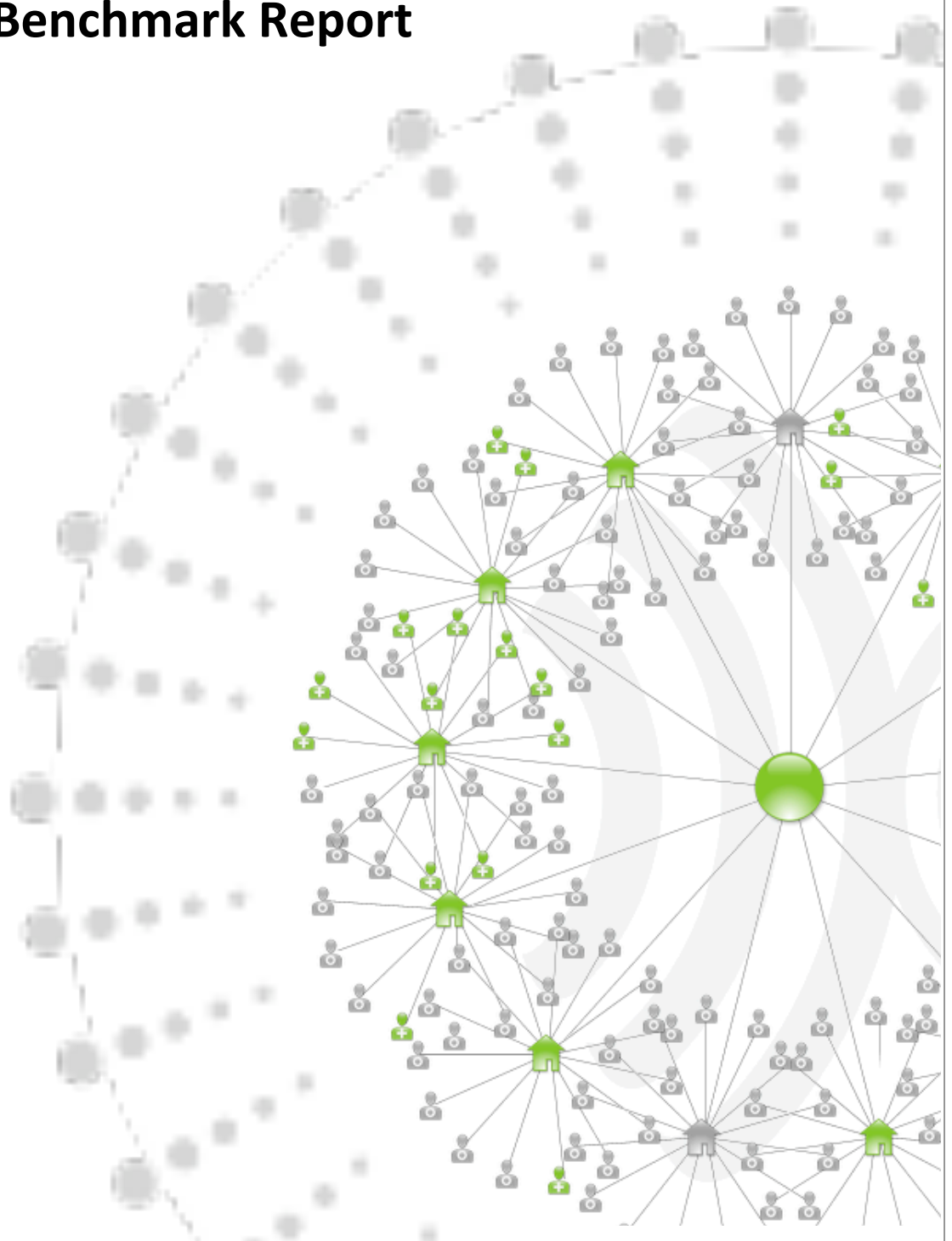




McCain

Baseline Benchmark Report

9 July 2008



Executive Summary

This report contains analysis of feedback and discussion within various outlets of consumer generated media (CGM) in relation to potatoes, rice, corn, and wheat. We analyzed four crops in relation to values of affordability, sustainability, utility/convenience, health/nutrition, and food trust.

We gathered data related to these topics over a three-week period, from June 10th to June 30th. During this time, we discovered a total of 12,299 individual topical statements, contained within 7,084 posts, across 6,181 threads, written by 5,774 authors. We found that:

Sentiment and Volume of Conversations

- The conversation regarding grain was of high volume and very passionate.
- Negative news events such as natural disasters affecting food supply, controversy over biofuel, and troubled commodity markets affected the overall sentiment for grain.
- Corn, rice, wheat, and potatoes were seen as vital foundational crops for issues such as food security and the well being of populations. The centrality of these crops were mentioned in discussion about food shortages, and contributed to positive sentiment for topics addressing the attributes of grain. In general, the topics of Utility/Convenience, Health/Nutrition, and Food Trust contained positive sentiment among posts that expressed an opinion.
- Corn, making up half of the conversation, also generated the highest percentage of opinionated posts (58 percent). However, negative opinion dominated all corn-related topics.
- Potatoes had the most positive overall comments compared to the other crops. For the Potato Utility/Convenience topic, 80 percent of posts expressing sentiment contained a positive sentiment. The potato was also overall positive in sentiment for Health/Nutrition and Food Trust.

