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Amplified Performativity of Business Leaders: A Big Qualitative Social Media Data Analysis

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Abstract

This large longitudinal qualitative study advances the theory of performativity and leadership language in the digital era by investigating the power of performativity in both mitigating economic recession and driving economic expansion on a global scale. The research analyses more than a million tweets from 70 global business influencers, whose follower count ranges between 10,000 and 50 million. The dataset spans the entire Twitter activity of these influencers from March 2006 to August 2019, comprising more than 8.5 million linguistic tokens. Through the analysis of word frequencies, hashtags, and bigram networks, the study employs data mining techniques to guide an inductive thematic narrative analysis. The research theorizes the amplified performativity of business influencers’ language on social media, demonstrating that digital communication can significantly magnify performative effects compared to traditional speech. The empirical evidence reveals how influencers’ social media language contributes to setting new business trends, fostering optimism during the recession, and supporting the recovery from one of the most severe economic recessions to a period of unprecedented economic expansion by emphasizing business and customer growth. This study paves an interdisciplinary path for exploring the transformative power of social media in business and society.

Keywords: amplified performativity, leadership language, social media, power, economic cycle, big qualitative data

Introduction

The power of language and its performativity has been substantial and undeniable (Barad, 2003), particularly the power of leadership language (Short & Anglin, 2019; Zander et al., 2011). Digitalization has changed the business world forever, which calls for research on a new leadership language (Mukhejee, 2020) on social media, which seems to be overlooked in mainstream publication outlets (Bapuji et al., 2020).

Language performativity traditionally has several definitions and meanings. In the simplest terms, it can be described as 'performative utterances' - when *saying something means doing something* rather than simply reporting on it or describing things (Austin, 1962; 1970). Lyotard (1984) defines performativity as a kind of power that *legitimize postmodern knowledge and social bonds*. Meanwhile, Callon (1998) defines performativity as a *broader discursive form of economic theory shaping the market* rather than just describing it. However, in a world where social media have become a powerful means to magnify social phenomena (Roccapriore & Pollock, 2022), it is critical to set a theoretical foundation for the performativity of social media language. A sufficient understanding of the performativity of business leaders' new form of language can also empower them to transform society into more innovative and hopefully more sustainable approaches.

In response to the relative deficit of research on business-based performativity (Gond et al., 2016) and the call for greater attention to the "social constructions of organizing" in business (Cunliffe & Eriksen, 2011, p. 1429), this study triangulates the Austinian, Lyotardian and Callonian conceptualizations of performativity to examine the power of language used by global business influencers through their social media posts. Thus, this paper seeks to answer the following question: *What performativity can world business influencers achieve via their social media during one of the most challenging economic recessions and the longest periods of economic expansions?*

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This large longitudinal qualitative study holds significance for several reasons. First, it explores the interaction of supremacy, as embodied by influential individuals (world business leaders/influencers), and the performativity of their social actions on social media. This critical dynamic is particularly relevant in the new era of digitalization (Bapuji et al., 2020). Second, this study goes beyond the mainstream leadership theories, which often emphasize dichotomies such as power versus influence, types versus sources of power, positional versus personal power, and impression management versus influence tactics with *organisational contexts* (Dinh et al., 2014). Instead, it investigates these concepts at a global level, where influencers’ social media posts are amplified and disseminated worldwide, introducing a novel concept of “amplified performativity”. Third, leveraging big data from the economic recession (2006–2012) and the subsequent economic expansion (2013–2019, prior to the COVID-19 pandemic), this study examines how language performativity can shape world business dynamics in the era defined by digitalization and social influence. It responds to the calls by Grodal et al. (2021) on achieving rigor in qualitative analysis by pairing it with text mining and quantitative exploratory techniques, and by de Bakker et al. (2019) and Bapuji et al. (2020) to embrace an “interdisciplinary mission” that integrates business, leadership, data science, and linguistic perspectives. Finally, the study offers insights not only for scholars but also for practitioners and leaders across disciplines and sectors, enabling them to harness the performative power of language on social media to enhance their (soft) power. In other words, this research contributes both *scientifically* and *practically*, embodying the dual utility emphasized by Crane et al. (2016).

Theoretical Background

Language of Leadership, and When It Is on Social Media

Since Conger's (1991) seminal paper '*Inspiring others: The language of leadership*', the performativity of the language of business leaders has garnered increasing attention from

management scholars. For example, Denning (2007) highlights the power of narratives that transformational business leaders should use. Fairhurst (2010) points out the importance of framing the meaning of an organization's vision and missions. Short and Anglin (2019) draw attention to the efficacy of leadership language, including charismatic rhetoric, political rhetoric, entrepreneurial orientation rhetoric, and virtue rhetoric in social crowdfunding. Leaders often try to enhance their visibility, which can lead to either positive or negative outcomes (Smith et al., 2019).

While most of those studies focus primarily on how leaders inspire their employees through their choice of language - crafting commitment and confidence in their firm's missions and visions via traditional mediums of public speeches or corporate reports – it has yet to adapt to the emergence of new social-digital communication platforms. Specifically, there is a limited exploration of the language of leadership within the online and mobile context, increasingly dominated by business influencers.

In the era of AI, big data and digitalization, we may lack the sufficient skills and knowledge traditionally associated with leadership, but we have more power to influence people around us (Mukherjee, 2020). Therefore, we prefer to use the term “business influencers” instead of “business leaders”. Influencers are typically referred to as individuals who disproportionately impact the likelihood of information spreading widely (Keller & Berry, 2003). In this context, business influencers hold the capacity to shape the perspectives and actions of their followers. Social media platforms, such as Twitter, provide an ideal ecosystem for studying the role of influencers (Bakshy et al., 2011). These platforms offer a rich medium for examining social actions via the performativity of language employed by world business influencers.

Power of Performativity

The crisis of narratives in postmodern cultures, which affects the whole social system (Lyotard, 1984), is particularly relevant in the age of social media. As Lyotard asserts, “knowledge has become the principal force of production” (Lyotard, 1984, p 5). Lyotardian performativity focuses on optimising the least inputs for the greatest outputs of knowledge production, legitimizing postmodern knowledge and social bonds to realise power. This idea aligns with Austin's (1962) concept of performative utterances: the function of language is not only to report but to urge people to do something and do it efficiently by optimizing input/output ratios.

While Zehnder et al. (2017) call to inject economics into leadership research, Callon's (1998) notion of performativity denotes the interaction between economic theories and the real-world economy. Callon posits that the economy operates to increase codified economic knowledge. Building on Callon's and Austin's notions of performativity, Cooren (2004) demonstrates how texts, as forms of discourse, become materially available to be interpreted across space and time. These texts carry meanings, symbols and receptive objects, as noted by Hardy et al. (2000).

Barad (2003) proposes posthumanist performativity, which integrates material and discursive, social and scientific, human and nonhuman, as well as natural and cultural factors. On one hand, performativity has the potential to blur disciplinary boundaries and provide a more neutral balance between materiality and human agency (Barad, 2003). This concept of boundary collapse has become increasingly critical and evident in the age of digitalization (Mukherjee, 2020). On the other hand, Gond et al. (2016) critically evaluate how management theory scholars have used different perspectives of performativity to stimulate the creation of new theories. They identify three unique views on performativity: constitutive organizational communication, the expression of routine, and the approach of ‘making critical theory influential’.

Weber's social action theory and explanation of causality

On the one hand, performativity is understood as the language which affects change in the world, and it functions as a form of social action (Cavanaugh, 2015). On the other hand, Weber (1978, p. 4) defined social action as actions to which the “acting individual attaches a subjective meaning to his behaviour— be it overt or covert, omission or acquiescence. Action is “social” insofar as its subjective meaning takes account of the behavior of other and is thereby oriented in its course”. Therefore, we argue that when world business leaders share their thoughts, news or trends on Twitter, it is seen as a form of social action to influence people or make them think. Unlike normal people, those business leaders are very busy, and they do not have time for fake news or nonsense.

Causal explanations of social actions have been central to sociology and management. There is a controversy between a positivistic causal explanatory approach in which causal explanations are directed toward producing empirical correlations between variables or making predictions on the basis of empirical laws, and a hermeneutic interpretive approach (Ekström, 1992). Weber (1978) has contributed to developing a generative view of causality in the hermeneutic interpretive approach. From this view, causal explanations are directed towards “the uncovering of causal properties or the processes whereby social actions arise out of the complex interaction of internally related mental dispositions, meanings, intentions, social contexts and structures” Ekström (1992. p. 107).

Thus, based on the integral perspective of performativity from Austinian, Lyotardian and Callonian views with Weber's social action and causal explanation, this longitudinal study shows how performativity shapes changes beyond the organizational level to the world level, not only the economy but also social changes. By developing a new methodology to work with big longitudinal qualitative data, we examine how the world business leaders'

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performativity on Twitter is associated with the world business sailing through one of the toughest economic recessions into one of the longest periods of economic expansion.

The power of rapid dissemination and circulation of information through social media, along with its far-reaching impact, remains under-studied even though it introduces a different language game, shifting performativity to unprecedented levels of influence. According to the Callonian perspective, this “amplified performativity” has the capacity to shape markets and economies. This longitudinal study shows how amplified performativity can drive changes not only at the organizational level but also on a global level, influencing both economic and social changes. By developing a novel methodology for analysing extensive longitudinal qualitative data, this research examines how the performativity of world business influencers on social media is associated with navigating the global economy through one of the most challenging recessions to one of the longest periods of expansion before the COVID-19 pandemic significantly disrupted it.

Methodology

Twitter and Its Language

Twitter (twitter.com) is an online news and social networking platform where users post and interact with short messages known as 'tweets'. Tweets can include text, emoticons, website links, videos, photos, or other multimedia content. Twitter had 217 million monetizable daily active users worldwide at the end of 2021 (Statista, 2022) and ranks amongst the top 10 biggest social networks globally (Statista, 2019). This study focuses on Twitter’s language as it is one of the most effective social media platforms for maximizing the input/output ratio. A short message (a tweet of a maximum of 280 characters, previously 140 characters until 2017) can be retweeted thousands of times in seconds (Kwak et al., 2010). In July 2023, Twitter underwent a rebranding and is now known as X (TechRadar, 2023). However, since all data

for this study were collected during the period when the platform operated under its original name and guidelines, we will refer to it as Twitter throughout this paper.

The language of business influencers in social media, particularly Twitter, is very different from the traditional leadership language. It is concise and constrained to 140 characters initially (although that limit was doubled from 2017 to 280 characters). Twitter users interact through comments on tweets or by sharing them via 'retweeting'. Retweeted content, on average, could reach 1,000 users regardless of the original poster's follower count (Kwak et al., 2010). This figure reflects the platform state in 2010 when it had 41 million users – a number that has since increased over tenfold by 2024.

Once retweeted, tweets are shared almost instantly, underscoring the rapid diffusion of information following the first retweet (Hajli et al., 2022; Wang et al., 2021). This rapid sharing highlights Twitter's potential as a tool to measure the influence of world business influencers within what Shifman (2013, p. 362) describes as the "vernacular discourse of netizens", which goes beyond the traditional analyses of leadership language. Without an adequate understanding of the performativity of business influencers' language on social media in the context of digital economy, we cannot effectively advance theory or equip the next generation of business influencers about how to best use social media for socio-economic impacts.

