Got

百度一下

💻 **6 billion**
──────────────
📱 **4 billion**

Search Requests per day
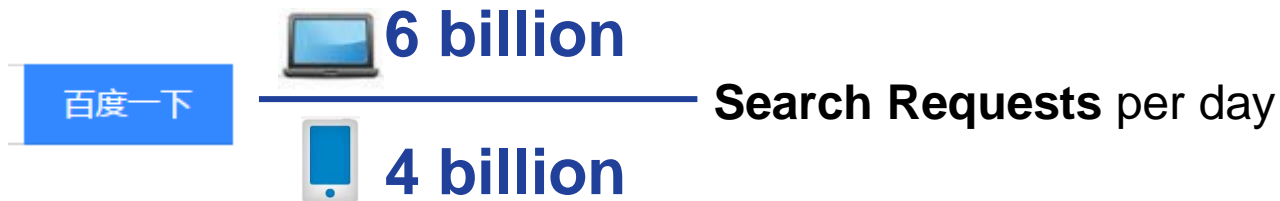
Bai du 百度
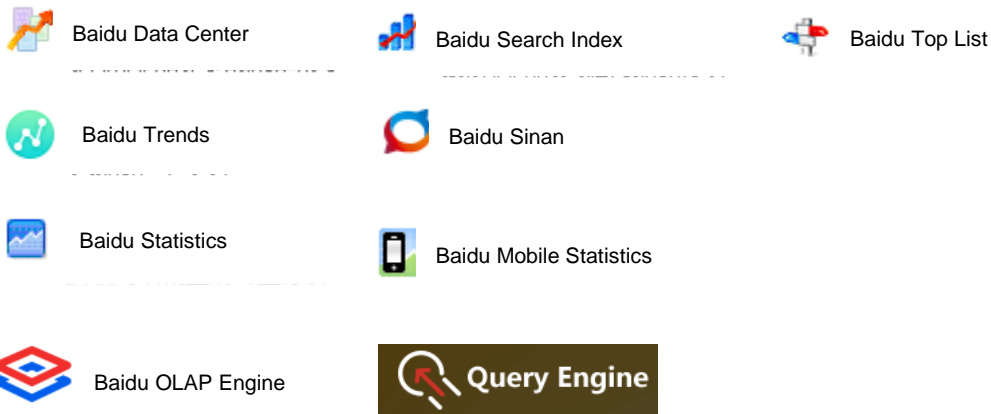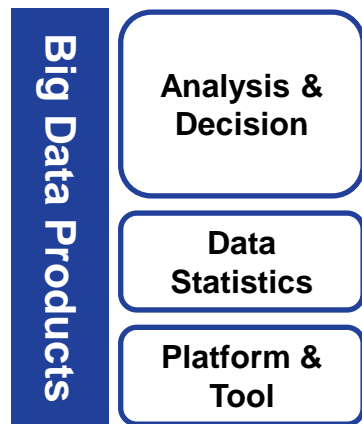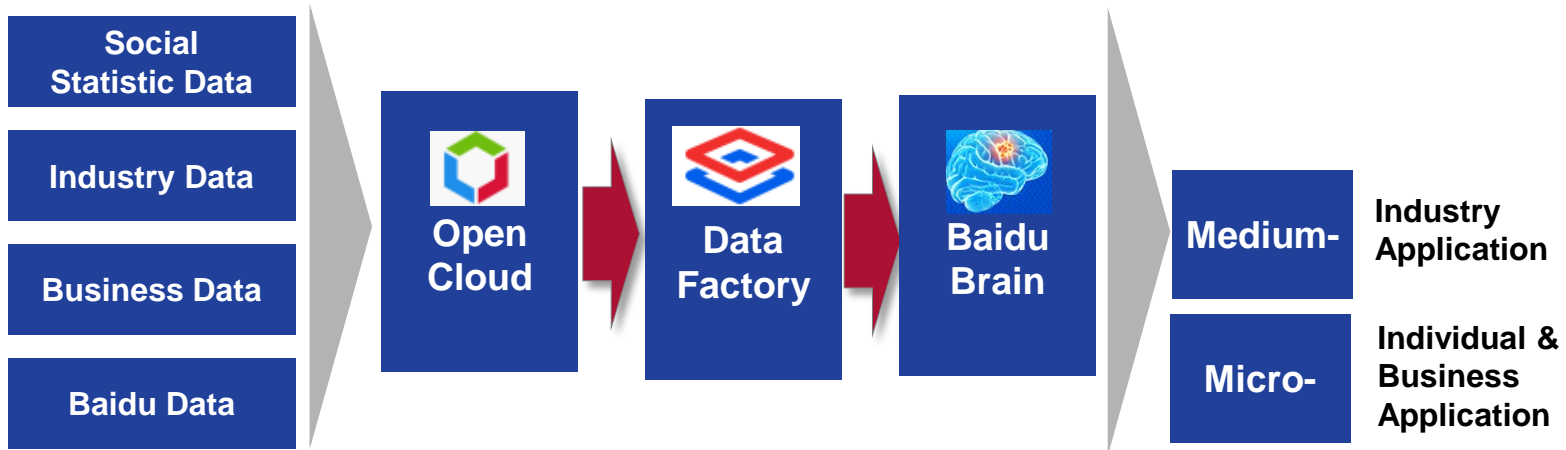
Bai du 知道 **230 million** questions answered

