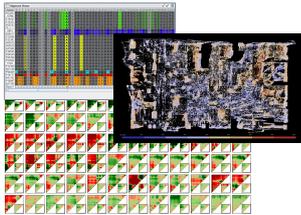
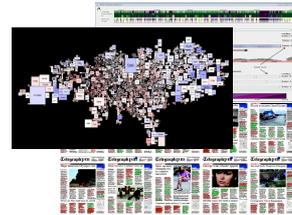


# Interactive Monitoring of Social Media Using Visual Analytics

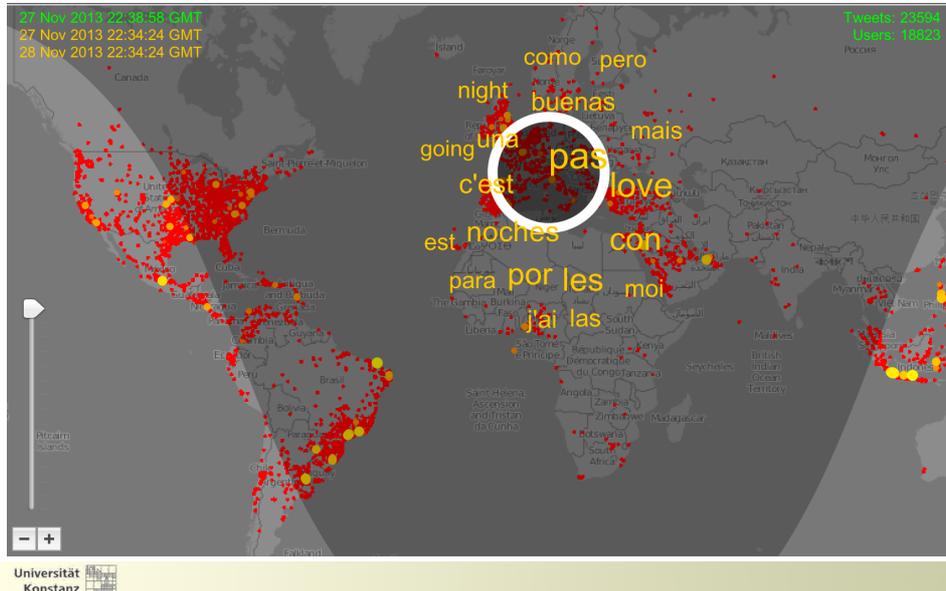


**Daniel A. Keim**  
Data Analysis and Information  
Visualization Group  
University of Konstanz, Germany



Dialogveranstaltung Münchner Kreis  
July 10, 2014

## Monitoring of Social Media



## Social Media Analysis

**Automated Analysis of social media only works under certain preconditions.**

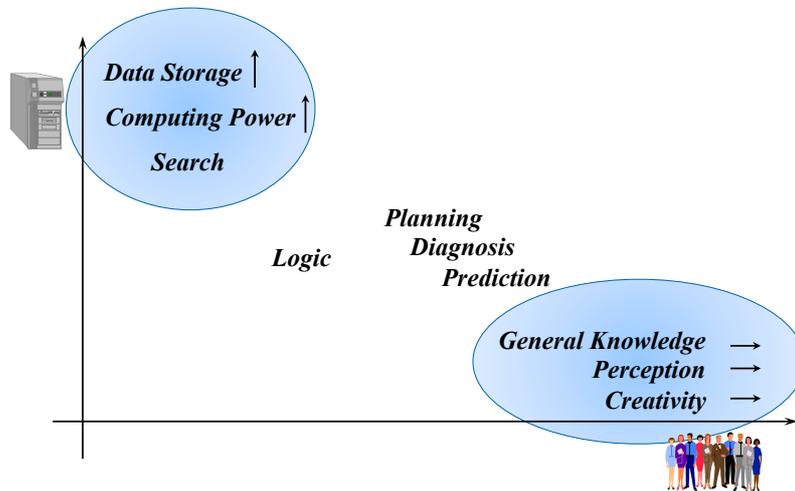
### Preconditions:

