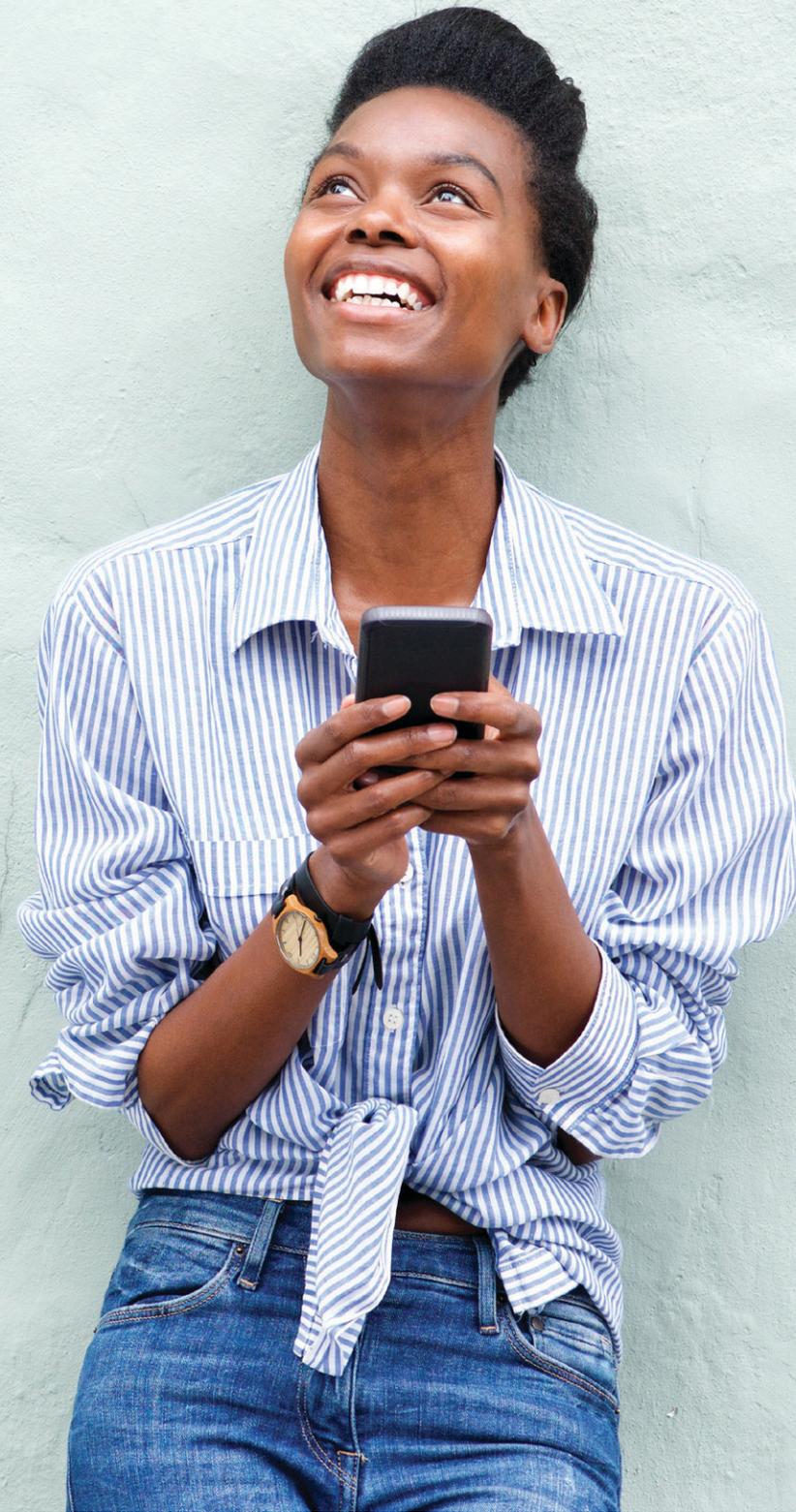


Recipes

for

Good

Your guide to building communications for impact



Creating the Recipes for Good

When Twilio.org launched in 2013, we set a goal to power a billion messages for good. We believed that by unleashing the creativity of technologists at nonprofits and social enterprises, Twilio could help organizations break down communication barriers and engage the people they serve at incredible scale.

Organizations responded beyond our expectations, building thousands of Twilio-powered apps to support people in crisis, drive civic action, deliver education, and much more. These applications now reach people by the millions all around the world. And at the heart of each application is the power of human connection to fuel positive social change.

In the following pages, you'll see several recipes for how social impact organizations use Twilio to reach new audiences and make a lasting impact. Each recipe describes a communication challenge, shows the steps to solve it, and diagrams the application flow.

We hope these examples spur your team to build new connections and engage your constituents and communities in innovative ways.

Let's get started.



