ABSTRACT: Social Media platforms (Twitter, Facebook, YouTube, Vimeo, etc) provide an effective way to broadcast avalanche information. Content can be created and updated rapidly and remotely and presented in multiple forms such as SMS (text), photos, and videos. Current information is available to users anywhere with a cell or internet connection and they can respond and provide feedback. Information can be posted in one medium and automatically fed to different media and by users to increase reach through virality. Backcountry users who have never known a world without Internet and email increasingly expect immediate, credible, mobile information about events and changing conditions, preferring to get their information from social media rather than traditional sources. Message sponsorship can generate financial support.

1. INTRODUCTION: WHY SOCIAL MEDIA?

We have found the social media to be an effective way of collecting and distributing avalanche-related messages due to the following social media characteristics:

1.1 User expectations

As the saying goes, the best fishing is where the fish are. Social media has become a dominant factor in modern communications and relationships, particularly among younger users, the group traditionally most at risk for avalanche accidents. There is a rapidly growing generation of backcountry users that have never known a time without cell phones, Internet, and email. Facebook has over 800 million users. A recent study by the Pew Charitable Trust (Tsukayama, 2011) found that, while Google is still the top way that people are finding news, the social networking site is the second or third source traffic referral site for the top five news sites on the Web. Users increasingly rely on social media channels for getting their news.

1.2 Two-way communication

Social media channels provide an easy way for our users to give us information, allowing us to hear about accidents, changing conditions, and response to our messages quickly and easily. This gives us a better sense of what is going on in the field and helps hone our messaging skills. Questions from users help us craft our forecasts, discussions, and educational products. When we converse with users rather than talking to them, we create more of a sense of community, leading to increased financial support and users that feel like a valuable part of the team. This sense of belonging plus the pressure to provide high quality field observations when other users are doing the same builds avalanche skills and awareness among users.

1.3 Speed and Mobility

We live in a world that operates in real-time. Our users get advisories as they are driving to trailheads and have come to expect updates during the day when accidents occur, control work closes roads and trailheads, and when conditions change. A significant portion of our forecast region has some degree of cell coverage and we frequently get high quality text and voice reports of avalanches along with photos and videos within minutes of when they occur. Forecasters can create, update, or receive advisories in the field, in their vehicles, or at home.

1.4 Virality

When we put information on our social media channels, our users share that information, particularly when it is highly attention-grabbing. This greatly increases our reach and introduces new users to our program that might not otherwise think to use or support our services.

1.5 Experience richness

When a user is making a critical go-no go decision on a windy ridgeline, the visual image that she saw that morning of an Extended Column launching out on the first elbow blow conveys a far greater and more visceral message than a written paragraph describing a persistent hard slab instability. We can describe to a class the stress and confusion that accompanies a beacon search,
but when they see GoPro® footage of frantic partners and a screaming spouse, they truly understand the need to practice rescue scenarios.

1.6 Vectors of communication

Social media allows us to reach more people by sending the same message out on different channels to reach users with different information gathering preferences. It also allows us to strategically use different channels for different types of messages, for example separating time-sensitive information like a road closure from less time-critical but equally important news such as an upcoming event. Tools exist to send the same message once on multiple channels as well as organize incoming information into different levels of urgency by channel.

2. HOW WE USE SOCIAL MEDIA

We recognized at the outset that we were not Social Media experts and we looked to others for help developing a strategy to identify and best use the tools at our disposal. Weld, a consulting group in West Virginia and Utah, was particularly helpful in teaching us how to best use Social Media, both in terms of strategy and day-to-day tactics and developing our user skills.

We began by breaking our messages into categories and identifying those that were time-sensitive and those that were not and those that were regular vs. those that were as conditions warrant. We identified the Social Media channels that seemed most appropriate for our use and most used by our users. From this, we created a policy of what types of messages go out on which media channels. One key lesson was that the same message on different channels can be effective. This strategy has evolved over several years and will continue to evolve. Our current strategy of which type of message belongs on which Social Media channel is shown in Table 1. It is important to note that we make occasional exceptions to this strategy when appropriate.