- Data is clearly structured
- Data semantics is well-defined
- Data is complete, correct, and not changing over time

**AND**

- Task is well-defined

## Visual Social Media Analysis



## Visual Social Media Analysis

***"Computers are incredibly fast,  
accurate, and stupid; humans are  
incredibly slow, inaccurate, and  
brilliant; together they are powerful  
beyond imagination."***

attributed to Albert Einstein

# Social Media Monitoring Examples

## Europe Media Monitor

### Europe Media Monitor

- collects news documents from 2,500 news sources: media portals, government websites, and news agencies
- processes 80,000-100,000 articles per day
- in 46 languages
- classifies the news according to countries and subjects
- extracts information about entities: people, places, and organizations

NewsBrief

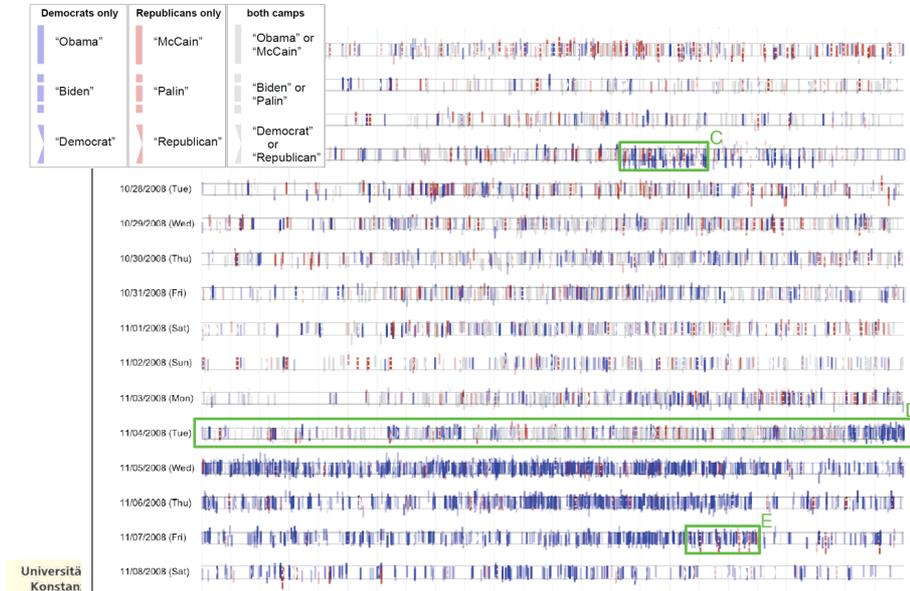


NewsExplorer

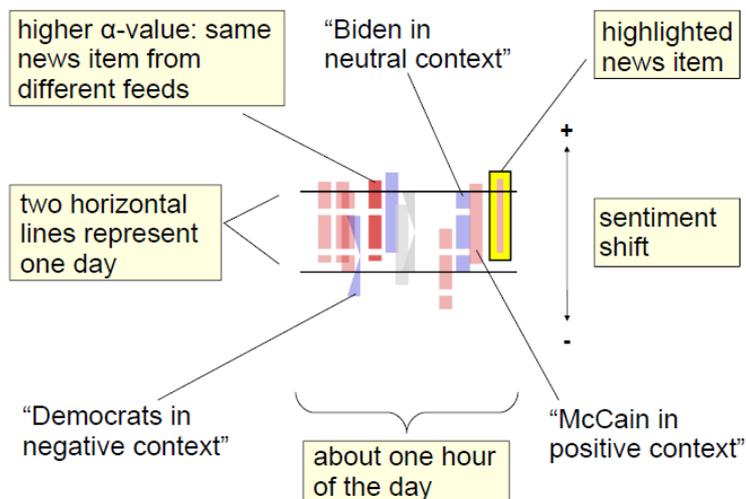




# Sentiment Explorer



# Sentiment Explorer



Fri Oct 10 19:41:49 CST 2008 (Feed 19):  
 Palin abused power Alaska 'Troopergate' probe finds: AFP - Republican vice-presidential nominee Sarah Palin abused her position as Alaska Governor by pressuring officials to dismiss a state trooper, an investigator's report said.