Erin Reilly,
VP of Social Impact and GM, Twilio.org

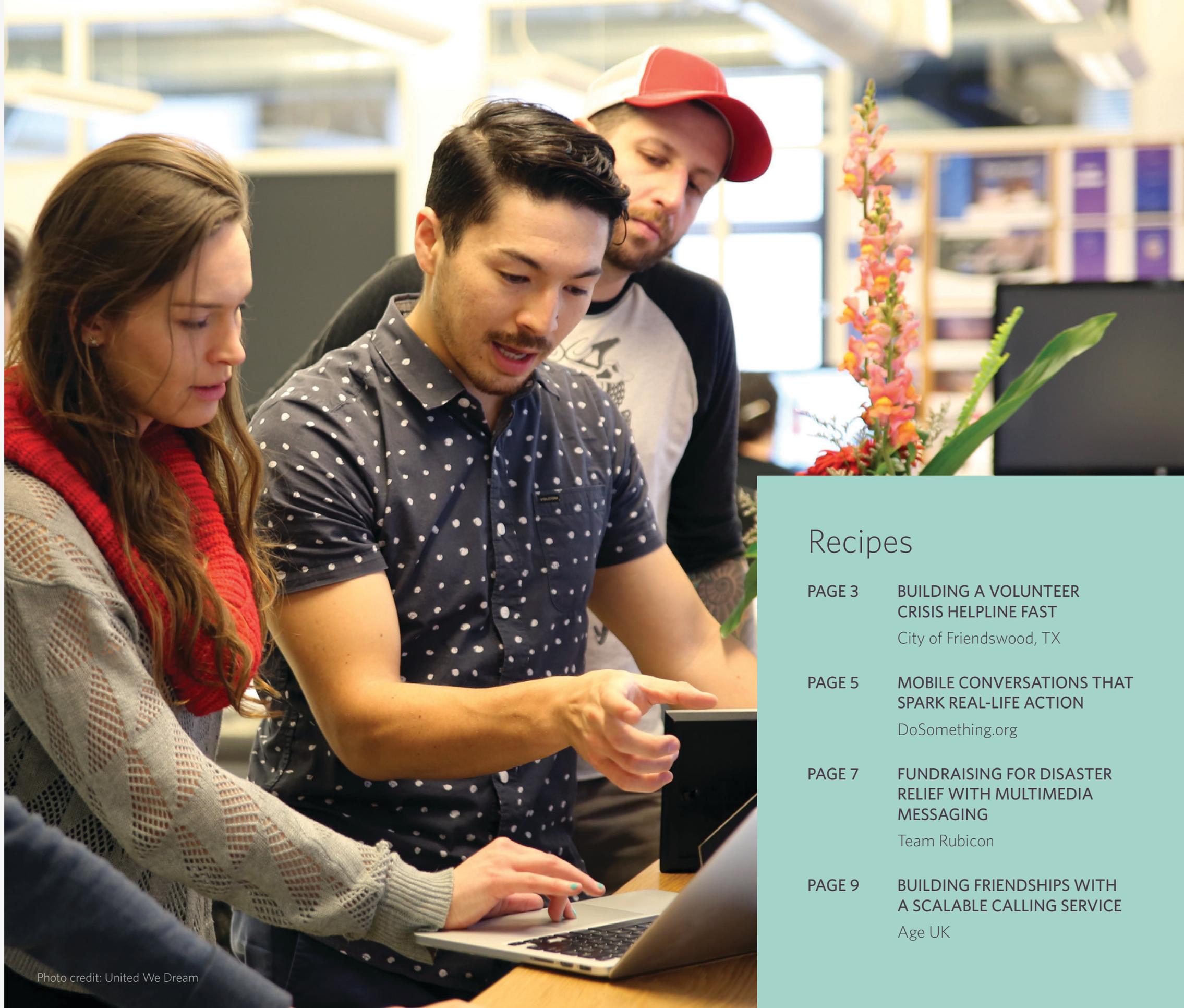


Photo credit: United We Dream

Recipes

- PAGE 3** **BUILDING A VOLUNTEER CRISIS HELPLINE FAST**
City of Friendswood, TX
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DoSomething.org
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Team Rubicon
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Age UK

BUILDING A VOLUNTEER CRISIS HELPLINE FAST

City of Friendswood, TX

Developer Joshua Lyman and other volunteers from local churches partnered with Friendswood city leaders to build and staff a call center in the midst of 2017's Hurricane Harvey.

THE TEAM

Joshua Lyman

Co-founder, O3,
Volunteer

Susan Liddle

Volunteer

Apryl Scott

Volunteer

Paige Bilyeu

Volunteer

Sally Branson

Councilwoman,
Friendswood

Steven Simmons

Deputy Fire Marshall,
Friendswood



"Time was the biggest constraint. It was incredible to have pulled it together that fast."

