

# Designing Smarter Communities: Self-Organising Capital Creating Ecosystems

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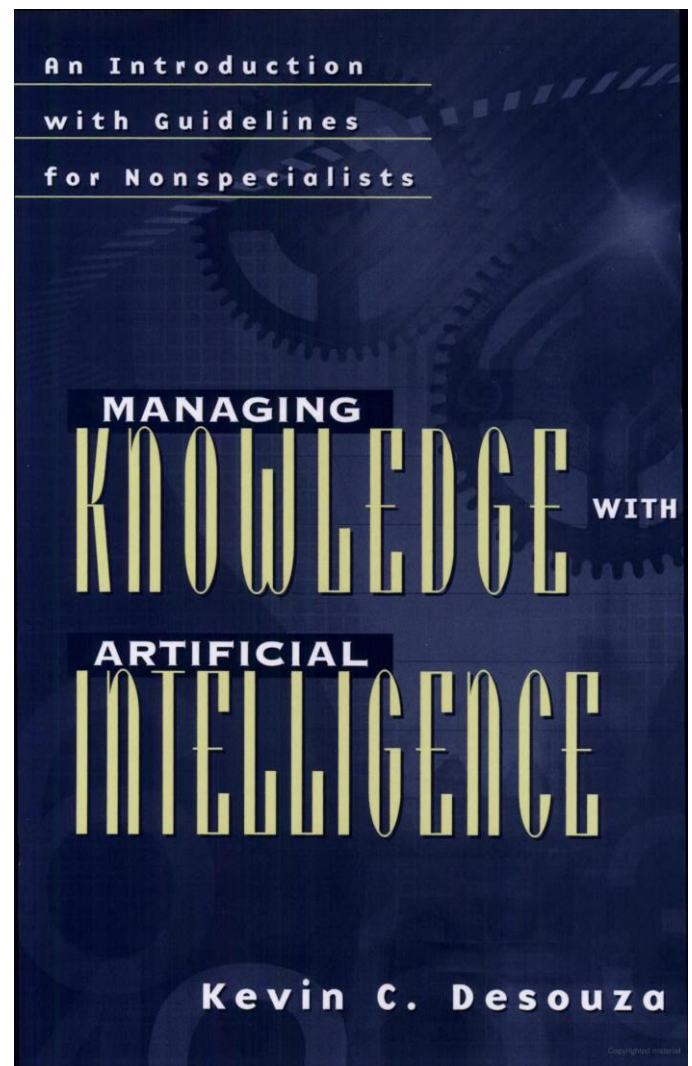
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# Agenda

- An Apology
- Context setting
- Capital systems
- Governance stack
- Case study
- Implications