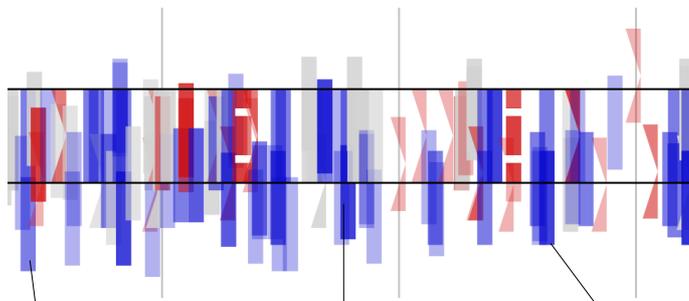
Fri Oct 10 22:15:22 CST 2008 (Feed 39):  
 Palin says report says she acted lawfully (Reuters): Reuters - Alaska Gov. Sarah Palin acted "within proper and lawful authority" in removing the state's public safety commissioner, the McCain-Palin Republican presidential ticket said on Friday in response to a state report.

Fri Oct 10 19:24:20 CST 2008 (Feed 49):  
 Alaska panel finds Palin abused power in firing: ANCHORAGE, Alaska (AP) -- A legislative committee investigating Alaska Gov. Sarah Palin has found she unlawfully abused her authority in firing the state's public safety commissioner. The investigative report concludes that a family grudge wasn't the sole reason for firing Public Safety Commissioner Walter Monegan but says it likely was a contributing factor....

Fri Oct 10 21:50:40 CST 2008 (Feed 32):  
 Alaska ethics probe says Palin abused her power: CHILLICOTHE, Ohio (Reuters) - An Alaska ethics inquiry found on Friday that U.S. Republican vice presidential candidate Sarah Palin abused her power as the state's governor, casting a cloud over John McCain's controversial choice of running mate for the November 4 election.

Fri Oct 10 21:06:44 CST 2008 (Feed 18):  
 Probe accuses Palin of abuse of power (AFP):  
 AFP - Investigators found vice presidential nominee Sarah Palin abused her powers as Alaska governor, dealing another blow to Republican John McCain's struggling White House bid.

Universität  
 Konstanz



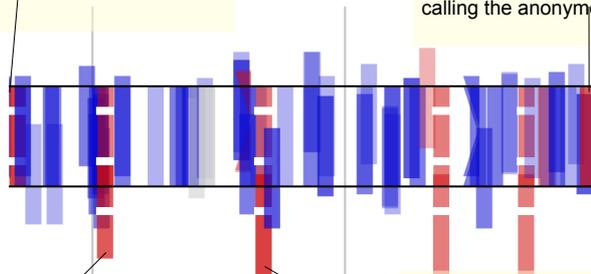
Mon Oct 27 14:24:25 CST 2008 (Feed 37):  
 ATF disrupts skinhead plot to assassinate Obama (AP):  
 AP - The ATF says it has broken up a plot to assassinate Democratic presidential candidate Barack Obama and shoot or decapitate 102 black people in a Tennessee murder spree.

Mon Oct 27 15:45:26 CST 2008 (Feed 38):  
 Assassination plot targeting Obama disrupted (AP): AP - Law enforcement agents have broken up a plot by two neo-Nazi skinheads to assassinate Democratic presidential candidate Barack Obama and shoot or decapitate 88 black people, the Bureau of Alcohol, Tobacco Firearms and Explosives said Monday.

Mon Oct 27 16:45:39 CST 2008 (Feed 31):  
 Skinheads held over Obama death plot: WASHINGTON (Reuters) - Two white supremacist skinheads were arrested in Tennessee over plans to go on a killing spree and eventually shoot Democratic presidential candidate Barack Obama, court documents showed on Monday.

