Social Media and Outage Management: Enabling Customer Participation

Smart Grid Information Webcast
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Agenda

• Introduction
• The team
• Why do we care?
• Setting the stage
• Risk
• Key points
• Discussion
What is an Innovation?
Social Media....

So what are you trying to do?

• 9 out of 10 businesses use social media. (Source: eMarketer)
• Facebook has 955M monthly active users, of which 58% are active daily. (Facebook, June 2012.) Over half of Facebook members use the social media platform regularly.
• Average Facebook user has 130 friends and is connected to 80 pages. (Social Media Examiner)
• Over 800 million unique users visit YouTube each month. (Source: YouTube)
• Twitter isn’t a social media community for most users. (Source: Beevolve)

So what are you trying to do?

Influence
Klout…

• Measurement of the influence of your social media efforts
• Measured from 400 signals from eight different sources*
  – Facebook
  – Twitter
  – g+
  – Bing
  – Wikipedia
  – Etc.
• Forbes lists the CEOs with the most Klout…

*More than 12 billion signals measured every day
Introductions

Jennifer Robinson
Project Manager
Program 182 provides tools for utilities to:

• Apply the behavioral sciences
• Conduct primary research
• Offer choices
• Measure success

Mechanisms for altering electricity usage behavior
What We Hear from Utilities

What types of customers want what programs?

How do we know what savings we can bank on from behavioral programs?

Do behavioral responses persist?

If we offer them choices, how many will participate?

How will customer behavior impact our goals?
IntelliGrid (P161) Structure
Enabling Information & Communication Technologies (ICT)

161A: ICT Coordination, Analysis and Technology Transfer
- Smart Grid Standards Tracking, Analysis and Contribution
- Communications Technology Tracking and Analysis
- Realized Costs, Impacts and Benefits of Smart Grid Deployments
- Enterprise architecture best practices

161B: ICT For Transmission
- Transmission related research on
  - Data structures,
  - Synchrophasors &
  - Data integration for planning, operations and maintenance

161C: ICT for Distribution
- Create the infrastructure for advanced distribution automation
  - Common Information Model (CIM) Development
  - Geospatial Information System (GIS) Data Management
  - Advanced Distribution Automation Communications

161D: ICT for AMI and DER
- Supporting members in AMI & DER integration
  - Open, interoperable AMI systems
  - Demand response communication technologies, architectures, and standards
  - Integration of customer-sited distributed energy resources

P161 Focuses on the area of interest to IT, OT, and Communications.
Why Care About Social Media?

John Simmins
Technical Executive
Context: Outage Management – Then
Context: Outage Management – Now

• 24 hour news cycle
  • Smart devices
  • Increased connectivity
  • Social media

• Increase expectations
  • Increased awareness
  • Increased technology intelligence
Who Remembers Flight 1549?

1/15/2009 ~3:40 PM ET

First image appears on Flickr at 3:49 PM ET

Traditional media begins reports at 4:00 PM ET
Meanwhile…..

- **4:07 pm** – Online media coverage reaches 30+ articles/feeds in within minutes of crash
- **4:12 pm** – Within 30+ minutes, video pulled from online media coverage is posted to YouTube
- **4:16 pm ET** – Twitter moves into overdrive with hundreds of tweets on the crash
- **4:21 pm ET** – Multiple photostreams appear on Flickr
- **4:22 pm ET** – Up to 90+ articles online within 40+ min
- **4:25 pm ET** – Pictures of crash appear on Twitter
Meanwhile…..

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US Airways site at 4:23 PM ET
Meanwhile…

4:30 pm ET – The iconic image of the crisis: the original twitter post as provided by Silicon Valley Insider

4:30 pm ET -- US Airways Site (intermittent service outages)
Meanwhile…

4:38 pm ET – Thousands of images begin appearing across the Internet

4:38 pm ET – US Airways Site has first statement of the crash

4:38 pm ET – Over 400 news articles appear in a Google search

Who controlled the narrative?
We have our own issues.....
Well, not so much. The rogue shark photo seems to pop up every time a major weather event happens, including in 2011 during Hurricane Irene.
Some of the misinformation persists; getting rearticulated and repeated on the web…

Storms are getting worse and more deadly…

<table>
<thead>
<tr>
<th>Year</th>
<th>Tornado Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>45</td>
</tr>
<tr>
<td>2011</td>
<td>553</td>
</tr>
<tr>
<td>2012</td>
<td>70</td>
</tr>
<tr>
<td>2013</td>
<td>39</td>
</tr>
</tbody>
</table>

Three year average: 222

Source: NOAA
Workshop Objectives

• Share utilities experiences with social media to improve situational awareness and response during disturbances
• Discuss ongoing and new opportunities:
  – customer communications
  – integrating customer-generated data into utility systems
Customer communications and outage management evolve through integration of various systems.