Big (Qualitative) Data

The context in which big data, particularly from social media platforms like Twitter, is generated often raises concern among 'big qual' data researchers regarding the risk of losing, misinterpreting, or overlooking the associated meanings (Boyd & Crawford 2012). This concern contrasts with the 'symphonic' view that context interweaves data from various sources as mutually supporting themes of evidence (Halford & Savage, 2017). Therefore, this study seeks to chart a novel approach to big qualitative data analysis to avoid such shortfalls.

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The growing significance and influence of big data, traditionally associated with large-scale quantitative datasets, highlight the opportunity for qualitative researchers to further enhance the value of existing investments (Davidson et al., 2019). In this context, the present study uses significant volumes of textual and narrative data generated by 70 world business influencers on Twitter over a 13-year period. We demonstrate a breath-and-depth analysis of ‘big qual’ data by applying computational text mining methodology and equating it to ‘deep data’ research. Adopting the term ‘aerial archaeology’ by Seale and Charteris-Black (2010, 537) we ‘descend to ground level and starts to dig our data, and adopting the term ‘cyber-archaeology’ by Zimbira et al. (2010), we capture and illuminate our data analysis that addresses change over more than a decade. By blending ‘aerial archaeologist’ with ‘cyber-archaeology’, we involve both breadth and depth.

This study has two stages of analysis. The first stage involves text mining, which provides a breath-and-depth analysis of big qualitative data by applying computational text mining methodology and equalling it to ‘deep data’ research. Adopting the term ‘aerial archaeology’ by Seale and Charteris-Black (2010, 537), this study ‘descends to ground level and starts to dig the collected data, employing ‘cyber-archaeology’ to capture and illuminate changes over the 13-year study period (Zimbira et al., 2010). The second stage involves inductive thematic narrative analysis (Riessman, 2008) to identify and finalize themes related to performativity. This stage builds on the results from the first stage’s results by providing more specific, concrete and detailed evidence from the dataset without relying exclusively on quantitative evaluation.

Research Context

The 2008 stock market crash, triggered by the collapse of the house price bubble, led to a great recession (Farmer, 2012). This global economic and financial crisis profoundly affected businesses and societies, causing worldwide economic uncertainty (Ball, 2014). The

global economy struggled until 2010-2012 with severe social consequences, including increased rates of suicides and mental and behavioral disorders (De Vogli et al., 2014). Although gradual economic recovery began between 2010 and 2012, the lingering effects of the recession underscored the challenges of restoring stability in a deeply interconnected global economy.

To explore the interplay between economic cycles and communication dynamics, this longitudinal study investigates the performative power of influential business leaders' tweets over a 13-year period. By examining the recession phase (2006–2012) and the subsequent expansion phase (2013–2019), the study captures a comprehensive view of these pivotal periods. The analysis concludes with 2019, just before the COVID-19 pandemic profoundly disrupted the global economy once again.

Data Collection

Selection of global business influencers

Data from CEOs and significant business influencers associated with the high-level positions (e.g., founder, chairman or prominent investor) of major global companies were collected based on the following three criteria: (a) the individual was serving or had previously served as a CEO, founder or chairman of a major global company at the time of data collection in 2019, (b) the total number of tweets authored by the individual exceeded 100, ensuring sufficient dataset for text mining analysis, and (c) the individual's Twitter account had a minimum of 10,000 followers, reflecting a significant scale of influence in terms of audience reach (followers are users who subscribe to another user's feed to receive notification of their shared content).

Determining the scale of influence on Twitter has been a subject of many studies, with four primary factors emerging as critical metrics: (a) the number of followers, (b) the number of retweets (i.e., how often the tweet is shared), (c) the number of mentions (i.e., instances

where the user's handle is referenced in other's tweets), and (d) PageRank, a metric that evaluates the centrality and impact of a user within the network (Anger & Kittl, 2011).

As a result, 70 world business influencers were selected for the study. Based on the number of followers, these influencers were divided into two distinct categories, following the marketing-oriented classification suggested by Gottbrecht (2016): (a) macro-influencers, with follower count between 10,000 and one million, and (b) mega-influencers, with more than one million followers. The former group consists of 47 influencers, while the latter has 23 influencers. Figure 1 shows a logarithmic relationship between follower counts and tweet counts for all influencers in the dataset. Notably, there is a high variance in the level of activity on Twitter among these influencers. Details about the selected business influencers – including their names, associated companies, positions within the companies, Twitter usernames, tweet count, and follower count - are provided in Appendix 1.

{Insert Figure 1 here}

Twitter dataset

Tweets were collected in 2019 using the Python programming language and the scraping tool Twint (Zacharian & Poldi, 2018), just before Twitter limited access to its data scraping capabilities. The data were then processed and analyzed using the R programming language (R Project, 2019). The dataset included the entire history of tweets posted by those 70 business influencers, spanning from March 2006 (when Twitter was launched) to August 2019, totalling 1,034,549 tweets. Each tweet included the following data and metadata: the influencer's Twitter username, a unique ID for each tweet, the tweet's text, the timestamp (year, month, day, hour, second), whether the tweet is a retweet, whether it has been retweeted, the count retweets and likes, and any hashtags used (see Appendix 1).

The collected tweets were subsequently split into two distinctive datasets: the recession period (2006–2012) with 376,899 tweets (36.4%), and the expansion period (2013–2019) with

657,650 tweets (63.6%). This unequal distribution of tweets between the two periods reflects Twitter's early years, as it took time to build its user base after its launch in 2006.

Figure 2 presents annual counts of tweets, hashtags, likes, replies and retweets over 13 years. Due to large differences in the total values for the number of tweets (1,034,549), likes (154,139,680), retweets (34,418,687), and replies (8,075,564), we used the logarithmic scale in Figure 2 to demonstrate the comparable changes in counts of those values over those years. We can observe an exponential increase in the number of likes, retweets and replies, especially in the expansion period 2013-18, whereas the annual number of tweets posted remained relatively stable throughout the study period.

{Insert Figure 2 here}

Stage 1: 'Aerial Archaeology' - Text Mining

To derive insights from the extensive dataset of raw tweet texts, a series of data processing text mining and data processing steps were designed and implemented specifically for Twitter data (Ampolo et al., 2015) using the R programming language. These steps include tokenization, calculating bigram frequencies, and analysing hashtag frequencies to identify key themes within the big qualitative data. Below we provide detailed explanations of the text mining techniques employed.

Tokenization of tweets

The texts in the dataset are represented by a collection of single tweets and retweets, which include many unnecessary characters, punctuation, capitalization, symbols and emoticons typically used in social media content. To clean and prepare the raw Twitter dataset for analysis, all tweets were broken down into individual tokens - a process called *tokenization* (Palmer, 2000). A token, a meaningful unit of text, most commonly a word, is extracted to enable meaningful analysis.

As a part of the tokenization process, the following steps were performed:

- Removal of all punctuation and conversion of words to lowercase.
- Removal of words with fewer than five characters and stop words (i.e., commonly used, contextually irrelevant English words such as *I, we, he, she, a, an, the*, etc.).
- Removal of special characters and encodings typically found in raw social media text, such as URL links, encoded emoticons, and non-English characters.

This process resulted in a clean, tokenized dataset comprised of single words (8,509,667 tokens) and separated ones with bigrams (586,815 tokens), both of which were used for subsequent stages of text analysis.

Bigrams analysis

A selection of the 30 most frequently used words during the bust (recession) and boom (expansion) periods was extracted to examine discourse change over the years. Using these frequently occurring words from both periods, this study also investigated which other words were commonly used in conjunction with them. These consecutive word sequences are called “n-grams” (Jurafsky & Martin, 2009). This analysis specifically focuses on bigrams (i.e., pair of two consecutive words) to better understand how linguistic patterns changed between the two periods.

An overall frequency of bigram occurrence within the bust and boom periods was also calculated. These bigrams were then visualised using a network diagram created with a specialised R package for network visualization (Csardi & Nepusz, 2006). Network diagrams provide a visual representation of relationships between entities, enabling a detailed examination of how tokens are interconnected. In these diagrams, nodes represent individual entities, and edges represent the connections between them. Customizing the nodes and edges allows comparison with the expected structure.

This this study, uppercase nodes represent the most popular global and company keywords, while lowercase nodes represent words associated with them. The edges between

nodes represent the frequency of bigram association, with thicker edges indicating higher frequency. Separate bigram network diagrams were created for the recession and boom periods, including only the most frequent bigrams that occurred in at least 0.1% of the corpus from each period.

Figure 3 visualizes bigrams from the recession period, highlighting *social*, *mobile*, *media*, *business*, and *world/global* as focal points. Figure 4 illustrates bigrams from the expansion period, with focal points such as *marketing*, *digital*, *business* and *customer*. Due to significant variation in bigram frequencies, logarithmic (log) transformation of frequency values was applied to scale the data and enhance the visualization in the network diagram.

{Insert Figures 3 and 4 here}

Hashtag analysis

Hashtags have emerged as a unique tagging convention that helps associate Twitter and other social media messages with specific events or contexts. Introduced in 2007, hashtags quickly became a popular tool for aggregating themes and organising discussions around particular topics. Prefixed by a “#” symbol followed by a keyword or acronym (e.g., #marketing, #smm, #socbiz), a Twitter hashtag represents a bottom-up, user-driven tagging system that facilitates both innovation and user participation in organizing information. For this study, we extracted the most frequently used hashtags by business influencers in the bust and boom periods. An overview of the top 30 hashtags for each period is shown in Appendix 3.

During the recession, the discourse cantered largely on social enterprise and customer relations. Prominent hashtags included #scrm (social customer relationship management), #sociamedia, #socbiz (social business), and #nimble (a referring to “Agile” business models; Loss & Crave, 2011). Additionally, hashtags referring to major innovation- and science-focused conferences were among the most frequently used. These included #ted (referring to TED conferences focused on education, business, science, and tech and creativity:

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<https://www.ted.com/>), #df12 (Dreamforce 2012, a conference focused on enterprise technology and cloud computing), and #sxsw (South by Southwest, a conference series focused on innovations in the film and music industries).

In contrast, hashtag analysis for the expansion period revealed a stronger emphasis on marketing and business strategies. Notable hashtags include #marketing and #smm (social media marketing), #influencemarketing, #cx (customer experience) and #cxo (customer experience officer), all of which ranked in the top 10. The discourse also reflected a strong focus on digital innovation, with top hashtags such as #digitaltransformation, #bigdata, and #ai signaling attention to technological advancements.

Stage 2: ‘Cyber Archaeology’ - Inductive Thematic Narrative Analysis

An inductive approach combining comparative logic (Rihoux, 2006) and thematic narrative coding (Riessman, 2008) was adopted to analyse the performative power of the tweets posted by the 70 world business influencers. The thematic narrative analysis prioritises the content of tweets – focusing on *what* is tweeted - rather than examining aspects like *how*, *to whom*, or *for what purpose*. This method seeks to identify common elements across cases to develop theoretical insights (Riessman, 2008).

The analysis begins by organising the results from the text mining stage as nodes to abstract relevant tweets. These nodes are then coded into first-order themes by identifying the core narrative elements associated with each theme (Gioia & Thomas, 1996). Themes that address the research question - what performativity can global business influencers create via their tweets - are subsequently selected. These themes are interpreted through a narrative lens, with particular attention paid to coherence and continuity over 13 years of an economic recession and expansion.

To enhance the clarity and presentation of findings, the Gioia data structure template was adapted (Gioia et al., 2013). Table 1 illustrates the data structure of the thematic narrative

analysis, providing a detailed overview of the emergent themes and their connections to the study's findings.

