



# How CSR social media sentiment affects your brand reputation

*Social media: more than just mining customer sentiment*

---

## Highlights

- Research shows there is real value for companies to strategically frame and discuss their CSR efforts online
  - Framing discussions in ways that encourage a thoughtful and emotional response can elicit more interest from users of social media, and encourage them to write about a company's CSR initiatives
  - Promoting a company's CSR work converts people who think about a company "neutrally" to "positively"
  - Over time, companies who increased promotion of CSR work online experienced improvements in how they are viewed by social media users
  - Companies can benchmark the expected volume of social media chatter based on their net income using an IBM algorithm called the CSR Social Media Benchmark
- 

Social networking sites, blogs, news boards, discussion forums, and other social media outlets are filled daily with discussions in reaction to major events in a corporation, such as shifts in its strategy, downsizing, handling of public policy, or related activity. Social media reaction to these events and towards the companies themselves can take on a positive, negative, or neutral tone in on-line discussions.

Social media analytics—the practice of gathering data from blogs and social media websites and analyzing that data to make business decisions—and more specifically sentiment analysis, provides a powerful method to analyze, interpret, understand, and ultimately influence what people discuss about a company on-line.

The most common use of social media analytics is to mine customer sentiment to support marketing and customer service activities. Mining customer sentiment is the process of analyzing data and summarizing it into relevant information. Social media is an ideal medium to understand real-time consumer choices, intentions, and sentiments. The most prevalent application of social media analytics is to get to know the customer base on a more emotional level to help better target customer service and marketing. With a varied constituency of volunteers, donors, partners, community members, businesses, government, and beneficiaries, organizations must understand a variety of motivations. Although surveys can solicit feedback from key constituents, they can be costly, narrowly focused, and miss valuable insights and opinions across a broader audience.

With the goal of understanding the relationship between public sentiment and the impact that corporate social responsibility (CSR) plays on this sentiment, a team of IBM consultants partnered with staff from the United States Chamber of Commerce Foundation Corporate Citizenship Center (USCCF) to target the manufacturing, retail, finance and insurance, and information services sectors for analysis using data from various social media outlets.



USCCF and IBM both believe the CSR work that a company performs in its communities can have a powerful influence on shaping how people feel towards a company, and can even affect a company's brand reputation. This connection between brand reputation and a company's engagement in society has significant anecdotal support and often serves as one of the main reasons why companies get involved in systematic CSR work—to show to the public that companies care about them and their communities.

Proving this connection has been difficult to quantify. Without innovative methods and analytical tools to measure social sentiment data, it is challenging to analyze the specific impact that a company's CSR work has on the public's overall sentiment towards that company, or towards the private sector in general. In addition, each company has a unique point of view on how they promote their CSR work; ranging from a desire to not bring any public attention to their community work to developing massive media campaigns to highlight their CSR activities. This can complicate measuring the importance of a company's CSR activities relative to internal and external stakeholders.

USCCF also wanted to quantify how CSR conversations, instead of CSR activities themselves, affect a company's brand and reputation. The positive impact that CSR makes should encourage companies to get more involved in their communities and then to take credit for their contributions by communicating it effectively via social media.

Regardless of the challenges in determining the social return on investment (ROI) of a company's CSR work, or an individual company's predilection to have a public conversation about its CSR activities, IBM and USCCF wanted to inspire more companies to do good in society by demonstrating with data that those types of actions deliver a measurable and positive ROI by improving a company's brand and reputation.

To prove this, IBM, through its Social Media Analytics Impact Grant offering, worked with USCCF's research and subject matter experts to measure social sentiment by examining what people posted about companies and their CSR activities. Through the use of IBM social analytics capabilities, IBM consultants have the ability to capture and consolidate insights

from a wide range of social media channels, providing insights into the opinions and motivations of the general public, and an organization's specific constituent base. This understanding allows organizations to be more responsive to their constituents' needs. IBM's social analytics capability helps businesses capture and understand the world's stream of consciousness at massive scale to identify previously unknown trends. When a topic of interest is identified, IBM analytics quickly identifies relevant content from social media, automatically presenting relationships and patterns in a dashboard.

Using IBM's social analytics capabilities made it possible for us to analyze the connection between companies socializing their CSR work, and its impact on the drivers of public sentiment.