Where the Conversations Took Place

- The conversation occurred in a mix of forums and blogs. The large number of blogs indicate a largely event and news driven space.
- The space contained a number of recurring topics including activism, investment advice, forums on agriculture news, politics, energy, and biofuel research and development. About 10 percent of the top hundred sites were general in nature, for instance, the forums at America Online, the MySpace Forums, and Yahoo! Answers, where users can vote on answers to user submitted questions. A few specialized sites also appeared, including low carb diet forums and farming news sites such as FarmPolicy.com.

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The TruCast® system enables clients to track, analyze, and participate in blogs, forums, social networks, and online communities. TruCast® monitors social media sites for relevant posts and comments with in-depth information about sites, authors, date, and links. Dashboard reports provide analysis for each topic by subject and sentiment. This information can be tracked over time using dynamic charts and statistical reports to identify influencers, hot spots, and trends. Finally, client can engage with influential consumers and publish real-time unique responses via the TruCast® interface.

What We Studied

This report contains analysis of feedback and discussion within various outlets of consumer generated media (CGM) in relation to potatoes, rice, corn, and wheat. We analyzed these four crops in relation to values of affordability, sustainability, utility/convenience, health/nutrition, and food trust.

We studied five areas for each crop:

- **Affordability**

We analyzed posts and discussions in relation to the cost and affordability of each crop to consumers and as a worldwide food solution. Discussions included opinions about the perceived value as well as its value on the world market.

- **Sustainability**

We analyzed posts discussing the importance of each crop in providing food security and its affect on the environment. Discussions included conversations about raising awareness of the importance on agriculture, malnutrition, poverty and the impact they have on the environment.

- **Health/Nutrition**

We analyzed posts about the health and nutritional value of each crop. Discussions included conversations discussing vitamin and nutrient content, health, obesity, diet and safety.

- **Utility/Convenience**

We analyzed posts that broadly discussed the utility and convenience of each crop. This topic may include opinions about cooking, availability, packaging, frozen and fresh options. Discussions included a broad understanding of how consumers perceive the utility and convenience of each crop.

- **Food Trust**

We analyzed posts and discussions that broadly discuss consumers' trust of food across each crop. Discussions included opinions about the lack of trust in companies, reputations, and ingredients in the crops. Discussions included a broad understanding of how consumers perceive trust around each crop.

Evaluating consumer sentiment about these subjects is difficult and expensive given polling bias, sample inaccuracy, and the sparse data available from focus groups. The CGM space is a new environment which contains unsolicited (and therefore incredibly valuable) feedback and opinions of potential customers, amateur journalists and other authors.

We first examined content from our coverage set of more than 70 million blog, forum, message board, review and media-sharing sites to uncover the most relevant discussions. We then leveraged our sentiment analysis system to ensure an accurate determination of the content and tone of discussions. Finally, our analyst teams reviewed the content and evaluated the most relevant authors, sites, and subjects of concern to developers of secure code. This report contains the results of that comprehensive research and analysis.

What We Learned

We identified a high volume and very passionate conversation regarding grain.

Sentiment

We found twice the average percentage of posts expressing an opinion. On average in CGM, only 20 percent of posts express an opinion. In this space, we found that on average 53 percent of posts across all of the topics expressed an opinion. The high percentage of sentiment indicated a passionate and engaged conversation in regard to grain. Among the four grains, corn had an average of 58 percent of posts containing sentiment. Potatoes contained the lowest volume of opinion with 49 percent.

Conversation in the space was driven by a variety of news-related events. A few significant media stories drove a large number of posts. Sites responded to the *World Development Report 2008: Agriculture for Development* and an ongoing series of articles in the *New York Times* that “examine growing demands on, and changes in, the world’s production of food.” Follow-up editorials published during the period of study included articles with titles such as, “Malthus Redux: Is Doomsday Upon Us, Again?” published on June 15th. The news affecting this space was mostly dire. A cyclone in Southeast Asia resulted in flooding, the destruction of rice crops, and restrictions in rice exports. Other regions also saw severe weather, such as a drought in Africa and flooding of the Mississippi River in Iowa. The first half of 2008 has seen severe weather, resulting in a worldwide food shortage of rice, massive increases in rice prices, and food riots in more than thirty countries.

At Investor Village, a commenter wrote in a post titled, “Ill-conceived rush to ethanol:”

The food crisis does have multiple causes. Record-high crude-oil prices have driven up the cost of everything from fertilizer to transporting food. About 40 nations have responded to higher prices by hoarding rice and other vital commodities, thereby driving up their price. (Wheat prices have abruptly dropped some 40 per cent since Ukraine, once known as the “breadbasket of Europe,” was persuaded by the World Bank to lift its grain-export restrictions.) Prolonged drought in Africa, a cyclone in Myanmar, the even more recent floods in corn-rich Iowa and other natural disasters have caused a massive loss of crops, even as developing-world demand, especially from China and India, has grown significantly.

— David Olive, 6/28, <http://www.investorvillage.com>

Across the board, issues related to affordability and availability generated very high percentages of negative commentary. Corn ranked as the crop with the most negative overall perception. This was due mainly to the decrease in availability resulting from the flooding in Iowa, along with an increase in demand. Negative sentiment related to availability was also driven by the fact that corn is used as a biofuel, as the food additive corn syrup, and as animal feed. While the negative scores for rice and

wheat were not at the same level as corn, they were also affected by similar demands.