{Insert Table 1 here}

Findings and Discussion

What is the power of performativity demonstrated in more than one million tweets posted by world business influencers between the birth of Twitter in 2007 and the onset of the COVID-19 pandemic? By combining data mining and inductive qualitative analysis, this study identifies three key dimensions of performativity that emerged from the Twitter language of 70 world business influencers over 13 years. Through their social media communication, these influencers played vital roles in leading and inspiring people and businesses virtually across the globe. The three critical themes identified are as follows:

1. Leading Trends in Business
2. Raising hopes during a hard time of economic recession
3. Developing businesses - their own and others.

These themes are detailed below, with illustrative data in Table 2.

{Insert Table 2 here}

Leading Trends in Business

During the recession and in the early days of Twitter, business influencers capitalized on the opportunity to dominate social media and influence people by promoting a vision of mobility that became deeply embedded in business information systems (Middleton et al., 2014). In the subsequent expansion period, these influencers not only promoted digital transformation but also shared their insights and strategies to help other businesses achieve it successfully.

Social media dominance

Over 13 years, these business influencers posted 1,034,549 tweets, garnering 154,139,680 likes, 34,418,687 retweets and 8,075,564 replies from their followers. This level of engagement underscores their dominance on the Twitter platform. These influencers actively encouraged people and other business leaders to raise their voices on matters of business and society. Examples of tweets illustrating all first-order categories are showed in Table 2.

As part of their job to lead trends in the digital business era, they advocated the integration of social media into business practices. As a part of their job, they also used Twitter to *share and initiate new ideas* related to social media's role in business. For example, Andrew Gill (2010) tweeted: "*Social media provides a real-time view of what the problems are & internal processes that need to be fixed. Social intelligence needed #csm10*". Similarly, Bill Gross (2012) highlighted the economic impact of social media: "*Do you think social media improves productivity? McKinsey says it will add \$1.3 trillion to the economy! <http://nyti.ms/QmItzXA>*". Followers could also learn more from their observations and *predictions* on social media, as seen in Brian Halligan's (2009) tweet: "*@paulineo Fascinating...it is cool to see how the social media sphere is enabling social change.*".

The ever-increasing prevalence and adoption of social media in the digital era has been shown to create a contagion effect across the business world (Castelló et al., 2016), foster value creation practice (Laroche et al., 2012), and promote civic engagement and trust in institutions (Wareen et al., 2014). The language used by world business influencers' on Twitter seems to serve as a guideline for many businesses and organizations across various sectors. Platforms like Twitter have viewed as revolutionary, influencing how knowledge is created and diffused (Havakhor et al., 2018).

A world of mobility

A significant difference between the recession and expansion periods lies in the use of the term '*mobile*'. During the recession, '*mobile*' was among the words most frequently

tweeted by business influencers, often in the context of *mobile cloud*, *mobile advertising*, *mobile marketing* or *mobile operator*. Most of these ‘mobile’ terms primarily referred to the use of short messaging services on mobile phones and personal digital assistants to deliver advertisements for products and services - a prevalent strategy during the recession (Grewal et al., 2018). Examples of tweets illustrating these first-order categories are presented in Table 2.

In contrast, during the expansion period, the use of *mobile social* in their Twitter language evolved to encompass broader meanings. It could refer to *mobile social network*, *mobile social service*, *mobile social game*, *mobile social shopping*, or *mobile social growth*. Examples of these are also provided in Table 2.

Digital influence on business

The rise of social media and digital mobility has significantly influenced businesses. In the final years of the recession, digital influencers began to emerge, building massive followings on social media and leveraging these platforms for financial gain (Cotter, 2019). Recognising the potential of digital influencers, business leaders saw the opportunity to harness their influence to drive business performance and value creation.

Digital transformation

Brian Solis, a globally recognised digital anthropologist and futurist, emerged as a leading voice in the digital transformation discourse on Twitter. During the expansion period, more than half of all the tweets on digital transformation were attributed to him. Through his tweets, Solis provided explanation of what digital transformation means and how businesses can achieve it.

Digital transformation is defined as the process through which digital technologies disrupt industries, prompting organizations to adopt strategic responses that alter their ways of value creation while managing structural changes and challenges impacting outcomes (Vial, 2021). Many business influencers framed digital transformation as a *new business model*. For

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example, R Ray Wang tweeted in 2013: “*MyPOV: service based industries have a huge opportunity to jump into digital transformation for new business models #oracle_ar*”.

These influencers also actively *shared their learning* from their own digital transformation journeys. For example, Brian Solis tweeted in 2014: “*Companies that allow technology to drive their digital transformation are making a big mistake* http://www.cmo.com/articles/2014/4/4/altimeter_group_don_.html” via @cmo_com”.

What amplified the power of these business influencers was not just their ability to transform their business via digital transformation but their efforts to highlight its societal impact and *draw public attention to the trends they were shaping*. For example, Tim O’Reilly tweeted in 2019: “*We don't count savings to the government. We count savings to the citizens.*” [@anirchowdury](https://twitter.com/anirchowdury) on the impact of government digital transformation in Bangladesh. *Savings are measured in Time, Cost, and Visits to government offices. An example for rice farmers. At @hks_digital pic.twitter.com/hocIL9Xfhh* At Harvard Kennedy School Courtyard”. This demonstrates that digital transformation has evolved into a purpose-driven initiative for businesses and organizations (George & Schillebeeckx, 2022; Rebekah et al., 2018), going beyond mere slogans or propaganda to become a meaningful agent of change.

A paradigm shift in marketing: Old titles, new labels

Web-based communications and digital technologies have forever transformed marketing. Digitalization has taken *marketing* to a new level by extending, enhancing and enriching boundary-spanning interactions (Joensuu-Salo et al., 2018). The participation of world business influencers appears to have significantly reshaped the marketing landscape, evidenced by the hashtag #marketing appearing over 24,000 times in the 13-year study period, with a notable peak between 2016 and 2018 (Graph 1).

{Insert Graph 1 here}

These influencers' early recognition of digital influence during the recession and their advocacy for digital transformation during the expansion period also precipitated a shift to a new form of marketing, *digital marketing*. Defined as “an adaptive, technology-enabled process by which firms collaborate with customers and partners to jointly create, communicate, deliver, and sustain value for all stakeholders” (Kannan & Li, 2017, p. 23), digital marketing become a dominant trend that these influencers championed on Twitter. Their tweets covered various of digital marketing, particularly how it could enhance business performance, especially during the recession.

Marketing automation – a trend that gained traction during economic expansion – was also highlighted by these influencers. *Marketing automation* refers to the use of software that automates marketing operations. For example, Brian Halligan tweeted in 2013: “*Hubspot, Marketo, Pardot, Act-On, and Eloqua lead latest marketing automation market share numbers* <http://venturebeat.com/2014/11/07/hubspot-marketo-pardot-act-on-and-eloqua-lead-latest-marketing-automation-market-share-numbers/> via @VentureBeat”.

Social selling has emerged as a novel marketing approach, integrating social media into daily sales practices to facilitate the sales process (Schmitt et al., 2021). Business influencers actively advocated for *social selling* on Twitter, emphasizing its potential to transform sales strategies. For example, Mark Fidelman tweeted in 2014 “*Artificial Intelligence is going to make social selling effortless and practical*” See the latest tips here. <https://cards.twitter.com/cards/dxgju/ej3A>”.

Infographics were also highlighted by business influencers as an important marketing communication tool, especially in content marketing. *Infographics*, an abbreviation for information graphics, represent data or knowledge in a visually engaging format to tell a story. For instance, Jon Ferrara tweeted in 2014: “*Why content marketing? Attention, loyalty, leads, sales. Infographic: A Guide to Marketing Genius* <http://www.nimble.com/blog/infographic-a->

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[guide-to-marketing-genius/](#)”. This emphasis reflects the growing importance of visual storytelling in digital marketing.

The performativity of these business influencers played a vital role in advocating for and shaping the evolution of digital marketing. Furthermore, this finding aligns with research suggesting that when leaders demonstrate care and engagement, the creation of new businesses is significantly enhanced (Arvate & Story, 2021).

The Role of Hashtags in Digital Marketing

Hashtags have become the iconic feature of Twitter, and they are fully utilised by business influencers to highlight their key messages within the constraints of limited text. Additionally, hashtags facilitate the search, classification and clustering of social media messages, enhancing their visibility and reach (Ferragina et al., 2021).

During the studied years, hashtags relating to digital marketing were strongly advocated by business influencers on Twitter. These included #smm (social media marketing), #influencermarketing, #ai (artificial intelligence), #bigdata, #scrm (social customer relationship management), #cx (customer experience), #cxo (chief experience officer), #cmo (chief marketing officer), #cio (chief information officer). Combined with trends such as automation, social selling and infographics, hashtags seem to have played a pivotal role in establishing and solidifying the identity of *labelling marketing as digital marketing forever*. Figure 5 illustrates the development of the above hashtags over 13 years, ordered by the number of tweets.

{Insert Figure 5 here}

Raising Hopes During the Economic Recession

By addressing grand challenges and proposing solutions to tackle sustainability issues, business influencers actively contributed to reducing the negative impacts of the economic recession, raising hopes for millions worldwide.

Grand challenges

Tim O'Reilly, Assaad Razzouk and Brian Halligan are among the business influencers who strongly supported the fight against climate change, countering sceptics and emphasising the reality and dangers of *global warming*. For example, Tim O'Reilly tweeted in 2012: “RT @hari: Between '91 & 12 there were 13,950 peer-reviewed #climate articles, 24 denied global warming. <http://bit.ly/XX9PPRA>”.

Beyond environmental concerns, many influencers addressed pressing *social issues* and advocated for *world peace*. For example, Anand Mahindra used his platform to speak out against incidents of gang rape in India, tweeting in 2012: “*The right measure of anger has built up in response to the Delhi gangrape. Media & social media need to sustain relentless pressure for action*”.

Prominent business influencers also focused on *global health challenges*, advocating for the distribution of vaccines and the eliminate of diseases like malaria and polio, particularly in the Global South. Kevin Rose highlighted this in 2009, tweeting: “*Help @aplusk reach 1M followers, he's buying 10,000 anti-malaria mosquito nets if he beats CNN to 1M (great cause)*”.

Bill Gates was amongst the most active business influencers on Twitter during the recession. Of the 20 most viral tweets in this period, 14 were posted by Gates, most of which called for support for the world's most *vulnerable populations*. His tweets frequently used keywords such as ‘world’, ‘people’, ‘health’, ‘Africa’, ‘children’, ‘students’, ‘malaria’, ‘polio’, ‘vaccines’, ‘women’ and ‘innovation’. It is, therefore, not surprising that Gates and his ex-wife, Melinda, are listed among the world's most influential philanthropists (Martin & Loudenback, 2015). The 2008 global economic crisis was a significant catalyst, motivating philanthropists, organizations, and governments to collaborate together with a more deeply embedded social purpose (Doherty et al., 2014).

Business solutions for sustainability

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Social business and *social enterprises* emerged as key interests and concerns among world business influencers during the studied period. These topics were mentioned 397 times during the recession and 253 times during the expansion. Influencers such as Andrew Grill, Mark Fidelman, and Brian Solis were the most active advocates for social business and social enterprise.

