



NWS Science and Technology Roadmap

Customer Outreach and Feedback Technology Team

“We’ve got to recognize that we can’t treat the American people as subjects but as a co-creator of ideas. . .We need to tap into the knowledge. . .in communities across the country.”

-- Federal CIO, Vivek Kundra (June 1, 2009)



Team Composition



- **Mike Gerber, OCWWS — Team Leader**
- **Jason Franklin, Eastern Region**
- **Michael Lewis, Central Region**
- **Rich Okulski, Southern Region**
- **Ben Schott, Western Region**
- **Ray Tanabe, Pacific Region**
- **Jeff Osiensky, Alaska Region**
- **Kevin Low, Missouri Basin RFC**



Vision/Benefits/Impacts



- **Team Vision**

- NWS outreach and feedback technologies that increase awareness and empower people to collaborate in ways that continually improve our service to Nation

- **Benefits**

- Improved integration of feedback and lessons learned into services and requirements that drive future services
- High level of trust and credibility with general public, key partners, and decision makers
- Americans are well informed about Weather, Water, and Climate Science and Impacts
- An educated public heeds NWS alerts and warnings
- Rapid and relevant response to customer needs

- **Impacts**

- Customers/partners make better decisions to mitigate losses and promote economic prosperity: lives saved, property protected, and money/resources saved
- Improved NWS branding via strategies that encourage wider public support of NWS
- Better understanding of NWS value to the nation
- Enhanced ability to capitalize on partnership opportunities for improved NWS services



2025 Stretch Goal



The NWS is the best in the Federal Government at exploiting technology to engage and inform the Nation. The NWS fully integrates feedback from the public, private industry and academia into its services.



Goals/Targets: Customer Needs



Goal	Outstanding Issues
<p>The NWS achieves the highest levels of customer satisfaction in the Federal Government. Customer feedback and needs are well understood and communicated across all levels of NWS. The NWS is responsive to those needs and shapes products and services around those needs.</p>	<p>NWS does not systematically document, aggregate, or share customer feedback and needs information. NWS cannot discern impacts across states and communities.</p> <p>NWS has not focused widely on managing customer relationships. Staffing not aligned with customer centric and decision support goals</p>
<p>NWS offices have instant access to high impact event threshold information of government and emergency management partners in order to provide the best possible decision support.</p>	<p>The NWS does not have a standard approach to documenting or mining critical needs information. Significant need for efficient collection of input and feedback.</p>
<p>The NWS informs the general public on how NWS information should be used in order to save lives and protect property. The public is aware and prepared.</p>	<p>The limitation on physical resources limits the amount and breadth of outreach performed with communities using traditional methods. Lack of effective technology for successful outreach.</p>



Goals/Targets: Emerging Science & Technology

Goal/Target	Outstanding Issues
<p>All NWS offices successfully leverage a common Customer Relationship Management (CRM) system for on-demand decision support and to drive future services.</p>	<p>Current feedback is not aggregated, shared, or searchable across the agency. It is done by email, web feedback, face to face discussion, phone calls, and other ways.</p> <p>Need to rapidly integrate NWS technologies with emerging user technologies. Future NWS systems, such as IRIS (Inter Regional Integrated Services), must be able to handle weather and impact related feedback from an extremely mobile society where users receive/transmit information using advanced communication technologies (i.e., wireless, location finding/navigation, advanced visualization, and environmental sensor information).</p> <p>Resistance to use of new technologies.</p> <p>Information Technology Security. Information is subject to compromise. False publication by an unauthorized source. Information viewed by an unauthorized source.</p>



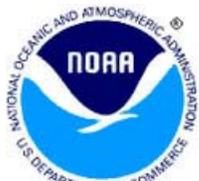
Goals/Targets: Emerging Science & Technology

Goal/Target	Outstanding Issues
<p>The NWS achieves high levels of efficiency, inclusiveness, and transparency using collaborative social media communities/communities of practice (e.g., Facebook, WebEOC, YouTube, etc.) that are built around all key mission areas.</p>	<p>Resistance to use of new technologies.</p> <p>Information Technology Security. Social media, like other Internet technologies, is subject to attack or being compromised in order to launch attacks and spread worms/viruses.</p> <p>Information security. Information on social media sites is subject to compromise or false publication by an unauthorized source.</p> <p>Federal and NWS social media policies are in early stages of development.</p> <p>The NWS struggles with providing interoperable formats and must leverage partnership opportunities.</p>