Fri Nov 07 15:40:35 CST 2008 (Feed 23):  
 GOP tries to sort out Palin's donor-funded  
 duds: WASHINGTON (AP) -- Republican  
 Party lawyers are still trying to determine  
 exactly what clothing was purchased for  
 Alaska Gov. Sarah Palin, what was  
 returned and what has become of the  
 rest.....

Fri Nov 07 17:56:01 CST 2008 (Feed 31):  
 Palin fires back at leaks questioning her  
 smarts: WASHINGTON (Reuters) -  
 Alaska Gov. Sarah Palin fired back on  
 Friday against post-election claims by  
 aides to Republican presidential  
 candidate John McCain that she thought  
 Africa was a country, not a continent,  
 calling the anonymous sources "jerks."



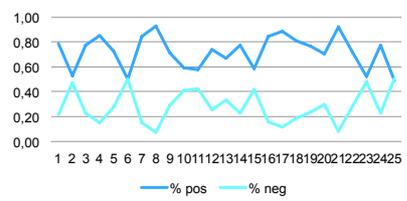
Fri Nov 07 16:01:19 CST 2008 (Feed 37):  
 Palin denounces her critics as cowardly  
 (AP): AP - Alaska Gov. Sarah Palin is  
 striking back at critics of the high-priced  
 wardrobe she wore as the Republican  
 vice presidential candidate....

Fri Nov 07 16:38:59 CST 2008 (Feed 39):  
 Palin denounces her critics as cowardly  
 (AP): AP - Alaska Gov. Sarah Palin called  
 her critics cowards and jerks Friday for  
 deriding her anonymously and insisted  
 she never asked for the expensive  
 wardrobe purchased for her use on the  
 presidential campaign.

## Review Analysis

I feel obligated to counter the **bad** reviews.  
 This **printer** is just **fine**.  
 I don't know what people are **complaining** about regarding the **software** but it installed **seamlessly** and is **intuitive** in its operation.  
 Even though the **paper tray jams** sometimes alltogether I am **happy** that I bought this **wonderful printer**.

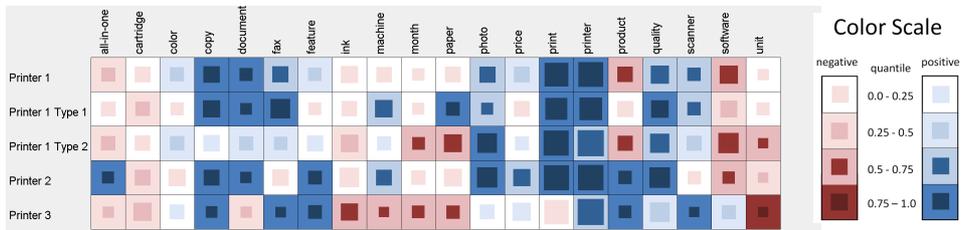
All Printers



copy, fax, feature, photo, price, print,  
 quality

cartridge, driver, ink, installation,  
 paper, software, usb

# Review Analysis



## Summary Report of printers

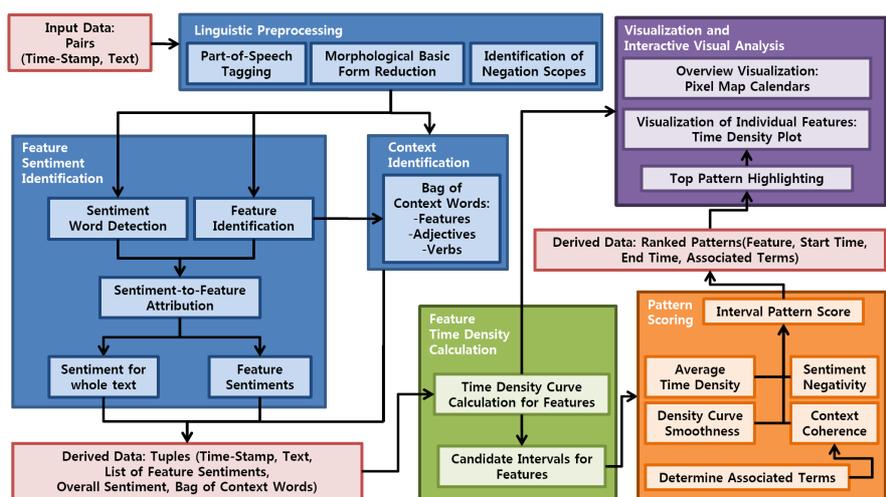
Size inner rectangle: amount of customers that commented on the attribute