JOSHUA LYMAN



OBJECTIVE

Help city officials coordinate recovery efforts

As floodwaters started to recede from Hurricane Harvey, Friendswood's emergency department needed additional staff and phone capacity to manage recovery efforts. A team of city officials determined that they needed a contact center that could:

- Launch within 48 hours
- Respond to a high volume of calls requesting help or offering assistance
- Make it easy for volunteers to work collaboratively to coordinate responses

ACTION

Empowered volunteers with easy-to-manage emergency helpline

Using the Twilio Modern Contact Center codebase as a template, Joshua built and shipped an emergency helpline in 36 hours. The application featured a streamlined UI—a must for volunteers with no call center experience. Within a few minutes, volunteers learned how to log in, take incoming calls via WebRTC, collaborate over webchat, and register new volunteers. They used the call center to coordinate a citywide recovery and cleanup effort. Volunteers could field calls from any place with internet connectivity, enabling the distributed workforce to help from home. An IVR (interactive voice response) routed callers to the next available volunteer or captured callback numbers, ensuring that no call was missed.

2
THOUSAND
calls to the hotline

OUTCOME

Connected hundreds of callers to lifesaving services

Nearly 2,000 people called the helpline—many requesting assistance, others offering it. Volunteers directed hundreds of callers to food, cleaning supplies, and emergency shelters. Many helpline volunteers leveraged personal connections with realtors to house families in vacant properties. Volunteers also coordinated more than 200 homeowner requests for mucking—the removal of drywall, carpet, insulation, and other materials contaminated in the flood.

BUILDING THE CITY OF FRIENDSWOOD'S CALL CENTER

1 Determining requirements with city officials and volunteers

City officials were inundated with calls to emergency numbers and departments. To free up these resources, officials needed a helpline with a single number for people to call. The helpline would be staffed by people from the community, so they needed a solution that helped volunteers get up and running with minimal training using their own equipment.

2 Designing program

Joshua reached out to the Twilio team on Twitter. The team steered him toward Twilio's Modern Contact Center repo on GitHub, which provided the basic functionality Friendswood needed. Joshua forked the repo and determined a few components to modify for the city's application.

3 Setting up and customizing the contact center

Joshua connected to Twilio's Programmable Voice API, provisioned the number, and set up call recording. Because volunteers would access the application dashboard from a public URL, he added authentication to control who could log in and serve as an agent or administrator. He modified the IVR messages to quickly guide callers to volunteers. Joshua also integrated simple links to manage caller needs, such as a link to Google Forms to track aide requests, and links to city resources. As the teams became more distributed, he added a simple chat widget to allow inter-agent chats.

4 Launching the MVP, testing, updating

After 36 hours of calls, programming, and testing, the helpline launched on a Saturday morning. Calls came in immediately after the city sent out an email blast with the phone number and posted the number to Facebook. Joshua made a few modifications after initial testing, including adding a ringtone to alert volunteers of incoming calls, and an after-hours message to the IVR when no agents were logged in.

Looking for a shortcut?



Launch your custom call center even faster with Twilio Flex.

[START BUILDING](#)

