

Using Social Media to Enhance Customer Service and Improve Responsiveness: The Case of Indian Railways' Citizen Engagement Mechanism

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AUTHORS:

Gopal Singh Bhati, Taejong Kim, Min-kyu Hwang



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Abstract

As one of the largest railway systems in the world, Indian Railways (IR) has had to accommodate a wide variety of customer service demands from its 23 million annual users. In 2014, the railway launched an effort to improve passenger services using a social media-based citizen engagement system through which passengers and IR staff could communicate. The system did not itself revolutionize customer service, but by using this social media communication platform in conjunction with hands-on learning, IR made a number of strides forward. Through a multistage implementation process, IR improved the social media platform's manual, haphazard work processes and automated them. As a result of trial and error and continuous adaptation, the new customer relations management system improved internal operations and accountability and enhanced public trust in the railway.

Introduction

Indian Railways (IR) is one of the world's largest railway networks. Owned and managed by the government of India and overseen by the Ministry of Railways, it owns 67,312 kilometers of track and serves 7,112 stations, according to information published in 2017. The railway conducts freight

This case study relies on background information from Indian Railways (2016a, 2016b); News 18 India (2016); and Sinha 2017.

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and mail operations and operates 20,000 passenger trains per day. IR serves 23 million users each year, and carries more than 1.2 billion tons of freight annually. The organization has nearly 1.4 million employees and annual revenue of nearly US\$30 billion (Ministry of Railways 2017).

Indian Railways operates in 17 zones across the country, each with its own headquarters, and the zones have been further divided into divisions. The general managers of each zone report to a central railway board consisting of seven members, the chair of which reports to the Ministry of Railways (Ministry of Railways 2015).

This case study examines how Indian Railways implemented a social media-based approach to respond effectively to customer feedback and complaints. The railway served a diverse group of passengers, operating various classes of service and of trains. The complaints received and problems reported were numerous and diverse, ranging from dirty coaches and late trains to more immediately pressing issues such as medical emergencies and crime. The scale, scope, and diversity of operations made responding to different needs and unexpected events a challenge. Long-distance trains, for example, might have problems with the condition of sheets and bedding, while the food served in pantry cars might be of poor quality.

The volume of customer complaints led Suresh Prabhu, who was appointed Minister of Railways in November 2014, to overhaul the organization. He and his team initiated an approach to improve customer relations using social media.

“This system of social media came into existence unintentionally,” said Ved Prakash, Director of Information and Publicity at Indian Railways. The organization had been using two mechanisms to collect customer feedback: a call center and a manual register kept at each station. “We never thought beyond these, as we thought they were working stably,” he elaborated. According to Prakash, the minister received a message on his personal Twitter account one day in 2015 regarding problems with the railway, and this inspired him to use the social networking platform to reach customers and solve problems.

“The gap between passengers’ demands and service quality still needed to be filled,” Prakash said. Twitter

represented a quick and user-friendly way to respond to those needs.¹

Development Challenge

The key development challenge was to improve transportation services. To do this, the ministry needed to create a communication platform to help Indian Railways quickly resolve passenger problems and complaints.

Prior to this initiative, there were no real-time mechanisms for railway customers to communicate problems to the railway. The use of grievance registers at train stations could only capture incidents that had already occurred and could not provide immediate solutions to problems as they were happening. In the past, customers had given feedback through means such as complaint books, letters, e-mail, and phone calls. The Indian government had more recently introduced the Centralized Public Grievance Redress and Monitoring Management System Portal and the IR’s Complaint Management System Portal to receive feedback from rail users and the public at large. These interfaces, however, still did not offer an opportunity for real-time responses.

The railway minister realized that better communication would improve accountability, convenience, and the travel experience for passengers.

Intervention

In July 2014, the Ministry of Railways launched its @RailMinIndia Twitter account as its core social media platform. The aim was to aid passengers on a real-time basis and promptly address grievances around the clock, as well as to enable passengers to share their experiences and give general suggestions.