In contrast, the potato was the most positive in terms of affordability and sustainability. In fact, the potato was the most positive in terms of utility and trust as well.

Overall, economic and energy-related issues related to food production, such as affordability, sustainability, and utility drove negative sentiment. Corn Affordability measured 95 percent negative, followed closely by Rice Affordability, and Wheat Affordability. Potatoes had the most positive ranking for affordability among the four grains, but were still negative overall with 55 percent.

Conversely, Food Trust and Health/Nutrition were mixed but contained a majority of positive sentiment for all of the crops except corn. Among the four grains, corn was starkly negative at 61 percent. While both rice and wheat were mostly negative, they were mainly mixed with nearly about two negative posts per positive post.

The potato was the only grain with an overall positive sentiment for Health/Nutrition.

Volume of the Conversations

Potatoes also had the lowest volume of posts with only 1,611 posts. Corn on the other hand had the highest volume with almost 6,000 posts – nearly half of the all of the posts we collected for the study.

The Affordability Topic Category (3,955 posts) had the greatest volume among the five functional areas of analysis. In contrast, both Health/Nutrition (1,605 posts) and Food Trust (1,189 posts) had less than half the post volume. The overall space was driven by news items and concerns about the financial, social, and political consequences of events affecting grain. The sites with the highest volume of posts included news forums, financial forums, and Web logs. Commentary about the Health and Trustworthiness of the crops occurred on Web forums focused on nutrient-restricted diets, such as the glutenfreeforum.com, or on various recipe and lifestyle boards. For instance, Recipezaar.com features more than 6,500 potato recipes. On Friday June 13, Kim127 posted, “We chose Peru as our Potato Dinner Country,” which she issued as a challenge to people to make potato recipes for dinner. She noted in her introduction to the post:

In South America’s Andes mountain region, indigenous women have traditionally been responsible for selecting, conserving and managing seed potatoes from the countless native varieties of the crop, thus ensuring diversity and continued production while contributing to food security among their people. — Kim127, 6/13, recipezaar.com

There was a surge in conversation for the majority of topics on June 12th, driven by coverage of the global food crisis. An *International Herald Tribune* and New York Times Article, “Worries mount as world’s farmers push for big harvest,” was widely referenced in the space noted that, “A universal saying among farmers is that high prices never last, because they encourage production that fills the demand and drives down the prices. The current crisis is testing that theory.” Many authors noted that the World Bank put the blame for rising food prices in South Asia on export controls by India and

others, while the US has severely criticized New Delhi's handling of the crisis.

Areas of Interest

In this section, we will look at CGM perceptions regarding affordability, sustainability, utility/convenience, health/nutrition, and food trust. In the next section we will look at the individual grains.

Affordability

The conversation around Affordability was driven by current events, a series of articles about the food crises in the *New York Times*, and continued coverage following last year's World Development report on *Agriculture for Development*. A cyclone in Southeast Asia and drought in Africa resulted in wide-spread shortages of rice. Spring flooding of the Mississippi in Iowa resulted in shortage of corn. Corn was already feeling supply pressure from increases in ethanol consumption and increases in meat demand as a corresponding demand of animal feed. While individual events were local in nature, bloggers were quick to note the global implications on the commodity price for subsistence crops as well as the social ramifications of these shortages.

Often conversations regarding the affordability of the various crops moved on to political remarks. One blogger blamed President Bush's politics, such as the U.S. war in Iraq, environmental policies, and land use practices. Some commented on the trade policies imposed on the developing nations. Other authors pondered the wealth gap in the world. One author noted:

The prices of essential foodstuff and grains like rice and wheat have shot up because fuel prices have gone up; food production and its transportation are critically dependent on fuel. The World Bank says food prices have more than doubled over the past three years. The price of rice, the staple for billions of Asians, is up 147% over the past year.
— Man Bear Pig, 6/11, tackleclimatechange.co.uk

A few authors compared the grocery store prices of the various crops. They noted that even though food prices were increasing overall, the cost of staples were still lower than the cost of processed food. One author write about maintaining a budget in the current market of growing food prices:

I grew up with this cost-per-meal strategy, and the logic behind inflation fighting cooking. We were solidly middle-class, but food for nine meant you had to plan. [...] Their strategy might include an Easter ham. An expensive bone-in ham was a value (irregardless of the price of that ham) because you got over the course of a week: a nice dinner, 6-8 sandwiches, ham and potato casserole (two days) and ham and navy bean soup (two days). So the cost per meal when calculated was modest. [...] with food prices and regular gasoline at \$4.39 around here; it becomes more of a challenge to keep overall costs in line. — Ralph, 6/22, airhead55-ralph.blogspot.com

A third of all conversation related to affordability issues with about 4,000 posts. This contained the highest number of opinion, with only 71 percent of authors offering a sentiment. This sentiment was the most negative with four out of five posts expressing a negative opinion about affordability.

Sustainability

Like Affordability, Sustainability was driven by current events, news analysis, and reports from international organizations. The conversation of sustainability had many facets and often enlarged into conversations about the role of government and international organizations in providing stability and managing the long-term productivity of key crops such as rice and wheat. Conversation themes regarding sustainability addressed the labor that produced, crop land use required for cultivation, and also the effect of this cultivation on the environment in terms of global warming and long-term productivity.