Social businesses and enterprises set themselves apart from traditional businesses by reinvesting profits or donating resources to create positive social and environmental changes. Emerging in the early 21st century, just before the onset of the 2007 economic recession, social enterprises gained prominence as they adapted beyond institutional constraints to customize their resources, strategies, and activities (Di Domenico et al., 2010). This current study reveals how global business influencers recognised the transformative potential of social business and social enterprises, inspiring businesses worldwide to adopt innovative practices. As Smith et al. (2013, p. 407) noted, “In a world filled with poverty, environmental degradation, and moral injustice, social enterprises offer a ray of hope”.

Through their tweets, these world business influencers guided not only their own organisations but also inspired other businesses to overcome the economic recession by focusing on what was critical. The performative power of their communication during this time played a pivotal role in energising global business growth, facilitating recovery during the recession, and maximising the opportunities of the subsequent expansion period. Their actions underscore the significance of business influencers in setting strategic directions and motivating businesses to both navigate crises and thrive during a record-breaking economic expansion. This aligns with Callonian theory and Barad (2003) notion of performativity, demonstrating how their social media activity contributed to shaping the economy through performative social actions.

The blossoming social enterprise and philanthropic initiatives during the recession also highlighted the human side of the world business influencers. Their focus in addressing societal challenges during difficult times showcased their ability to act as sources of comfort and stability, echoing a notion of leaders as a “rock in stormy waters” (Collins & Feeney., 2000). This study shows how world business influencers demonstrated flexibility in their digital and social media communication strategies to drive social change. By doing so, they also fulfilled their social responsibility – an increasingly essential expectation for contemporary business leaders (Waldman et al., 2006).

Growing Businesses

The performativity of world business influencers on Twitter was particularly noticeable in their contributions to business development. Their tweets largely focused on three core themes: *marketing, business and customers*. While digital marketing has been discussed previously, this section focuses on *business* and *customers* to understand how influencers’ tweets might have supported business growth.

Business-focused: old bottle, new wine

During both the recession and expansion periods, world business influencers seemed to constantly work out *new business models* to adapt to the change. Their tweets raised questions, shared ideas, and outlined strategies for business models focusing on “*people and planet alongside profit*” (Richard Branson, 2013), “*engineer-and-designer-driven*” (Bill Gross, 2014), and “*internet of things*” (R Ray Wang, 2015). Among these influencers, R Ray Wang stood out as the most prominent contributor to the “business model” theme, accounting for 283 of the 573 tweets on this topic over the 13-year period.

Business strategy was another frequent topic in their tweets, often framed as supporting specific business models. For example, R Ray Wang tweeted in 2012: “*MyPOV: it's obvious*

that roles are not useful in these discussions about business strategy shifts. It's multidisciplinary or fail #custexp”.

Business leaders appeared to be another topic for them to inspire and/or urge individuals and organizations to take action. For example, Richard Branson tweeted in 2011: “True business leaders have the ability to think differently - why Steve Jobs was the entrepreneur I most admired <http://virg.co/bltdA>”. Their focus extended beyond personal business interests to include the broader economy. For example, Steve Case tweeted in 2011 about the US economy: “Senators introduce Startup Act, aim to boost new business growth <http://bit.ly/tvZ29JA> #StartupAmerica”.

Interestingly, *business schools* also appeared in their tweets, but often in critical context. Influencers urged business schools to transform themselves if they do not want to be out of the business. For example, Bill Gross highlighted this in a 2012 tweet: “Forbes with 8 reasons why Startup Incubators are better than business school: <http://onforb.es/TKvIMeA>”.

In Lyotardian terms of performativity, their business-focused tweets during the economic recession can be seen as inputs into the global economy, laying the foundation for growth. The tweets from the expansion period represent the outputs of their recession-era performativity. Metaphorically, these influencers produced “*new wine*” (innovative business models and strategies) for their “*old bottles*” (their existing companies), rather than focusing on creating entirely new enterprises.

Customer-Focused: Expanding the Scope

R Ray Wang, Mark Fidelman, Jon Ferrara and Brian Solis were among the top business influencers who actively tweeted about customer care, contributing thousands of posts over the studied period. However, there were notable differences between the recession and expansion periods regarding the level of care to *customers* initiated by business influencers.

During the Recession: Traditional Focus

During the economic recession, they emphasis was on traditional aspects of customer engagement, including *customer service*, *customer satisfaction*, *customer relationships* and *customer experience*, as businesses did for many decades. Craig Newmark appeared to be the most committed to *customer service*, frequently tweeting about his personal involvement in addressing customer concerns.

Customer satisfaction received much fewer tweets as it did not seem to catch people's attention until Elon Musk tweeted about it. For example, his tweet on customer satisfaction in 2014 (*Model S receives highest customer satisfaction score of any car ever surveyed by Consumer Reports* <http://www.cnn.com/id/101444215A>) was retweeted 848 times.

Customer relationships during this period were influenced by the digitalization process, with a shift towards interactions mediated by digital platforms and social media. Brian Solis highlighted this evolution in 2011, tweeting: “*The Games Businesses Play with Customers: how gamification is changing customer relationships* <http://bit.ly/gLQydY>”.

Customer experience was a dual focus during the recession. On the one hand, influencers criticised poor customer experiences; on the other hand, they proposed strategies to enhance customer experience. However, *customer experience* did not really flourish on those business influencers’ tweets until 2014, when disruptive technologies changed the architecture of customer experience. The hashtag #cx ranked seventh among the top 10 hashtags used by business influencers over the 13-year period (see Graph 2 again). By then, creating a solid customer experience had become a principal objective for many companies (Lemon & Verhoef, 2016).

During the Expansion: Future-Oriented Strategies

In the expansion period, business influencers introduced new tools and concepts, including *customer acquisition* and the *customer journey*. The *customer journey* refers to a sequence of events that customers go through to learn about, purchase and interact with a firm’s

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products, services or processes (Norton & Pine II, 2013). Business influencers recognised its growing importance, as illustrated by Brian Solis’s 2013tweet: “*Customer journey management (CJM) is the future of customer experiences*” [*http://smartblogs.com/leadership/2013/05/30/customer-journey-management-is-the-future-of-customer-experiences/*](http://smartblogs.com/leadership/2013/05/30/customer-journey-management-is-the-future-of-customer-experiences/)”.

Customer evolution was another key term advocated by business influencers, which carried different implications across two periods. During the recession, customer evolution was referred to customer-centricity, while in the expansion period, it aligned with customer experience. These shifts highlight the transition in marketing from a traditional, service-dominant logic to a value-focused approach aimed at delivering more meaningful experiences to customers (Payne et al., 2017).

Further Discussion and Conclusion

The concept of mega-influencers has increasingly gained attention in social media research (Ruiz-Gómez, 2019) as a powerful tool for marketing and engagement (Alassani & Göretz, 2019). This study has shown their positive association with the world economy going through one of the worst recessions and sailing through one of the longest economic expansions. Theoretical and managerial implications arising from this research are discussed below.

Theoretical Implications

Responding to Antonakis’s (2017, p. 16) call to explore innovative methods for studying leadership and advancing our knowledge base, this study introduced a novel approach to researching leadership in the era of IoT (Internet of Things). By leveraging big qualitative data collected from social media (Twitter), it demonstrates how the performative language of world business influencers’ can be amplified. This study significantly extends the current leadership and performativity research in several ways.

This study contributes to the ongoing conversation in social sciences about performativity by conceptualizing a new dimension of leadership performativity during and after an economic recession – an area largely overlooked by foundational performativity research. Drawing on the Austinian view (Austin, 1962; 1970), we argue that tweets are performative utterances - uplifting, encouraging and inspiring others to take action. This performativity is reflected in the progression of businesses from recession to expansion, focusing on areas such as business models, strategies, growth, and customers-related aspects like satisfaction, experience, journey and evolution.

As social media networks exhibit greater levels of embeddedness (Hong et al., 2018), when digital technologies are infused, their influence can go beyond their organizational level to global economic and social ones. This study advances the Lyotard's (1984) view of input/output efficiency in performativity by illustrating how minimal inputs (short tweets) yield significant outputs (business development and social influence). Business influencers established virtual interconnections long before the COVID-19 pandemic, even though their contributions went largely unacknowledged (Bapuji et al., 2020).

Business influencers, who can be leaders of a firm, industries, and even global markets, align with the Callonian view of *shaping the world market* through their social action while transforming the business world via their tweets. Their influence is evident in the business trends they have catalysed, such as digital transformation, digital influence, a world of mobility, and paradigm shift in marketing, as highlighted in this study's findings.

This study diverges from traditional power and influences leadership research theories (Treadway et al., 2004) by integrating Austinian, Lyotardian and Caledonian views of performativity. It highlights significant changes in the landscape of performativity and business leadership research. Social media like Twitter can amplify social alertness, social transmission, and action, enabling rapid scaling through algorithmic processes and automated accounts (de

Lima Salge et al., 2022). The constrained character limit on Twitter compels business influencers to craft their messages cleverly and creatively, maximizing their impact and extending their reach. This demonstrates *amplified performativity*, defined here as *language enhanced by digital technologies to catalyse large-scale economic and societal transformation, far surpassing the potential of traditional leadership communication*.

Finally, this conceptualization of amplified performativity opens doors for more interdisciplinary research, particularly in the optimization of leadership language for broader social impact. It illustrates how business leaders can create shape, reshape, uplift, and guide the world business landscape through their performative virtual interconnections.

Practical Implications

Though it is known that language has the power to reflect and shape social norms and attitudes (Fiol et al., 1999), social media and the Internet of Things (IoT) provide unprecedented opportunities for business leaders to amplify their influence (Gubbi et al., 2013). Current and future leaders must embrace digitalization to maximize the potential of these tools for creating meaningful social and economic impact.

The advancement of our amplified performativity of using less for more, on the one hand, reflects the new language leaders of the digital world should use if they want to create more social impacts (Schrage et al., 2021). On the other hand, more importantly, it can gradually change people’s mindset of using fewer resources for more outputs or a more sustainable future via their perceptions of amplified performativity.

For companies and managers, staying informed about the developments in digital marketing and actively utilising digital platforms is crucial for improving business performance and achieving social impacts. The current era of digital transformation has also redefined customer care, creating opportunities for businesses to innovate in acquiring, nurturing, and engaging with customers. Firms should focus on continuously advancing their marketing

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3 strategies, particularly during periods of economic downturn, to maintain positive customer
4 relationships and societal contributions.
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8 Finally, businesses must prioritize delivering exceptional customer service, creating
9 memorable experiences, and enhancing the customer journey. By doing so, they not only foster
10 loyalty but also contribute to broader social and economic resilience, even during challenging
11 times.
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16 17 **Limitations and Future Research**

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19 While this study makes significant contributions to understanding amplified
20 performativity, it also presents certain limitations that invite further exploration. For example,
21 this study did not explore how language was used on Twitter, such as the role of lexicons,
22 sentence structures, or metaphors. Future research could investigate how language is framed in
23 tweets or examine the contribution of metaphors to amplified performativity. In addition, the
24 non-reciprocal relationships on Twitter—where users primarily “broadcast” information rather
25 than engage in two-way communication—raise questions about the platform’s dynamics. Some
26 messages on Twitter are often perceived as expressions of narcissism (Davenport et al., 2014).
27 Future studies could explore the boundary between performativity and narcissism, particularly
28 in the context of social media leadership.
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43 Some researchers may also question the causality matter of this study. From the
44 generative view of causality (Ekström, 1992), this study has uncovered the process whereby
45 world business influencers take action by tweeting new trends, ideas, products, technologies
46 and concerns. These tweets inspire and influence a vast global network of businesspeople,
47 facilitating diverse and complex interactions. The findings from this study provide another
48 piece of evidence for Cunliffe and Eriksen’s (2011) concept of relational leadership, which
49 emphasises being-in-the-world, knowing-from-within, and acting with responsive
50 responsibility. As Weber (1948, p. 78) famously noted, “*An exhaustive causal investigation of*
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any concrete phenomenon in its full reality is not only practically impossible – it is simply nonsense”.