After this initial “top-down” intervention, IR began creating an organizational structure and new work processes. A few months after the creation of the Twitter account, the minister of railways assigned its management to Ved Prakash, even though he had no game plan and no experience. “I was not sure how I was going to do it,” he said. “I was asked to set up some basic infrastructure, and we bought two iPads.” Prakash’s primary work responsibilities consisted of circulating information and

¹ Author interview with Ved Prakash, September 2017.

communicating the railway's activities to the press and media, but he tried to find time to monitor the Twitter account. "I used to scan all the Tweets in bits and pieces along with my major work," he said. The Minister of Railways also interacted with the Twitter messages at times, responding directly or sending messages to Prakash about certain complaints so that he could reply.²

This initial incarnation of the evolving system had plenty of room for improvement. It had no formal procedures or regulations for how to treat complaints and problems. Work was done by either replying to a passenger's grievances at the central office or forwarding the grievance to the appropriate zone for action. The process was time consuming, and there was no order of prioritization among issues. This unsystematic approach harmed performance. The @RailMinIndia account received messages throughout the day and night, but Prakash worked on it only during his workday. Consequently, this system sometimes overlooked important complaints.

The number of Tweets quickly grew, further straining the ability of Prakash and the minister to respond. "It was just a two-man show," Prakash said of this time. Initially, the daily number of messages was in the double digits, which he said was manageable, but within a few months, it topped 100. The growing number suggested to Prakash that the Twitter account had become a much sought after mode of communication, but he needed to adapt in order to respond to public feedback in a timely fashion. "Due to the popularity, we needed a team and a structure for the whole process," he said.³

Delivery Challenges

Building an effective, social media-driven citizen feedback system required Prakash and Indian Railways to overcome several challenges.

Organizational Capacity

Soliciting customer feedback through Twitter resulted in a large number of messages, and handling those messages manually was very difficult. The railway needed skilled workers and an efficient process to manage Tweets and determine which ones needed to be addressed. The

organization had no guidelines for managing messages and prioritizing responses, and coordination within the organization suffered from a lack of information communication technology (ICT) tools and training for handling these Tweets.

Reporting and Supervision

A further difficulty was generating insights and management information system reports to allow IR staff to collect meaningful data, understand the best way to serve customer needs, and determine which specific areas required greater attention. A social media system would in theory allow IR to generate systematic insights on data such as the number of complaints, suggestions, and feedback; the types of issues reported; and the division or zone from which they originated. The railway, though, lacked a system for rigorously tracking and reporting this data.

Culture

Perceptions of corruption were a further challenge. Some passengers received feedback on their complaints while others did not. Some believed that corruption among Indian Railways authorities affected who received a response. The railway had to counteract this perception by building trust.

Tracing the Implementation Process

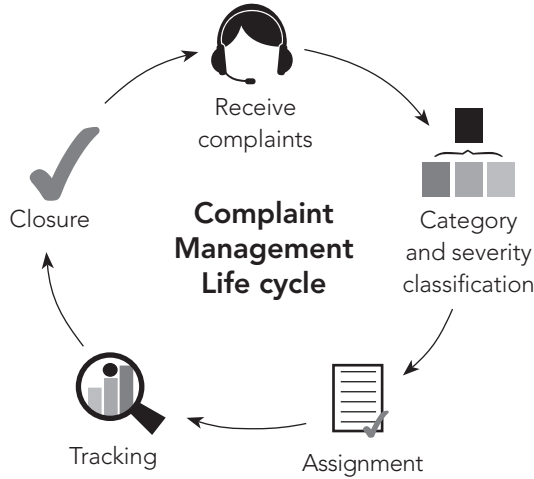
Phase 1: Creating the Twitter Cell and Prioritizing Messages (2014–15)

To improve the Twitter-based system for responding to passenger complaints and problems, Indian Railways promoted the Twitter account to citizens, expanded the team of people assigned to respond to messages, developed basic rules for prioritizing certain problems, institutionalized the system at lower levels of the railway administration, and developed tools for collecting data for monitoring and reporting.

The need for a structure and a larger team led the ministry to create a "Twitter cell" (also known as a Twitter *seva*, a Hindi word meaning "service") in December 2015. (Figure 1 shows the basic workflow of the *seva*.) The ministry sought out computer operators working within

² Author interview with Ved Prakash, September 2017.

³ Author interview with Ved Prakash, September 2017.