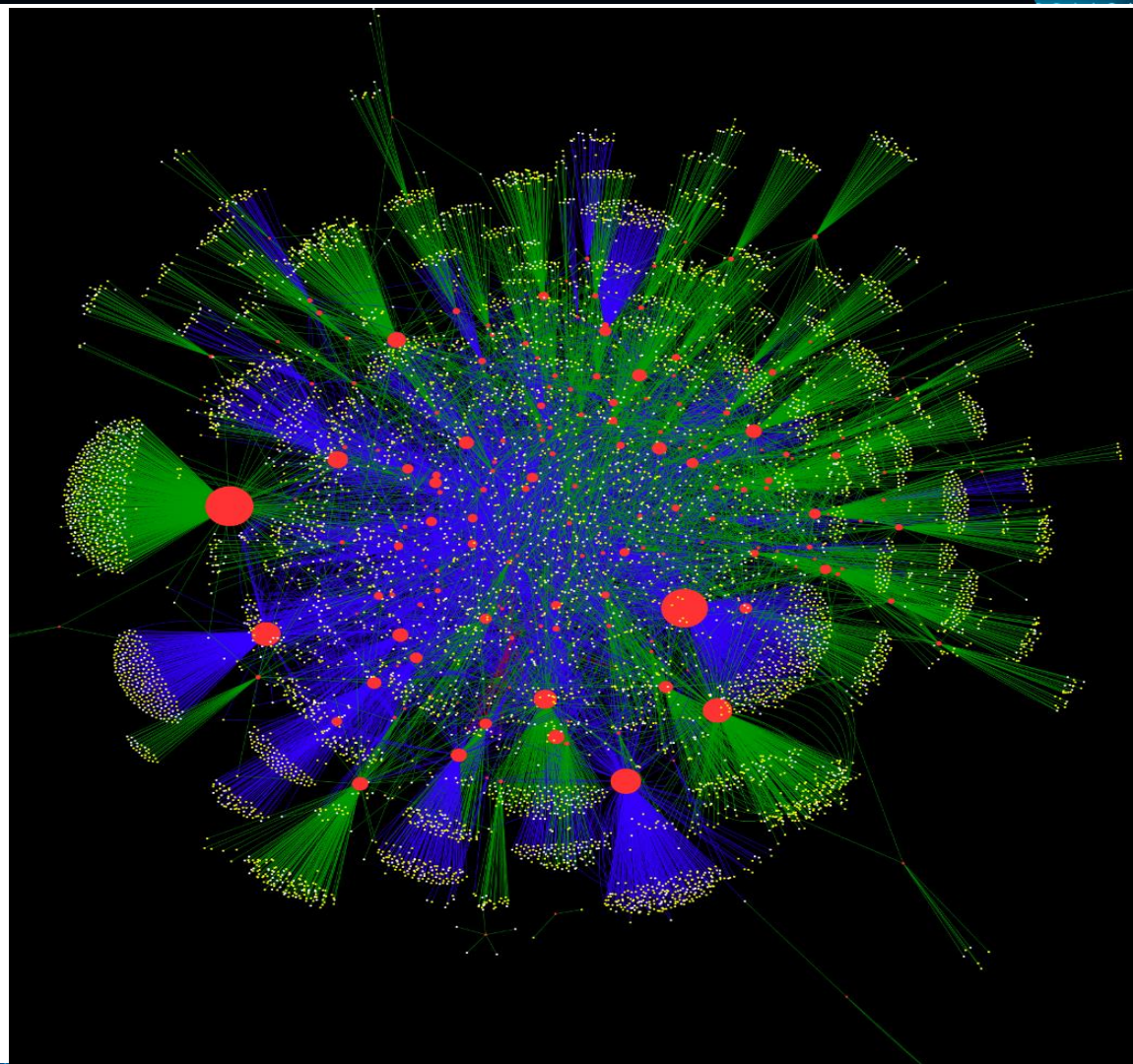
# An Apology



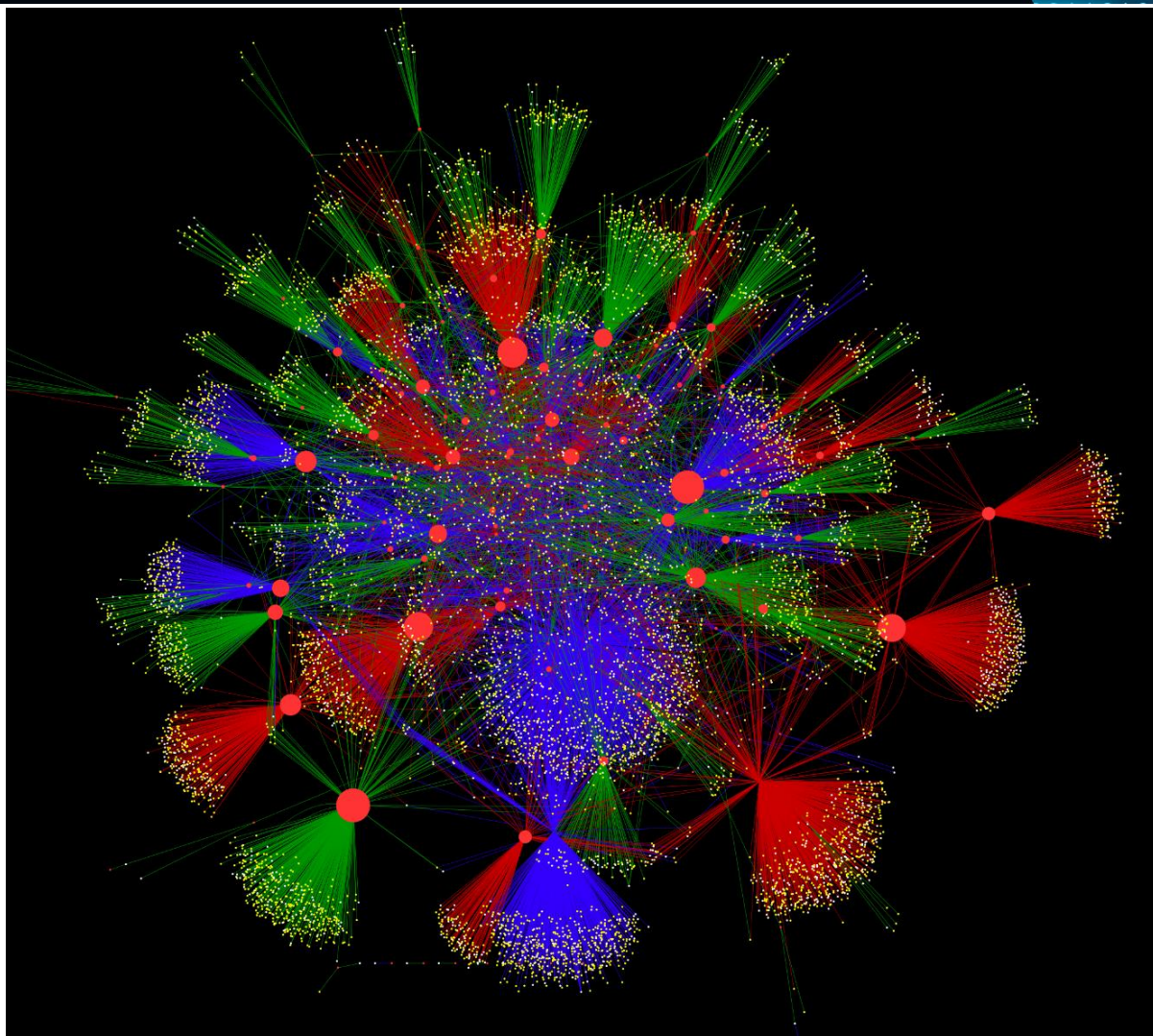
2012



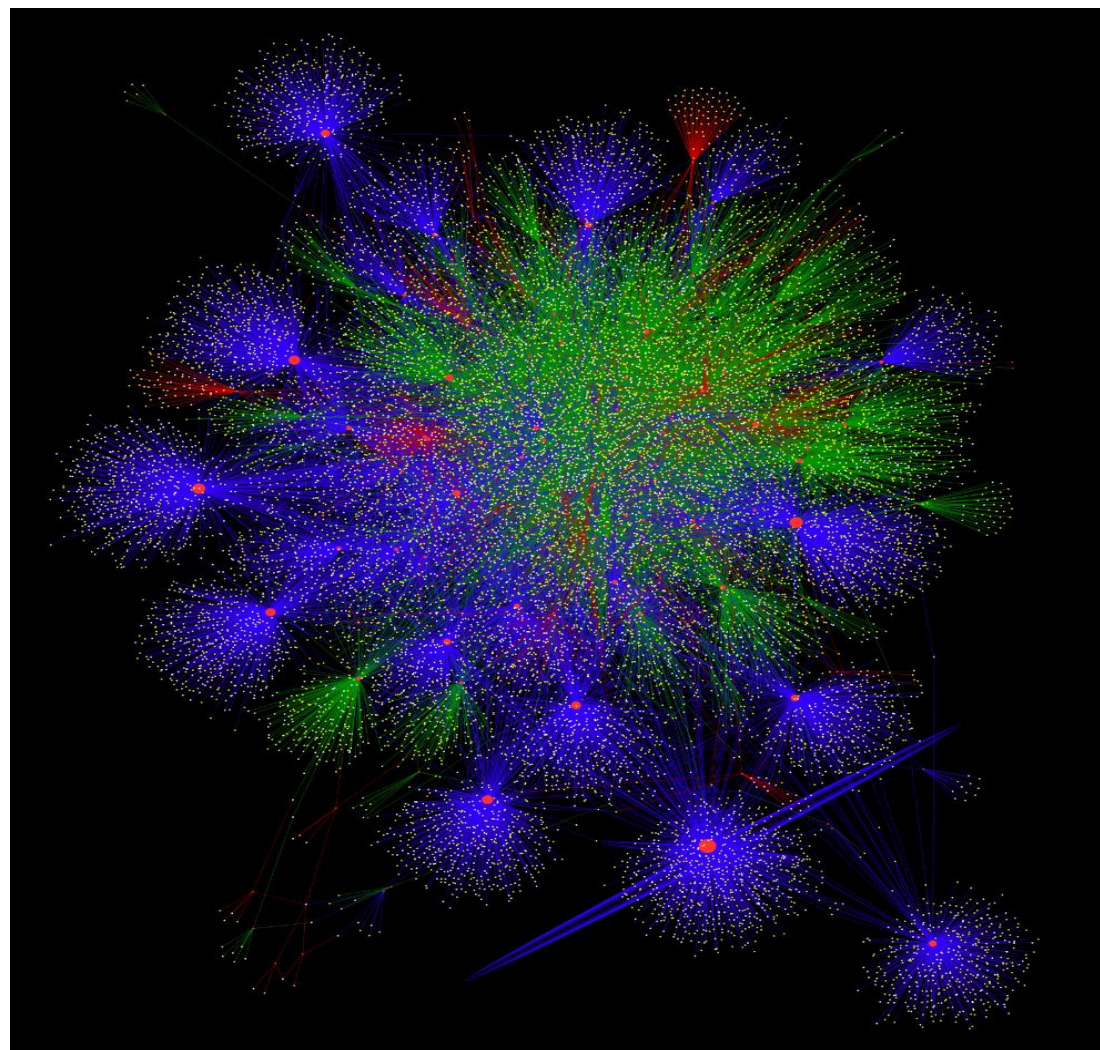
Warmer sea surface temperatures intensify tropical storm wind speeds and increase precipitation. Warmer air also plays a role, holding more moisture and equaling more precipitation over the life of the storm. As sea surface temperature has increased steadily over the 20th century, rising about 16.5°F from 1901 to 2020, it's only natural that the effect on storms and water-centered weather patterns worsens. Rising sea levels also add to the intensity of coastal storms, making them more damaging. Storm surges, the abnormal rising of water generated by a storm, caused the levees to fail during Hurricane Katrina, and storm surges also caused an extra \$2 billion in damage to New York City after Hurricane Sandy hit in 2012.