Adapted from
Workshop Objectives

• Share utilities experiences with social media to improve situational awareness and response during disturbances
• Discuss ongoing and new opportunities:
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  – integrating customer-generated data into utility systems
• Discuss potential roles for EPRI in helping to define technology requirements, provide a platform, etc.
Approach

Summer 2013 Workshop Series

San Francisco
Aug 12-13
Hosted by PG&E

Dallas
July 8-9
Hosted by TXU

New York
June 3-4
Hosted by ConEd
Workshop Series End Product

• White paper synthesizing:
  – Regional meeting findings
  – Cross-regional commonalities/differences
  – Opportunities for enhanced use of social media

• Webcast update
  – October 2013
Setting the Stage

Christina Haddad
Project Scientist
Utility Industry & Social Media

• Examine utility industry use of social media
  – Research journals
  – News articles
  – ~160 utilities
    • Websites
    • Social media accounts
    • Inventory of mobile apps
Utility Industry & Social Media

- Top 3

- Common Applications

Outage & Emergency Management
Education
Outreach
News
Job Postings
Bill Pay

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Utility Social Media Inventory: Facebook

Did you know cooking meals in a microwave uses half the energy of a conventional oven? #EnergyWellSpent
Utility Social Media Inventory: Twitter

73% of utilities had a Twitter account.
Utility Social Media Inventory: Mobile Apps

36% of utilities had a mobile app

- Outage & Emergency Mgmt: 51%
- Bill Payment: 26%
- News: 18%
- Education: 5%
Utility Social Media Inventory: Mobile Apps

36% of utilities had a mobile app
Key Findings: Common Themes

- Define a strategy and **clear objectives, but be flexible**
- **Be proactive**
  - Notify customers what to expect when a storm approaches and inform them how often they will be updated
  - Proactively prepare for and address negative comments
- **Integrate** with existing communication channels
- **Know the audience** and develop niche group communications around certain topics
- **Show Don’t Tell**: Show pictures of damage or of executives talking to the public (e.g. Flickr & YouTube)
- Become **regular presence** on social media / communicate often
- Identify **internal staffing** and resource needs early
- Perform **dry run** of outage and emergency management that incorporates social media information
Key Findings: Opportunities & Challenges

Opportunities

– Direct two-way customer communication, opportunities for engagement
– Monitor public perceptions of outage restoration
– Provide timely and more accurate communications on ETRs
– Potential for faster and more precise movement of equipment to crews
– Crews standing by for shorter periods of time

Challenges

– Cyber security
– Verifying accuracy of data and information received through social media
– Consolidating collected outage and damage data
– Difficult to monitor website traffic from onlookers
Risks and Security

Galen Rasche
Technical Executive
Cybersecurity
What’s your definition of a disaster?
23 April 2013

- 1:08 p.m., a fake AP tweet went out, reporting two explosions in the White House and that President Barack Obama had been injured.
- Two-minute period of panic selling forced the Dow down from around 14700 to 14554, 150 points, or about 1 percent.
  - S&P 500
  - NASDAQ
  - Crude oil all dropped 1 percent.
- Within 5 minutes, it has recovered.
- Syrian Electronic Army
Common Security Attacks

• Spoofing of messages from the utility or users
  – Syrian Electronic Army

• Phishing attacks
  – Tweets of impending outages
  – Leads to fake site
  – Privacy

• False reporting of outages

• Denial of service
Securing Smart Devices

• Many examples of secure applications for smart devices:
  - Application sandboxing, encryption, local and remote wipe
  - Pass code policy, remote wipe, SSL-secured protocols, secure password authentication

• Well established security approaches can be followed:
How Can We Manage User Behavior?

- **Deter**
  - Increase barriers to bad behavior
  - Make penalties clear and binding
- **Detect**
  - Correlate the information with other sources
- **Respond**
  - Develop clear policies and procedures for responding to abuse
Conclusions....
Key Issues

• Leaders are expecting **measurable ROI**
  – Tie social to key business results, only customer satisfaction?

• **Keeping up as customers migrate** to mobile and social

• **Customers want more granularity** of information

• Mobile/social/web/call center – **consistent info across all**

• **Social to scale** – systems, processes, tech to move beyond small teams

• **Employees as ambassadors**
  – Tools/tips to support this (e.g., social text, likebook)
Barriers (1)

- $$$
- **Key management buy-in**
  - Or if they do, then what?
- **Changing field work processes**, getting folks to see the value
- Incomplete/inaccurate damage assessments
- **Accurate ETORs** not readily available
- **Paper orders** main platform for mutual aid crews
- **Getting info from the field** – customer, timely
- **Integrating** mobile outage system into existing
Barriers (2)

- Working with IT
  - Creating it internally or externally
- Front end/back end communication
- Technology
- Social monitoring/response/workflow management tools not yet widely used by utilities
  - No clear leaders (and they don’t “get” us)
  - No utility wants to be the first
- Difficult to tie account # with email, social (360 view)
- Unique customer situation with Texas TDUs/REPs
Key Takeaways (1)

- Keep new followers **engaged after the storm**
- Determine **what will sell at your company**
- Consider **cost of scaling customer service** through social
- Technology is available – varied uses/approaches
- Social media **team**
  - Not just one group, cross-functional participation
Key Takeaways (2)

• Engage **existing fans and employees** (training)
  – Build communities

• Need to **collect twitter & FB info**
  – At sign-up, other time

• Once customers have opted into a channel, **offer/expand its use**

• Customer **expectations vary** (e.g., weather, temp, day of week, neighbors’ power restored, return to work expectations)
Wrap Up

EPRI’s Role

Next Steps?
Other Workshops: Research Ideas

- Mashable data, outage maps…ways of making data mashable in general
  - Define comms protocols and data standards (CIM, CIM, CIM) to better facilitate outage info sharing
- Mobile damage assessment app for mutual aid, open api so they can open up
- Look at SM trending, where we should focus in the future
- Assessment of mobile websites: what functions do users want, for C&I customers, too
Other Workshops: Research Ideas

- Utility survey on social media **activity, now and planned**
  - Field annually

- Customer research on impact of social on customer sat, **pool/share results across utilities**
  - With users and those who have expectations re: its availability

- Customer segmentation

- Broaden the workshop approach, ask what do electric consumers need
  - **SM is a piece of a larger strategy** (digital communications, engagement)
Discussion....

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Together...Shaping the Future of Electricity