FIGURE 1. BASIC WORKFLOW OF THE TWITTER SEVA

Source: Adapted from Onedirect 2017.

the railway system and initially created a small cell of five people in a shared office. The cell was placed under the authority of Ravinesh Kumar, who was the railway's executive director of public grievance. The cell operated in two shifts: 6 a.m. to 2 p.m. and 2 p.m. to 10 p.m. In addition, the ministry recommended that each of IR's 16 zone heads and 64 division heads create Twitter accounts to more quickly address customer grievances.

The Twitter cell learned how to prioritize and respond to messages. "In the initial days, we tried to capture all the Tweets from 6 a.m. to 10 p.m.," said Ms. Anchal, one of the first batch of people hired to work in the cell.⁴ "We were always confused about how to assign priorities, as we did not have railway managerial experience. For us, all Tweets seemed important." The cell members discussed the issue with Kumar, and the team narrowed down the focus to actionable tasks required during an emergency and amenities requested by a passenger in need.⁵

The cell's growing ability to prioritize some incoming messages over others allowed IR to respond quickly to time-sensitive issues. "One day, a medical emergency case was reported in Twitter," Anchal recalled. "A fellow passenger's health deteriorated while undergoing a journey. We immediately identified his location and sent

this information to the concerned zonal center by Twitter and phone, too. We arranged a medical team at the next station, and medication was provided. The passenger re-Tweeted us after the incident, which made me feel proud and happy that we did something good."

Other examples of responses to problems identified by the Twitter cell included addressing water shortages on trains, providing milk to an infant, getting a wheelchair to a paralyzed passenger, finding a missing child, and responding to sexual harassment cases.⁶

Phase 2: Expanding the System and Hiring Skilled Workers (2016–17)

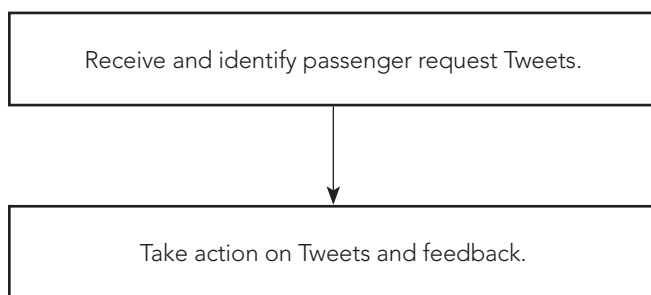
The Twitter cell had helped the railway better communicate with passengers and respond to problems, but limitations on the system remained. Staff had adopted an unorganized process that uses manual registers for recording Tweets that they could respond to in a day. Although the cell tried to capture messages in the 6 a.m. to 10 p.m. time window, most long-distance trains ran during the night, when cell members were not at work. Cell members consequently missed many important requests. Scanning and processing all requests depended on the efficiency of the staff, along with Twitter traffic at that moment. The format in which Twitter displays messages could make it difficult to distinguish a message from its subsequent responses. Messages were thus frequently overlooked. Another issue the cell faced was a massive increase in Twitter traffic. On April 27, 2016, the @RailMinIndia account reached the 1 million follower mark (Sharma 2016b), and the thousands of Tweets the account was now receiving every day made it difficult for the cell to keep up with its response load.

Along with the increased usage of the Twitter account came public criticism of IR's response to those messages. "We faced huge media criticism," said Rajesh, a member of the Twitter cell. One aspect of that criticism concerned unattended and unresolved messages, which produced comments suggesting that the railway would act on a complaint only if the minister himself desired action. The second area of criticism concerned the cell's tone when it did respond to a message. "Our unskilled staff's responses in re-Tweets sounded machine-generated, lacking a human touch," Rajesh said. "Our response

⁴ In conducting interviews, the authors only asked general employees for their last names.

⁵ Author interview with Anchal, September 2017.

⁶ Author interview with Anchal, September 2017.

FIGURE 2. TWITTER SEVA PROCEDURE (INITIAL MODEL INTRODUCED IN EARLY 2016)

Source: Onedirect 2017.