### **Scope of the Analysis**

For the scope of our sentiment analysis, IBM conducted a national query of data on four identified sectors: manufacturing, retail, finance and insurance, and information services, sorting the companies within them by their primary North American Industrial Classification System (NAICS) code. These queries were conducted over an 18-day period by extracting data from blogs, forum sites, news sites, and Twitter. The total number of social media mentions (excerpts of user generated text from the Internet) pulled during this period amounted to 557,000, while the number of CSR-related mentions represented 18,000 of the total, or about 3.2%. An additional data pull was performed over a six-month period and analysis showed that the ratio of CSR related mentions to the total number of mentions remained consistent at approximately 3.2%.

IBM, with USCCF's guidance, also looked at 30 companies that have mature programs in developing CSR strategies and campaigns to benchmark best-of-breed CSR companies. After rigorous hypothesis testing with different types of company data, the team developed an algorithm to examine the relationship between the net income of best-of-breed companies against the number of CSR mentions observed during an 18-day pull of data. An algorithm was developed called the CSR Social Media Benchmark, which the team used to prove predictability in the relationship and to establish a model for other organizations to use in benchmarking their specific net income to the expected number of CSR mentions generated via social media.

## Key Findings

### Promoting CSR activities through social media has a greater impact on lowering neutral sentiment than it does in decreasing negative sentiment

When writing about something online, the tone of the written word is important when thinking about the impact it will have on the reader. For example, flat-toned press releases read differently than user reviews, which read differently than a journalist’s report.

In the hundreds of thousands of mentions reviewed by IBM, a vast majority read like flat-toned descriptions. Even when an individual described something positive, such as an environmental project or a community health program, the writer did not encourage the reader to think about the initiative in any particular way. Some of these mentions came directly from official releases about CSR projects, which makes it difficult to encourage readers to think about a company or a project positively or negatively. It is vitally important to use a writing style that elicits a sentimental response whenever possible.

A company cannot really change negative perception by increasing the prominence of their CSR efforts, regardless of language usage. However, our analysis found that CSR mentions had a significant impact in shifting individuals who view the company “neutrally” to viewing it “positively. This is parallel to the “undecided voter” issue — a political candidate likely won’t change the mind of supporters of her opponent, but may be able to sway those who have no or little opinion of either.

While the real advantage remains in getting people who do not think about a company at all to thinking about it positively, there is some evidence to suggest that writing about CSR efforts in a way that elicits emotion and sentiment is a useful tool to get individuals to think about that company positively.

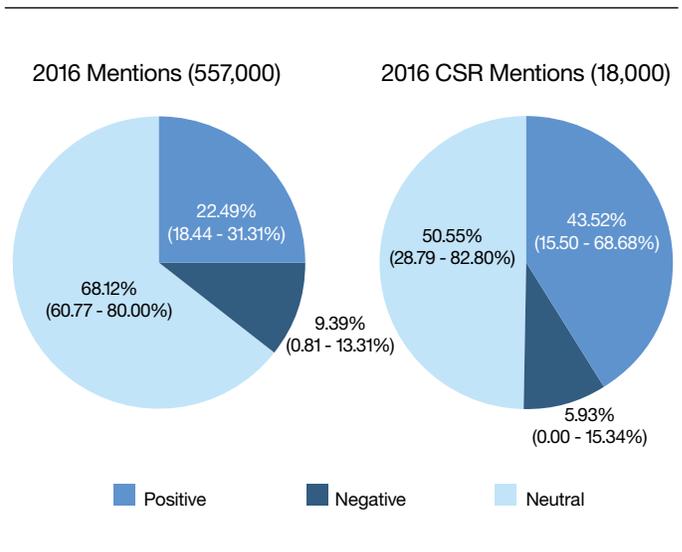


Figure 1: Comparing the different levels of sentiment between mentions about companies and mentions about companies’ CSR activities. Note the higher positive, and lower neutral and negative percentages.

Figure 1 shows the evidence for the importance of promoting CSR work on social media. On the left are the mentions about all company activities, with ranges for all 30 companies included in parentheses. On the right is a similar chart with only the CSR mentions included. There is a significant increase in positive sentiment and decrease in neutral sentiment. While there is also a promising decrease in negative sentiment, it is not quite as statistically significant as the decrease in neutral sentiment. Also, the significant increase in ranges suggests that there is opportunity for companies to leverage social media for promoting their CSR work, since the returns across companies are varied, and some are quite successful in leveraging their programs.