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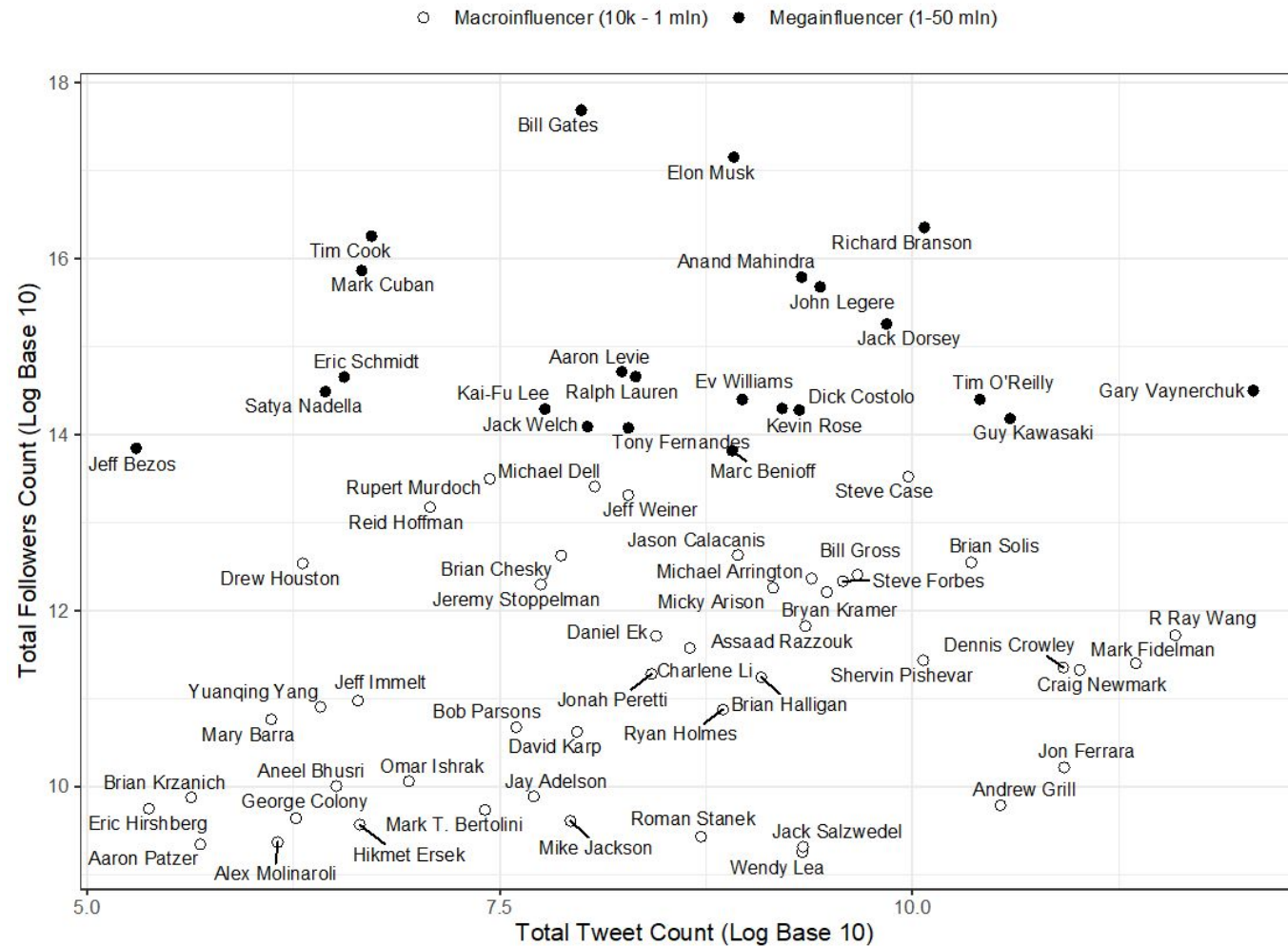
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Figure 1: Scatterplot of differences between total tweet count and total followers count for 70 business influencers examined in this study. The black dots refer to mega-influencers and the white dots to macro-influencers. Counts were log-transformed to enable better axis scaling and easier visual inspection.



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Figure 2: Counts of all tweets, hashtags, number of likes, replies and retweets on Twitter by all 70 business influencers between March 2006 and August 2019. Dashed vertical line signifies a split point between recession and expansion/boom period. Note: 2006-2012 are the recession period, and 2013-2019 are the expansion period. However, in our qualitative quotes, 2012, 2013 and 2014 are sometimes treated as overlaps between the two periods.

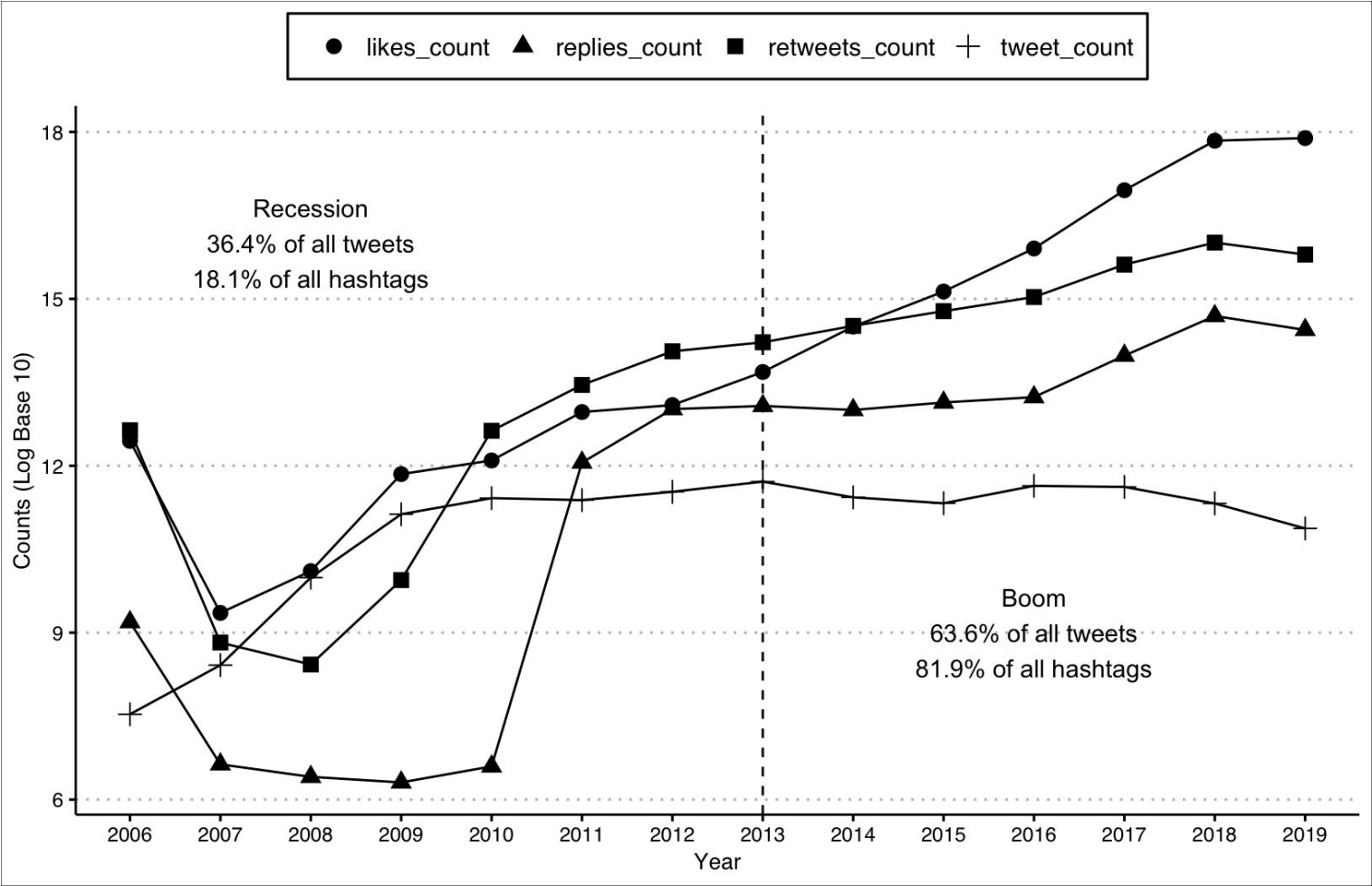
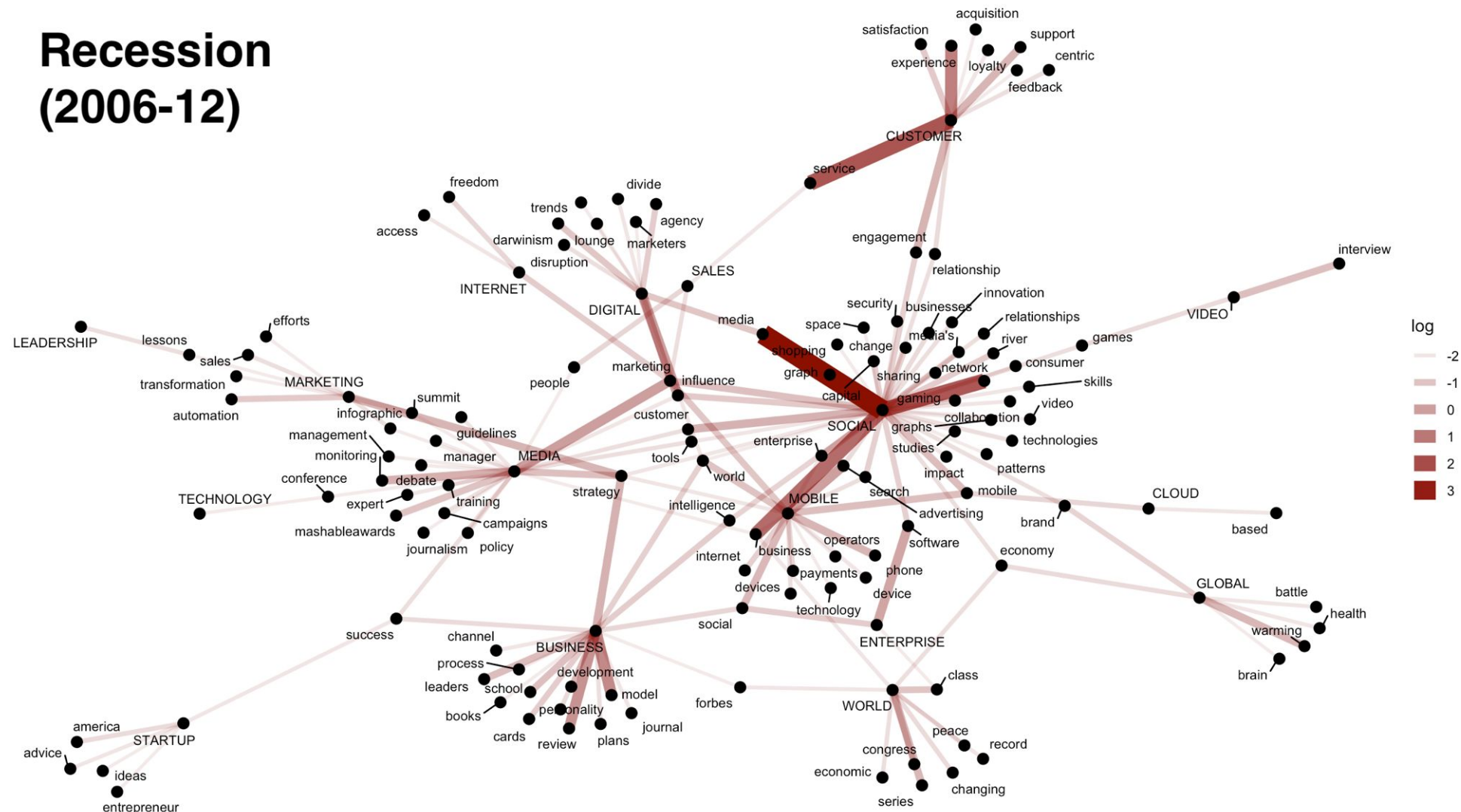