Just as Affordability often magnified local events into trends with global implications, issues of Sustainability also often focused on the idea of food security. The plight of Haiti was brought up as shorthand for the failure of grain sustainability. Haiti was mentioned more than eighty times in relation to Sustainability. “Forty years ago, Haiti was self-sufficient in rice,” Steven wrote on 6/19 at Swduun.blogspot.com, “Now it imports most of its rice from the United States.”

One author detailed the virtues of the potato in the face of issues of Affordability and Sustainability. John Foster posted an article at ezinearticles.com on how to increase the yield of potatoes:

The world is on the brink of a major food shortage. Farm lands have been converted to residential areas resulting in a decrease of available farming space, and yet at the same time due to the increase of population, the demand for food increases at a steady rate. Potatoes have become the number three crop in the world, providing an excellent form of nutrition. — John Foster, 6/13, ezinearticles.com

Nearly a fourth of the comments addressed Sustainability issues with about 2,600 posts. The percentage of authors offering an opinion was more than three times the amount normally seen in CGM, with 56 percent. Typically, CGM averages about 20 percent of posts expressing any sentiment. Sentiment in regard to Sustainability was generally negative, with 67 percent expressing a negative opinion compared to 29 percent offering a positive comment.

Food Trust

Although issues of genetically modified crops have been making the news in the last couple of years there were fewer than 50 mentions of genetically modified crops. Instead, more current issues of food shortages and government and market responses to food informed the conversation around Food Trust. The lack of trust focused on the response of governments and international agencies both to specific disasters, and to the larger crisis and the unpredictability in the market that has resulted in rationing, food shortages, and more than 30 food riots in the last year.

Corn was not a trusted food. More than 60 percent of all posts regarding Corn Food Trust that contained an opinion expressed a negative sentiment. “We have the same rules in my house,” Brass Monkey wrote on 6/21, answers.yahoo.com, “... high fructose corn syrup will never be allowed.” In

contrast, the other crops were all largely regarded positively, with Rice containing the highest percentage of positive comments. Potatoes were nearly as high, with 60 percent of the opinions scoring positive. While potatoes were associated with French fries (or chips), many authors acknowledged their positive attributes:

It's a real shame that the fast food industry has given potatoes a bad name by serving the unhealthiest version (fried in oil) as the staple of American life. How many people still eat the baked, sliced or salad preparations of potatoes in preference to hot, quick, salty french fries?
— Donald, 6/19, blogs.wsj.com

This was the lowest volume of all conversations with about 1,200 posts. The percentage of authors offering an opinion was more than double the amount normally seen in CGM, with 48 percent. Typically, CGM averages about 20 percent of posts expressing any sentiment. Sentiment in regard to food trust was generally positive, with 54 percent expressing a positive opinion compared to 45 percent offering a negative comment.

Health/Nutrition

The four crops were seen as the foundation of the food supply rather than just a healthy or nutritious option for consumers. Overall issues focused on access to grain for the survival of population and the security of a nation. In this case, the conversation was largely binary: was there food? However, among the four grains, differences in the relative merits of each crop as food were discussed and a more nuanced and detailed portrait developed. Wheat and rice were often mentioned in terms of overall health. The benefits of the potatoes were not widely discussed. Corn was seen as the least healthy.

Corn, in particular corn syrup, was seen as an unhealthy product. Corn had the highest percentage of negative comments. Negative posts made up 52 percent of all opinion in regard to corn. In these posts, corn syrup was cited 526 times.

Discussion on nutrition for rice and wheat often appeared in blogs and forums about health and diet, as well as those about cooking and gourmet cooking. Whole wheat, in particular, was viewed positively, with 240 citations. For rice, brown rice was cited 299 times. One blogger extolled the virtues of eating and eating well, which included eating whole wheat:

You are skipping essential vitamins and nutrients that your body needs. Please don't skip breakfast. If your body skips breakfast that equals the beginning of starvation mode. That tells your body that the rest of the calories that you consume throughout the day have to be stored as fat. If you eat something like a whole wheat (complex carb) and a fruit (simple carb) your body will know that you are trying to give it energy. If you want to lose weight or just maintain, then you have to give your body enough to run on.
— Erika O, 6/14, answers.yahoo.com

Potatoes were mixed in terms of the sentiment regarding their Health/Nutrition. 49 percent regarded

them positively compared to 45 percent negatively. Negative sentiment was largely in relation to commonly prepared methods for potatoes, such as potato chips and French fries. Some of the positive attributes of the potato—such as its high potassium content—were only mentioned in 38 posts. One health blogger extolled the virtues of natural foods including the sweet potato. “Sweet potatoes are,” she wrote:

“An excellent source of beta-carotene, Vitamin C, copper, fiber, potassium, and iron, the sweet potato eliminates free radicals in the body, reduces the risk of heart disease and certain types of cancer, helps regulate high blood pressure and anemia, and protects against rheumatoid arthritis. —Debra Gropp, 6.28, healthmoz.org

In terms of home cooking and using whole foods the potato often appeared in recipes and off-the-cuff mentions of food preparation as quick and healthy. One author noted:

Love baked potatoes—we have them with just canned chili over them (any kind you like beans, no beans, veggie) and a sprinkle of shredded cheese. Serve with a salad. Filling. Tasty. Cheap. Healthy.—yoopergramma, 6/15, moneycentral.msn.com

Health/Nutrition was the second lowest volume of all conversations with about 1,600 posts. The percentage of authors offering an opinion was nearly three times the amount normally seen in CGM, with 56 percent. Typically, CGM averages about 20 percent of posts expressing any sentiment. Sentiment in regard to food trust was generally positive, with 56 percent expressing a positive opinion compared to 49 percent offering a negative comment.