SOFTWARE STACK

Twilio products

Programmable Voice
TaskRouter

Programming language

Node.js

Starter app

Twilio Modern Contact Center
sample codebase

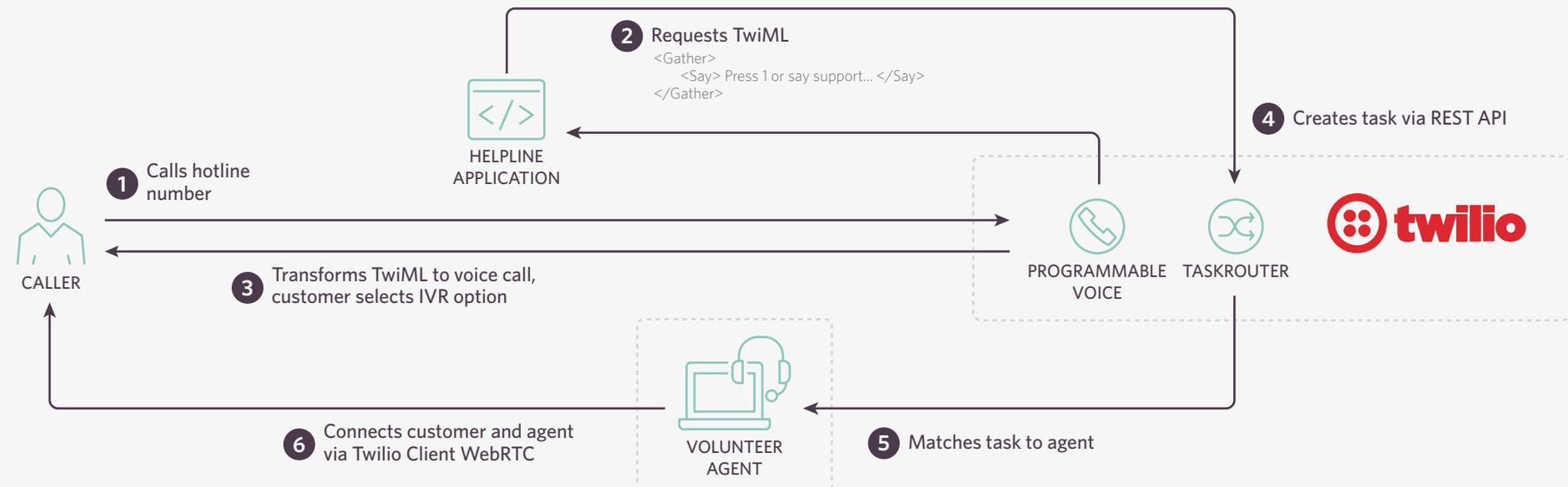
Web server

NGINX as reverse proxy

Database

Flat file, PostgreSQL as an option

HELPLINE CALL FLOW



MOBILE CONVERSATIONS THAT SPARK REAL-LIFE ACTION

DoSomething.org

DoSomething.org motivates young people to take action in their communities for positive social change. Through the organization's mobile messaging platform, DoSomething.org's members sign up for volunteer and issue-based campaigns to make a real-world impact on causes they care about.

THE TEAM

Matt Holford
Chief Technology Officer

Carrie Bloxson
Chief Marketing Officer

Freddie Bologno
Director of Mobile Messaging

Aaron Schachter
Senior Software Engineer

Rafa Pacas
Senior Software Engineer

Anthony Aurrichio
Digital Engagement Associate

Kika Gilbert
Product Manager (Alum)

Sergii Tkachenko,
Senior Software Engineer (Alum)



“Texting isn’t just about sending a push notification—it needs to be conversational. We needed a messaging platform that allowed us to create this personalized experience.”

FREDDIE BOLOGNO



OBJECTIVE

Power conversations with growing membership

In 2017, DoSomething.org needed a flexible communications platform that could scale with the organization's mobile subscriber base, which grew 20x over the past nine years. The team identified several needs for its new platform:

- A flexible two-way SMS platform to power personalized, ongoing conversations with members
- Message-level data insights to improve message segmentation and user engagement
- Global connectivity for cross-channel communications so that members worldwide can communicate on the channel they prefer

OUTCOME

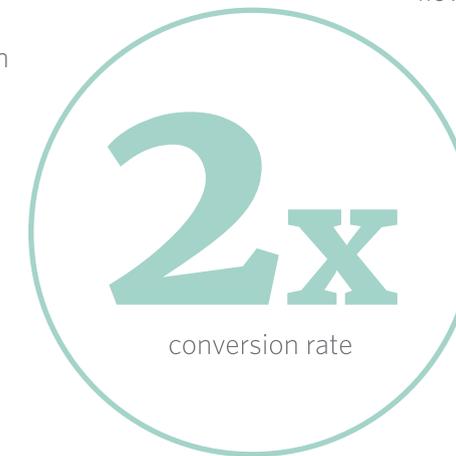
Conversion rate doubled within months of launch

By creating a more personalized messaging experience for members, DoSomething.org saw its conversion rate double in the spring of 2018. Retention rates improved too. During its “Grab the Mic” campaign, DoSomething.org sent members a variety of actions via SMS, through which members could make an impact online, in their communities, and at all levels of government. Members who received these messages had 40% higher retention rates than those who did not.

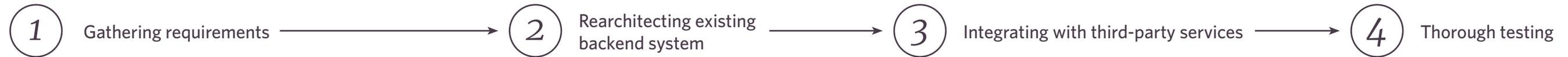
ACTION

Created two-way conversational engine to engage members at massive scale

Developers at DoSomething.org built a conversational engine to send broadcasts to members at scale. With the new platform, DoSomething.org can sustain conversations with members across multiple concurrent campaigns. The application not only maintains a member's conversation state across these campaigns but also accommodates unanticipated requests—such as extra help—without losing the conversational flow. As a result, members stay engaged longer because messaging feels like a human conversation. The platform is built for global scale so that DoSomething.org can grow its list and geographic coverage on demand.



BUILDING DOSOMETHING.ORG'S MESSAGING PLATFORM



1 Gathering requirements
 The team started by sizing up industry tools. Because DoSomething.org was migrating from a legacy platform, team members had to decide whether to find another vendor for each required feature set or build the features themselves. They also assessed the implications of running all messages through their own system. This presented a new scaling challenge, but also a big opportunity to own all their messaging data.

2 Rearchitecting existing backend system
 DoSomething.org separated its existing messaging engine into two apps. To handle the dynamic traffic patterns of multimillion-recipient SMS broadcasts, team members introduced a message bus built with Node.js and RabbitMQ. They also built a RiveScript engine to provide a lightweight outer tier of message analysis and quick reactions to common messages.