- Tweet is received and passenger is located and identified by a unique PNR (passenger name record) number.
- Passenger's mobile phone number is recorded for further communication.
- On the basis of passenger's location, zonal center is informed to arrange a solution at the next train stop.
- Feedback is sent to the aggrieved passenger.

lacked courtesy, empathy, and sensitivity as we became a routine answer machine.”⁷

In response to these problems, Kumar pledged to revamp the system in August 2016. He implemented several changes to the original system. (See figure 2 for the original Twitter Seva procedure.) First, the cell began working around the clock so that it would no longer miss messages that came in during the night. Second, Kumar increased the number of cells, or kiosks, to seven. Third, he contracted with a customer experience management firm called Onedirect to advise IR about increasing customer satisfaction. Onedirect began to develop an automated algorithm to identify the grievances. In this algorithm, certain words or phrases could be classified into groups. This was helpful, considering that certain types of complaints, such as those relating to punctuality and cleanliness, kept coming up. With a clear grouping of the complaints, the employees could respond according to procedures listed in a manual. Fourth, Indian Railways required railways within the zone to set up their own Twitter cells. This differed from policy in the past, which made the establishment and operation of Twitter cells in each zone optional, dooming this effort to failure. Now, the zonal railways were required to monitor their Twitter accounts, which allowed for easy monitoring and coordination from the central office. IR had chosen Twitter as its tool for communicating with citizens, and it was crucial that the zonal offices responded to grievances in each station instantly instead of expecting the cell at IR headquarters to take the lead on complaint resolution.

Phase 3: Improving Reporting and Monitoring

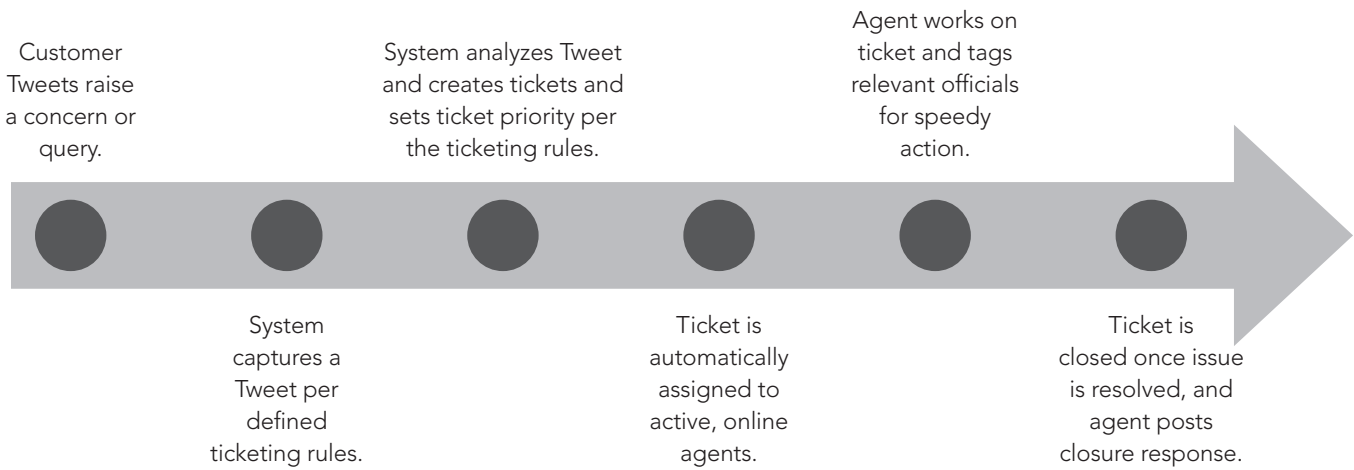
The expansion of the system helped Indian Railways respond to more Twitter messages and do so on a 24-hour basis, but there were remaining problems for Kumar to address. “We were unable to detect whether more than one cell was working on the same Tweet issue or not,” he said. The cells were overlooking Tweets because they continued to track the oldest unaddressed Twitter messages while the volume of new messages was increasing. The central office, for example, could be working on a Tweet that had already been addressed by the zones. There was no mechanism for closing a complaint once it had been resolved other than assuming that a matter was closed if they could find that a zone had re-Tweeted or responded to the message. The lack of a system for tracking responses and formally closing cases meant that “uncertainty in monitoring was persistent,” Kumar said.⁸