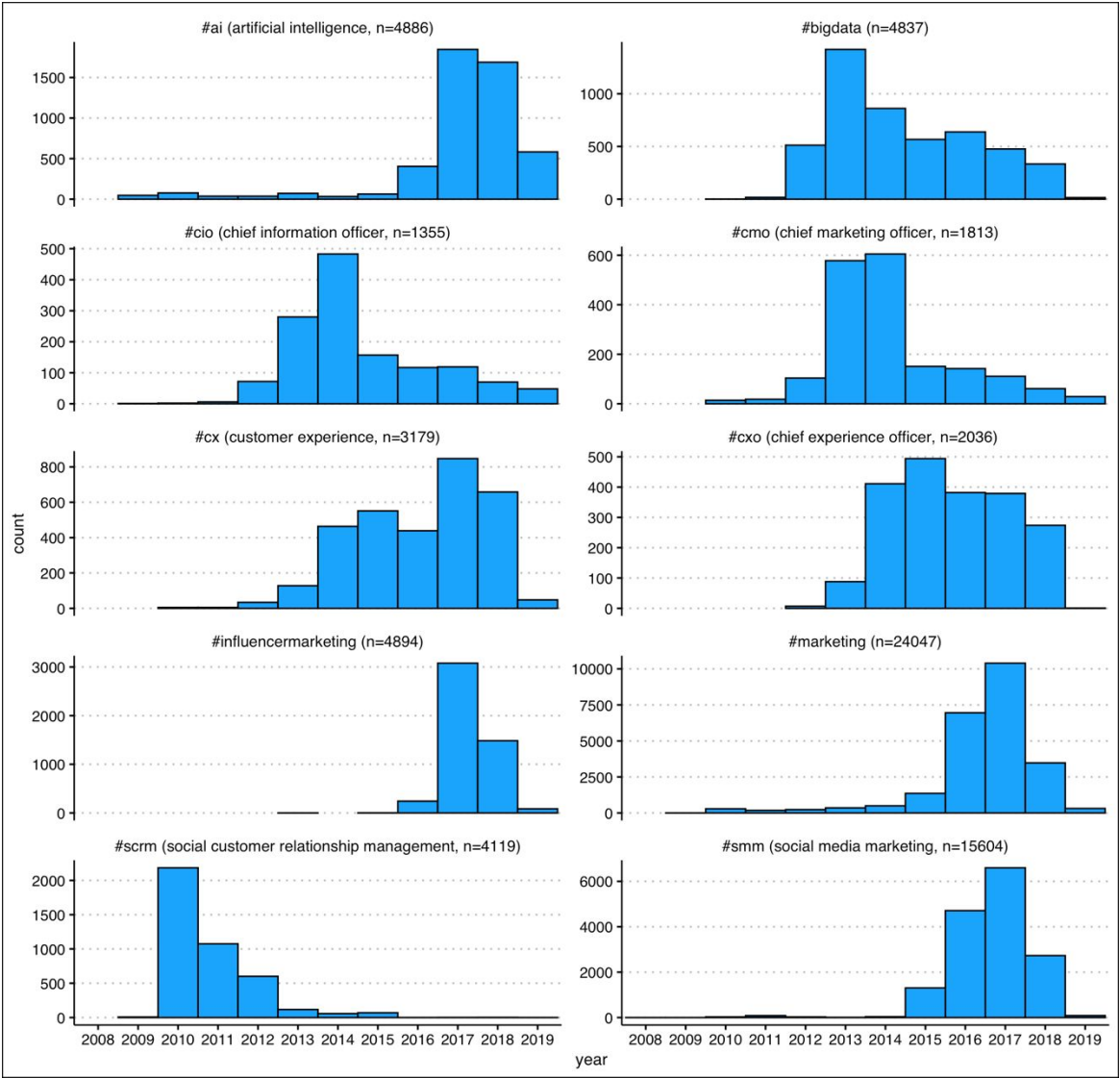
Figure 3: Network graph of most frequent bigrams associated with selected keyword (uppercase font) occurring during RECESSION period. The thicker the lines (edges) the more frequent specific bigram occurs. Scale has been transformed to logarithmic (log) for a better visual clarity.



Boom (2013-19)



Figure 5: Count of top 10 hashtag occurrence per year with y-axis adjusted per individual hashtags counts for visual clarity.



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Table 1: Data structure of the thematic narrative analysis during the recession and expansion period

RECESSION		EXPANSION		Aggregate Theoretical Dimensions
First-Order Categories	Second-Order Themes	First-Order Categories	Second-Order Themes	
1. To raise social voice 2. To be a part of the job 3. To initiate new ideas 4 To learn new things 5. To predict the future	<i>A. Social media dominance</i>	13 What does it mean? 14. Its benefits 15. As a new business model 16. How to 17. New learning 18. Its social impacts	<i>D. Digital transformation</i>	Leading Trends in Business
6. Mobile cloud 7. Mobile advertising 8. Mobile marketing 9. Mobile social 10. Mobile operator	<i>B. A world of mobility</i>			
11. Digital influencer 12. Translation of digital influence	<i>C. Digital influence on business</i>			
	<i>E. Paradigm shift in marketing</i>	19. Emerging importance of #marketing, #smm, #ai, #bigdata, #socialmedia and #influencermarketing 20. Digital marketing 21. Marketing automation 22. Social selling		
23. Climate change 24. Social issues 25. Health issues	<i>F. Grand challenges</i>			
26. Social business 27. Social enterprise	<i>G. Business solutions toward sustainability</i>			Raising Hopes During the Recession
	<i>H. Business-focused: old bottle, new wine</i>	28. Business model 29. Business strategy 30. Business leader 31. Business growth 32. Business school		Developing Their Businesses and Others'
	<i>I. Customer-focused: more on the table</i>	33. Customer service 34. Customer satisfaction 35. Customer relationship 36. Customer loyalty 37. Customer experience 38. Customer acquisition 39. Customer journey		

Table 2: Representative Data

Second-Order Themes and First-Order Categories	Representative Data
<i>Overarching dimension: Leading Trends in Business</i>	
A. Social media	
1. To raise a social voice	1a: Why is it NYC laws let women be raped/robbed, rather than armed & able to defend themselves? http://tinyurl.com/yakn3mh (Bob Parson, 2009) 1b: #FindYourVoice on social media! Important for leaders at ALL levels. Thx for this, @kevin_hunt. http://ow.ly/4gUg30pl4UAA (Jack Salzwedel, 2015)
2. To be a part of the job	2a: Best practice for using social media in a crisis. Case study: Vodafone UK. How well did they respond to the Monday outage? http://lc.tl/vfc (Andrew Grill, 2011)
3. To initiate new ideas	3a: smaller brands at an advantage in social media - can set their own tone of voice. Big brands already have set expectations. #csm10 (Andrew Grill, 2010) 3b: Have you taken out social media insurance? The premium may be as low as you having a social media crisis plan http://lc.tl/smcrisisA (Andrew Grill, 2012)
4. To learn new things	4a: Great post from @socialsteve about social media influence. He has identified the different types of influencers. http://lc.tl/ssiA (Andrew Grill, 2012) 4b: How do you measure the Revenue Impact of social media? Watch the webinar replay with @setlinger @altimetergroup: http://slidesha.re/PcHYmtA (Brian Solis, 2012, Influencer, Altimeter)
5. To predict the future	5a: I want to see if we can prove that social media is a powerful tool and companies need to manage their reputation in the blogosphere (Andrew Grill, 2008)
B. Mobility	
6. Mobile cloud	6a: MyPOV: @VAIsoftware has made significant investments into its new line of mobile cloud and analytical offerings #erp #smb #vaiconf (R Ray Wang, 2014, CEO, Constellation Res.) 6b: "Reminder of the day: Come join us to discuss the future of Mobile Clouds at the Focus RoundTable #mobile #cloud " (Mark Fidelman, 2011).
7. Mobile advertising	7a: Think big, act small, scale fast - advice from P&G on mobile advertising http://tinyurl.com/3fl65j (Andrew Grill, 2008) 7b: Here's a great article on mobile advertising, with a breakdown of average pricing by platform: http://on.mash.to/S1VVIXA (Bill Gross, 2012)

8. Mobile marketing	8b: London Calling» Gigafone and Xtract partner to create a superior mobile marketing platform http://www.andrewgrill.com/blog?p=1791 (Andrew Grill, 2009).
9. Mobile social	9a: @ColinMiles It's no longer "what are you doing" but with <i>mobile social networking</i> it is "what are you doing & where are you doing it" #snwf (Andrew Grill, 2009)
10. Mobile operator	10a: day ended well. Large UK mobile operator interested in product. now the fun begins (Andrew Grill, 2008) 10b: RT @andrewjscott: @aussieinlondon With Googles free LBS API & others, mobile operators LBS is irrelevant- they missed the boat! Gone fore ... (Andrew Grill, 2009)
C. Digital influence	
11. Digital influencer	11a: @rinteractive: @markfidelman needed to share this with you - the state of #digital influencers http://bit.ly/17ElliQA live this (Mark Fidelman, 2013) 11b: A Tomoson case study found #influencer outreach to be the fastest-growing online customer acquisition channel, beating organic search, paid search, and email #marketing http://bit.ly/2RcaqvAA #influencermarketing #digitalmarketing #blog (Jon Ferrara, 2019)
12. Translation of digital influence	12a: Translating digital influence into "tune-in" - key for @current shows #kredcrew (Andrew Grill, 2012)
D. Digital transformation	
13. What does it mean?	13a: Tech is the digital catalyst - digital transformation is about transforming the human side of business http://tinyurl.com/mtgqxdz (Brian Solis, 2014)
14. Its benefits	14a: Three reasons why CEOs need to be more vested in digital transformation http://goo.gl/N0ngPc via @martinjonesaz (Brian Solis, 2017) 14b: Have you made your 2019 digital transformation goals yet? Keep these 10 projected trends in mind as they emerge this year to stay ahead of the game! Via @danielnemanwUV https://buff.ly/2WccjLX #disruption #disrupt #digitaltransformation #technology #innovation (Charlene Li, 2019)
15. As a new business model	15a: Restructuring your business model to keep up with digital transformation sounds great, right? But it is easier said than done. Find out the most effective strategies to disrupt from within and flourish in the digital era from @HarvardBiz. https://buff.ly/2TMDD2a #disruption pic.twitter.com/73SMY3b0UQ (Charlene Li, 2018)
16. How to achieve it	16a: #1 challenge to digital transformation is company culture, which outranks budget http://venturebeat.com/2014/07/23/people-are-more-important-than-technology-according-to-new-altimeter-group-study/ via @stephenuniverse (Brian Solis, 2014) 16b: To innovate or advance digital transformation, look outside your industry http://www.briansolis.com/2018/03/innovate-advance-digital-transformation-look-outside-industry/ (Brian Solis, 2018)