Blue color: positive opinions

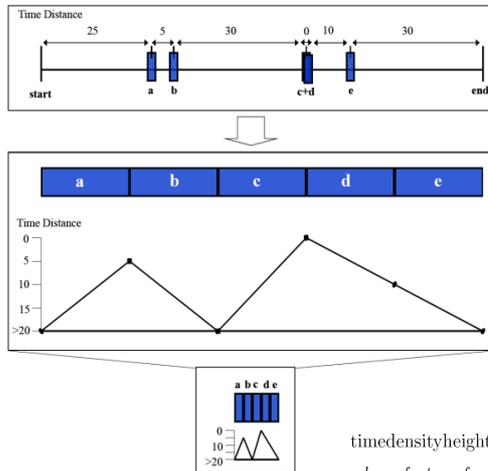
Red color: negative opinions

Brightness of color: degree of positiveness / negativeness of comments

# Customer Feedback Analysis



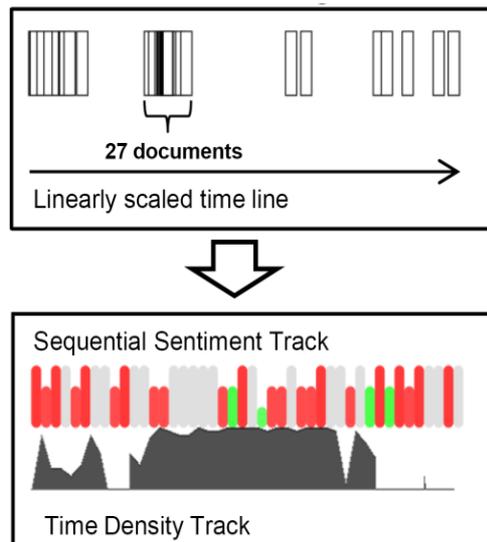
# Customer Feedback Analysis



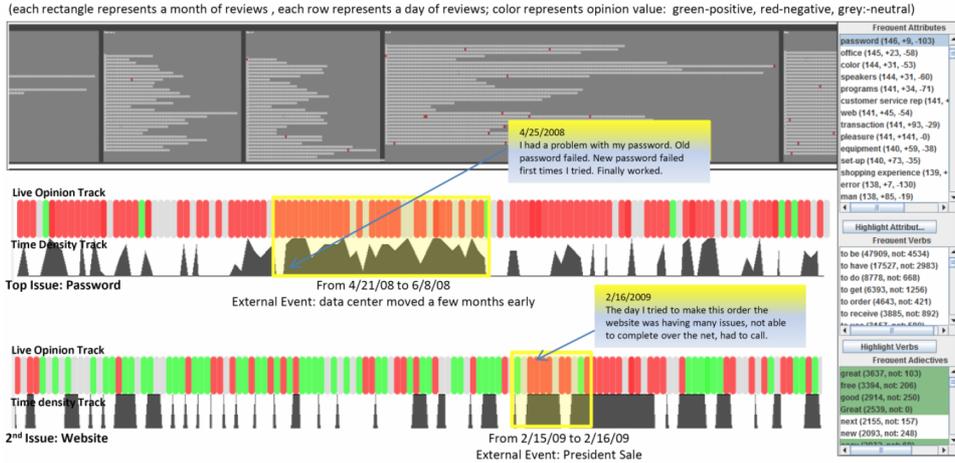
$$\text{timedensityheight}(f,a,b) = \max\left(0, \left(1 - \frac{\text{timedist}(a,b)}{\text{avgtimedist}(f)}\right)\right) \quad (1)$$

where feature  $f$ , preceding document  $a$ , succeeding document  $b$ .