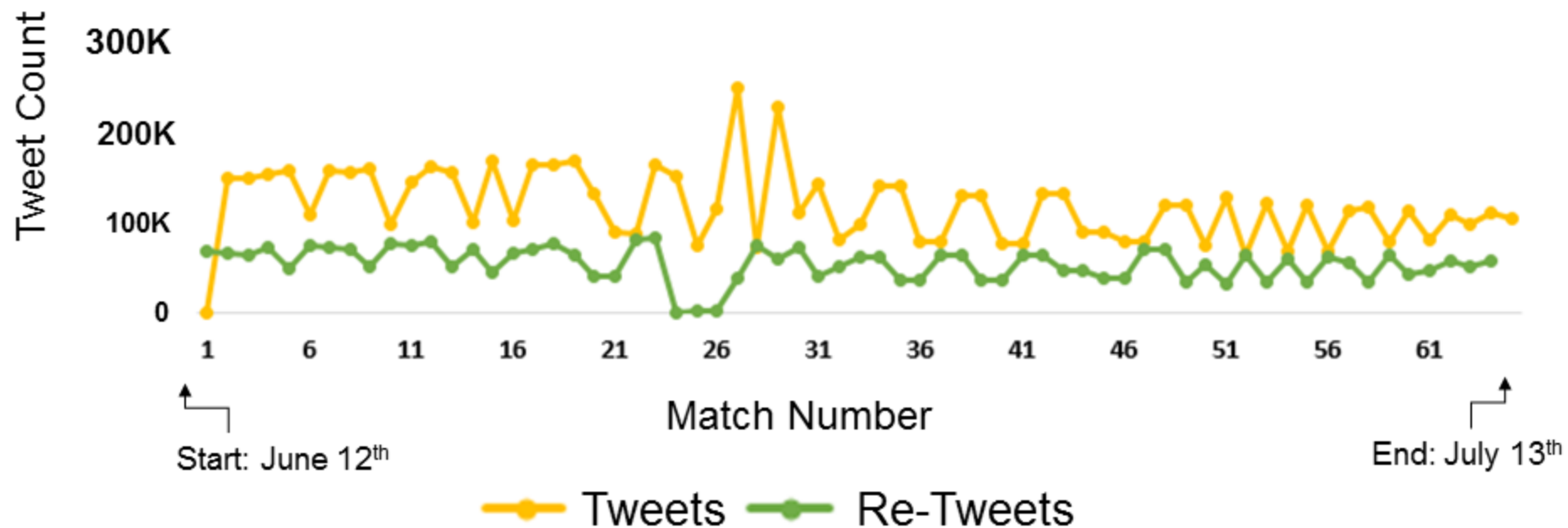


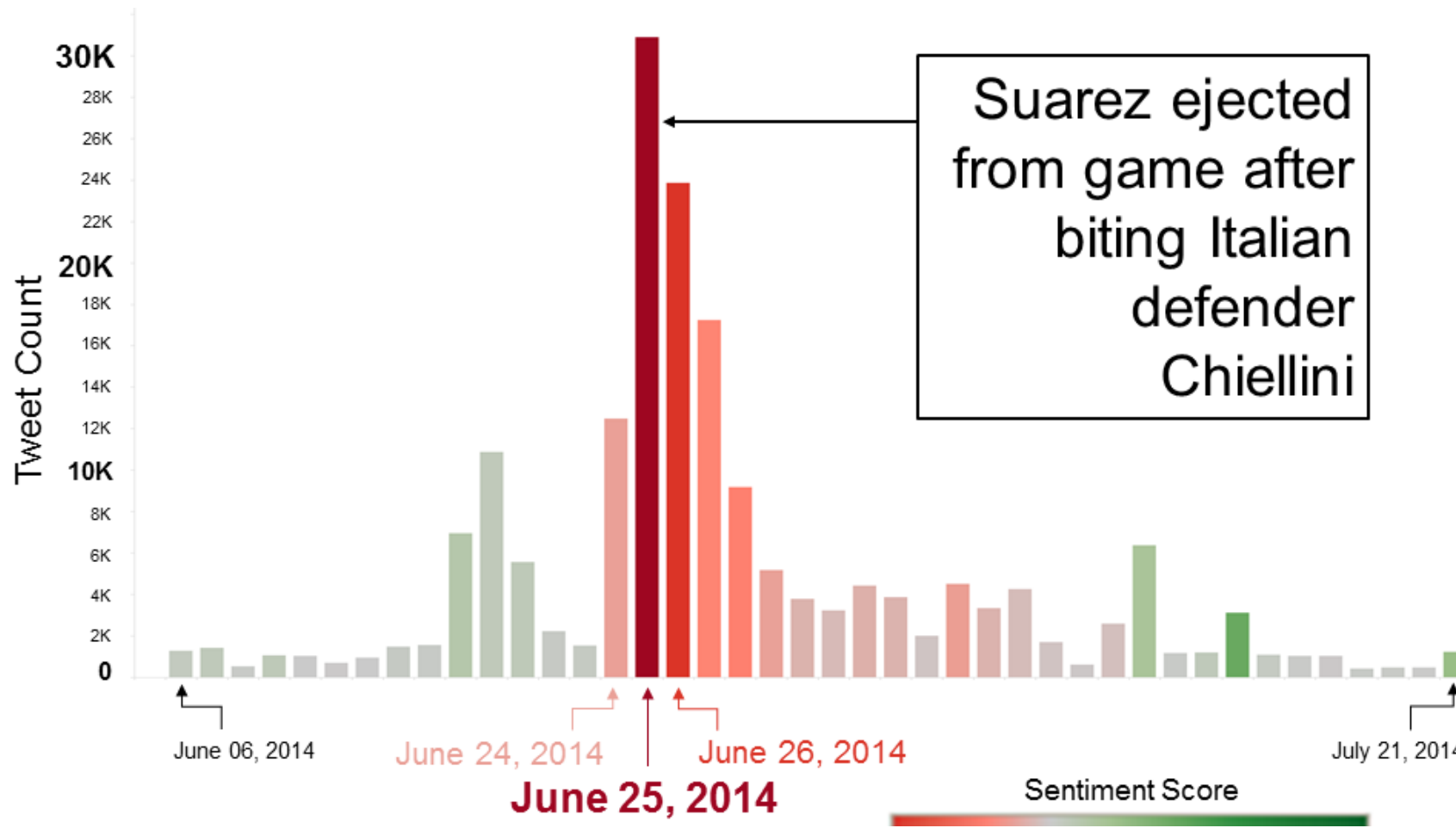




2014

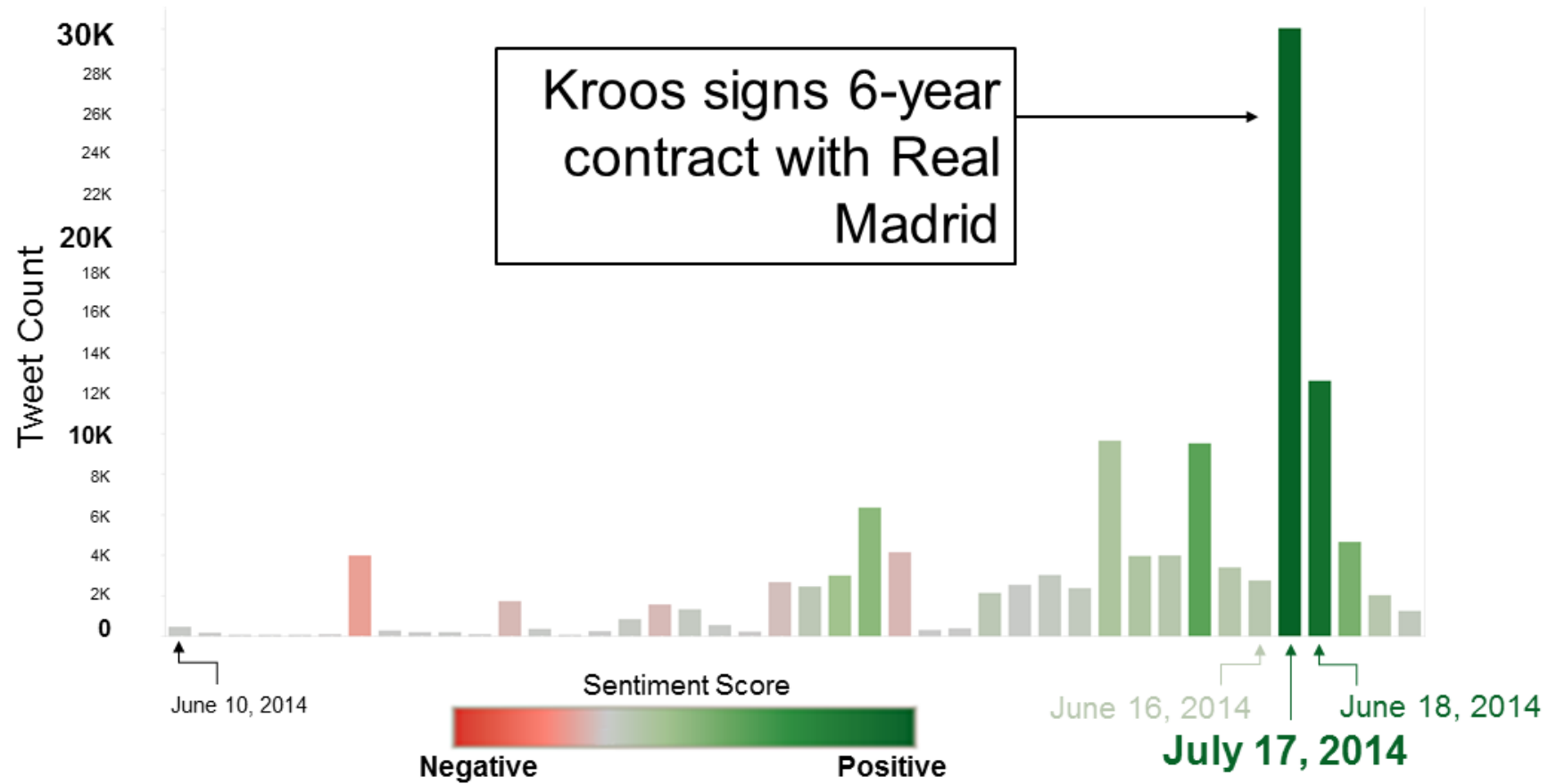
## Tweet Volume: FIFA World Cup 2014







## Twitter Reacts **Positively** To An “Offline” Event

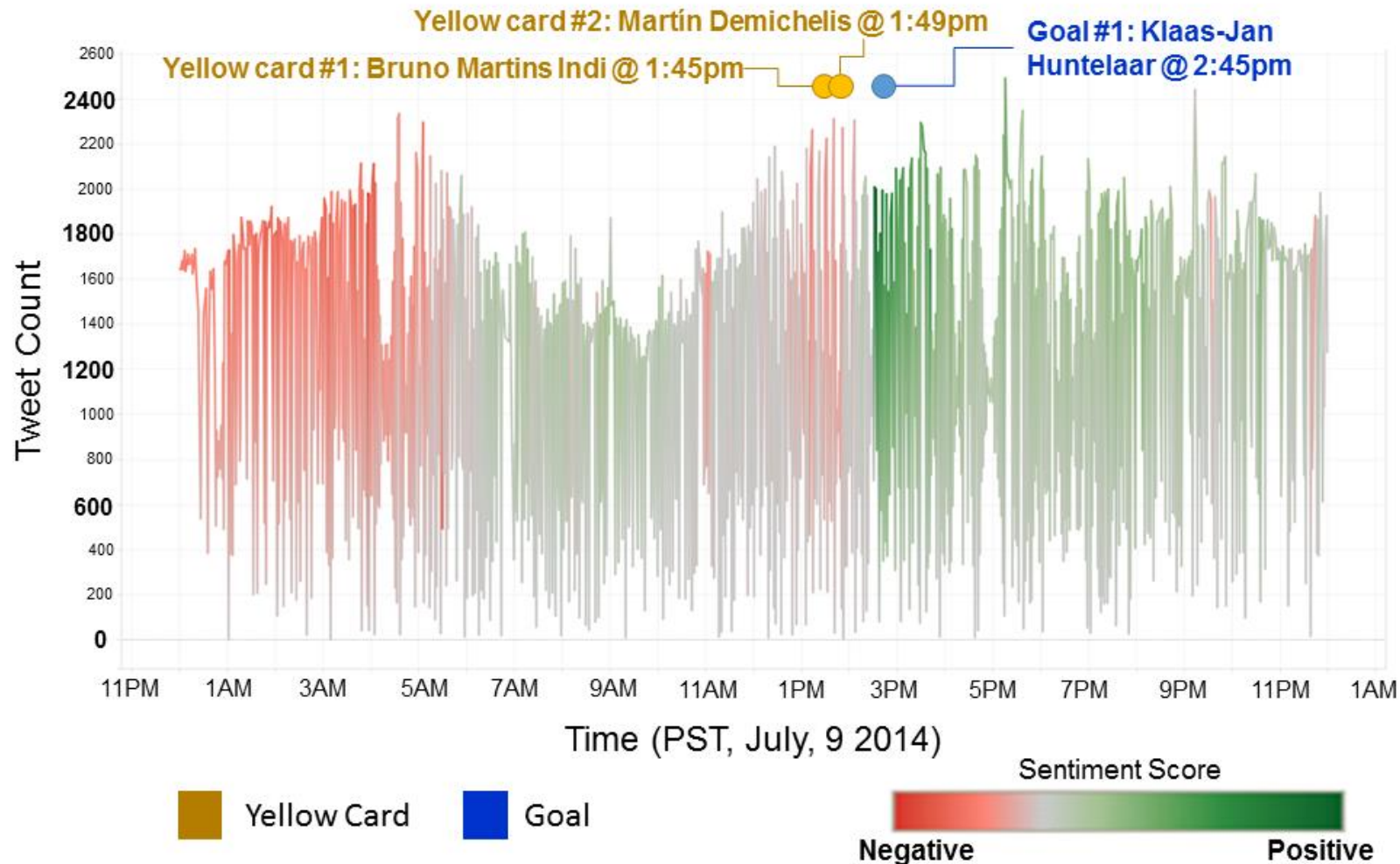


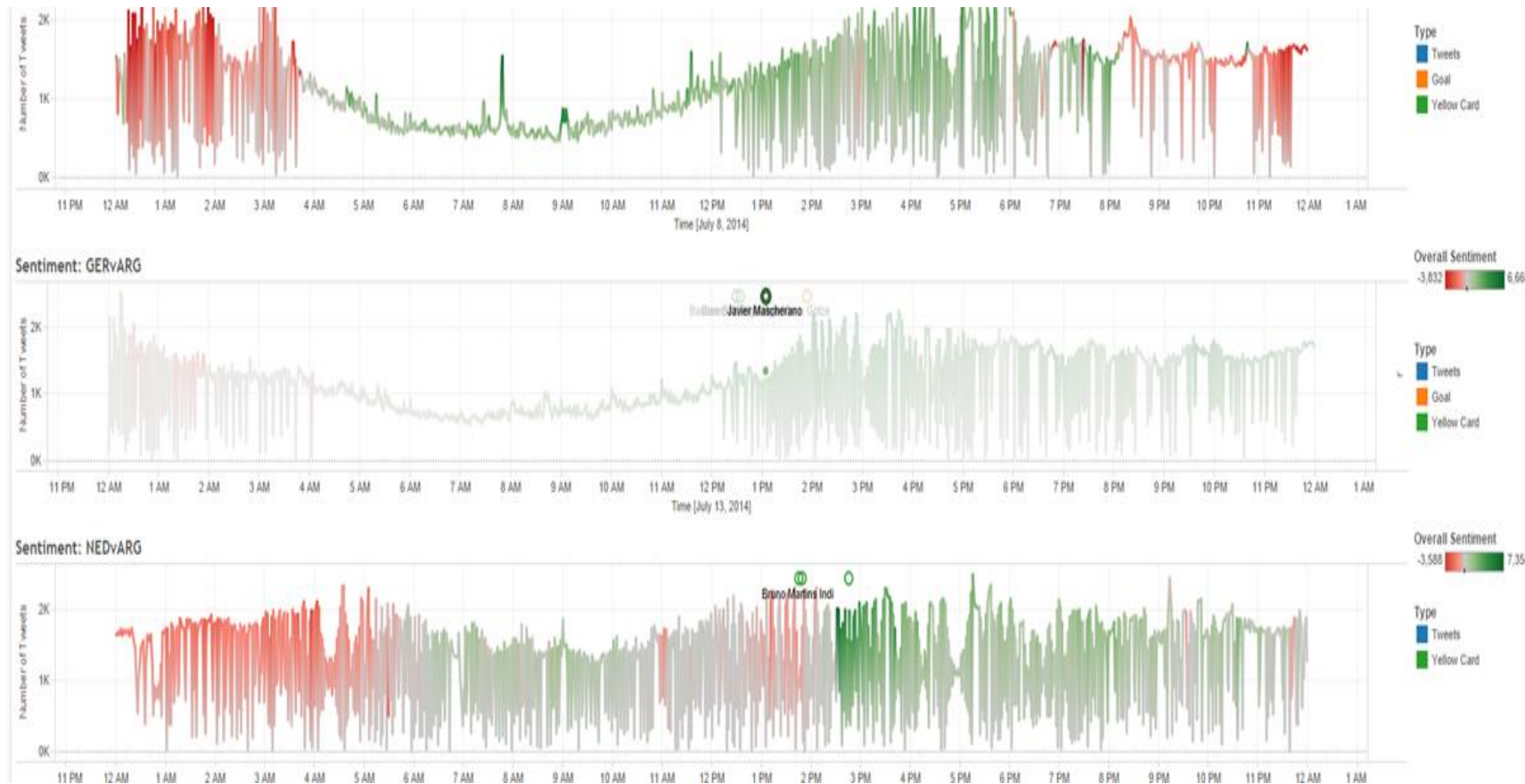