17. New learning	17a: 7 habits of highly effective digital transformations https://www.cio.com/article/3235958/digital-transformation/habits-of-highly-effective-digital-transformations.html via @CIOonline (Brian Solis, 2017) 17b: An excellent resource list for those working in #digital transformation https://twitter.com/TheDigitalTP/status/1123239399213367296 (Brian Solis, 2019)
18. Its social impacts	18a: Amazing story about digital transformation http://bit.ly/21svX31A "Government Procurement: A New Hope :-)" (Tim O'Reilley, 2015) 18b: Not to mention, social is changing the workplace. It's hard to lead a digital transformation if you've never logged into Facebook. (Ryan Holmes, 2016)
<i>E. Digital market dynamics</i>	
19. Emerging importance of #marketing, #smm, #ia, #bigdata, #cio, #influencermarketing, #cxo, and #cmo	19a: RT @valaafshar: FORRESTER - Content: The Engine Of #Social Media #Marketing: http://bit.ly/pFMcEL by @seancor. #soccbiz #smm #cmo <-Yes! (Mark Fidelman, 2011) 19b: Monday's Musings: Understand The 4 Personas Of Disruptive Tech Adoption by @rwang0 #cmo #cio #ceo #cfo #cto #cxo http://tinyurl.com/btjtl6a (R Ray Wang, 2012)
20. Digital marketing	20a: Great post! 7 digital marketing tactics that boost offline sales - iMediaConnection.com http://www.imediaconnection.com/content/29964.asp via @imediawtweet (Wendy Lea, 2011) 20b: Content and curation are changing integrated digital marketing http://goo.gl/rHRLuA via @gregbardwell (Mark Fidelman, 2012) 20c: The evolving role of influencers in digital marketing http://www.huffingtonpost.com/entry/the-evolving-role-of-influencers-in-digital-marketing_us_583ef9e2e4b08347769c0603?ncid=engmodushpmg00000004 #influencermarketing (Mark Fidelman, 2016)
21. Marketing automation	21a: 25 years ago #GoldMine pioneered Relationship management + sales+marketing automation - The world is rediscovering this. #LinkedInChat (Jon Ferrara, 2015) 21b: MyPOV: @adobe vs @salesforce in #b2c marketing automation. The deal may turn B2B and that puts @marketo back into the picture. #CMO (R. Ray Wang, 2017)
22. Social selling	22a: Thank you! RT @erhardr: Loving @Nimble! Excellent social selling tool http://nimb.li/MhHPySA #socialbiz #scrm (Jon Ferrara, 2012) 22b: In the age of the gig economy, social media and social selling, I believe that we need to consider that companies are now renting your brand for the period you work at a particular company. My POV: #socialselling #personalbrand https://vimeo.com/266857022 (Andrew Grill, 2018)

22. Infographics	b: Infographic: Does Your Business Lack a Solid Mobile, Social Foundation? http://www.mobilemarketingwatch.com/infographic-does-your-business-lack-a-solid-mobile-social-foundation-38749/ (Brian Solis, 2014)
<i>Overarching dimension: Raising Hopes During the Recession</i>	
F. Grand challenges	
23. Climate change	23a: Obama: Pls use the spill crisis to fund alt energy to fix global warming, avoid new spills, and get troops out of Mideast. (Brian Halligan, 2010) 23c: Clever activism. Teenagers sue over global warming costs passed on to their generation http://bit.ly/IWaOJ0 Discuss http://bit.ly/LYagDBA (Tim O'Reilley, 2012) After all the debate and controversy, I can't wait to see for myself if global warming is real pic.twitter.com/txvOoMLC (Jonah Peretti, 2012)
24. Social issues and peace	42a: World business leaders should speak out & support people of Egypt & other countries where oppressive leaders hold sway. http://ow.ly/3PruH (Richard Branson, 2011, CEO Virgin group) 24d: No green growth without gender equality: #Sustainability can't ignore voices, needs and priorities of #women http://buff.ly/19a6Jio #Climate (Assaad Razzoul, 2014, CEO, Sindicatum)
25. Global health	25b: A net is our goal too! Celebrate the #WorldCup with @UAMalaria. Buy a net - Save a life. http://bit.ly/WC_bg4 #endmalaria (Bill Gates, 2010) 25e: Amazing: Microsoft Research using email spam fighting principles to help in HIV vaccine search: http://b-gat.es/uulIav #WAD11 #WorldAIDSDay (Bill Gates, 2011)
H. Business solutions toward sustainability	
26. Social business	26b: Creating a social brand is a necessary endeavor, building a social business is an investment http://www.briansolis.com/2012/05/the-path-from-a-social-brand-to-a-social-business/ (Brian Solis, 2012) 26c: @ChrisCrandell: Most companies do not see #socialbusiness as the transformation to new business models. http://ow.ly/aq6cc <their wrong (Mark Fidelman, 2012)
27. Social enterprise	27b: They All Laughed - The road to becoming a social enterprise http://www.briansolis.com/2012/04/they-all-laughed-the-road-to-becoming-a-social-business/ (Brian Solis, 2012) 27c: Big businesses risk losing out to social enterprises unless they adapt - http://bit.ly/LduKck #SocialBiz #sCRM (Jon Ferrara, 2012)
I. Business-focused	
28. Business model	28a: Article refers to my Detroit roots and the magic of family style business models: http://digg.com/d1shwl?t (Jay Adelson, 2009)

	<p>28b: Retweeting @timbray: Hah, a new business model for software. Thought-provoking: http://www.tausendstern.com/ (Tim O'Reilly, 2008)</p> <p>28c: Thoughtful piece by Fred Wilson on mobile buinssess models. "Scarcity is not a viable business model on the Internet." http://bit.ly/gdugec (Bill Gross, 2010)</p> <p>28d: FACT: Every time a startup is launched without a business model, a baby panda is captured and put in a zoo. (Aaron Levie, 2012, CEO, Box)</p> <p>28e: Hearing @juhrman talk about Ouya restores my faith that business models that empower communities are the future. http://ustre.am/UEwqA (Jay Adelson, 2013)</p> <p>28f: You can't build what customers need tomorrow if you're stuck with yesterday's business model and processes. (Aaron Levie, 2013)</p> <p>28i: Crossfit's "open source" business model http://bit.ly/18n2Pj8A (PDF) via @jstogdill "Create more value than you capture" (R Ray Wang, 2013)</p> <p>28k: 5/7 Balanced Monetization. One business model does not fit all. Balance is achieved by <i>putting people at the center</i> (Satya Nadella, 2014, CEO, Microsoft)</p> <p>28m: Great term "the Uber Syndrome" - <i>a competitor out of nowhere</i> with a completely different business model http://for.tn/1Q62bxDA #NextEconomy (Tim O'Reilly, 2015)</p> <p>28n: The biggest break-through aren't technology leaps, they are business model leaps: Retail - Stitch Fix; Cars - Uber; Music - Spotify; etc. (Brian Halligan, 2018)</p>
29. Business strategy (78)	<p>29b: RT @ValaAfshar: @rwan0 @andrew_tech the most expensive business strategy is to build processes around tools - no exception. #socabiz #e20 (R. Ray Wang, 2012)</p> <p>29c: How to align social media with business strategy for real results...via @charleneli http://www.amazon.com/dp/B00DNQJEV4/ref=cm_sw_r_tw_ask_rS-uF.03X3T5AA (Brian Solis, 2013)</p> <p>29d: If you have a digital business strategy, you'll want to make sure you tackle #identity. See why http://lnkd.in/b6uyyDXA #cmo #cio #ceo (R. Ray Wang, 2013)</p> <p>29e: 10 creative companies on Instagram to inspire your business strategy http://holykaw.alltop.com/10-creative-companies-instagram-inspire-business-strategy?gk1A pic.twitter.com/3b5ostZxOj (Guy Kawasaki, 2016)</p>
30. Business leader	<p>30a: #ITFE11 2,700 business leaders surveyed by #Forrester. 61% believe that their businesses are becoming digital. (George Colony, 2011, CEO, Forrester)</p> <p>30c: Why a Liberal Arts education can best prepare business leaders http://bit.ly/bCtjaP (Steve Case, 2010)</p>

31. Business growth	31b: I never liked the acronym #CRM - it's not just Customers who drive your business growth. It's an entire community @KMBTweets @justinofpoets (Jon Ferrara, 2012) 31c: Check out "The Growth Show" - New C-level #podcast with today's smartest business growth leaders https://itunes.apple.com/us/podcast/the-growth-show/id963131164?mt=2 (Briand Halligan, 2015)
32. Business school (36)	31b: Attended @adamlashinsky Inside Apple book launch at #Davos. Apple breaks every management rule taught at business school... (George Colony, 2012, CEO, Forrester) 31d: "We've decided not to be the best business school for startups. We're going to be the best school for ~grow-ups." http://for.tn/1BtISDGA (Steve Case, 2015)
J. Customer-focused	
33. Customer service	33a: @Zappos has grown gross merchandise sales from \$1.6M in 2000 to \$840M in 2007 by focusing relentlessly on customer service. (Brian Solis, 2008) 33b: @rdrake98 thanks, very appreciated. I'm beginning to figure that customer service, in good faith, is a form of public service. (Craig Newmark, 2009) 33c: Human + AI customer service bots = #HybridBots #digitalmedia18 pic.twitter.com/i11WOCagxw (Andrew Grill, 2017) 35d: MyPOV: we live in a bifurcated world. Folks that want high touch will pay big time. Folks that want self service want super efficient. This is why customer service feels so lousy. Companies know how angry they can make you and still win your business. https://www.wsj.com/articles/everyone-hates-customer-service-this-is-why-11564804882 (R Ray Wang, 2019)
34. Customer satisfaction	34a: The one necessary thing for customer satisfaction and loyalty http://bit.ly/bCXIHn #Trust #CustServ #CustExp # sCRM (Jon Ferrara, 2010) 34c: Why bother with purpose? Increase customer satisfaction, reduce staff turnover, do good http://virg.in/X40zu pic.twitter.com/eFkaFEFXpu (Richaed Branson, 2016)
35. Customer relationship	35a: 5 Trends that will change CRM & customer relationships - http://www.briansolis.com/2012/01/5-trends-that-will-change-crm/ (Brian, Solis, 2012) 35b: The future of customer relationships and business lies in experience architecture http://www.psfk.com/2013/08/designing-customer-experiences.html#.Uita4mP-HfJ.twitter via @psfk (Brian Solis, 2013)
36. Customer experience	36a: RT @cometoJUMP 90% of UK marketers see a joined-up customer experience as important, only 4% have achieved it http://lc.tl/jumpcs (Andrew Grill, 2011) 36b: Companies that deliver excellent customer experience view service and support as a process, not a department. #cxo RT @ValaAfshar: (Jon Ferrara, 2012)