3 Integrating with third-party services
 DoSomething.org sought third parties for three pieces of functionality.
 Customer.io handles broadcasting, segmenting, and sending triggered transactional messages.
 Contentful stores message content using a content model that supports the two-way messaging interactions that are core to DoSomething.org's messaging operations.
 Front facilitates customer support. DoSomething.org moves the conversation out of its flow and into Front, and then it restores the conversation at its original point once the customer support interaction is complete.

4 Thorough testing
 DoSomething.org ran extensive tests for functionality and scalability. Introducing a Slack adapter let the staff test out SMS messaging flows as Slack conversations. Engineers used common load-testing tools like Siege to find weak spots and bottlenecks.

Looking for a shortcut?



Build your own SMS bot in minutes with Twilio Studio visual editor.

[START BUILDING](#)

SOFTWARE STACK

Twilio products

Programmable SMS

Programming language

Node.js, Express.js, React

Cloud services

CloudIO, Front, Contentful

Database

MongoDB, hosted on MongoDB Atlas

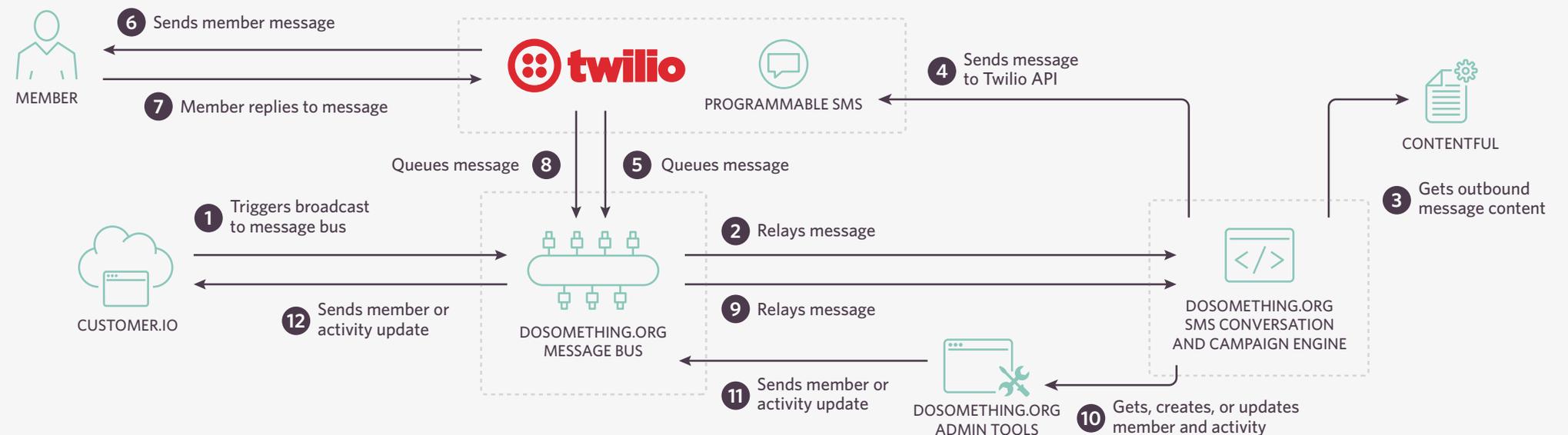
Message broker

RabbitMQ, hosted on CloudAMQP

Application cache

Redis, hosted on Heroku

MESSAGING FLOW



FUNDRAISING FOR DISASTER RELIEF WITH MULTIMEDIA MESSAGING

Team Rubicon

International nonprofit Team Rubicon deploys military veterans around the world to help communities respond to large-scale natural disasters. To amplify the organization's fundraising efforts, Team Rubicon built a scalable SMS/MMS integration to connect people with the organization's work on the ground when it matters most.

THE TEAM

Matt Scott
VP of Development

Peter Churchill
CEO and Founder, Bridge Farm Consulting



“Giving volunteers the ability to quickly send a photo or video that we can distribute to donors is a powerful tool, and it’s a medium that doesn’t take a lot of time. Emails end up getting lost, but a text message is extremely effective for engagement because almost everyone opens every text they get.”

MATT SCOTT

OBJECTIVE

Engage donors as disasters unfold

Recognizing a shift in donor preferences from email to text, Team Rubicon set out to build a messaging integration for Salesforce that could:

- Effectively engage large numbers of donors on their preferred communication channel
- Boost fundraising by motivating more people to donate, volunteer, or launch peer-to-peer fundraising campaigns
- Strengthen relationships with donors by showing them exactly how their donations are put into action



OUTCOME

\$30 million raised since launch

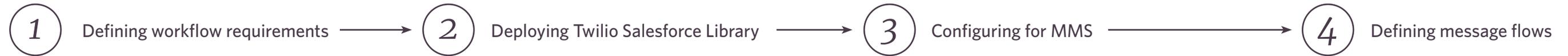
Since launching the app in 2017, Team Rubicon has raised more than \$30 million for disaster relief efforts. A large part of this success derives from building and sustaining relationships with supporters. Matt says messages with photos demonstrating how donations are put into action have proven extremely effective in increasing donor retention. Since they started using SMS, supporters interact with Team Rubicon's communications at a much higher rate, with an open rate of 85% for texts, compared with 35% for emails. Team Rubicon has acquired more than 13,500 new donors since launching SMS and has leveraged its Twilio integration to generate thousands of dollars in monthly giving.