Kroos signs 6-year contract with Real Madrid



**July 17, 2014**

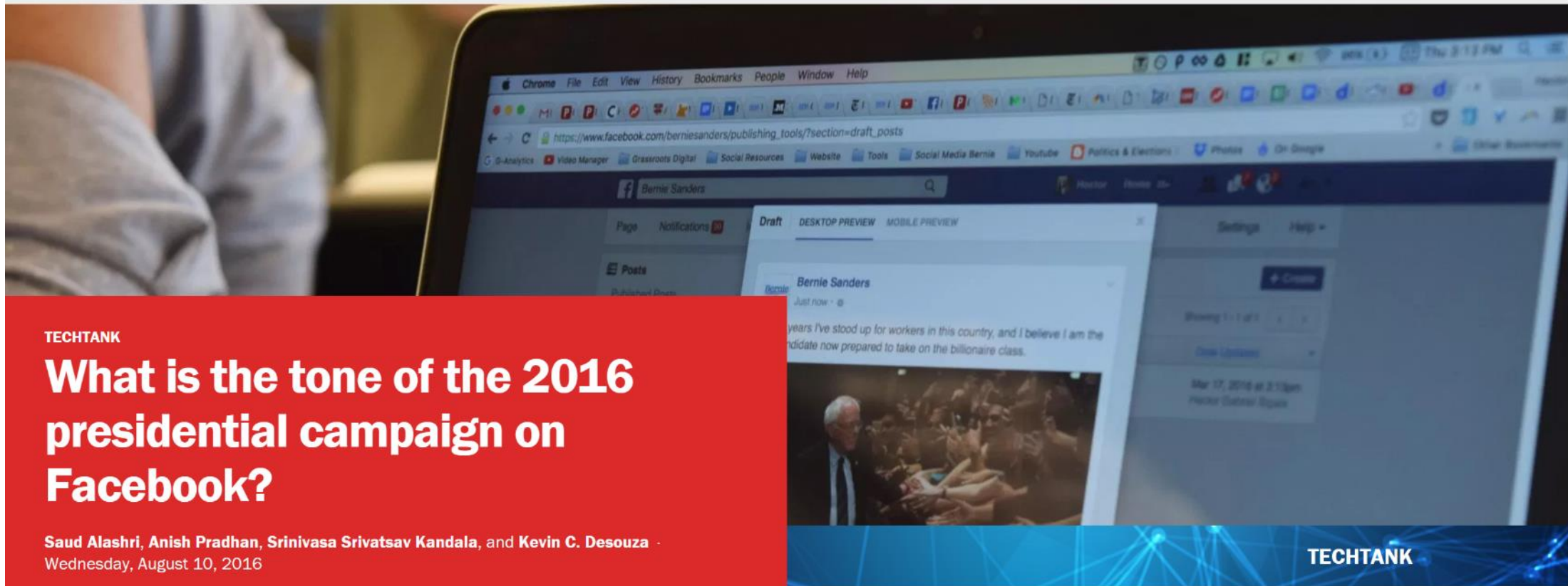
## Semi-Finals: Netherlands vs. Argentina





2016





TECHTANK

## What is the tone of the 2016 presidential campaign on Facebook?

Saud Alashri, Anish Pradhan, Srinivasa Srivatsav Kandala, and Kevin C. Desouza ·  
Wednesday, August 10, 2016