Bai du 贴吧 **1 billion** Page Views, **33 million** posts per day

Bai du 百科 **6.2 million** vocabulary entries
140 thousand entries renewed per day

LBS

30 billion API Calls per day

Baidu Big Data: Products & Services

Social Statistic Data		Open Cloud		Data Factory		Baidu Brain		Medium-	Industry Application
Industry Data									
Business Data								Micro-	Individual & Business Application
Baidu Data									

Big Data Products

- **Analysis & Decision**
- **Data Statistics**
- **Platform & Tool**

Baidu Data Center

Baidu Search Index

Baidu Top List

Baidu Trends

Baidu Sinan

Baidu Statistics

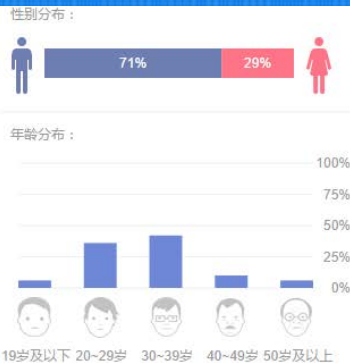Baidu Mobile Statistics

Baidu OLAP Engine

Query Engine
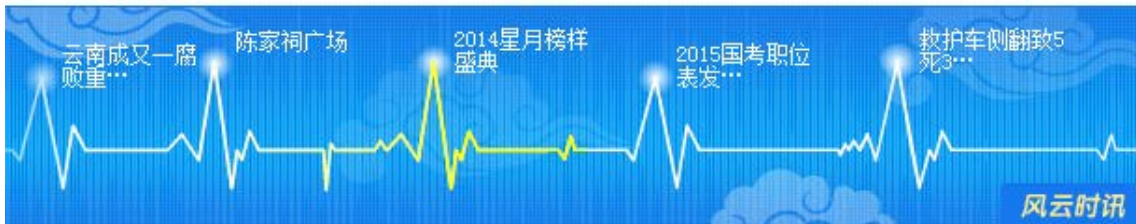
On micro level, Baidu is providing individuals and enterprises with a variety of big data products