Goals/Targets: Emerging Science & Technology

Goal/Target	Outstanding Issues
<p>The NWS successfully educates the American public through call to action simulations, which results in a significant reduction in the loss of life and property.</p>	<p>NWS has limited experience in this area.</p> <p>Partnership with public (e.g., FEMA) and private entities. Will need to address any public/private issues that arise.</p>
<p>The NWS informs people through interactive virtual outreach (e.g. holographic type imagery as recently used on CNN), where travel is not possible or cost-effective.</p> <p>There is a significant reduction in the loss of life and property. Students are inspired to take on environmental studies. There is an influx of exceptional talent into the NWS, which accelerates advancements in weather and climate services.</p>	<p>Possible high financial cost at start may limit use. Identification of interoperable formats. Must investigate any possible linkages to AWIPS (or AWIPS equivalent).</p>



Key Information Gaps



Gap	Solution Alternative	Impact
<p>No national system exists to:</p> <ul style="list-style-type: none"> •Collect requirements at local, state, fed level •Plug NWS into decision maker strategic plans, goals, and processes •Validate requirements with customers •Ensure fast turnaround on solutions that address decision maker needs •Document performance feedback from customers, customer satisfaction 	1.1 Nation-wide Customer Relationship Management System (CRM)	Key enabler of providing relevant, responsive, on-demand service to customers. NWS has customer needs information necessary to provide high quality decision support and drive future services. Can quickly validate customer needs compared to traditional NWS processes and more readily identify where resources should be applied toward a solution.
<p>Traditional outreach and decision support limited by physical resources</p>	2.1 Leverage Social Networks	High level of trust and credibility with general public, key partners, and decision makers. Outstanding partnerships. Fast and efficient collaboration and content sharing. Remote and targeted outreach to customers. Customers are educated in how to best use NWS information.
<p>Lack of impact based content for outreach and decision support</p>	3.1 Interactive Virtual Reality	
<p>No mechanism exists for people to practice response to NWS information in a realistic fashion, before the weather emergency occurs.</p>	4.1 Call to Action Simulation	Customers react to NWS information in ways that best save lives, protect property, and ensure economic well being