Utility/Convenience

The utility of these four crops was a contentious topic. There were two main ways in which a crop provided utility. On one hand, utility involved a conversation about how to use the crop. For instance in the case of corn, the flexibility of the crop has resulted in many competing demands. Corn is used as a food additive, in biofuel production, as an animal feed, and a grain crop for food. In the posts we collected, this was reflected in the mixed opinion regarding corn’s utility. Crops that are primarily used for food, such as rice and potatoes, ranked very positively in terms of utility and convenience perceptions. On the other hand, utility also involved a conversation about the ease of preparing the crop for dinner.

Potatoes featured in a number of conversations about the utility of the potato in industry and food security because of their resistance to commodity trading. Unlike corn, the potato is primarily used as a source of nutrition. One blogger noted in response to the UN’s declaration of the Year of the Potato:

The humble potato in all its thousands of varieties is gaining more and more importance as a food source for developing nations. [...] More potatoes are grown in developing countries than in the developed countries, providing poor nations with valuable food and some income. One of their big attractions is that potatoes provide higher yields in less time than

other staple foods. — THE GODFATHER, 6/20. unp.co.in

In terms of the ease and utility of preparing potatoes, there were dozens of causal mentions of preparing potatoes for a meal. One blogger described throwing together a summer-time side dish:

What do you do when you have about a dozen red and small russet potatoes and a lot of fresh dill? Why make potato salad of course! This weekend I experimented with what I had in the kitchen and whipped up some potato salad from scratch.
— littledevilworks, 6/29, littledevilworks.blogspot.com

Nearly a fourth of the comments addressed Utility/Convenience issues with about 2,800 posts. The percentage of authors offering an opinion was more than twice the amount normally seen in CGM, with 36 percent. Sentiment in regard to food trust was generally positive, with 63 percent expressing a positive opinion compared to 37 percent offering a negative comment.

Four Crops

In this section we will look at the general conversation and sentiment in relation to corn, wheat, rice, and potatoes.

Corn

The word “Ethanol” was prominent in the discussion in relation to corn. Corn’s association across the food chain and energy chain spoke to the usefulness of corn. This usefulness also drove much of the negative sentiment in relation to the crop. Corn syrup appeared in numerous posts. Corn’s use as animal feed, a necessary crop used for pigs and cattle, also appeared frequently. Corn was cited in discussions about alternative energy and biofuel. Finally, as a result of flooding in Iowa in the late spring of 2008, corn shortages and prices driven by market speculation drove negative sentiment in relation to corn.

There were more than 3,000 mentions of Ethanol in the Corn Affordability topic. Even in posts addressing overall perceptions of corn and health were drawn into the energy conversation. There were even 200 mentions of ethanol in Corn Health/Nutrition. On a Weather Blog, an author replied in a heated discussion regarding Global Warming:

Ethanol is the use of corn outside our normal thoughts that is in the media spotlight. Look at the labels of items in your pantry (especially sodas and snacks) and see how many of them list high fructose corn syrup as one of the first five ingredients. If that were changed, more corn would be available for more nutritious forms of consumption. Ethanol and corn on the cob are not the only versions of corn usage on the market! — Sue, 6/14, alabamawx.com

Other prominent fuel related terms included oil, fuel, biofuel, and energy.

Ethanol as the keystone of energy policy takes a body blow! My family has its share of

farmers and I remember family discussions not so long ago where the farmers of the group were dreaming about selling their corn for \$2.90 a bushel. Corn was selling somewhere south of \$2.40. — Angry Political Optimist, 6/25, 12angrymen.wordpress.com

Corn saw the highest volume of posts totaling 5,921. This was nearly half of the total conversation. This conversation also contained the highest percentage of authors willing to offer their opinions. 58 percent of posts offered a comment expressing sentiment. By and large, these were negative comments. Corn's affordability was starkly negative with 95 percent of all opinions regarding this topic scoring a negative sentiment. Corn also had the highest percentage of negative comments in relation to its sustainability, utility and convenience, health, and trust.

Wheat

Wheat was perhaps less complicated in terms of competing uses driving price, but was nearly as negative as corn in conversations related to Availability and Sustainability. Eighty-eight percent of posts containing an opinion were negative in regard to wheat's availability. Sixty-five percent of posts containing an opinion were negative in regard to wheat's sustainability.

On one forum, an author posted an alarming call to action to hoard wheat:

I don't want to alarm anybody, but maybe it's time for Americans to start stockpiling food. No, this is not a drill. You've seen the TV footage of food riots in parts of the developing world. Yes, they're a long way away from the U.S. But most foodstuffs operate in a global market. When the cost of wheat soars in Asia, it will do the same here. Reality: Food prices are already rising here much faster than the returns you are likely to get from keeping your money in a bank or money market fund. — wvpeach, 6/17, americanpoliticsandmore.com

Sentiment about wheat affordability was overwhelmingly negative due to the sharp price increase in the past two years. On June 11th, the US Agriculture Department released a forecast for global wheat production. They predicted that wheat production would recover by nearly 10 percent in 2008 and price increases would relax. Search-the-ABC posted on ABC.Net a quote from Gerald Bange, the World Agriculture Board Chair saying, "Wheat production and supplies continue to recover after major drought in Australia and poor growing conditions in Europe, North America and the Former Soviet Union." Despite this forecast of an improved outlook for wheat, the commentary remained largely negative.

