



# Build your own mass notification service for disaster recovery



## Communication is the most important aspect of continuity.

Pushing out timely and accurate information to your workforce during a disaster helps to mitigate disruption, minimise threat to human safety, and promote behaviours that preserve continuity.

The trouble is, doing this at scale can be expensive and difficult. Mass notification services can easily cost smaller businesses several thousand pounds, with prices easily running into five or six figures for global, multi-site deployments. No one should be priced out of continuity. That's why we've designed a simple Mass Notification Service that you can build with a combination of existing tools and platforms for less than £50 per year.

The only requirements are a workforce with mobile phones and about an hour of free time to configure.

## What you need



A Twilio account from which to push notifications via SMS or voice.



Excel or Google Sheets to manage and organise your list of contacts.



A Zapier account to connect your recipient list to your Twilio account.

### Twilio

Twilio is a communications platform that allows developers to programmatically make and receive phone calls and SMS messages.

### Excel & Google Sheets\*

Excel and Google Sheets hopefully require no introduction. For the Mass Notification Service to work, the only caveat here is that these spreadsheets must be saved online.

For Excel users, your spreadsheet must be stored on OneDrive for Business - i.e. not locally or on a shared server. (OneDrive for Business is included in Office 365 subscriptions).

For Google Sheets users, your spreadsheet needs to be stored on Google Drive.

### Zapier

Zapier is a tool that connects web apps like Office 365, Google Docs, Slack, Mailchimp, Trello and Salesforce. It allows you to create automated workflows so when something happens in one app, an action occurs in another.

\*To ensure redundancy, we recommend users of Office 365 configure their Mass Notification Service using Google. It's inadvisable to use the same platform for both normal and emergency communications.

# How much does it cost?

## Twilio

You can sign up for a Twilio account for free. You pay only for the telephone number (from \$1 per month) and the number of messages sent:

**SMS pricing:** \$0.04 per SMS (140 characters)

**Voice call pricing:** Costs per minute are from \$0.04

It's possible to fit more into one minute of voice call than in a single 140 character text message.

## Excel & Google Sheets

**Office 365:** Starts at £3.10 per user, per month

**G Suite:** Starts at £3.30 per user, per month  
**There is also a free legacy edition with some reduced functionality**

## Zapier

**Zapier free tier:** Free for use of up to five 'Zaps' (individual two-step workflows)

**Zapier paid tier:** Starts at \$20 per month with access to advanced features and app integrations

# Example scenario

We calculated costs for an example organisation with 100 users using the free tier for Zapier and a free Google Sheets account. The total cost is under £50.00 per year.

Cost per SMS	Number of employees	Cost per alert	Number of alerts per test/disaster	Total cost per test/disaster	Annual local number subscription cost	Total annual cost (1 test & 1 disaster)
\$0.04	100	\$4.00	5	\$20.00	\$12.00	\$52.00

Assumptions:

- 1 telephone number
- A total of 5 different messages or 'alerts' being sent to every user (SMS only)
- 1 full test per year and 1 actual DR invocation

# Background

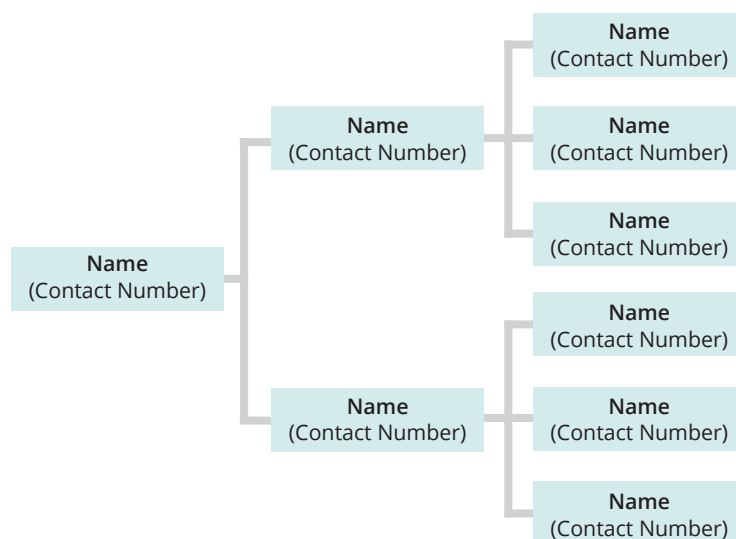
## What is a Mass Notification Service?