TECHTANK

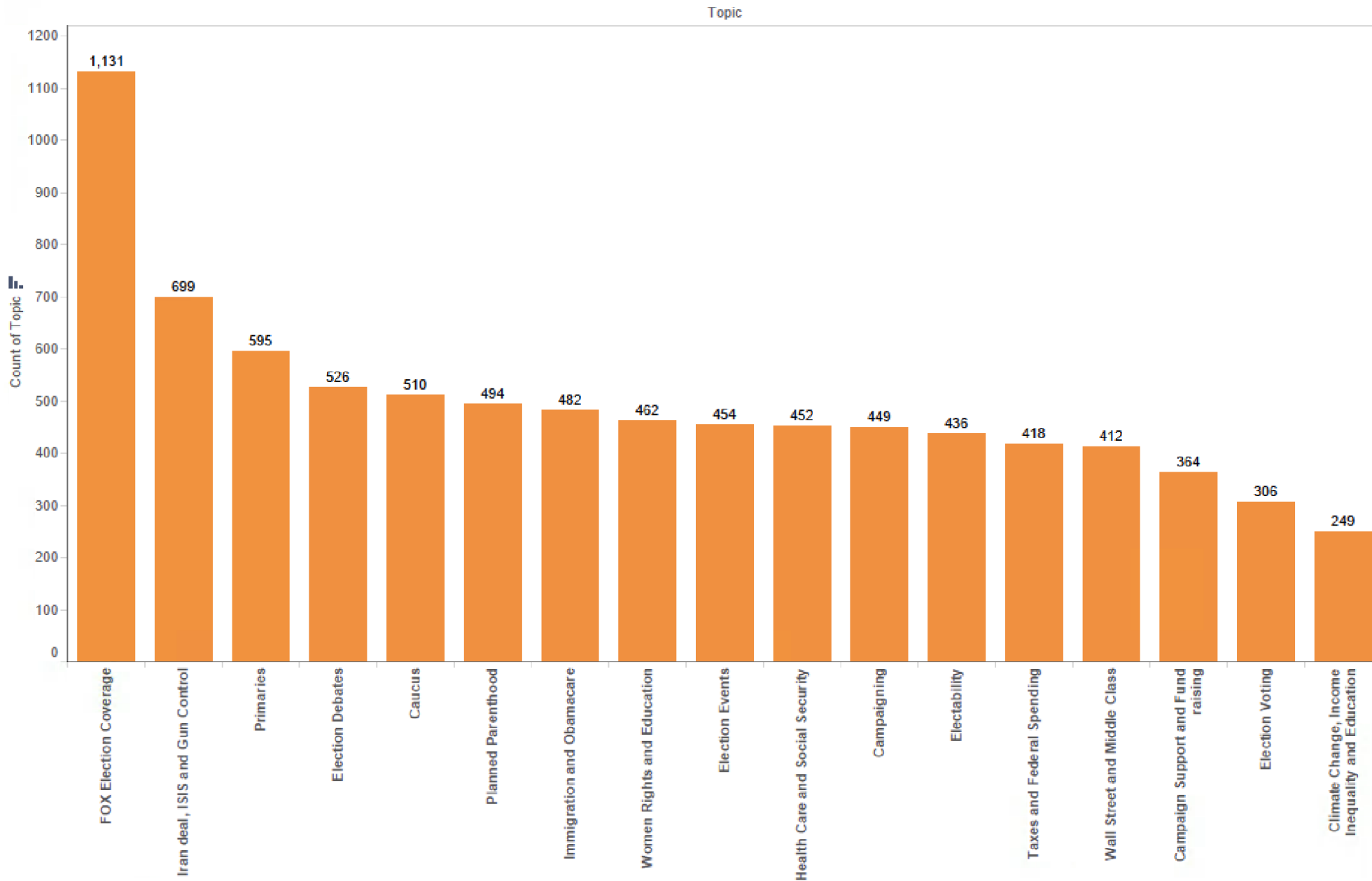
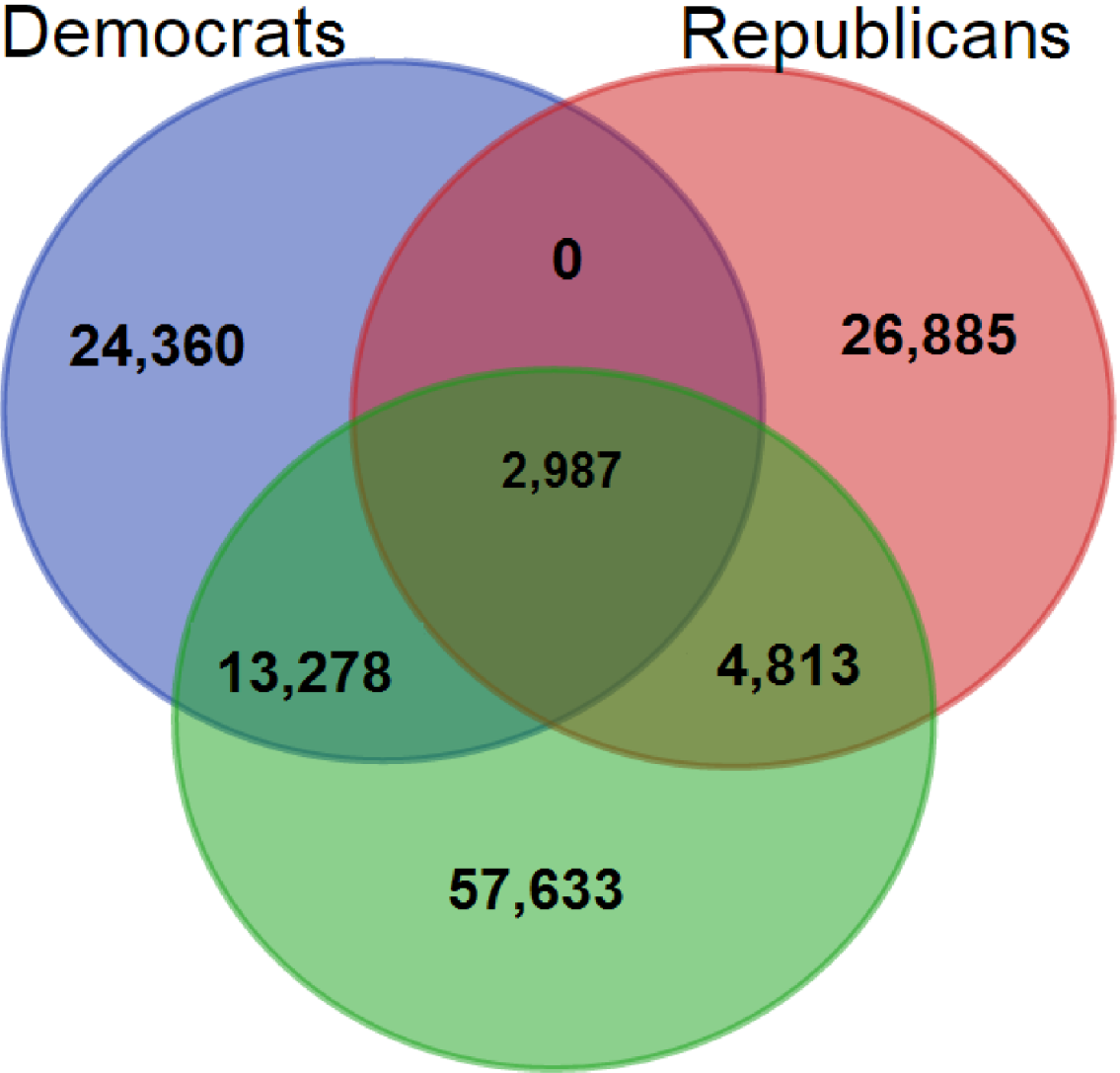
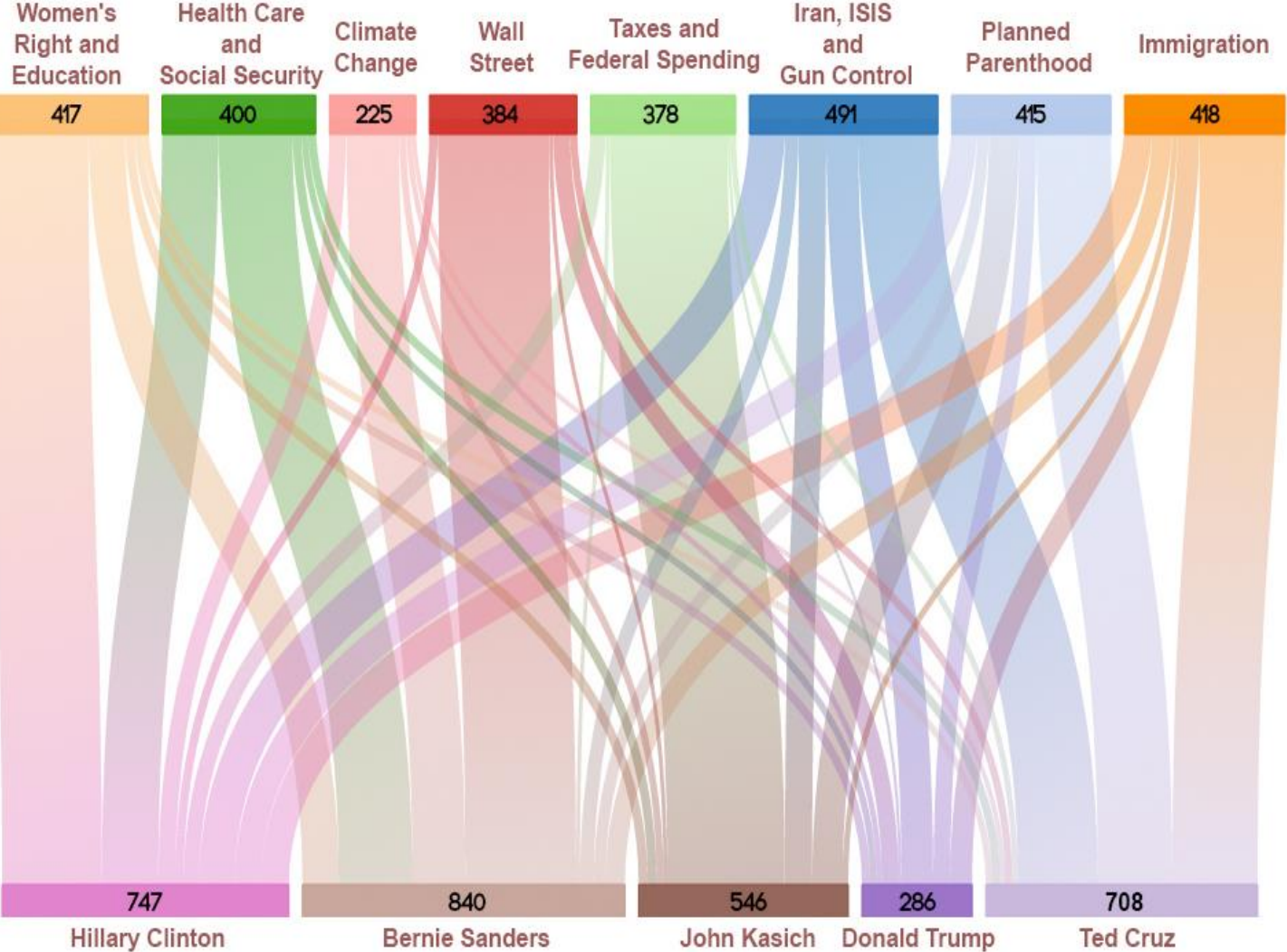