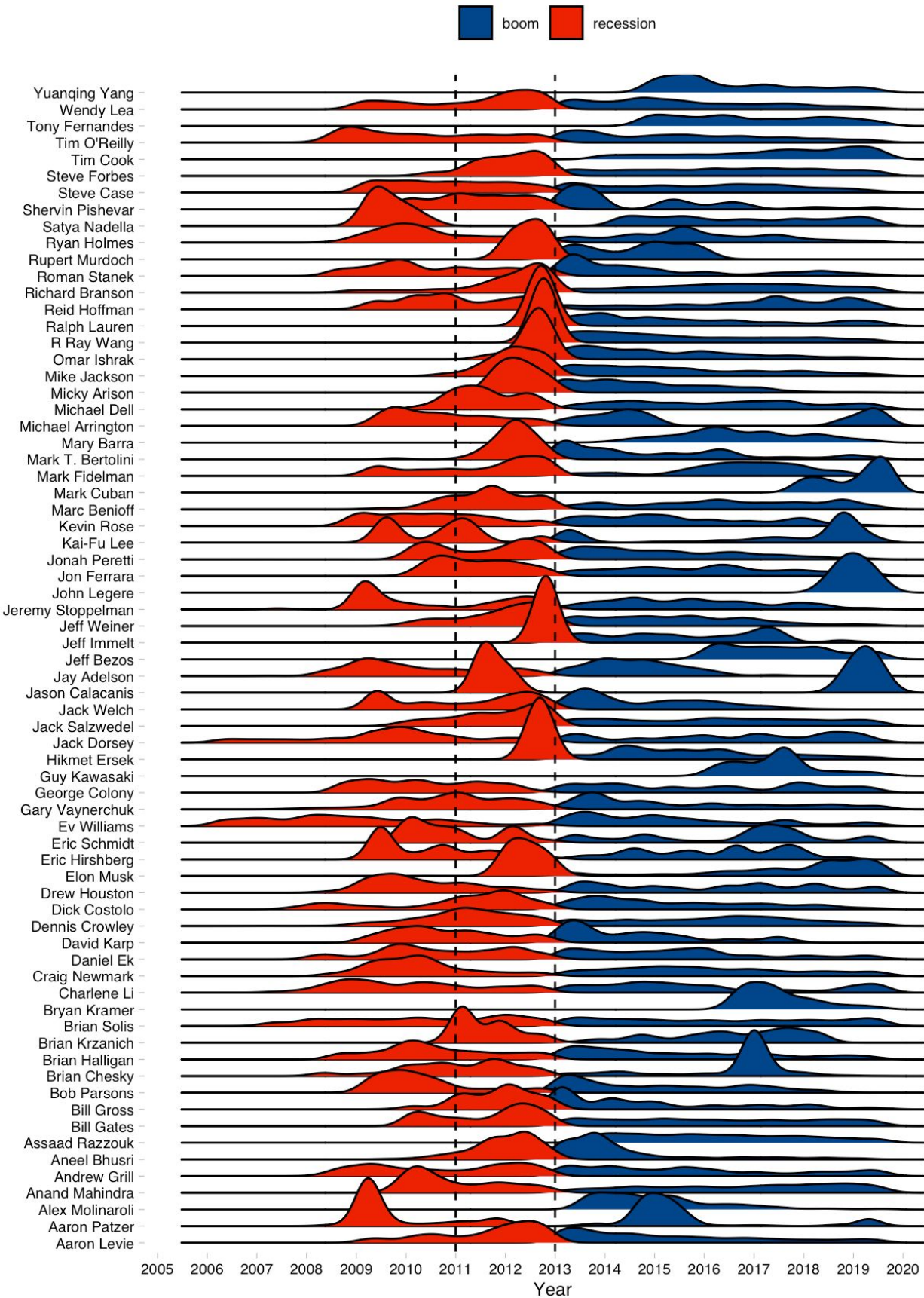
37. Customer acquisition	<p>37a: What is the value of customer acquisition if retention itself isn't valued? http://bit.ly/u6RKTu (Brian Solis, 2011)</p> <p>37b: Well done Corrine . Finally an analyst who understand the value of our data and how we make money acquiring customers as opposed to tech business who spend a fortune on customer acquisition (Tony Fernandes, 2018)</p>
38. Customer journey	<p>38a: When we talk about the "customer journey" these days, few of us imagine how it **really** is for our customers. The latest cartoon from @tomfishburne nails it. Why is marketing so screwed up in 2018? pic.twitter.com/AiKwQx9ABV At The Hospital Club (Andrew Grill, 2018)</p> <p>38b: I learned that a mere 35% of organizations investing in digital transformation had studied the modern customer journey. That number is not only dismal, it's down from 54% the year before. #cx #mobile #marketing #customerjourney https://www.forbes.com/sites/briansolis/2018/06/20/the-mobile-customer-journey-is-the-new-customer-journey-design-it/#2c5186e85a6f (Brian Solis, 2018)</p>
39. Customer evolution	<p>39a: MyPOV: Customer Experience is stop gap. Customer Centricity must be won at the board room. This requires leadership http://blog.softwareinsider.org/2013/08/23/event-report-crm-evolution-2013-seven-trends-in-the-return-to-digital-busines-and-customer-centricity/ (R Ray Wang, 2013)</p> <p>39b: Thanks Team @adobe for hosting our #adobeinsiders community for a conversation about the revolution in #customerexperience and how your powering companies to intelligently engage their customers #digitaljourney cc @mattyroze @ranimani0707 @Goldie http://bit.ly/2ZqGhgb pic.twitter.com/uKJ2EG6klt (Jon Ferrara, 2019)</p>

Appendix 1: List of 70 business influencers used in the study.

	Name	Company	Position	Twitter Name	Tweet Count	Followers Count
1	Aaron Levie	Box	CEO	levie	3788	2458465
2	Aaron Patzer	Mint	Influencer	apatzer	295	11438
3	Alex Molinaroli	Johnson Controls	CEO	amolinaroli	471	11736
4	Anand Mahindra	Mahindra Group	Chairman	anandmahindra	11261	7201180
5	Andrew Grill	IBM	Former CEO	andrewgrill	37528	17850
6	Aneel Bhusri	Workday	CEO	aneelb	672	22197
7	Assaad Razzouk	Sindicatum	CEO	assaadrazzouk	11517	136377
8	Bill Gates	Microsoft	Influencer	billgates	2962	47978289
9	Bill Gross	PIMCO	Investor	bill_gross	15790	245324
10	Bob Parsons	PXG	CEO	drbobparsons	1998	43300
11	Brian Chesky	Airbnb	CEO	bchesky	2624	304315
12	Brian Halligan	HubSpot	CEO	bhalligan	8810	76391
13	Brian Krzanich	Intel	Former CEO	bkrunner	279	19505
14	Brian Solis	Altimeter	Influencer	briansolis	31456	281281
15	Bryan Kramer	PureMatter	CEO	bryankramer	13113	200958
16	Charlene Li	Altimeter	Influencer	charleneli	5717	106523
17	Craig Newmark	Craigslist	Founder	craignewmark	60612	83081
18	Daniel Ek	Spotify	CEO	eldsjal	4660	122103
19	David Karp	Tumblr	CEO	davidkarp	2887	41077
20	Dennis Crowley	Foursquare	Founder	dens	54884	85366
21	Dick Costolo	Twitter	Former CEO	dickc	11100	1589648
22	Drew Houston	Dropbox	CEO	drewhouston	548	278463
23	Elon Musk	Tesla	CEO	elonmusk	7463	28124527
24	Eric Hirshberg	Activision	CEO	erichirshberg	216	17157
25	Eric Schmidt	Google	Former CEO	ericschmidt	705	2313546
26	Ev Williams	Twitter	Former CEO	ev	7858	1794330
27	Gary Vaynerchuk	Vayner Medi	CEO	garyvee	173424	1981850
28	George Colony	Forrester Research	CEO	gcolony	526	15386
29	Guy Kawasaki	Apple	Influencer	guykawasaki	39800	1442841
30	Hikmet Ersek	Western Union	CEO	westernunionceo	774	14322
31	Jack Dorsey	Twitter	CEO	jack	18826	4223298
32	Jack Salzwedel	AMFAM	CEO	amfamjack	11349	11140
33	Jack Welch	Jack Welch MI	Chairman	jack_welch	3075	1317639
34	Jason Calacanis	AOL	Investor	jason	7646	306118
35	Jay Adelson	Center Electric	Influencer	jayadelson	2222	19751
36	Jeff Bezos	Amazon	CEO	jeffbezos	200	1030659
37	Jeff Immelt	General Electric	Former CEO	jeffimmelt	766	58620
38	Jeff Weiner	LinkedIn	CEO	jeffweiner	3938	604356
39	Jeremy Stoppelman	Yelp	CEO	jeremys	2317	219338
40	John Legere	Tmobile US	CEO	johnlegere	12600	6438422

41	Jon Ferrara	GoldMine	CEO	jon_ferrara	55208	27460
42	Jonah Peretti	BuzzFeed	CEO	peretti	4532	79319
43	Kai-Fu Lee	Google	Influencer	kaifulee	2377	1607723
44	Kevin Rose	Digg	Influencer	kevinrose	10000	1618923
45	Marc Benioff	Salesforce	CEO	benioff	7392	1001388
46	Mark Cuban	Dallas Mavericks	Influencer	mcuban	784	7751280
47	Mark Fidelman	Primechain	CMO	markfidelman	85206	89514
48	Mark T. Bertolini	Aetna	CEO	mtbert	1654	16928
49	Mary Barra	General Motors	CEO	mtbarra	453	47393
50	Michael Arrington	TechCrunch	Influencer	arrington	11954	234421
51	Michael Dell	Dell	CEO	michaeldell	3216	667055
52	Micky Arison	Carnival Corp	Chairman	mickyarison	9462	210990
53	Mike Jackson	AutoNation	CEO	ceomikejackson	2776	14932
54	Omar Ishrak	Medtronic	CEO	medtronicceo	1043	23444
55	R Ray Wang	Constellation Res.	CEO	rwang0	108160	123060
56	Ralph Lauren	Ralph Lauren	CCO	ralphlauren	4119	2322227
57	Reid Hoffman	LinkedIn	Chairman	reidhoffman	1186	526837
58	Richard Branson	Virgin Group	CEO	richardbranson	23663	12654289
59	Roman Stanek	GoodData	CEO	romanstanek	6118	12500
60	Rupert Murdoch	News Corp	Chairman	rupertmurdoch	1703	727550
61	Ryan Holmes	Hootsuite	CEO	invoker	6991	52951
62	Satya Nadella	Microsoft	CEO	satyanadella	629	1960373
63	Shervin Pishevar	NA	Investor	shervin	23515	92568
64	Steve Case	Revolution	CEO	stevecase	21467	745801
65	Steve Forbes	Forbes Media	Chairman	steveforbesceo	14451	227493
66	Tim Cook	Apple	CEO	tim_cook	832	11478951
67	Tim O'Reilly	O'Reilly Media	CEO	timoreilly	33131	1791957
68	Tony Fernandes	AirAsia	CEO	tonyfernandes	3940	1296718
69	Wendy Lea	Cintrifuse	CEO	wendyslea	11300	10495
70	Yuanqing Yang	Lenovo	CEO	yuanqingyang	610	54532

Appendix 2: Counts of tweets represented by height of the ridges for each of 70 business influencers included in the study, illustrated as small multiples of linecharts for better visual comparison, across recession (red, 2006-12) and boom (blue, 2013-19) period / years.



Appendix 3: Percentage frequency of hashtag occurrence in recession (2006-12) and boom (2013-19) periods.