A Mass Notification Service is a tool used to communicate with large groups of people. They're often used by large enterprises to send unique messages to different groups or combinations of groups. They may include Geographic Information System data for sending messages to users within a certain proximity to an event and they track individual responses, for reporting both during the incident and afterwards.

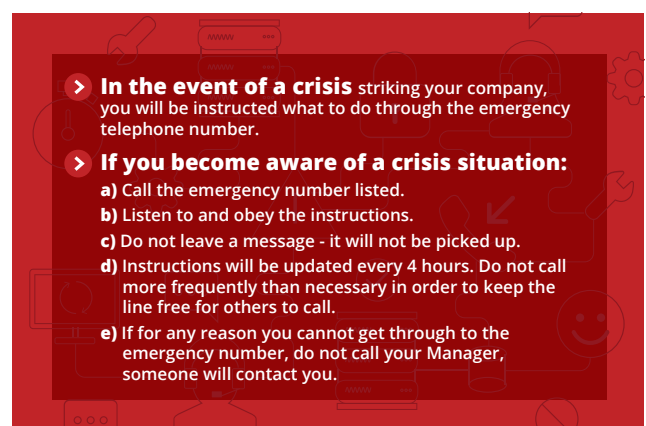
## What are the alternatives?

The traditional method of emergency communication is to use a call tree. Put simply, this represents a series of phone calls cascading down a predetermined hierarchy, i.e. one person calls two people, who may call their individual team leaders, who call their subordinates. This means that no single person needs to make more than perhaps five calls each for updates to flow throughout the organisation.

It is cheap and simple, but not without its faults – predominantly that it's a manual process which if broken early on, leaves large sections of the organisation in the dark.



Another method is to have a centralised phone line for staff to call in a disaster to hear a pre-recorded message that is updated throughout the incident. Whilst this minimises the time spent by the EMT communicating to the team (so they spend more time fixing the problem), it also requires immediate and constant updates following the incident and every time there's a change in circumstances.



# How can we do better?

Good communication is the best remedy to major disruption, and in an emergency scenario, it's important to make that distinction. "Good" communication fulfils two basic criteria:

- It's relevant to the recipient at that moment
- It's delivered consistently



## Relevancy

Mass notification services are good for more than generic broadcasts – you should tailor the messaging you push out according to the needs of different groups within your organisation. For example:

- Your office-based workforce need updates around evacuation, relocation and on-site hazard avoidance
- Your line managers may need updates on changes to reporting lines
- Your public-facing staff may need updates around media communications
- Your Emergency Management Team (EMT) may need details on where to assemble and updates on recovery progress

Equipping the right people with accurate, timely and relevant information can be instrumental in maintaining continuity throughout disaster.



## Consistency

Breakdown or unavailability of traditional communication channels is incredibly common during disasters.

The problem here is twofold, as anyone who's lost a mobile phone will understand. First, the means of communication disappears and second, vital contact information is suddenly unavailable.

Disasters that affect both email and telephone systems strip the organisation of the means and data needed to communicate internally.

Mass notification services must then exist outside of business-as-usual communication infrastructure.