To address these challenges, IR developed a new customer relationship management tool in late 2016 with the help of Onedirect (see figure 3). For each relevant message, the tool created an individual ticket to allow zonal and central officials to collaborate using an online portal. The tool captured Twitter messages and posts on the basis of keywords and then used a natural language-processing engine to categorize each message as positive, negative, or neutral, as well as being of normal, high, or urgent importance. The software could, for example, give top priority to posts that contained certain trigger words such as “help,” “urgent,” or “emergency.” Cell

7 Author interview with Rajesh, September 2017.

8 Author interview with Kumar, September 2017.

FIGURE 3. UPDATED TWITTER SEVA PROCEDURE FLOW CHART (LATE 2016 MODEL)



Source: Onedirect 2017.

members from the central office could then open the ticket and read the Twitter message. Depending on whether a ticketed message required any action from the railway, cell members could code it as an actionable or nonactionable ticket. Finally, each case was placed into one of three priority categories: top, medium, or low.

This system assigned each counter an individual Twitter message and an ID number for that message, meaning the messages were now traceable, which solved the problem of potential overlap in responding to passenger grievances. A unique ID ensured tracking of the time pending for resolution of each issue. This change allowed the cells to respond to a larger number of messages, as Indian Railways was receiving 18,000 Twitter messages per day by 2017. Indeed, on March 29, 2017, the @RailMinIndia Twitter account hit the 2.5 million follower mark (Indian Railways 2017; Sharma 2016).

Results

The new system allowed passenger Tweets, both from running trains and from stations, to be forwarded to the relevant officials and resolved within the shortest possible time.

Citizen Engagement and Trust

Receiving complaints, forwarding those complaints to the concerned authority and relevant senior officials, and taking action and getting feedback from passengers all

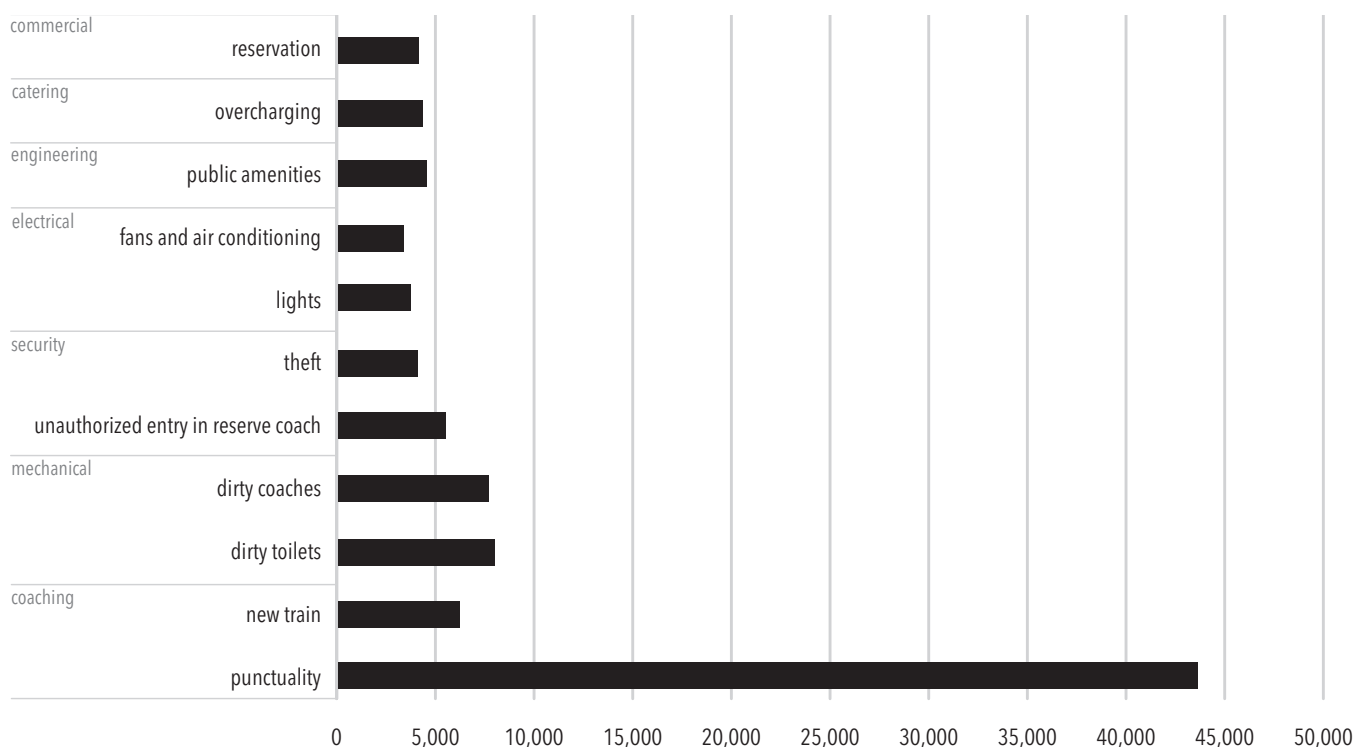
occurred within the public domain. The Twitter messages forwarded and resolved were automatically recorded in the system and stored in retrievable form for future reference. The general public also used the system to report incidents of corruption by IR employees, thereby allowing authorities to take appropriate action as an incident occurred.