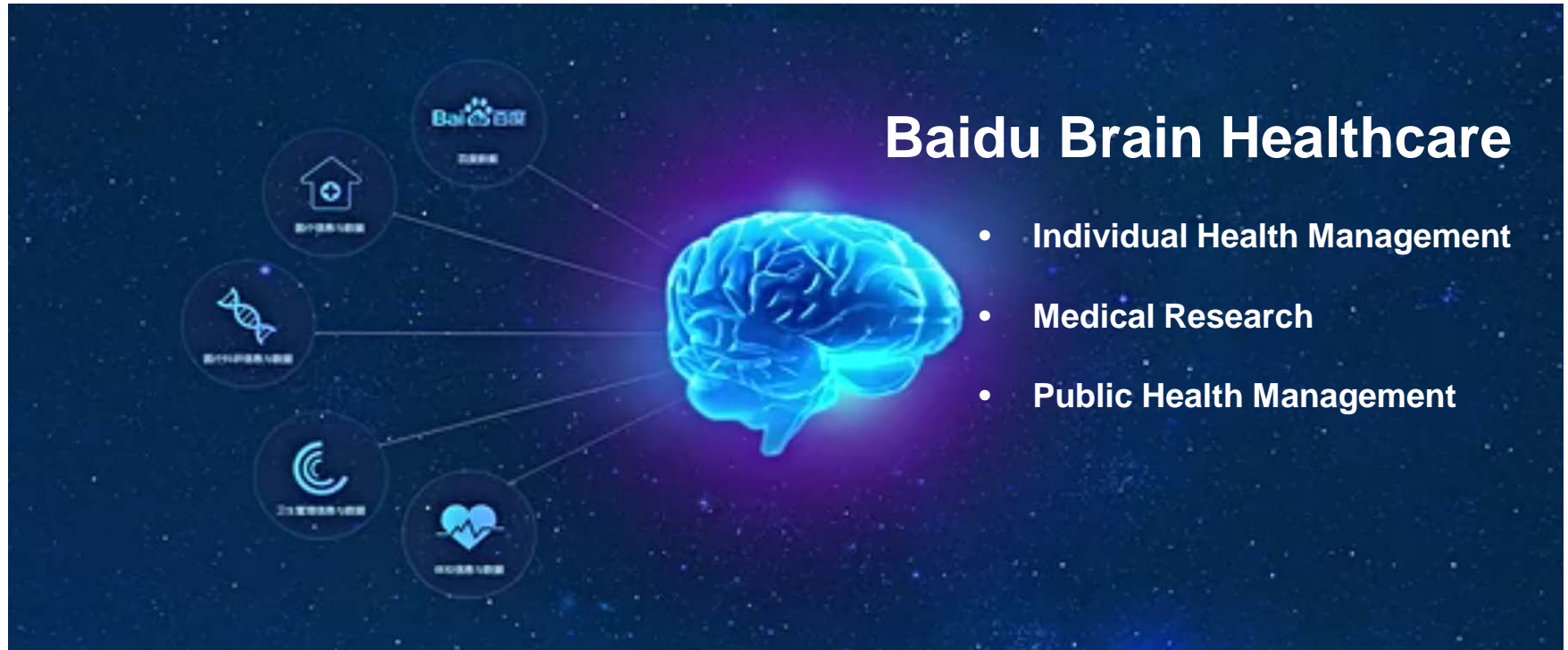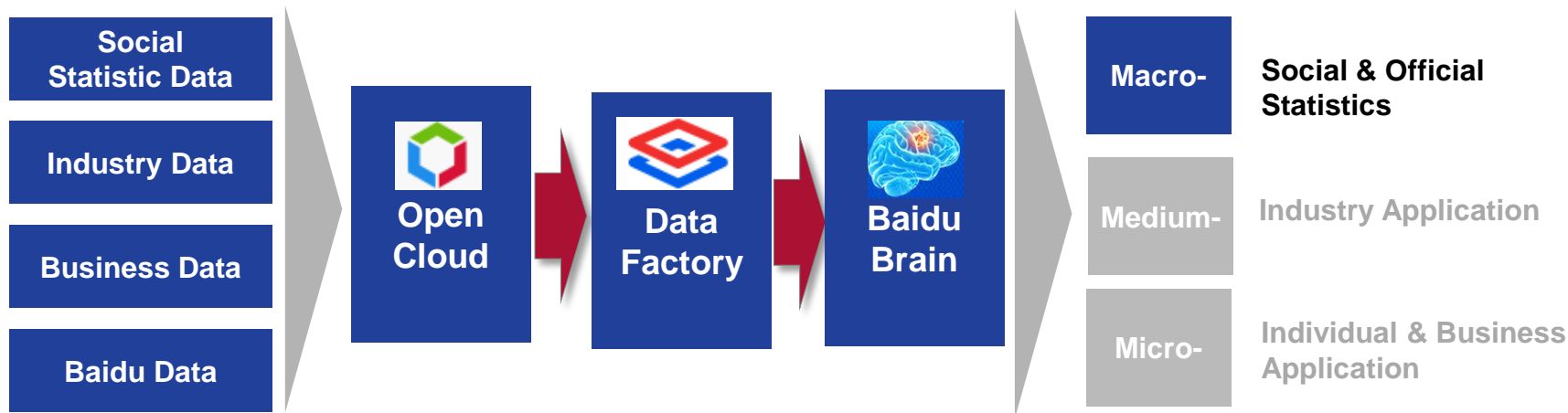**Baidu Search Index**