We have also spent time training our forecasters in Social Media use and learning to use tools that simplify our process, such as message aggregators like HootSuite and functions such as automatically forwarding our Facebook postings to one of our Twitter accounts. It was important to us to avoid adding to the forecaster workload or requiring our forecasters to become tech wizards.

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<table>
<thead>
<tr>
<th>Channel</th>
<th>Type of message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website</td>
<td>Central repository of information. Advisories, Wx, archives, observations, accident reports, photos and videos, calendar of events, tutorials and other education tools, resources, donation link, online store, announcements, internal data management, etc.</td>
</tr>
<tr>
<td>Phone Recording</td>
<td>Verbal daily advisory by region and Wasatch Dawn Patrol Hotline, a quick draft summary of conditions updated by 5 am daily</td>
</tr>
<tr>
<td>Facebook</td>
<td>Community news, fundraising events, donation requests, upcoming classes and awareness talks, Avalanche Warnings, surveys, and links to noteworthy resources at other centers.</td>
</tr>
<tr>
<td>Twitter UACWasatch</td>
<td>Immediately important avalanche notification including incidents, changing conditions, advisory updates, road and route closures, natural activity. Users are encouraged to elect to receive tweets as SMS messages</td>
</tr>
<tr>
<td>Twitter UtahAvalanche</td>
<td>Repeat of everything posted on Facebook plus event reminders and updates</td>
</tr>
<tr>
<td>Vimeo</td>
<td>Videos demonstrating current conditions, reporting incident investigations</td>
</tr>
<tr>
<td>YouTube</td>
<td>Videos demonstrating techniques and best practices, current conditions</td>
</tr>
</tbody>
</table>

3. RESULTS

3.1 Real Time Information

Our users have made it clear that they expect real time information. Photos and videos were effective at conveying the seriousness of current conditions and had the most impact when they were posted within hours of recording, in some cases from the field. UACWasatch (Twitter) has been effective at broadcasting news of changing conditions and
incidents as they were happening to mobile device-equipped users in the field.

3.2 Observed Behavior

The central Wasatch Mountains have easy access and are within 30 minutes of a major metropolitan area. There are a number of premier ski runs with significant avalanche hazard that are considered local "milk runs" and experience high skier and snowboarder traffic. During periods of High Avalanche Danger last season, many of these easily accessed runs remained track-free for weeks following storms, something that has not been seen for many years. It appeared that users were heeding the warnings we were broadcasting and avoiding hazardous terrain.

Our subjective assessment last season was that avalanche incidents were occurring more among experienced users than those with no awareness of avalanche hazard relative to past years. We believe these incidents occurred as a result of conscious decisions that went wrong, rather than the more common total lack of awareness of conditions. We believe that our messaging was effective, that we would have experienced far more human-triggered avalanches and subsequent fatalities had we not launched an aggressive awareness campaign using multiple communication channels. We received far more informal feedback from users and the general public indicating that they had heard, understood, and heeded our warnings than we have in past years.

3.3 User Field Observations

We received 531 observations last winter from users, some from volunteers and some from a team of observers paid a token amount to submit observations. Most observations included some combination of pit data, photos, and videos. Observations are submitted by filling out an online form, simplifying the process of submitting and using the observation and assuring all the essential information is captured. The observations are nearly all published for public viewing and the observations have been steadily increasing in quality in recent years, possibly due to publication of the observations "raising the bar" and applying pressure to users to provide more detailed and accurate information using standard terminology.

3.4 Sponsorship

The Friends of the Utah Avalanche Center, a non-profit, non-government entity owns www.utahavalanchecenter.org. Content related to avalanche conditions is provided by the Forest Service Utah Avalanche Center. This ownership structure allows paid advertising to appear on website pages. 38 businesses provide significant financial support to the UAC in exchange for logo placement and recognition as sponsors.

3.5 Fundraising

Facebook, Twitter, Website announcements, and email advisories all provide free or nearly free and nearly effortless communication of upcoming fundraising events and campaigns to large numbers of users. This has been partially responsible for the steady increase in donations and fundraising event participation in difficult financial conditions in which other non-profit organizations have experienced donation declines and foundations have reduced awards.