In the negative comments for Wheat Affordability, the most prominent keyword was, predictably, price with more than 3,000 mentions. Other prominent keywords, though, pointed more to issues with production rather than competing demands for wheat use, such as for use as animal feed or ethanol. These topics were mentioned, but were less central to the conversation. Central words included commodity, production, demand, and government. Affordability was often associated with political and financial issues, such as the G8's support of developing countries, and export restrictions imposed on rice and wheat in Asian countries. Posts with positive comments argued that wheat

remains cheap when compared to other food.

In Kenya, an author posted:

Finance Minister Amos Kimunya has announced on his 2008/2009 budget speech this afternoon that the VAT on Wheat and its products be reduced from 35% to 10% which effectively will mean bread, wheat flour ("Ungaya Chapo") pastries will drastically reduce in price. This is perhaps the best budget ever read by him and a show of good will in the light of rising food prices globally.— Collins Mbalo, 6/12, siku-moja.blogspot.com

The availability of wheat was regarded as significant because it is an essential component in a country's subsistence diet. It was noted that wheat contains a high percentage of protein compared to other commonly consumed grains. Protein appeared as a moderately prominent keyword with more than 50 mentions in the positive post for Wheat Health/Nutrition. "You're getting protein from the wheat pasta as well as the cheese and milk, of course," user name "fiogras" posted in response to a diet plan on Chowhound on June 24th.

Another blogger posted on health-nutritionfacts.blogspot.com on June 20th, "Stick with Whole Wheat," in a long catalog of what were characterized as nutrition facts. This post noted the positive attributes associated with wheat consumption:

Whole wheat is actually better for you. It offers more fiber, which helps reduce the risk of heart disease, stroke, cancer, diverticulosis, diabetes to name a few. When possible, set aside the white flour and bread and reach for products that are made from oats, barley, buckwheat, bulgur, rye, brown rice, millet, and wheat. — Healthy, 6/20, health-nutritionfacts.blogspot.com

Wheat saw about a sixth of the overall volume with 1,916 posts. Just as the conversation around the economic issues of corn contained negative sentiment, so did the conversation around wheat. Nine out of ten opinions were negative in regard to affordability. Two out of three opinions were negative in regard to sustainability. However the utility, health, and general trust of wheat were all positive.

Rice

Sentiment on rice affordability and sustainability was overwhelmingly negative due to the sharp price increase in the past two years. Nearly nine in ten authors with an opinion expressed negative sentiment toward Rice Affordability. Although less negative, nearly two in three authors who expressed an opinion were negative in regard to Rice Sustainability. Blogs noted the effect of price increases, shortages, and export limits had in Asia and Africa. Prices more than doubled over the course of the last year. One author wrote:

The rice shortage in various Asian Countries at the moment is considered a silent tsunami affecting all people especially the poor. The recent cyclone in Burma and earthquake in

China even worsened the already dreadful situation. — Wilson, 6/15, Wilsonstreet.

Discussions on rice were mostly originated by Asian bloggers and authors. They addressed the various ramifications of the rice crisis in Asia. Country names that appeared in the conversation included Vietnam, Thailand, the Philippines, China, and Myanmar [Burma]. The food crisis and export restrictions in Asia raised concern of a failure of the global supply of rice. A continued food crisis raised fear of economic recession and social instability in Asia. A large number of posts speculated on how to increase rice production by adopting new technology, policy, financial measures, and government controls.

Rice was considered a better crop than corn in terms of sustainable farming practice. However, growing population, the demand for land, and the spread of suburban development made the authors consider the reusability of land in rice farming.

In terms of perceptions of health and corn, Michelle wrote on Answers.Yahoo.com on 6/14, “Rice is always healthy... never can go wrong with this one.” In terms of Nutrition and Health, rice was considered excellent choice as a starchy food and rich in fiber even though it lacked protein and vitamins. Health-conscious bloggers made sure to mention eating brown rice. Other bloggers mentioned that eating beans with rice will form a complete protein, “Ideally eat [beans] with rice; the combination forms a complete protein,” Save M wrote on 6/26 at Yahoo! Answers. Beans were mentioned 122 times in relation to Rice and Health. Nearly 70 percent of sentiment for Rice Health/Nutrition was positive. Another author posted at Yahoo! Answers:

Delicious food! Depends whereabouts you go but the food is obviously very influenced by Greek and Turkish cuisine. Lots of kebabs and delicious fresh fish and rice and salads. Proper healthy Mediterranean food. I loved it. Away With The Fairies, 6/30, answers.yahoo.com

Rice saw the second highest volume of post 2,703, with nearly a fourth of the total conversation. Nearly half of all authors offered an opinion regarding rice. By and large opinions were mixed. Nine out of ten opinions were negative in regard to affordability. Two out of three opinions were negative in regard to sustainability. On the other hand, the highest percentage of authors posted positively toward rice’s health and nutrition (72 percent); this was the highest of any of the four grains. The sentiment was also the most positive (69 percent) toward rice in terms of overall trust.

Potato

The potato was often mentioned in the broad context of foundational grains. Because it lacks the prominence of rice, wheat, or corn, it escaped many of the negative associations of other crops in terms of food shortages, biofuel, and the increasing focus and alarm over possible famine. Instead, posts referenced potatoes in relation to diets for weight loss or health, as a useful crop, and even as a

crop that had seen people through past hard times such as the Depression.