Trends

Hot Issues

User Profiles
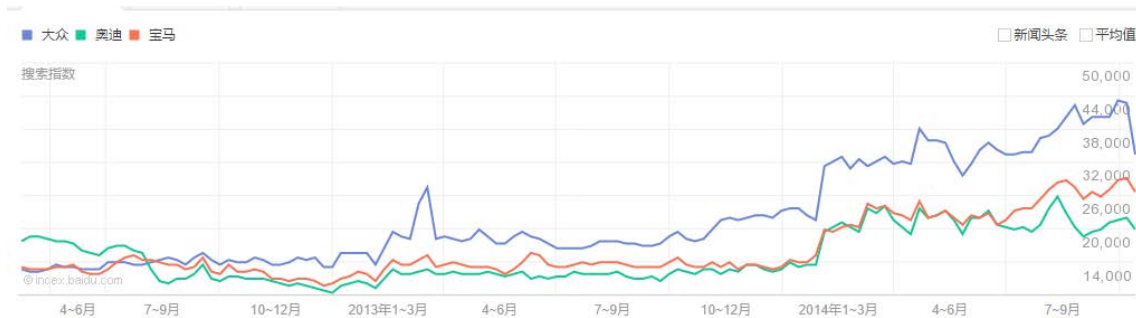
On medium level, Baidu big data is penetrating, supporting and even reshaping traditional sectors

Baidu Brain Healthcare

- **Individual Health Management**

- **Medical Research**

- **Public Health Management**

Baidu big data also contributes to official statistics by supporting analysis, forecasts and decision making

Input Data	Processing	Output
Social Statistic Data	Open Cloud → Data Factory → Baidu Brain	Macro- — **Social & Official Statistics**
Industry Data		Medium- — Industry Application
Business Data		Micro- — Individual & Business Application
Baidu Data		

Official Statistics

| National Economy	Social Development	Science & Technology	Resource & Environment
• Macro-economic Index • Consumption • Investment • Export • ……	• Demographics • Employment and Remuneration • Education/Culture / Hygiene /Sports • Entertainment	• Technology • Activities • Research Institutions • Patent Statistics • ……	• Water/Forest/Land • Pollution • Natural Disaster • ……

Baidu Big Data and Economic Development

Traditional Official Statistics

地区: 全国 ▼				查询时间:	2013年 ▼	9月 ▼	至今 ▼	刷新
指标▲	2014年9月	2014年8月	2014年7月	2014年6月	2014年5月	2014年4月	2014年3月	20
ⓘ制造业采购经理指数(%)	51.1	51.1	51.7	51.0	50.8	50.4	50.3	
ⓘ生产指数(%)	53.6	53.2	54.2	53.0	52.8	52.5	52.7	
ⓘ新订单指数(%)	52.2	52.5	53.6	52.8	52.3	51.2	50.6	
ⓘ新出口订单指数(%)	50.2	50.0	50.8	50.3	49.3	49.1	50.1	
ⓘ在手订单指数(%)	45.6	45.9	46.4	46.2	46.0	44.9	44.8	
ⓘ产成品库存指数(%)	47.2	48.1	47.6	47.3	47.1	47.3	48.3	
ⓘ采购量指数(%)	51.2	51.9	53.0	52.0	52.3	50.6	50.3	
ⓘ进口指数(%)	48.0	48.5	49.3	49.2	49.0	48.6	49.1	
ⓘ主要原材料购进价格指数(%)	47.4	49.3	50.5	50.1	50.0	48.3	44.4	
ⓘ原材料库存指数(%)	48.8	48.6	49.0	48.0	48.0	48.1	47.8	
ⓘ从业人员指数(%)	48.2	48.2	48.3	48.6	48.2	48.3	48.3	
ⓘ供应商配送时间指数(%)	50.1	50.0	50.2	50.5	50.3	50.1	49.8	
ⓘ生产经营活动预期指数(%)	56.0	57.9	55.3	54.8	56.2	59.6	62.7	

Baidu Big Data

Based on search data, Baidu has launched Baidu Economic Index Trends, including SMEs Climate Index and Macro-economic Index Prediction.