### Online conversations about social media mentions are episodic

One of the first analytical findings that surfaced indicated that social conversations on the topic of CSR initiatives were very episodic, more so than conversations about the companies' general activities. The three largest peaks in chatter volume occurred when companies with an already significant social media presence launched major communications campaigns, with the largest peak in chatter volume representing a major educational campaign with an established media outlet.

It wasn't only the largest companies with advanced social media campaigns that saw major returns on social media chatter. After the three largest peaks in volume, the next six largest peaks were all achieved by companies without advanced social media campaigns, from different areas of social media, and different types of campaigns—meaning there is a lot of opportunity for a company to make an impact on social media through its CSR work regardless of the initiative type, location, company size, or brand recognition.

### In a breakdown by social issue, education dominated CSR discussions

To help facilitate analysis, the team categorized CSR projects using the same breakdown as USCCF's Issue Networks, including education, disaster response, women's and economic empowerment, community health, and environment.

The USCCF wanted to be able to analyze if there were any significant differences among these issue networks when they were discussed on social media, such as which category of initiatives attracted more chatter, or which were discussed in a positive manner more often than others.

The team created a series of dictionaries to determine if mentions about CSR fell into any of those categories, which included a search ontology for "philanthropy," to allow for the inclusion of any CSR projects that did not fall into any of the other categories. Mentions that included multiple issues, around 5% of the total, were kept out of further data analysis, though education was the issue most likely to be mentioned with another issue.

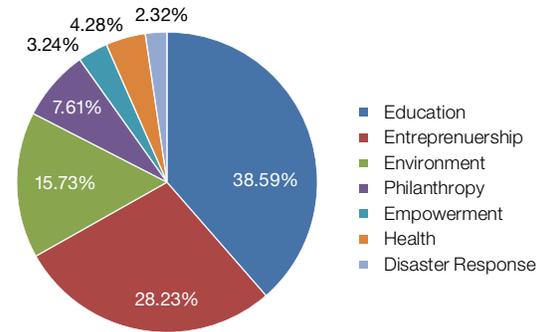


Figure 2: Percentage of mentions about each Issue Network.

As shown in Figure 2, education dominated the conversation about CSR initiatives. Often, these mentions were descriptive in nature, instead of emotional or sentimental. Many of the mentions were scholarship announcements, though more comprehensive educational programming and initiatives usually elicited greater positive response. Educational chatter was also one of the least controversial and responsive of the topics because it was most likely to be neutral in nature.

The only topic area that proved to elicit a weaker response, either positive or negative, than education was philanthropy. This suggests that philanthropic gifts have a weaker impact on how people view a company than its commitment to an important societal issue.

The topic that elicited the strongest sentimental response was the environment, largely because many projects were criticized as greenwashing, the practice of claiming to be "green" through advertising and marketing, rather than actually employing environmentally friendly practices, and could attract negative attention, particularly for companies in the manufacturing space.

**Most of the CSR related discussion emanated from news sites**

Analysis of CSR related discussion segmented by type of social media shows that news sites were the major source of media, as shown in Figure 3. This was followed by blogs, Twitter, and discussion boards. We did not broadly analyze Facebook as a source, since most of that data is not publicly accessible.

One of the biggest questions we have answered through the sentiment analysis is how much of the conversation about a company’s CSR work comes directly from that company’s website, blog, or social media pages. It is important to check if CSR mentions exist in an echo chamber, and if they do, to assess if there is significance in the company writing about its own work versus the significance of others outside the company writing about it.

IBM’s analysis found that out of the hundreds of websites that hosted conversations about company CSR work, company specific websites or blogs proved to be relatively unimportant in relation to the total volume of social conversation. The largest company website or blog was responsible for about 200 mentions, relatively few in the nearly 50,000 mentions observed about CSR work in the six month analysis.

This suggests that discussing CSR work online and on social media requires a broader strategy than just depending on a company’s blog or social media outlets to start a good conversation about the CSR work that company is doing. Increasing the volume of the work, allows more people to react and respond to the company and its presence in the community.

Many companies partner with media agencies to increase their brand on social media and online, so thinking about leveraging that partnership to more comprehensively include a company’s CSR work can be a valuable tool. Even if a company does not partner with an agency to do so, we found that keeping a close relationship with community members and customers can be quite impactful in spreading positive sentiment about an organization’s work.