# Step By Step Guide - Creating the Mass Notification Service

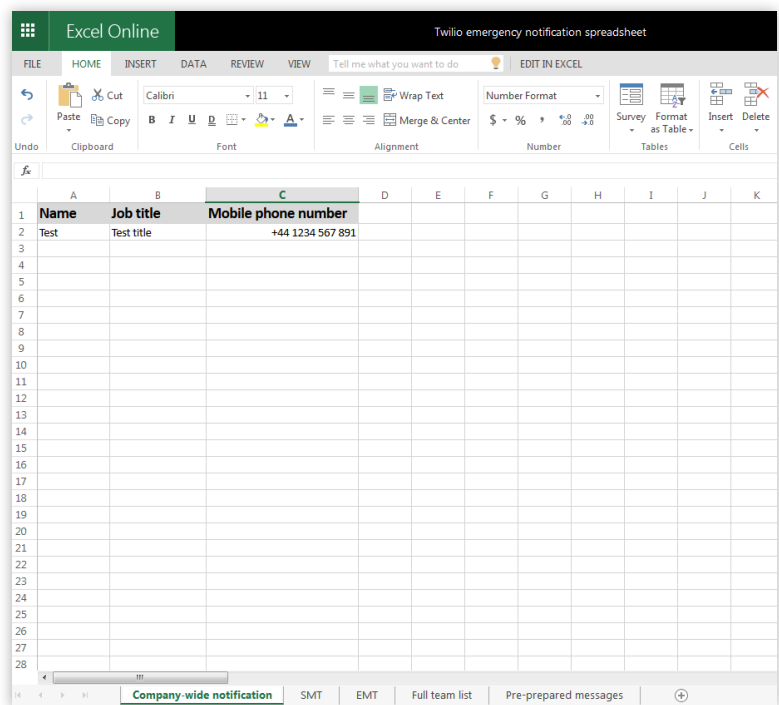
## Step 1 – Creating Your Spreadsheet

This step is the same whether you are using Excel or Google Sheets. Create a spreadsheet with mobile phone numbers for your team.

### 1.1

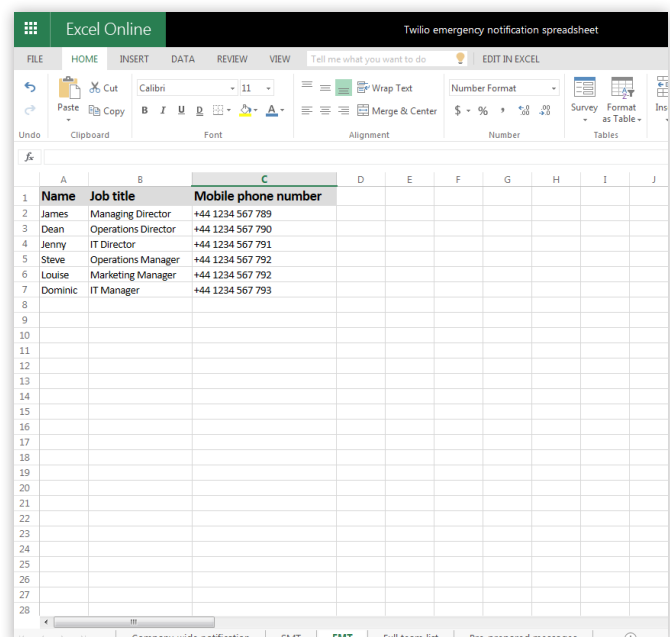
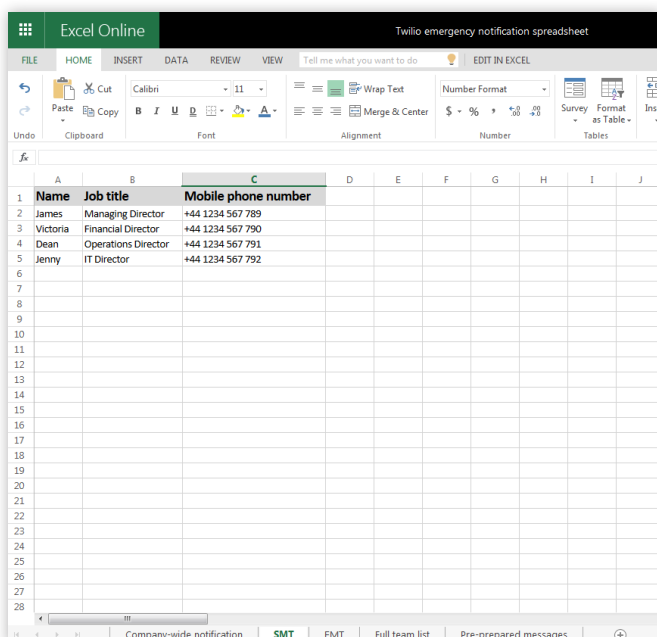
Start by creating the worksheet that will be used for the notification. Give this sheet a name that describes who the message is for, such as: “Company-wide notification”.

In order to test the integration, this sheet will need at least one entry so add your own details and mobile number.