The tool made citizens collaborative partners in effective service delivery. They used it as a tool for raising awareness of their concerns in government, discussing and analyzing government initiatives, and finally empowering themselves through democratic governance. After the successful implementation of the @RailMinIndia Twitter account, other ministries such as the Ministry of Commerce and the Ministry of External Affairs followed suit and devised their own digital communication strategies.

Internal Management

The customer relationship management tool allowed the Ministry of Railways to generate useful insights through various management information system reports. These geographic and functional reports helped administrators find areas that warranted attention and improve the system. Sharing such reports with geographic department heads on a weekly and monthly basis facilitated effective monitoring and instruction by the central ministry.

The customer relationship management mechanism also helped create a summary sheet to be used for monitoring and tracking each request status. It could

FIGURE 4. TOP ISSUES AND COMPLAINTS (APRIL 1, 2016–MARCH 31, 2017)

Source: OneDirect.

record tickets in a customized format, with problem areas matched to the relevant departmental authorities. In October 2016, for example, security issues began to be flagged for law enforcement personnel, whereas mechanical issues were directed to the technology team. The tickets were automatically stored in a database, thereby allowing the authorities to identify the most prevalent issues and allocate resources to tackle the problem.

This evaluation tool helped IR identify common subjects of passenger complaints, effectively putting citizens at the forefront of reviewing ministry performance. Once this was done, the ministry could then analyze the shortcomings involved and identify areas in which they could provide better service, using social media data as a barometer to measure its performance in reference to the desired better outcomes. Punctuality of coach services, mechanical issues, and dirty toilets were major contributors to citizen dissatisfaction (see figure 4). Evidence-based management of citizen feedback ensured that railway management officials were held accountable for how they responded to complaints. In return, their

responsiveness generated trust and favorable attitudes toward the railway.

The response times of IR divisions to concerns raised on social media platforms, which had been a key performance indicator for both divisions and zones, were also regularly monitored by the cells. The resulting competition among divisions led to enhanced customer service.

Lessons Learned

The Indian Railways case demonstrates how citizen monitoring can enhance the quality of public service delivery and how ICT may enable both citizens and the responsible agency to create a fruitful partnership. This effort benefited from a number of key success factors.

Using ICT Innovations to Solve Problems Goes Beyond Just Technology

The process of trial and error traced in this study shows that equipment and technological solutions alone cannot

be a magic bullet for all delivery challenges. Experience proved that additional investment in operational standardization, systems customization, personnel training, and adjustments in organization was crucial to better harness the potential of citizen monitoring for continual improvement of service quality. The complexity, diversity, and sheer scale of the delivery challenges meant that iterative adaptations were necessary to respond to customer demands. Sustaining the organizational commitment to managing the adaptation process required a strong leadership focused on citizen outcomes at all levels of the organization.

To streamline the process, IR paid extra attention to organizational capacity and data analytics. The organization tried different options such as creating and relocating cells and divisions working on the project. The staff and their tasks were constantly reorganized, integrated, and prioritized. As a result, the importance of the Department of Public Grievances increased, and it received the resources that it needed.