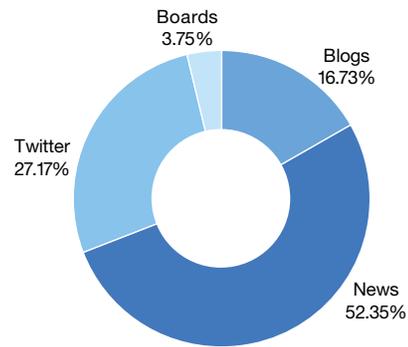


Figure 3: Social media mentions sources.

**Overall neutral sentiment of a company can be shifted to positive sentiment by increasing the promotion of CSR project activities**

IBM and USCCF conducted this work as part of an on-going process over a two-year period, and as a result, were able to test both panel data and time series data. While we were confident that chatter about CSR activities had a strong impact on improving public sentiment about companies in general, the second year of data let us to show the impact of CSR social media chatter on any specific company.

Through IBM’s analysis of each company’s percentage of neutral mentions about their company overall in 2015 and 2016, the team observed a decrease in neutral sentiment overall. The strongest factor to that reduction in neutral sentiment was the change in the percentage of that company’s social media chatter about their CSR efforts from 2015 to 2016. Discussing CSR efforts more often, both by the company and by the general public, had a very strong impact in reducing a company’s neutral sentiment, and a generally strong impact in improving positive sentiment.

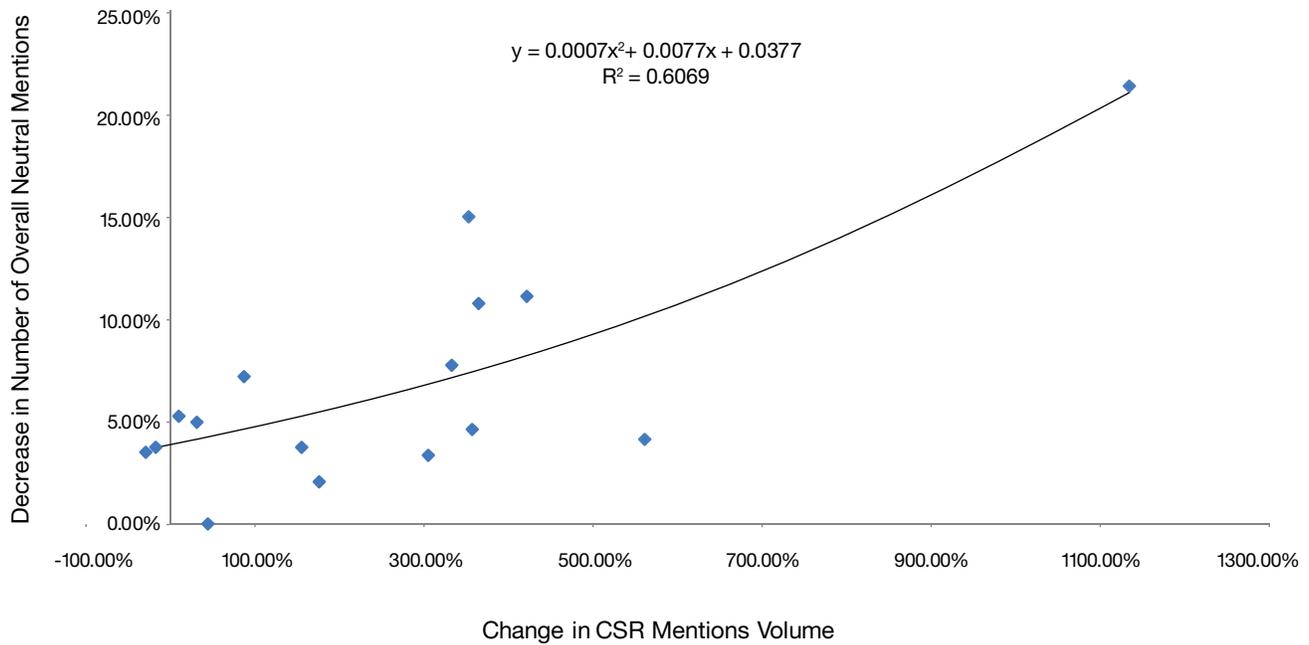


Figure 4: Year over year impact of increasing the number of CSR Mentions. As CSR becomes a bigger part of a company's social media chatter, the number of neutral mentions decreases.