Figure 3: Mutual commentators between Democrats, Republicans, and Trump/Clinton



Between Trump and Clinton





Hillary Clinton

Bernie Sanders

John Kasich

Donald Trump

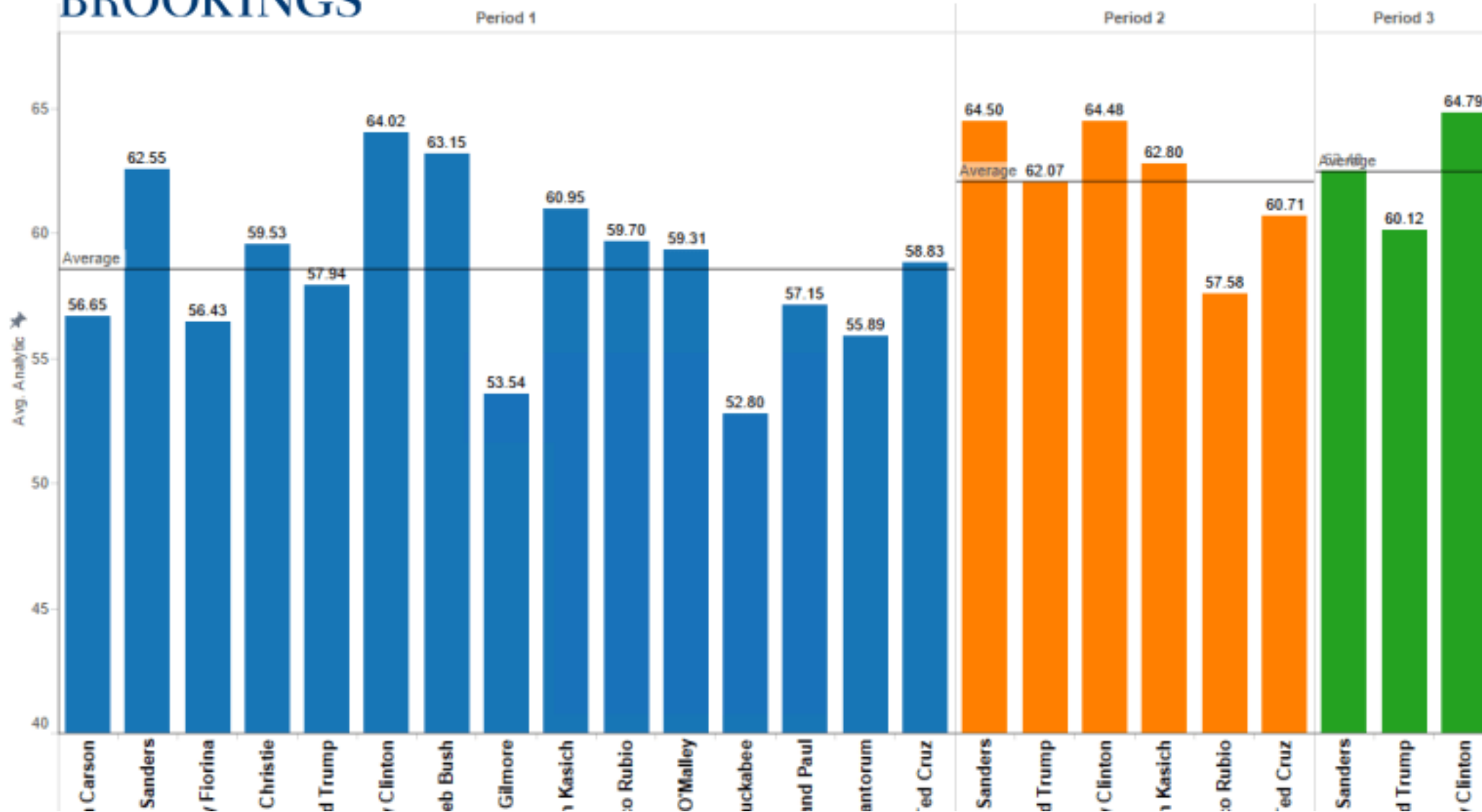
Ted Cruz





# BROOKINGS

Period / Candidate's Comments





**Hillary Clinton**

April 22, 2016 · 🌐



In ten years, we can generate enough renewable energy to power every home in America. #EarthDay



██████████ Hillary has the right attitude, renewable energy will protect the environment, Hillary cares for America and for our kids, for their future!

👍 13 · April 22, 2016 at 6:17pm

Positive Comment



██████████ This woman, is the sleaziest un-indicted criminal who has ever run for national office. The lies and deceit shown by this person simply slides off the backs of her supporters. She has shown lower morals than her skirt chasing husband over and over again. Her lies have left dead men in their wake. She has sold out our country for her own personal gain.....

👍 10 · April 22, 2016 at 3:42pm

Negative Comment

# Context Setting

# The Basics

- Local governments have a direct and significant impact on the communities they serve
  - Must take responsibility for the safety, health, and well-being of their communities
  - Focus on economic development
- Since the 1980s, the New Public Management movement drove governments to focus on performance management to improve efficiencies in operations and service delivery
  - Innovation to drive efficiencies
- Since the 1990s, techno-centric driven innovation
  - The smart (intelligent) cities movement
  - Information systems seen as a key enabler of process efficiencies and innovations



# The Problem - I

## Sleepy in Songdo, Korea's Smartest City

The hardest thing about living in an eco-friendly master-planned utopia? Meeting your neighbors.



The towers of Songdo, which sometimes feels a lot like a sleepy America suburb. *Mikensi Romersa/CityLab*

It's the heart of the greater Songdo city, and from its conception in 2001, the IBD was envisioned as a sustainable, low-carbon, and high-tech utopia. For Koreans, the city would have all the perks of Seoul—and more—but without the capital city's air pollution, crowded sidewalks, and choking automotive traffic. And for foreign corporations looking for access to Asian economies, Songdo as a whole would be a glitzy business capital to rival Hong Kong and Shanghai. “The city aims to do nothing less than banish the problems created by modern urban life,” as one 2009 story declared.

## The Problem - I



Along a typically wide (and empty) Songdo street, rows of apartment buildings wait for their residents to arrive. *Linda Poon/CityLab*

“There’s a ton of people living here, but you don’t really see them. The city is alive, but it’s invisible.”

For a high-tech city of the future, parts of Songdo feel more like a sparsely populated American 1970s suburb—just arranged in a grid form—especially as you leave the business district. The wide roads and sprawling scale means that human activities are located far apart from one another. Occasionally you see small touches, like an artificial *hanok* village (a traditional village where houses with old-school architecture remain intact) to remind you that, yes, you are still in Korea. It’s not exactly a “Chernobyl-like ghost town,” as some reports have claimed, but it is eerily quiet as we drive past cluster after cluster of concrete residential high-rises, all identical. Many are empty, partly the result of Korea’s rush to build out Songdo in anticipation for the arrival of foreign workers.



# The Problem - II



**In February, the city of Toronto announced plans for a new development along its waterfront.** They read like a wish list for any passionate urbanist: 800 affordable apartments, a two-acre forest, a rooftop farm, a new arts venue focused on indigenous culture, and a pledge to be zero-carbon.

The idea of an affordable, off-the-grid Eden in the heart of the city sounds great. But there was an entirely different urban utopia planned for this same 12-acre plot, known as Quayside, just a few years ago. It was going to be the place where Sidewalk Labs, the urban innovation arm of Alphabet, was going to prove out its vision for the smart city.

## The Problem - II

The real problem is that with their emphasis on the optimization of everything, smart cities seem designed to eradicate the very thing that makes cities wonderful. New York and Rome and Cairo (and Toronto) are not great cities because they're efficient: people are attracted to the messiness, to the compelling and serendipitous interactions within a wildly diverse mix of people living in close proximity. But proponents of the smart city embraced instead the idea of the city as something to be quantified and controlled.

Smart city technology should do things like shorten commute times, speed the construction of affordable housing, improve the efficiency of public transit, and reduce carbon emissions by making building technology more efficient and providing less polluting transportation alternatives to the car. But often its proponents focus on what it *can* do rather than what it should. If Sidewalk's Quayside failure taught us anything, it's that these technologies need to respond better to human needs.