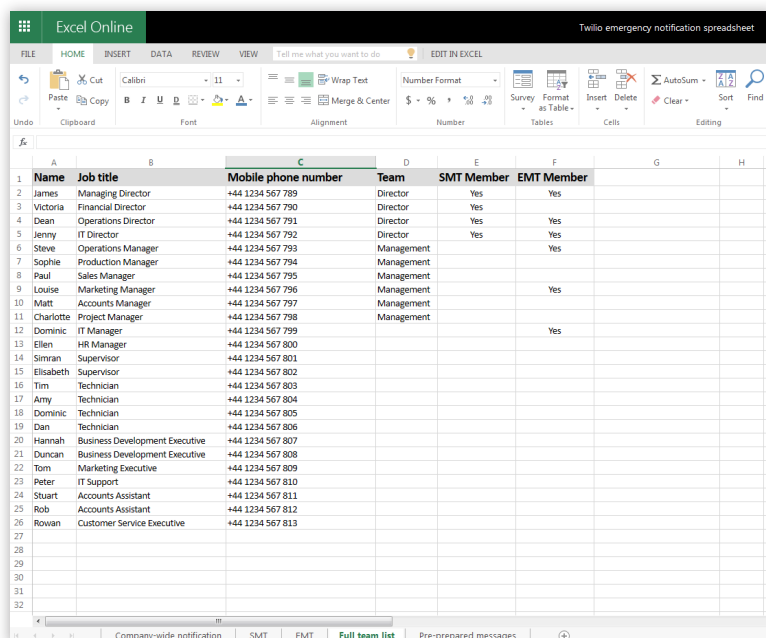
### 1.2 (Optional)

You may want to send different messages to different groups. If so, create a separate worksheet for each group.



### 1.3

Create a worksheet with the full list of mobile numbers for your organisation, in this case named “Full team list”. If your team members belong to multiple teams or groupings, also include that information here.



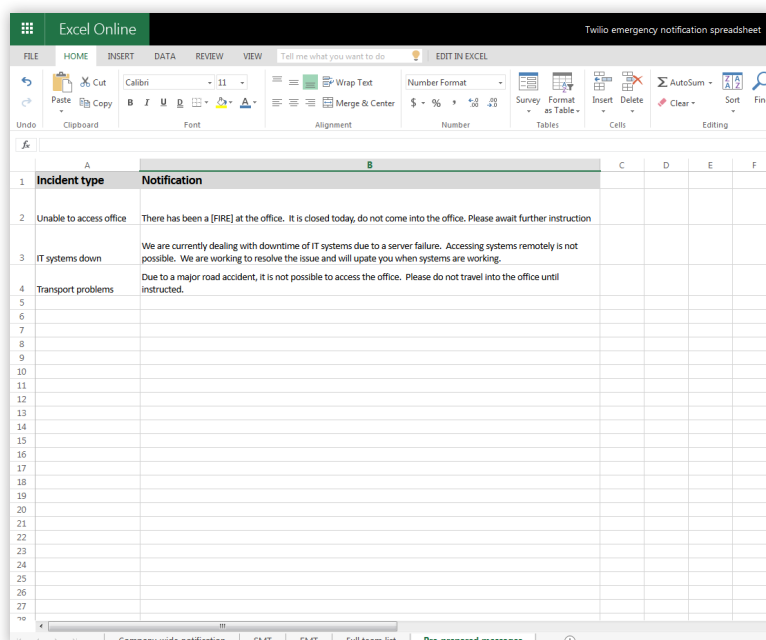
Name	Job title	Mobile phone number	Team	SMT Member	EMT Member
James	Managing Director	+44 1234 567 789	Director	Yes	Yes
Victoria	Financial Director	+44 1234 567 790	Director	Yes	Yes
Dean	Operations Director	+44 1234 567 791	Director	Yes	Yes
Jenny	IT Director	+44 1234 567 792	Director	Yes	Yes
Steve	Operations Manager	+44 1234 567 793	Management		Yes
Sophie	Production Manager	+44 1234 567 794	Management		
Paul	Sales Manager	+44 1234 567 795	Management		
Louise	Marketing Manager	+44 1234 567 796	Management		Yes
Matt	Accounts Manager	+44 1234 567 797	Management		
Charlotte	Project Manager	+44 1234 567 798	Management		
Dominic	IT Manager	+44 1234 567 799			Yes
Ellen	HR Manager	+44 1234 567 800			
Simran	Supervisor	+44 1234 567 801			
Elisabeth	Supervisor	+44 1234 567 802			
Tim	Technician	+44 1234 567 803			
Amy	Technician	+44 1234 567 804			
Dominic	Technician	+44 1234 567 805			
Dan	Technician	+44 1234 567 806			
Hannah	Business Development Executive	+44 1234 567 807			
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Peter	IT Support	+44 1234 567 810			
Stuart	Accounts Assistant	+44 1234 567 811			
Rob	Accounts Assistant	+44 1234 567 812			
Rowan	Customer Service Executive	+44 1234 567 813			

### 1.4

Create a tab with a list of any pre-prepared messages you might need to send.