Figure 4 shows how the effect of a company's percentage change in CSR mentions impacts its decrease in overall neutral sentiment. The equation at the top of the chart shows the quantification of the relationship by plugging the % change of mentions about CSR as "X", and the R<sup>2</sup> term describes how well the line describes the data, with .6069 being considerable since other statistical tests prove it is significant.

The impact of this increase in CSR chatter was stronger for companies who started at a lower percentage of mentions about their CSR activities. Therefore, the impact was exponential—the greater the increase, the stronger the impact on decreasing neutral sentiment. This also means that there are greater opportunities for companies who experienced less chatter about their CSR programs to leverage the impact on their neutral sentiment. It remains to be seen, however, if these companies will be able to maintain a pace of increasing their percentage of CSR mentions by 100%+ year over year over a longer period.

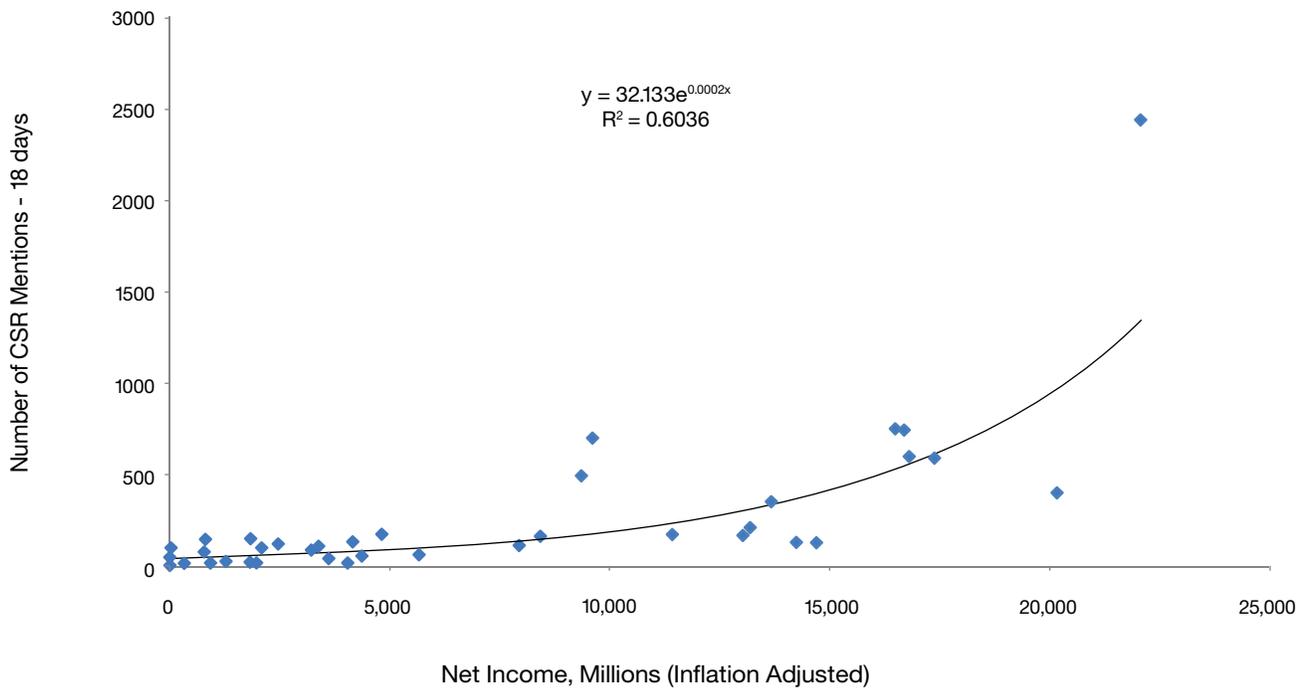


Figure 5: The relationship between a company's net income and the number of mentions about its CSR activities. By including its net income in the x of the equation  $32.133e^{.0002x}$ , any company can determine how many CSR mentions they need to be in the "best in class" group of companies' CSR activities.

### Companies can predict the expected volume of social media chatter based on their net income

IBM's prior analysis from its 2015 Impact Grant with USCCF showed a strong correlation between a company's net income and the expected rate of 18-day mentions about CSR by using an algorithm that we developed called the "CSR Social Media Benchmark." At the time, the USCCF was concerned that the relationship wouldn't hold in 2018, due primarily to the fact that on average, the companies in the study increased their net income by approximately 6%, but experienced decreases in revenue and gross profit.