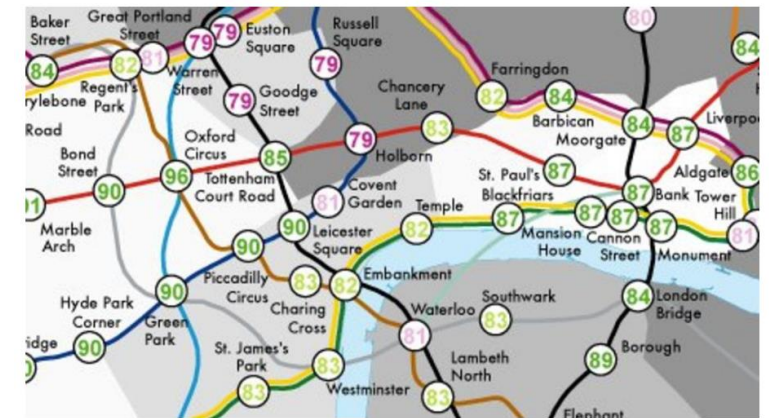
Had it succeeded, Quayside could have been a proof of concept, establishing a new development model for cities everywhere. It could have demonstrated that the sensor-laden smart city model embraced in China and the Persian Gulf has a place in more democratic societies. Instead, Sidewalk Labs' two-and-a-half-year struggle to build a neighborhood "from the internet up" failed to make the case for why anyone might want to live in it.



## Tube map used to plot Londoners' life expectancy

By Andy Dangerfield  
BBC News, London

© 20 July 2012



The map shows how life expectancy varies between different Tube stations

A version of the Tube map has been produced to show how life expectancy

## The Problem III

For example, it shows there is a 20-year difference in life expectancy between those born near Oxford Circus and others born close to some stations on the Docklands Light Railway (DLR).

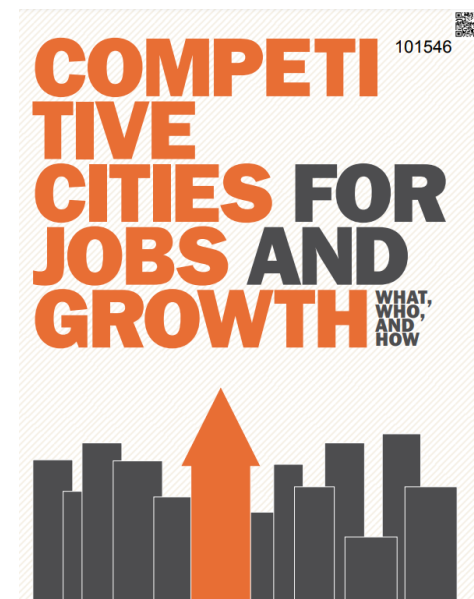
Newborns around Star Lane are predicted to live, on average, for 75.3 years in contrast to 96.4 years for those near Oxford Circus.

"The difference between Hackney and the West End is the same as the difference between England and Guatemala in terms of life expectancy."

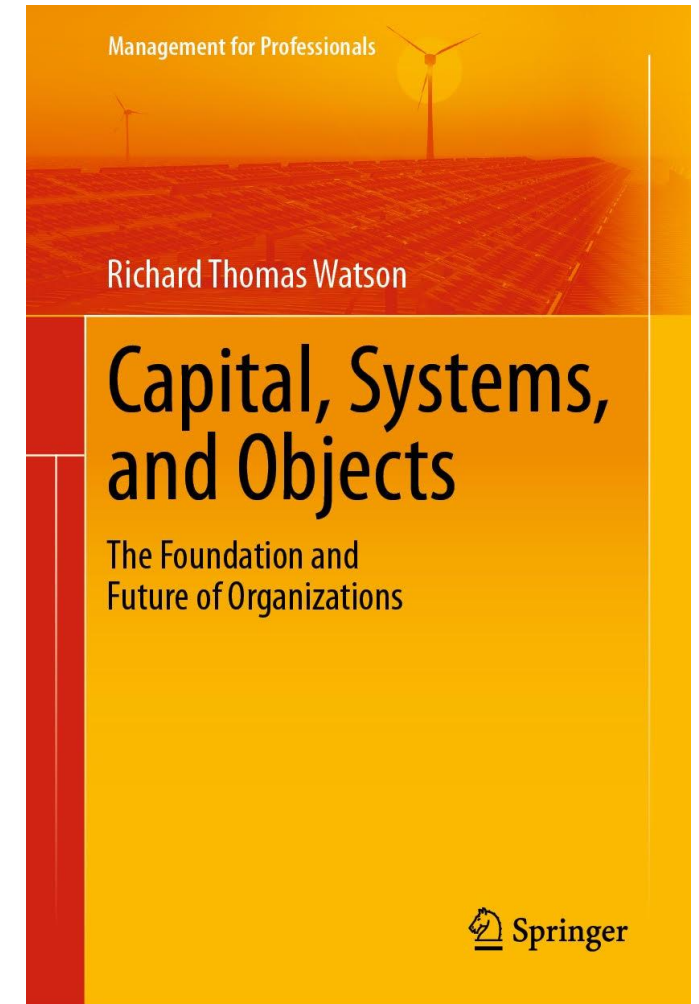
Sir Michael said life expectancy was affected by "early child development, education, employment and working conditions, having the minimum income to live a healthy life, the environment and the issues of smoking, obesity, drinking and diet".

# Summary

- Local governments need to reimagine the future of their communities
- “A competitive city is a city that successfully facilitates its firms and industries to create jobs, raise productivity, and increase the incomes of citizens over time.”



# Capital Systems



# Self-Organising Capital Creating Ecosystems

- Communities create capital
  - Communities are capital creating engines
- The role of local government leadership is to orchestrate a thriving **self-organising capital creating ecosystem (SOCCE)**
  - Need to move beyond the focus on economic development (economic capital) as the primary tool for innovation, creativity, and well-being
  - Data and information systems need to facilitate effective and efficient capital creations and flows



# Economic Capital

- Public infrastructure, both physical and informational
  - better job with higher wage

# Human Capital

- The general health, skills, knowledge, and abilities of the population
  - Healthcare and educational opportunities

# Natural Capital

- Natural resources, living systems, and ecosystem services
  - Public parks and gardens for recreation

# Organisational Capital

- The political, economic, and legal systems, and national culture
  - A functioning society with a higher level of equitable treatment



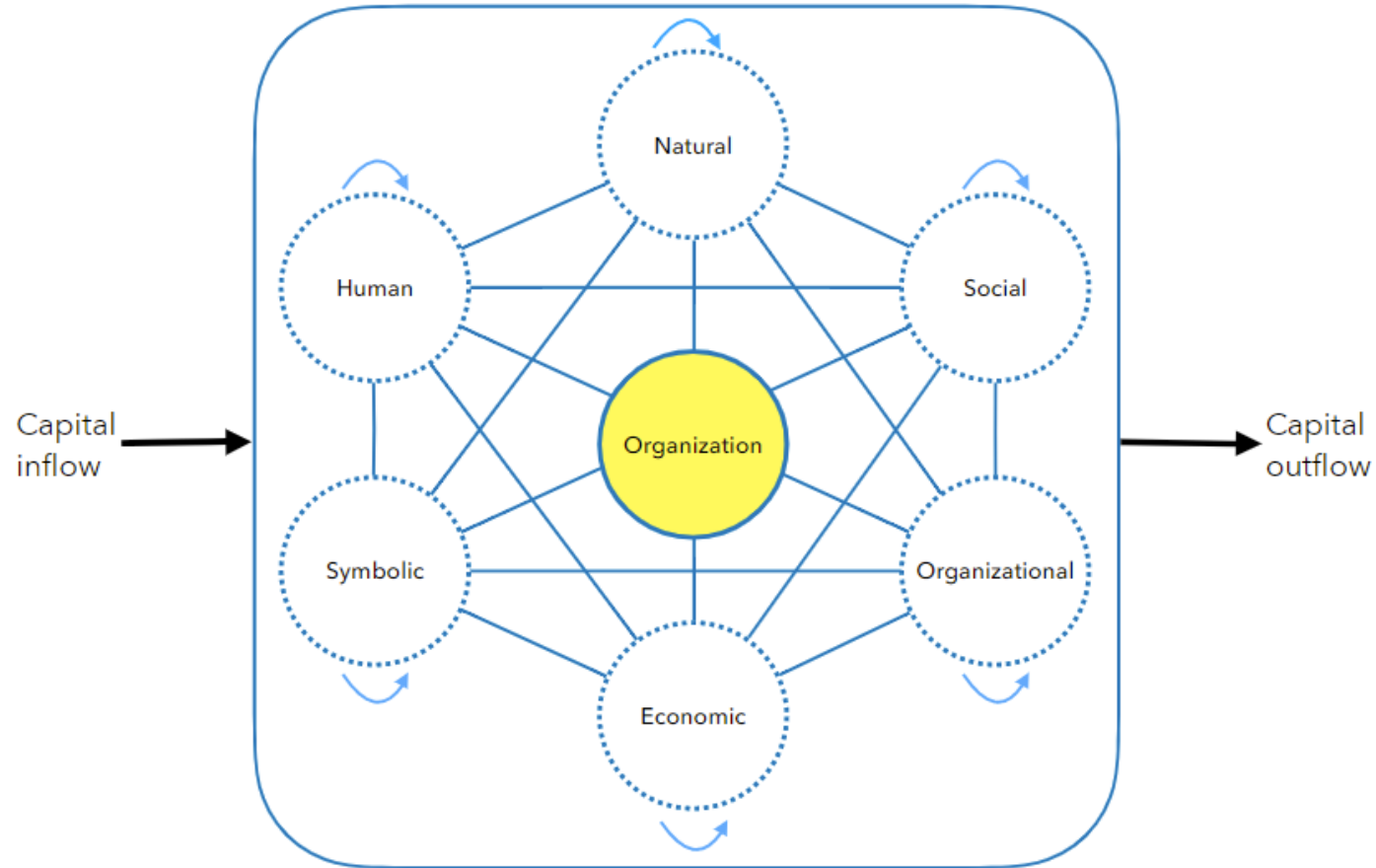
# Social Capital

- Structures for integrating and assimilating citizens within a city to create broad and diverse social networks
  - A wide range of personal connections, especially with those of similar nature, interest, and needs

# Symbolic Capital

- Reputation and image. Respect and admiration for a city's institutions and culture
  - A shared 'ownership' of the icons of a city.