Outreach & Feedback



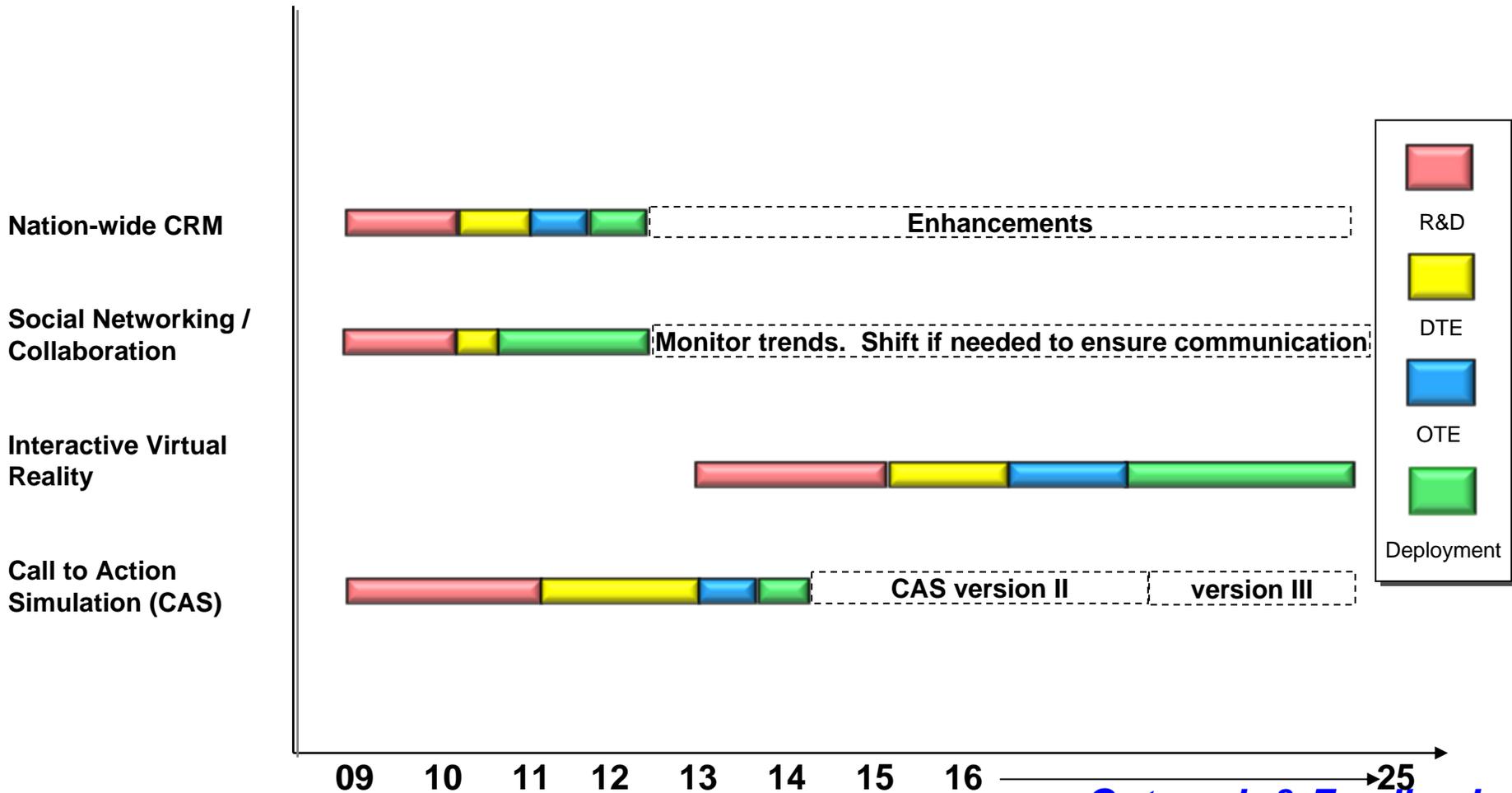
Research Needs and Opportunities



- **Understanding of Social Science aspects**
 - Analysis of sociologic and economic factors that drive response to weather, water, and climate information
 - How best to communicate information, so that people understand it and are best prepared to take action
- **Technology**
 - Investigate how outreach and feedback related activities be integrated with automated NWS systems, such as the Weather Information Database (WIDB), for more effective communication and collaboration
 - Investigate emerging trends in push/pull outreach, feedback, and collaboration technologies (i.e., social networks, cell phones, navigation systems, weather sensors, virtual reality, collaboration tools, etc.) for interoperable and relevant communication with partners and customers
 - Investigate emerging technology and/or develop/leverage virtual reality technologies that would enhance remote outreach