Engaging the Public to Improve Services

This case study also can be seen in a broader context, going beyond the narrowly defined goal of improving customer satisfaction with service delivery. The story demonstrates how the public, once seriously engaged and properly empowered, can serve as a strong partner in

subsequent efforts for further reforms. Indian Railways' efforts to adapt to better meet customer needs succeeded in improving public trust in this government service and contributed to a dramatic increase in citizen engagement. The process kept moving in a positive feedback loop, with each new round of efforts raising the level of expectation as well as the willingness of citizens to partner with the government.

As a public service provider, IR realized its key reform objective was to enhance its reliability by promptly responding to and resolving the large quantity of demands and complaints from passengers in a more systematic manner. To achieve this goal, IR used ICT to overcome the key development and delivery challenges of resolving grievances related to the poor quality of government services. It first chose social media, specifically Twitter, as a communication channel and further developed a database to code and manage the Tweets.

Another success factor was that IR viewed the public as legitimate customers of its services. Accordingly, it collaborated with a firm specializing in customer relations to track satisfaction rates among passengers. IR also actively marketed and promoted the Twitter account as a channel for customers to submit feedback. This effort not only improved the value of the services themselves, but also added to the public perception that the government cared about customers' grievances.

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Annexes

Annex A. Interviewee List

1. Ravinesh Kumar, Executive Director of Public Grievances, Railway Board, New Delhi.
2. Ved Prakash, Director of Information and Publicity, Railway Board, New Delhi.
3. R. Badri Narayan, Divisional Railway Manager, Howrah Division, Eastern Railway.
4. Team members of the social media cell at the Railway Board, New Delhi.

Annex B. List of Sample Keywords in the Word Cloud for Prioritizing and Categorizing Tweets

Categories	Keywords
Urgent	Theft, missing, medical, rape, accident, security, poison, collapsed, unconscious, wheelchair, danger, dead, death, fire, harass, urgent, serious, trouble, terrorist, robbery, serious, drunk, police, first aid, emergency, snatch, fainted, derailment, injured, doctor, bleeding, hurt, suffer, misbehave, pain, fever
Security: urgent	Beaten, beggar, RPF (Railway Protection Force), lost, theft, stone pelting, hawker, antisocial, illegal, stabbing, knife, pistol, murder, <i>dacoit</i> , robbery, gun, passenger missing, luggage lost, extortion, kidnapping, trafficking, afraid, suspect, insecure, tease, drugged, railway police
Medical: urgent	Medical, heart, stomach, headache, pain, blood, vomit, fever, oxygen, asthma, attack, patient, medicine, injury, cancer
High priority	Arthritis, bedroll, birth, cigarette, cockroach, corruption, worried, seat, cooling, milk, dirty, air-conditioning, clean, fan, disturbance, bedsheet, extra charge, no water, no pantry, hot, rat, <i>gandagi</i>
Low priority	Punctual, vendor, platform, announcement, attention, staff, littering, station, lighting, attention, ticket examiner, no train, quality, reservation, <i>shatabdi</i>

Note: Hindi words are italicized.

Annex C. Timeline

July 4, 2014

Twitter account @RailMinIndia was created.

March 2015

Mobile app for India Railways was created to act as a real-time information exchange forum.

December 2015

The Customer Complaint Management Cell was set up by the Railway Board to monitor complaints.

April 2016

The Ministry of Railways Twitter account, @RailMinIndia, reached the 1 million follower mark.

June 2016

Zonal railways were urged to create their own complaint management Twitter accounts.

August 2016

The Twitter account of the Ministry of Railways, @RailMinIndia, officially took on the responsibility of complaint management. With a better skilled and larger workforce, the Seva system operated 24 hours a day and seven days a week.

October 2016

The social customer relationship management tool became automated and began systematically coding the incoming Tweets.

December 2016

The Twitter account of the Ministry of Railways, @RailMinIndia, reached the 2 million follower mark.

March 2017

The Twitter account of the Ministry of Railways, @RailMinIndia, reached the 2.5 million follower mark.



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