Baidu Economic Index Trends
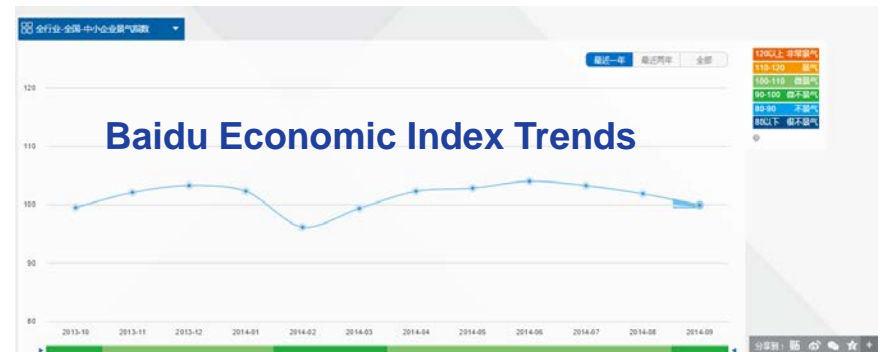
Baidu big data assist departments of economy management in grasping economic trends and monitoring the business climate condition, providing analysis、 predictions and decision-supporting.
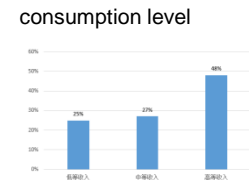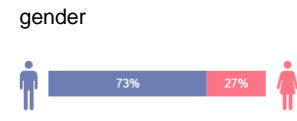
Baidu Big Data and Demographics

Traditional Official Statistics

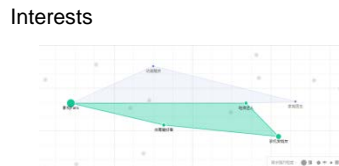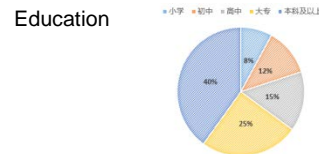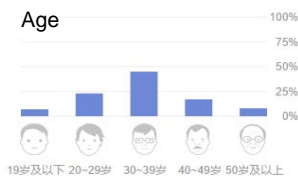| 指标	2013年	2012年	2011年	2010年	2009年	2008年	2007年	2006年	2005年
年末总人口(万人)	136,072	135,404	134,735	134,091	133,450	132,802	132,129	131,448	130,756
男性人口(万人)	69,728	69,395	69,068	68,748	68,647	68,357	68,048	67,728	67,375
女性人口(万人)	66,344	66,009	65,667	65,343	64,803	64,445	64,081	63,720	63,381
城镇人口(万人)	73,111	71,182	69,079	66,978	64,512	62,403	60,633	58,288	56,212
乡村人口(万人)	62,961	64,222	65,656	67,113	68,938	70,399	71,496	73,160	74,544

- National/Regional Population
- Urban/Rural Population
- Gender
- Region
- Age Structure
- Birth Rate/Death Rate
- ......

Baidu Big Data

- **PC User**
- **Mobile User**

Region

gender

73%   27%

consumption level

25%   27%   48%

Age

19岁以下 20~29岁 30~39岁 40~49岁 50岁及以上

Education

小学 初中 高中 大专 本科及以上
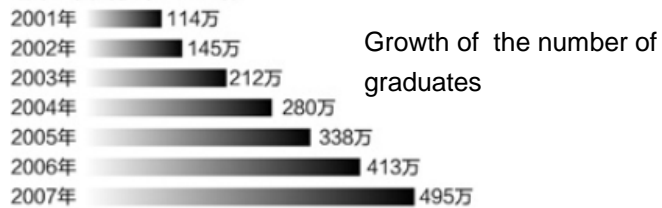
8% 12%
40% 15%
25%

Interests

Baidu big data assist statistical departments by real-time and multi-dimensional statistics and insights of internet users.

Baidu Big Data and Employment

Traditional Official Statistics

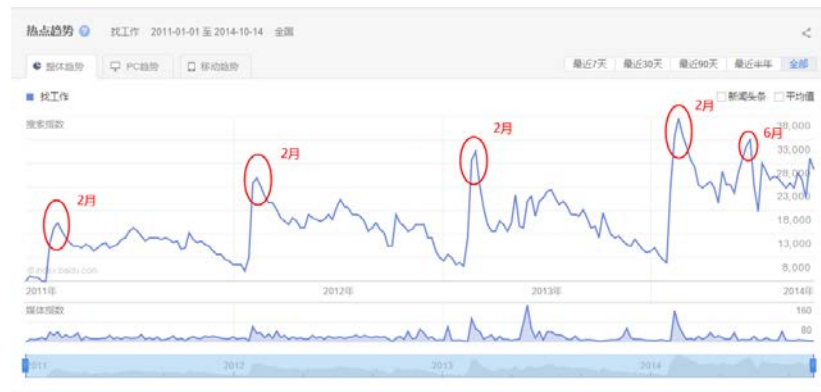## Baidu Big Data

近年全国高校毕业生人数
2001年 114万
2002年 145万
2003年 212万
2004年 280万
2005年 338万
2006年 413万
2007年 495万
2008年
2009年
2010年
2011年
2012年
2013年