3.6 Media Relations

In 2011, we met with representatives of local TV stations to explain the nature of avalanche hazard and accidents to make sure they had the correct terminology, graphics, and contacts and were prepared to report conditions and incidents accurately and concisely. By following our Tweets, newsrooms received breaking news as soon as it was available without requiring forecasters to contact them directly. As a result, local news channels regularly broadcasted current conditions, forecasts, and incident reports last season using generally correct terminology and standard hazard level icons and terminology with minimal forecaster effort. By making avalanche advisories a part of the daily mainstream news, the general public was made more aware of avalanche conditions than ever before.

3.7 Video Exposure

We produced 50 short videos and posted them on either Vimeo or YouTube last winter. The 26 Vimeo videos received a total of 104,000 views and the 24 YouTube videos received a total of 31,730 views. We received positive feedback regarding the quality and impact of the message they conveyed. A typical comment was "it is one thing to hear day after day about persistent weak layers and another thing entirely to see a 60
second video of an ECT popping out violently on the 12th tap 2 weeks after a storm. We found the use of a helmet mount GoPro camera invaluable, allowing in one case the capture of a remotely triggered avalanche as we traversed a ridge as well as simplifying recording by a forecaster working solo.

An important lesson learned was the value of actively facilitating a video to go viral. The primary difference between the Vimeo and YouTube channels was that links to the YouTube videos were typically provided only on our advisories and field reports, while the Vimeo videos were spread via Facebook and Twitter and were forwarded to a much larger audience by several of our business sponsors with a large social media presence.

The growing presence of helmet cameras in the field led to an extraordinary capture of an entire avalanche burial, from initiation to successful complicated rescue. The video was given to us and had tremendous impact among our motorized users, achieving 34,400 views across North America (http://vimeo.com/38078462).

3.8 Internal data management

The password-protected internal portion of the website, currently running on Drupal, has proven to be an effective enterprise management tool. We maintain a database of classes, talks, and events and responsible parties, a list of observers, and payment status. We have an online store to sell event tickets, class fees, and logo swag such as t-shirts and caps and the website provides order management and fulfillment tools. Sponsor ads and links are easily added, removed, and modified.

3.9 Forecaster workload

A key goal of this program was to streamline data management and advisory preparation to avoid adding to the forecaster workload. We also agreed that forecasters are not expected to become webmasters and technology gurus – the tools we use need to have a simple and user-friendly interface. That goal has largely been achieved.

Forecaster training has been crucial. Providing the ability to access and edit all of these channels remotely with password access has been useful in allowing forecasters to do some work from home, vehicle, or the field to allow rapid updates and leveling the work load, for example by reviewing the day’s observations at night before forecasting rather than at 4 am in the office under time pressure. In some cases, this has allowed the creation of a complete advisory from home to negate the need to drive to our central office.

3.10 Lessons Learned and what’s next

The response to the strategy we are using has been overwhelmingly positive. The UACWasatch Twitter channel and the Vimeo video channel have been particularly successful and we intend to make more use of videos this winter. There is considerable overlap between the Vimeo and YouTube content and we plan to further focus our strategy to clarify which videos go where. At the suggestion of our consultants, we intend to include buttons on every page to make sharing that page content via Facebook or Twitter a 1-click step for users. It has greatly increased our reach to encourage our users to Share and Retweet our messages, especially our business sponsors with large numbers of followers. Posting links to our videos and other messages on ski, snowboard, and snowmobile forums has been effective. Our UtahAvalanche Twitter account seems underutilized and we hope to use that more this winter and make it more relevant. We are introducing a website redesign this winter (back-end update and front-end graphic redesign) to better target our message to different levels of users, simplify navigation, create a more appealing look, take advantage of new features, and move towards creating a U.S. standard for Avalanche Center websites. We have had strong demand for mobile device applications to create more user-friendly mobile access to avalanche tools and products. We intend to supplement our advisories with a periodic blog, including encouragement for users to comment and ask questions.
4. CONCLUSION

Avalanche advisories are most effective when they are timely, widely distributed, easy to understand, attention-grabbing, and incorporate user input. A new generation of users expects information to be delivered as it happens to mobile devices in a simple, easy to understand format. Common social media tools provide an inexpensive and simple means of meeting those needs without significantly adding to forecaster workload. The learning curve required to use these tools has been worthwhile to the Utah Avalanche Center in greatly expanding our reach and the impact of our messages.