Recent news items in CGM often mentioned positive stories associated with the potato. The United Nations for instance, declared 2008 the International Year of the Potato. On the blog.sina.cn, an author posted:

The United Nations has declared two thousand eight the International Year of the Potato. There is even a Web site to help bring more attention to the world's third most important food crop, after rice and wheat: potato2008.org. The world produced three hundred twenty million tons of the vegetable last year, about the same as in two thousand five. The top five producers were China, Russia, India, Ukraine and the United States. India hopes to double production in the next five years. Officials in Bangladesh say that country produced a record eight million tons this season. Prices for rice, the main food crop, have doubled in Bangladesh in the past year. Potatoes now cost much less than rice. Yet potatoes are not an especially popular food choice in Bangladesh. The government hopes that will change. And some Bangladeshis may have no choice. Soldiers are now being served potatoes as part of their daily food. The International Potato Center in Lima, Peru, says potatoes could offer better food security for at least twenty Asian countries. — 6/17 KiddPlus, blog.sina.com.cn

The potato frequently appeared in stories about individuals and countries surviving hard times, indicating an underlying perception of the potato as a hearty, durable crop that can provide even in times of economic depression and political instability. For instance, one blogger wrote:

This lovely Dutch town was once famous for its potatoes, which could be grown in the local sand dunes. This somehow made them resistant to the potato blight which inflicted most soil grown potatoes in Europe at the time, ultimately resulting in widespread famine. The clever Dutch had to turn to potatoes because the occupying French at the time stopped the locals from fishing the sea. — unknown@news.scotsman, 6/12, news.scotsman.com

Although the potato promises to be a sustainable and affordable global crop, this promise wasn't well known. Instead, most of the conversation online focused on the affordability of a bag of potatoes, the ease of potato preparation, and the relative health merits of the white potato compared to white rice or bread. Neil McCarthy wrote, on her blog, neils3ds.blogspot.com, on 6/12, "My grandmother's reaction to the challenges of the Depression was to buy a 10 pound sack of potatoes and feed her family on it for two weeks." Although a few bloggers jokingly noted that the potato (and thereby chips) were classified as a vegetable, the potato was often mentioned in relation to vegetables, vitamins, and overall nutrition. It appeared in the menu plans of glycemic and gluten-sensitive bloggers. It was also a food that was mentioned in terms of its relative ease of preparation. "Today I had a sweet lunch of a potato over black beans," Hautcity wrote on 6/17 on his blog, hautcity.wordpress.com.

In the following table, we took a look at five words to count their occurrence in the general text of posts in the potato-related topics. We separated out their occurrence among negative and positive positively scored posts. We counted any occurrence of the word along with the word *health*.

Term	Overall	Overall Negative	Overall Positive	Health Negative	Health Positive
Fries	305	39	79	21	35
Chips	286	68	49	46	20
Fried	204	15	35	12	10
Baked	232	16	64	12	28
Potato	3,183	213	368	80	17

These counts provide general sense of the overall sentiment and size of the topics in relation to the term potato among the posts we collected. For instance, chips are regarded negatively, while fries are regarded positively even with the addition of the word *health* in each body post.

Potatoes saw the smallest volume of overall posts with just 1,611 posts. Like other grain topics, issues of affordability and sustainability were negative among posts containing sentiment. However it was also the most positive of the four grains. Thirty-eight percent of sentiment posts were positive for affordability compared to 5 percent negative. Thirty-six percent were positive for sustainability compared to 61 percent negative. Potatoes contained the most positive percentage for overall food trust and utility of all of the topics. In terms of health and nutrition the potato was mixed with slightly more posts considering the potatoes healthy.

Where the Conversation Took Place

The conversation occurred in a mix of forums and blogs. The large number of blogs indicate a largely event and news driven space. The space contained a number of recurring topics including activism, investment advice, forums on agriculture news, politics, energy, and biofuel research and development. About 10 percent of the top hundred sites were general in nature, for instance, the forums at America Online, the Myspace Forums, and Yahoo! Answers, where users can vote on answers to user submitted questions. A few specialized sites also appeared, including low carb diet forums and farming news sites such as FarmPolicy.com. In a summary of the USDA's Convergence in Global Food Demand and Delivery, FarmPolicy cited a passage about a food exchange targeting potatoes:

To cope, food banks are being forced to purchase more food, cut back on the amount they provide or even trade local produce with other food banks. United Food Bank in Mesa, Ariz., recently got volunteers to pick oranges, grapefruits and lemons, some of which were swapped for potatoes from food banks in Idaho.

— Keith Good, 3/20, Farmpolicy.com

The distinction between forums and blogs is worth noting. Forums feature user-generated topics and user-generated discussions. In a forum, users post an open question and other users respond. The sequence of posts and responses create a thread. Threads may be organized by topic, date, and initial author. Generally, forum participants access posts from a variety of customized views. Forums often feature community aspects. Users, for instance, have profiles in the context of the Web site, and often the various forum users become familiar with each other. Forums often develop community standards. These sites often contain rich offerings of information about a specific topic and procedures about solving problems. Web users may come across threads from a search engine while looking for a solution or detailed discussions about a specific topic.