# Self-Organising Capital Creating Ecosystems (SOCCE)





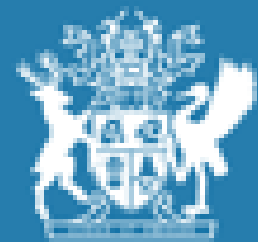
# Natural C' – Info Sys – Social C'

**'Parkrun saved my life': how the weekly runs became a phenomenon - and are now coming back**





# Organisational C' – Info Sys – Economic C'



Queensland Government

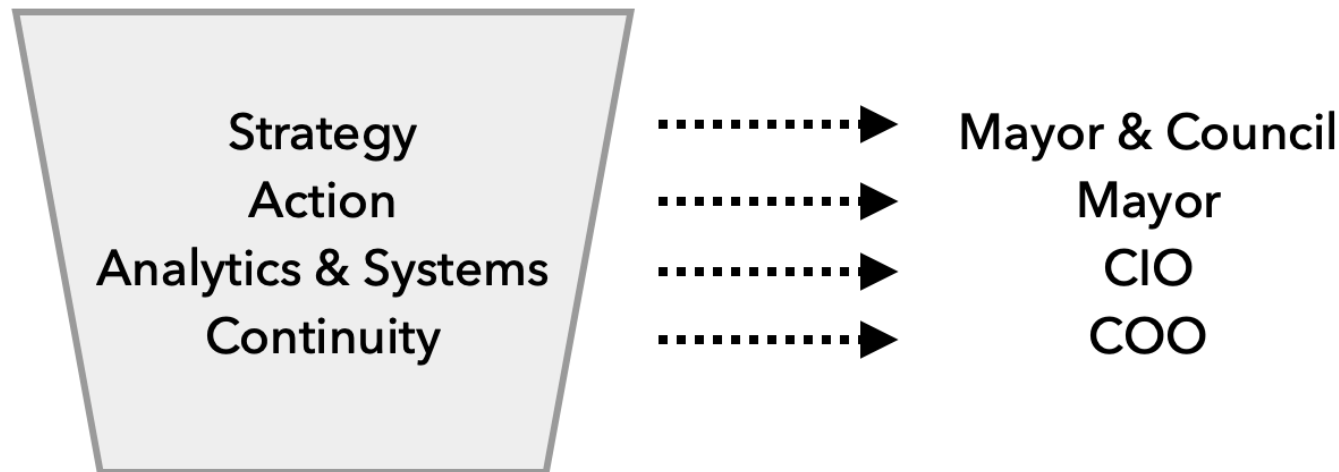
Open Data Portal

# City's Governance Stack

# Governance Stack – Capital Creation

- A city’s governance stack is the **keystone** that links city administration and SOEs, and the effectiveness of this linchpin strongly influences a city’s ability to create capital

Governance stack



# Governance Stack

Layer	Focus	Actors
Strategy	<ul style="list-style-type: none"> <li>defines the broad goals and vision for the city and how these relate to the success of its SOE</li> <li>long-term plan for the division of capital creation and how the city will invest in creating capital to facilitate capital creation by the SOE</li> </ul>	Mayor and Council
Action	<ul style="list-style-type: none"> <li>convert a city's vision into a set of capital that meets the city's strategic goals.</li> <li>developing partnerships with key SOE members to build the infrastructure to forge the envisioned future</li> </ul>	Mayor and City Administrators
Analytics & Systems	<ul style="list-style-type: none"> <li>supports decision-making by the upper two layers by reporting on the current and projected state of the city</li> <li>identifies, designs, develops, and maintains systems for decision making, by the two layers above, and operations, for the lower continuity layer</li> </ul>	CIO
Continuity	<ul style="list-style-type: none"> <li>ensure the continuous operation of a city's vital service, particularly during times of stress</li> <li>creation of standards to promote effective and efficient data exchanges across the heterogeneous environments of the SOE</li> </ul>	COO

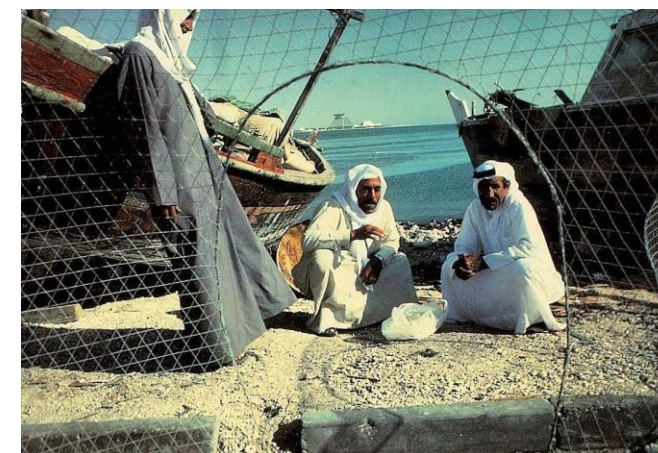
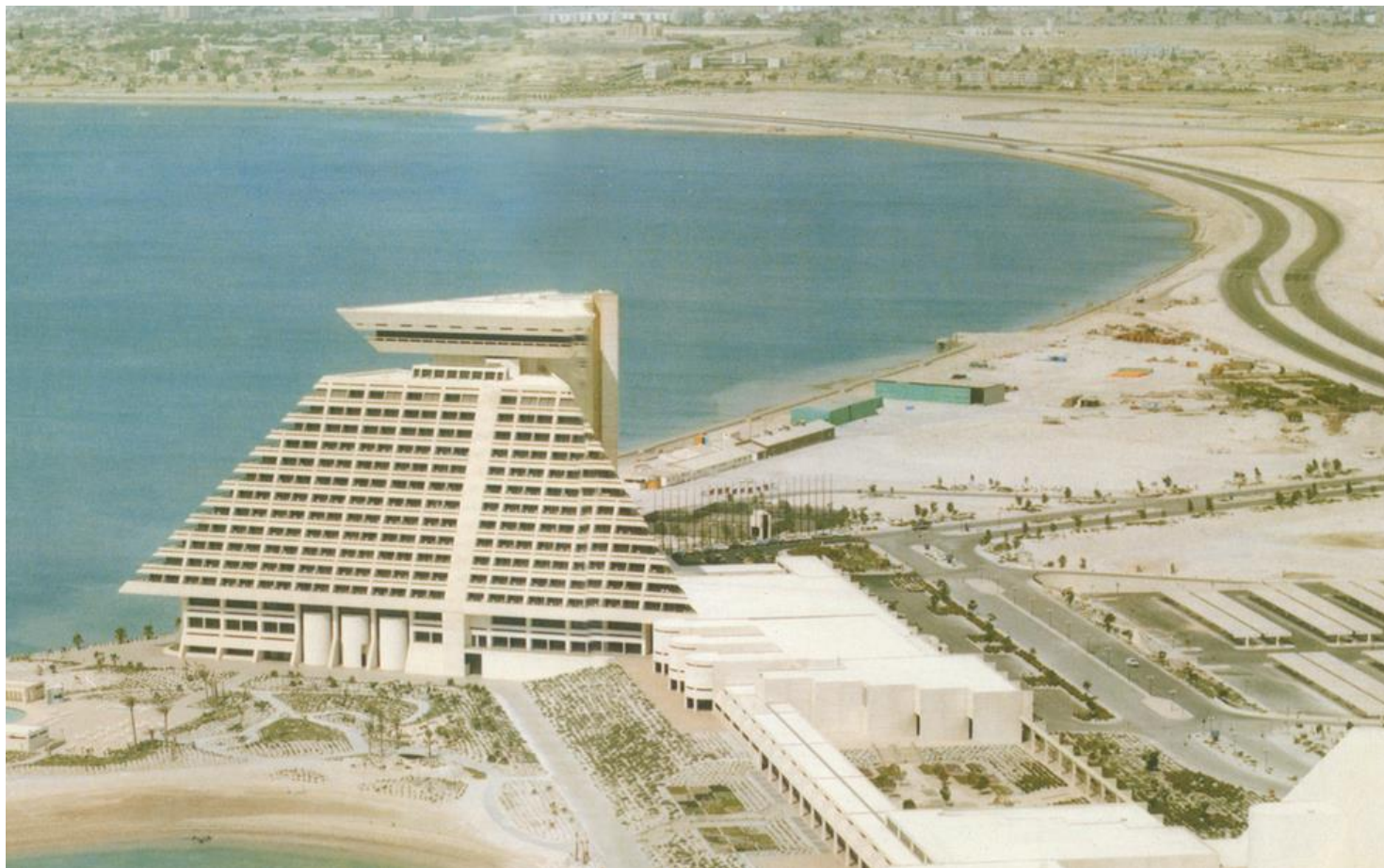




# Case Study



# The Beginnings





# The Middle Years





# The Present



# Implications

# Your Challenge

- Design systems to improve capital productivity of the SOCCE
- Design and implement a capital budgeting system that reduces ecological and social fragilities
- Standardize the measure each form of capital to assess overall and comparative performance





# Thank You

<http://www.kevindesouza.net> | [@KevDesouza](https://twitter.com/KevDesouza)