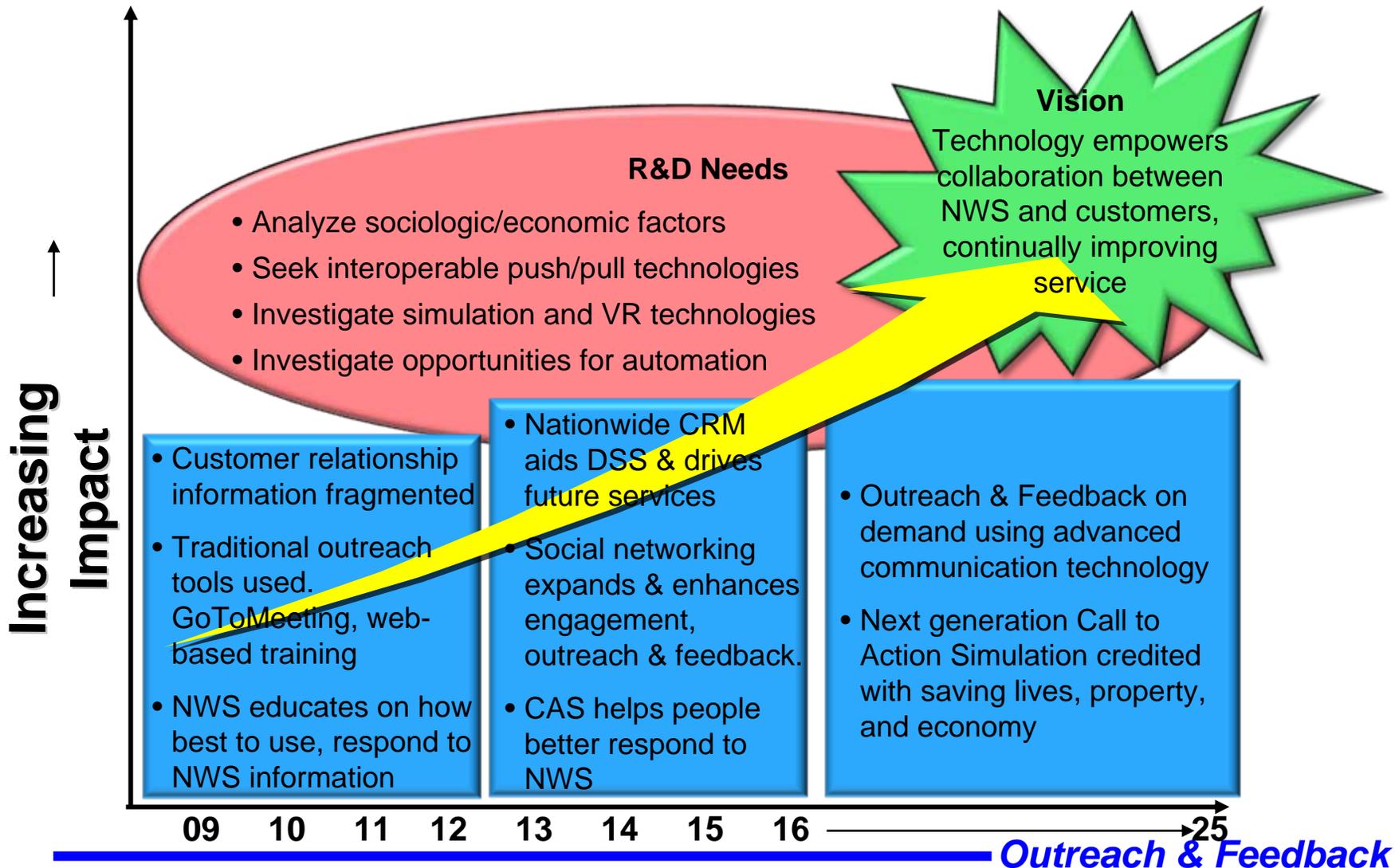
Outreach and Feedback Technologies Alternative Solutions



Outreach & Feedback



Focus Area Team Summary: Outreach and Feedback





NWS Science and Technology Roadmap

Outreach and Feedback Technologies Team Additional Information



Target Performance Measures: Outreach and Feedback



Proposed	Current (2009)	FY 2016 Target Example	FY 2025 Target Example
% of employees trained on use of CRM System	N/A	100%	100%
% of offices using CRM System	N/A	100%	100%
Campaign Value Index (CVI) for NWS Social Media	N/A	Achieve score of 80	Achieve score of 90
Call to Action Simulation Number or Users	N/A	Reach 1,000,000 users	Reach 10,000,000 users
CVI for Interactive Virtual Reality	N/A	Achieve score of 80	Achieve score of 90
CVI for Call to Action Simulation	N/A	Achieve score of 80	Achieve score of 90
Measures of impacts and public responsiveness to NWS alerts	Service Assessment, lead times, false alarm ratios, etc.	GPRAs + Socioeconomic Impacts	Directly measure economic savings to American taxpayer
StormReady Measures based on OMB guidance	100 StormReady Communities per FY	Survival Ratio of SR vs. non-SR (post-event)	Directly measure SR value to NWS mission
SKYWARN Measures based on OMB guidance with shift from outputs to outcomes	290,000 spotters	Economic value of spotter verified warnings	Directly measure economic savings to American taxpayer



Notes



"FEMA Administrator Craig Fugate said this week that he will devote considerable efforts to boosting citizen participation in disaster preparedness, a shift from previous emergency management perceptions of the general public as a liability. . . Fugate touted the agency's YouTube and Twitter efforts and DisasterHelp.gov as examples of the agency's efforts to spread the word in new ways. During a visit to FEMA headquarters late last week, President Obama urged residents of hurricane-prone areas to plan ahead for this year's tropical weather, suggesting that preparedness is a responsibility of citizenship."

– Washington Post (June 3, 2009)