In contrast, blogs often feature a single author or team of authors who post a continuous cycle of posts. Readers of the blog comment on individual posts. Generally, a post has an open comment period while the post is active. The post drifts from the current portion of the blog into the archive as newer articles are posted to the top. Eventually, the post is archived, and may be available by topic tags, date, or author. To prevent comment spam and facilitate maintenance of the archive, the site administrator usually turns off the comment function for older articles. Blogs lend themselves to timely posts either as personal journals or news sites. Web users may come across the threads from a search engine or from a related blog's *blogroll* (a list of related links).

Blogs accounted for slightly more than 50 percent of the top hundred sites. These blogs focused on environmental news, agriculture, energy issues, and politics. For instance “The Consumerist” posted some reader complaints about a cat food, “Hill’s Science Diet Cat Food.” One post relevant to rice and corn was posted on the thread in mid June:

I used to buy lamb & rice Eukanuba cat food. The first three or four ingredients were protein - not corn, wheat or by-products. Well now Eukanuba changed the formulas for all its food. It's now "with lamb & rice" and it chocked full of chicken, by-products, corn and corn grits - the lamb & rice doesn't appear until well down the ingredients label.
— nygenxer, 6/13/08, consumerist.com

The thread on The Consumerist was viewed more than 3,600 times and generated 42 comments. Furthermore, every post on the blog can be shared with bloggers through built-in links to content sharing sites and social networking sites such as Digg, Facebook, and Fark. As a content sharing site, Digg can rapidly propagate a message across the Internet. Individual users vote for content at Digg. Popular stories end up on the homepage or sorted into topic areas such as World & Business, News, Science, Lifestyle, and others. For instance, this article that appeared in Digg, filed under All\Lifestyle\Health:

Prices for food staples such as wheat, eggs, milk and rice have increased substantially in the last year, leaving many to wonder how to affordably plan their next shopping trip. If you or a loved one has diabetes, you know the importance of stocking a well-balanced pantry and eating healthy foods to maintain good diabetes control. — Steveboren, 6/13, Digg.

Steveboren had “dugg” an article that originally appeared on the SZONE.com forums. Forums topics included financial, investing, politics, environmental, non-governmental organizations (NGO), charity, support, health, diet, Organic lifestyle, Pets owner, and parenting (Children’s nutrition).

For more information on the top sites and bloggers, refer to the profiles on page 36. A list of the top hundred sites and bloggers appears on page 33.

Next Steps

Based on our findings, we recommend that McCain expand the engagement effort to target key sites and leverage its access to Web communities interested in potatoes:

- **Engagement in Consumer Generated Media**

Define an outreach campaign and use TruCast® Engagement Campaign and outreach effort to bring McCain's message to key participants in social media.

- **Measure Current State and Progress of Efforts**

Measure changes in the environment following engagement. Future monitoring will continue to increase our understanding of the relevant social media space.

Refine Engagement in Consumer Generated Media

Launch an engagement targeting the specific areas of interest among the participants in social media. Use insights of the benchmark report to prepare the effectiveness of an engagement strategy.

The authors in this space respond well to personalized, credible, and consistent conversation and interaction with Potato experts. Posts from brand representatives that enrich the online conversation, offer knowledgeable insight, and respond to the initiative of users in CGM will result in positive outcomes. Engagement not only provides access to information and expertise about McCain potatoes, but also serves to leverage the impact of doing so in an open, highly-visible environment. Consistent and transparent engagement with key bloggers, and a long-term involvement in key Web forums would go a long way toward shaping the brand image of McCain in the CGM space. Such a campaign would create desirable associations, and enlist already sympathetic bloggers, such as Bellaonline.com, as brand loyalists and advocates.

In past campaigns, our research demonstrated that clients using the TruCast® engagement manager can see an increase of more than 200 percent in post volume. Further, we have demonstrated that engagement outperforms paid search in conversion rates by 250 percent. By connecting potential audiences to high-quality content, on their turf, in front of the world, McCain will confirm the brand as the source for relevant, authoritative content not just on McCain.co.uk but throughout the blogosphere.

This campaign would require an additional report to assess changes in the overall environment and to measure the effectiveness of the outreach efforts. The next report would provide a snapshot after the refined engagement campaign to measure its effects.

Possible campaigns may include:

- McCain Experts could conduct blog tours, guest blog, or host guests identified as influencers.
- McCain Experts could frequent key forums (identified in this report) to provide tips, insight, and leadership key issues for the McCain brand.
- McCain Expert could interact with influencers in specific areas. We've identified a list of a hundred key authors, and top 10 authors in each site. Many of these authors participate in forums where McCain Experts can directly interact with them.
- McCain Experts can use TruCast® Engagement Manager to interact with the CGM space, and track topics and developments in the online conversation.

Measure Current State and Progress of Efforts

Perhaps the most crucial observation that comes out of our analysis is the need for McCain to leverage the existing baseline of data to provide solid measures of performance for its social media engagement campaign and monitor the impact of brand advertising and promotions. Continuing systematic and ongoing performance tracking would continue to provide a clear picture of the impact of the engagement in the space as well as the effects of other forms of advertising and promotions. This procedure will improve the efficiency and effectiveness of McCain in social media efforts overall. For this reason, the information contained in this report is strongly complemented by use of Visible Technologies' TruCast® application. TruCast's® dashboard and reporting functions can be utilized to monitor and measure near real-time consumer generated discussion allowing for the most efficient and effective engagement within this vital space.