ACTION

Propelled peer-to-peer fundraising with real-time SMS/MMS messages

Using the Twilio Salesforce library, Peter designed a Twilio-powered integration that sends personalized SMS/MMS messages to donors during peer-to-peer fundraising campaigns. Messages may include donation requests that align with an unfolding disaster or SMS broadcasts updating supporters on the details of a deployment in real time. Deployed volunteers also use the app to motivate smaller peer-to-peer fundraising groups to donate. Volunteers share photos and videos of themselves mucking homes in North Carolina, fixing roofs in Puerto Rico, or—in one memorable case—rescuing a homeowner and her kitten via a swiftwater boat during Houston's Hurricane Harvey. Volunteers send the photos and videos to Team Rubicon, which distributes the messages to subscribed donor lists.

INTEGRATING TEAM RUBICON'S MESSAGING INTO SALESFORCE



Team Rubicon needed the ability to send SMS and MMS messages from a Salesforce campaign. This would allow the team to segment and target supporters with personally relevant multimedia messages and then send and track engagement with those messages from the organization's existing supporter database.

Using Twilio's Salesforce Library, Peter set up requests for Twilio's Programmable SMS API to send and receive messages via callbacks to Salesforce's REST API. After testing in a sandbox environment, Peter could deploy to their production instance.

To send photos and videos alongside SMS, Peter used public URLs to host multimedia files via Pardot and defined media-handling parameters in Apex.

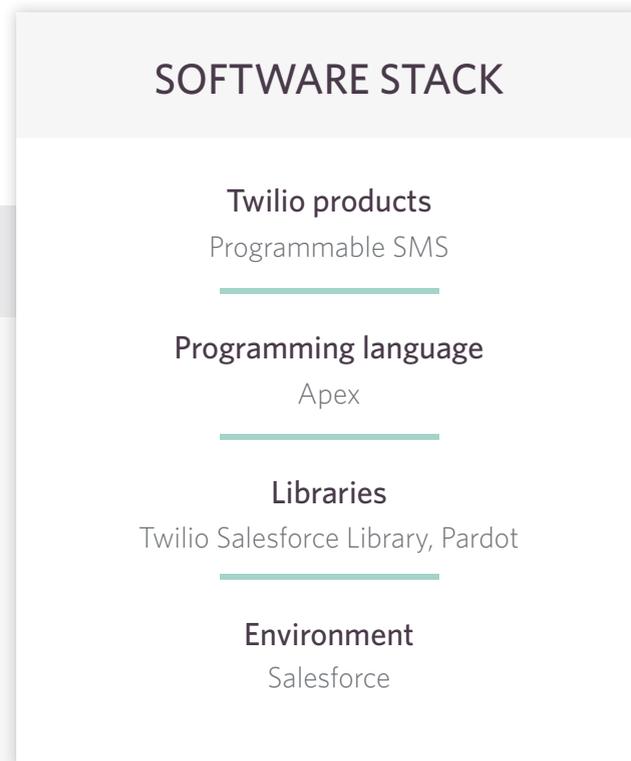
After completing the integration between Twilio and Salesforce, Peter defined flows for inbound message handling using Process Builder. To define message responses, he created rules based on a user's previous engagement with Team Rubicon. For outbound messaging, Peter used a Salesforce custom object to capture donor opt-in preferences.

Looking for a shortcut?