# Customer Feedback Analysis

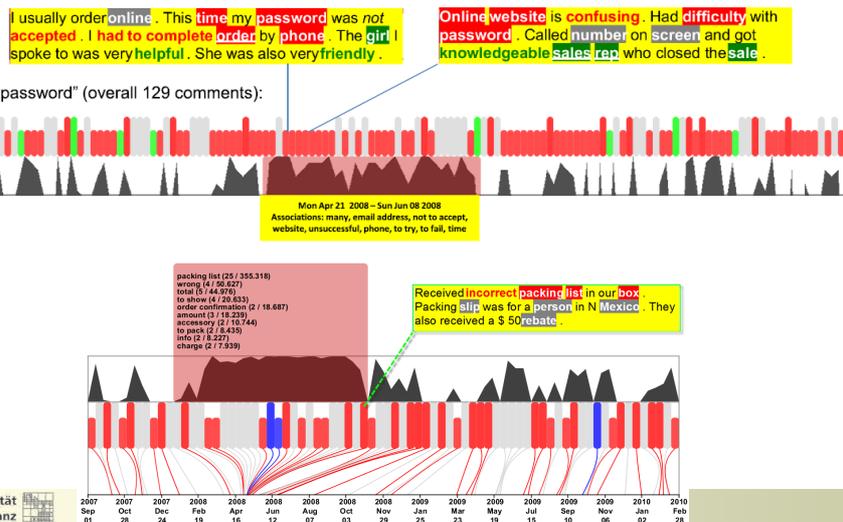


# Customer Feedback Analysis

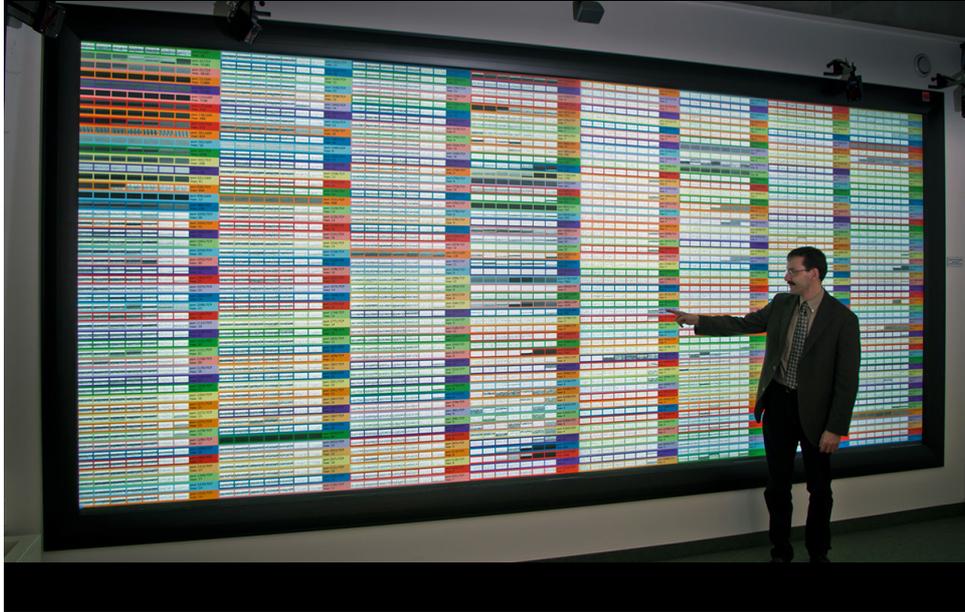


Universität  
Konstanz

# Customer Feedback Analysis



## Uni Konstanz Powerwall



## Uni Konstanz Control Room



## Conclusion

**“All truths are easy to understand once they are discovered; the point is to discover them.”**

**Galileo Galilei (1564-1642)**

*[infovis.uni-konstanz.de](http://infovis.uni-konstanz.de)*