In general, that meant that even under pressure of lower sales, companies included in the study reduced costs accordingly. Net income, in general is sticky downward since companies can more directly reduce costs than increase sales. The initial thinking was that this departure would ruin the correlation.

Instead of disproving the strong connection between a company's net income and its CSR mentions found in 2015, adding an additional year of data verified it. After accounting for some minor inflation, we now have two years of data, and while we saw a minor decrease in  $R^2$  compared to last year's figures, the fact that we more than doubled the sample size with a reduction in  $R^2$  of less than 10% suggests that this relationship is significant.

By including its net income as the "X" in the equation shown in Figure 5, a company is able to determine a benchmark guideline of its CSR mention production (the line that is included in the same chart).

By comparing a company's number of mentions about CSR with the 30 companies included in this analysis, who are all well known for their CSR programs, any company can determine what it takes to raise the prominence of their CSR programs, and use them to effectively impact their own brand reputation.

## Conclusions

By validating there is a positive impact on a company's brand and reputation through the effective use of social media about their CSR activities, this report gives companies compelling evidence for doing even more good in their communities. IBM's Social Media Analytics Grant helped USCCF validate this premise by capturing and consolidating insights across multiple social media platforms, segmenting social media audiences, and measuring social media sentiment impact. The following insights provide guidance for promoting a company's CSR activities and help you keep pace with other companies in your sector and their CSR activities:

- Research from the social media analytics team at IBM and USCCF shows there is real value for companies to strategically frame and discuss their CSR efforts online, and can improve brand image and company reputation.
- The largest benefit of promoting a company's CSR work is not in swaying the opinion of people who think about your company "negatively," it is in converting people who think about your company "neutrally" to "positively."
- Over time, individual companies who increase the promotion of their CSR work on-line experience improvements in how their companies are viewed by social media users.
- To keep up with companies that are best-in-class in leveraging their social media to showcase their CSR work, companies can benchmark the expected volume of social media chatter based on their net income using the CSR Social Media Benchmark algorithm.

## About

### U.S. Chamber of Commerce Foundation Corporate Citizenship Center

The USCCF's Corporate Citizenship Center helps advance the positive social, economic and environmental impact of business. The Center works to educate the public and the business community on the positive efforts of business through best-in-class communications, fact-based research, and a convening power that brings together key business and policy leaders.

### IBM Corporate Citizenship and Corporate Affairs Impact Grants

IBM Impact Grants deliver strategically designed consulting and software solutions that leverage the breadth of IBM's capabilities and technologies to empower organizations as they work in our communities to overcome society's toughest challenges. This program is one of several IBM CSR initiatives which comprehensively enable the company to deliver higher value solutions to the not-for-profit sector, affect significant social issues, and impact communities across the globe.

### For more information

United States Chamber of Commerce Foundation:  
[uschamberfoundation.org](http://uschamberfoundation.org) or email [foundation@uschamber.com](mailto:foundation@uschamber.com)

IBM CSR initiatives: [ibm.com/ibm/responsibility](http://ibm.com/ibm/responsibility)  
or email [ibmgrant@us.ibm.com](mailto:ibmgrant@us.ibm.com)

IBM Watson Analytics for Social Media:  
[ibm.com/us-en/marketplace/social-media-data-analysis](http://ibm.com/us-en/marketplace/social-media-data-analysis)  
or call (800) 426-4968 to speak with a representative

### Contributors

- Marc DeCoursey, Senior Vice President, United States Chamber of Commerce Foundation
- Lawrence Bowdish, Data Scientist, United States Chamber of Commerce Foundation
- Diane Melley, Vice President, Global Citizenship Initiatives, Corporate Citizenship, IBM
- Christian Schoen, Project Executive, IBM Impact Grants, Corporate Citizenship, IBM
- Lane Hart, Social Media Analytics Consultant, IBM
- Louis Krass, Project Manager, Corporate Citizenship, IBM



---

© Copyright IBM Corporation 2017

IBM Corporation  
Route 100  
Somers, NY 10589

Produced in the United States of America  
April 2017

IBM, the IBM logo and [ibm.com](http://ibm.com) are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml).

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.



Please Recycle

---