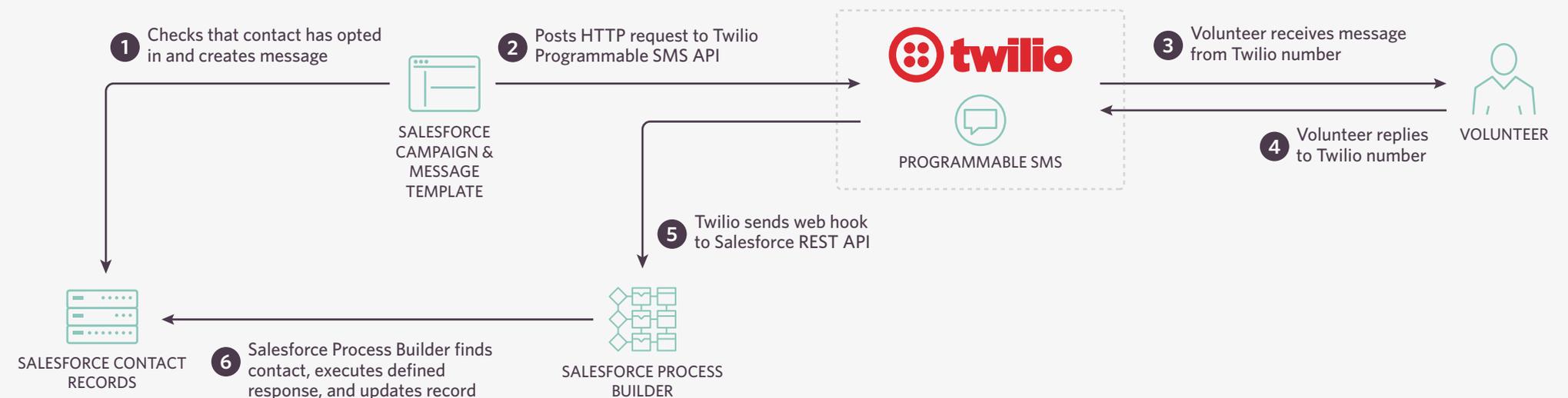


Engage your supporters with the new Twilio for Salesforce app.

[START BUILDING](#)



MESSAGING FLOW



BUILDING FRIENDSHIPS WITH A SCALABLE CALLING SERVICE

Age UK

Age UK fights chronic loneliness among older people by connecting them with volunteers over a weekly phone call. After the charity's manual call system plateaued at 2,500 calls per month, Age UK built a scalable system capable of helping thousands of additional people each week.

THE TEAM

Richard Holland
Solutions Architect

Steve Fate
Operations Manager

Chuk Ezigwe
Project Manager

Reason Digital
Developers

Webcredible
UX Consultants



"We've connected thousands of people to volunteers over the years. With this new system, we'll be able to help even more."

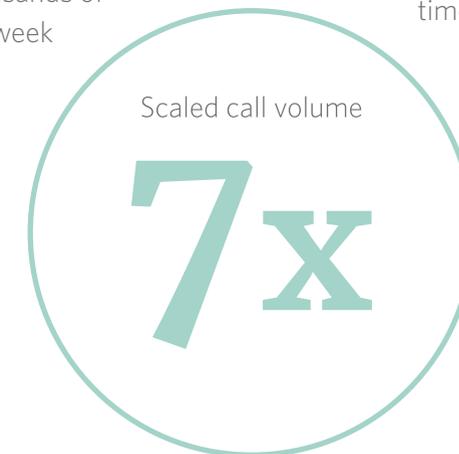
RICHARD HOLLAND

OBJECTIVE

Scale call capacity and volunteer force securely

Age UK needed a new technology infrastructure for its Call in Time service to replace the labor-intensive manual system it had been using since 2005. Age UK's new system needed to:

- Open volunteering to the public with remote calling while maintaining safety and security
- Scale to handle thousands of additional calls per week
- Keep Age UK's staff workload at the same level



OUTCOME

Thousands of new friendships made with Call in Time

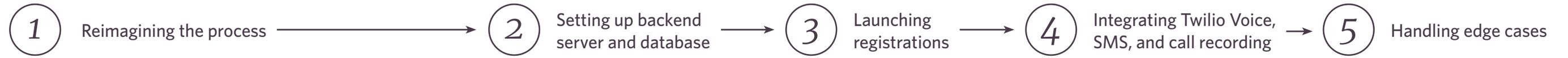
After an advertising blitz, Age UK vetted 2,000 volunteers within a few weeks through the newly automated process. "We had to stop, because we had too many people," Richard says. While the old system handled 2,500 calls per month, Age UK is now scaling to 5,000 calls per week. The redesigned Call in Time has won several awards, including two BIMA Awards for Product and Service Design, the UXUK Award for Best Innovation, and the Third Sector Award for Breakthrough of the Year. Call in Time also contributed to Age UK winning DL100 Digital Charity of the Year 2018.

ACTION

Automated the screening and calling process

Richard Holland, Solutions Architect at Age UK, designed a scalable Twilio-powered solution to replace the manual calling system. A new web app matches volunteers and older people, known as Call in Time members, based on shared interests such as hometown or music, giving callers common ground for conversation. Using Twilio, Age UK connects callers without requiring people to exchange numbers, streamlining the screening process for volunteers while adding a layer of safety and security for both parties. The app initiates calls by dialing volunteers and members individually at the scheduled time. After a simple IVR selection, they're connected in a conference call. All calls are recorded for safeguarding. Richard used a serverless infrastructure for economy and on-demand scalability during peak hours.

BUILDING AGE UK'S APPLICATION



1 **Reimagining the process**
 Call in Time volunteers were historically restricted to employees at Age UK's corporate partners. All volunteers were vetted and matched manually, with information recorded on large spreadsheets. The Age UK team realized it needed an automated solution to scale and open volunteering to the public. This required figuring out a way to mask phone numbers and record calls for members' safety—which Twilio enables.

2 **Setting up backend server and database**
 To save the charity money while offering a scalable, event-driven service, Richard selected a serverless architecture, using AWS Lambda and RDS to power the application. Working with Reason Digital, Age UK created CloudFormation templates to automate the infrastructure setup and expedite development.