Growth of the number of graduates

Baidu search data reflect the trend of job demands

Growth of labor demand

年份	国内生产总值指数（上年=100）	非农就业量（万）	城镇单位在岗职工平均实际工资指数（上年=100）	非农产业劳动生产率（真实）增长率	非农就业的增长率	非农劳动力需求增长率
2000年	108.4	36042.5	111.4	0.088	0.012	0.037
2001年	108.3	36398.5	115.2	0.083	0.010	0.079
2002年	109.1	36640.0	115.5	0.087	0.007	0.074
2003年	110.0	37531.6	112.0	0.081	0.024	0.064
2004年	110.1	39434.2	110.5	0.032	0.051	0.123
2005年	111.3	41205.2	112.8	0.085	0.045	0.088
2006年	112.7	43037.4	112.7	0.084	0.044	0.088
2007年	114.2	44590.0	113.6	0.099	0.036	0.073
2008年	109.6	45640.6	111.0	0.065	0.024	0.069
2009年	109.2	46937.5	113.0	0.075	0.028	0.083
2010年	110.4	48174.4	110.0	0.080	0.026	0.046

Baidu big data assist ministries of human resources and social security in understanding the employment trends and demands and supporting policy-making.

Baidu Big Data and Healthcare

Traditional Official Statistics

Baidu Big Data

Baidu big data assist ministries of health in monitoring epidemic disease trends and taking precautionary measures.

Baidu Big Data and Tourism Management

Traditional Official Statistics

Baidu Big Data

2014年1-8月四川省旅游经济情况简述

信息来源:政策法规处 2014-09-23 阅读 905 次【大 中 小】【打印】

2014年1-8月,我省旅游业呈现稳定增长态势。全省共接待国内外游客3.93亿人次,同比增长14.6%;实现旅游总收入3261.4亿元,同比增长27.4%。

一、国内旅游

1-8月我省累计接待国内旅游人数超过3.91亿人次,同比增长14.5%。实现国内旅游收入3228.49亿元,同比增长27.5%。

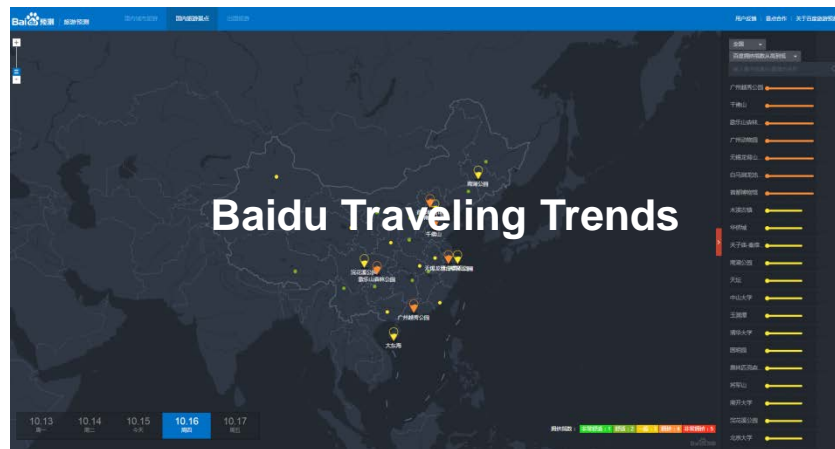二、入境旅游

1-8月我省累计接待入境游客147.65万人次,同比增长16.5%。实现旅游外汇收入5.31亿美元,同比增长17.2%。

三、出境旅游

1-8月我省旅行社组织71.96万居民出境旅游,累计增长53.9%。

Baidu Traveling Trends

Baidu big data assist departments of tourism management in predicting tourist flow to prepare evacuating measures in advance.

Baidu Big Data Cooperation with Official Organizations

National Bureau of Statistics of China

China Consumers' Association

Ministry of Transport of China

Ministry of Public Security of China

Ministry of Education of China

State Food and Drug Administration

Ministry of Industry and Information Technology of China

Beijing Municipal Health Bureau

Shandong Travel and Tourism Administration

China Air Transport Association

China Banking Association

Baidu big data for Official Statistics:

- **mastering macro trends**

- **learning people's livelihood**

- **driving management innovation**

Thank you

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Oct, 2014

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