3 **Launching registrations**
 Age UK opened registration two months later, just in time for its Christmas campaign. The organization received more than 2,000 volunteer registrations in the first two weeks.

4 **Integrating Twilio Voice, SMS, and call recording**
 Richard and the development team continued to work on the remainder of the system, staggering the release of each stage from registration to volunteer matching to ultimately placing the call. Using the Twilio Programmable Voice API to route calls, the team launched the first version of the application and began to run tests, tweaking and improving the process along the way.

5 **Handling edge cases**
 Because volunteers or members might miss the initial phone call, Richard implemented rules to handle call failures. Fallback communications automatically escalate from a call retry or SMS reminder to a live agent making a call to check on the member.

Looking for a shortcut?



Create the call flow for your community with Twilio Studio.

[START BUILDING](#)

SOFTWARE STACK

Twilio products

Programmable Voice
 Programmable SMS
 Lookup

Programming language

Node.js

Hosting service

AWS Lambda triggered by
 CloudWatch

Web server

AWS Lambda

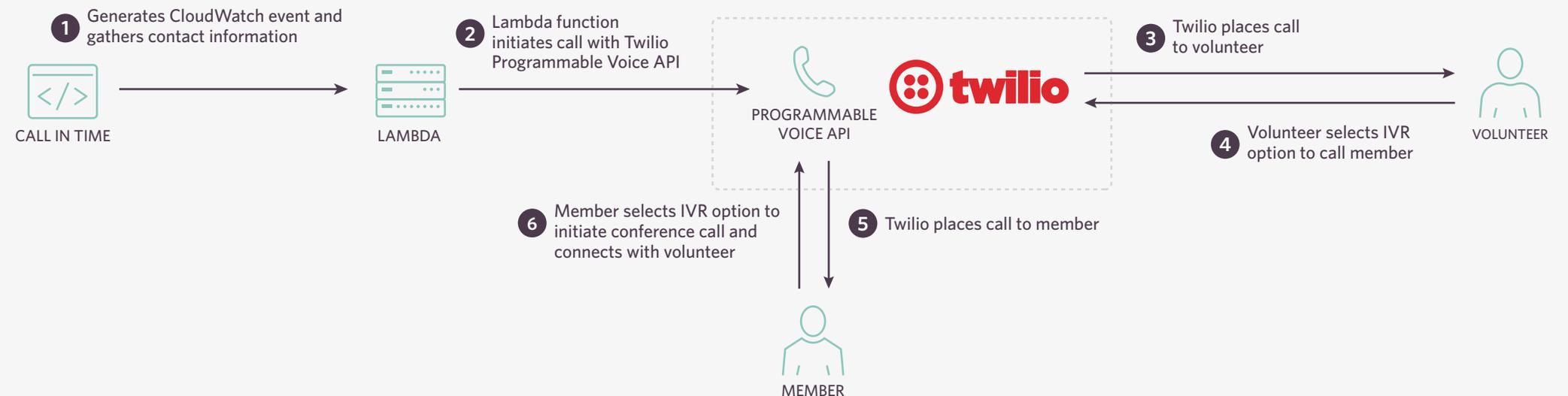
Database

MySQL

Front end

Vue.js front end via CloudFront

CALL FLOW



Getting started with Twilio

The recipes in this book illustrate a few of the many ways Twilio enables you to build powerful connections with constituents, volunteers, and supporters.

The opportunities are vast, but getting started is simple. You can create your first chatbot or IVR with Twilio Studio in just a few minutes. Or use Twilio for Salesforce to create personalized SMS conversations with people in your Salesforce database using the tools you already know.

If you're looking for a place to start, we're just a [click away](#). We'd love to talk with you about your engagement goals.

ABOUT TWILIO

More than two million developers around the world have used Twilio to unlock the magic of communications to improve any human experience. Twilio has democratized communications channels such as voice, text, chat, and video through APIs that are simple enough for any developer to use yet robust enough to power the world's most demanding applications. By making communications a part of every software developer's toolkit, Twilio is enabling innovators across every industry—from emerging leaders to the world's largest organizations—to reinvent how they engage with their audiences.

ABOUT TWILIO.ORG

Twilio.org is the social impact arm of Twilio. Our mission is to fuel communications that give hope, power, and freedom. To achieve this, we connect social impact organizations, passionate software developers, and the full power of the Twilio platform to ignite positive change on a local to global scale. We support nonprofits and social enterprises with credits and discounts through our Impact Access Program, volunteer developers through the Impact Corps, and grants and investments through the Twilio.org Impact Fund.



Photo credit: DoSomething.org

JOIN THE TWILIO.ORG IMPACT ACCESS PROGRAM

The Impact Access program is your gateway to support from Twilio to help you reach your communication goals. Benefits for social impact organizations include Twilio product discounts, developer support, funding, and more.



\$500 USD Twilio kickstart credit



Exclusive discounts on Twilio products



Volunteer developer support through the Impact Corps



Technical resources for nonprofit communications



Invitation to apply for grants and investments through the Impact Fund