Look at your Risk Register and Business Impact Analysis to determine the most likely incidents that you may need to inform staff about.

Although you will need to amend individual statements to add specific detail, having pre-agreed and authorised statements can speed up the process of sending messages during an incident.



Incident type	Notification
Unable to access office	There has been a [FIRE] at the office. It is closed today, do not come into the office. Please await further instruction
IT systems down	We are currently dealing with downtime of IT systems due to a server failure. Accessing systems remotely is not possible. We are working to resolve the issue and will update you when systems are working.
Transport problems	Due to a major road accident, it is not possible to access the office. Please do not travel into the office until instructed.



Remember that your message will be interpreted and spoken aloud by text-to-speech software. Sound out your messages phonetically and make adjustments to account for this i.e. “IT downtime” will need to be “I T Downtime” to ensure the computer doesn’t read the abbreviation as the word “it”.

You can also choose the “language” of the voice. It can be male or female with an English or an American accent. In our tests, we found the American accent slightly slower, easier to understand and less associated with pre-recorded telemarketing phone calls such as PPI schemes.

## Step 2 – Set up a Twilio Account

This part is simple. Just follow the sign-up process at <https://www.twilio.com/>

Once you have created your account, add payment details and buy enough credit to pay for your phone number and test messaging.

Twilio is the tool that gives you the ability to send both SMS and voice messages, but beyond setting up the account, you don't need to interact with it.

## Step 3 – Connecting Zapier and Sending Messages to your List Using Twilio

### 3.1 - Create a Zapier account

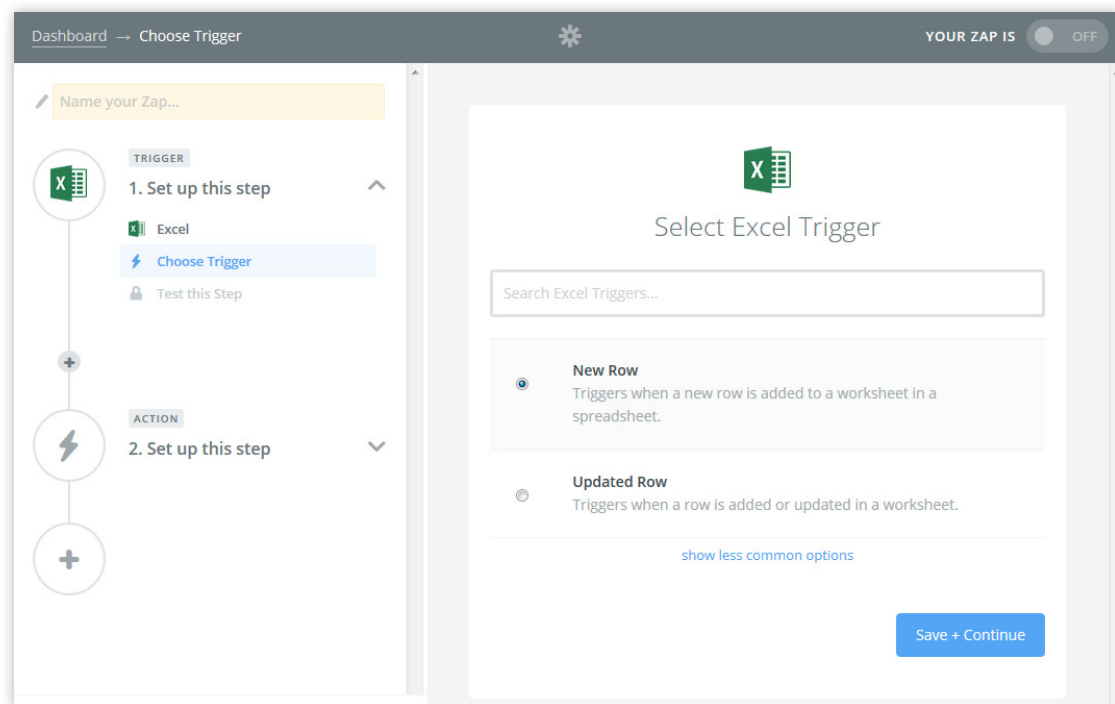
Sign up for free here: <https://zapier.com/>

### 3.2 - Make a “Zap” and create the trigger

To create your first workflow, click “Make a Zap” and pick the application that will be the trigger – in this case either Excel or Google Sheets.

### 3.3 - Select the trigger

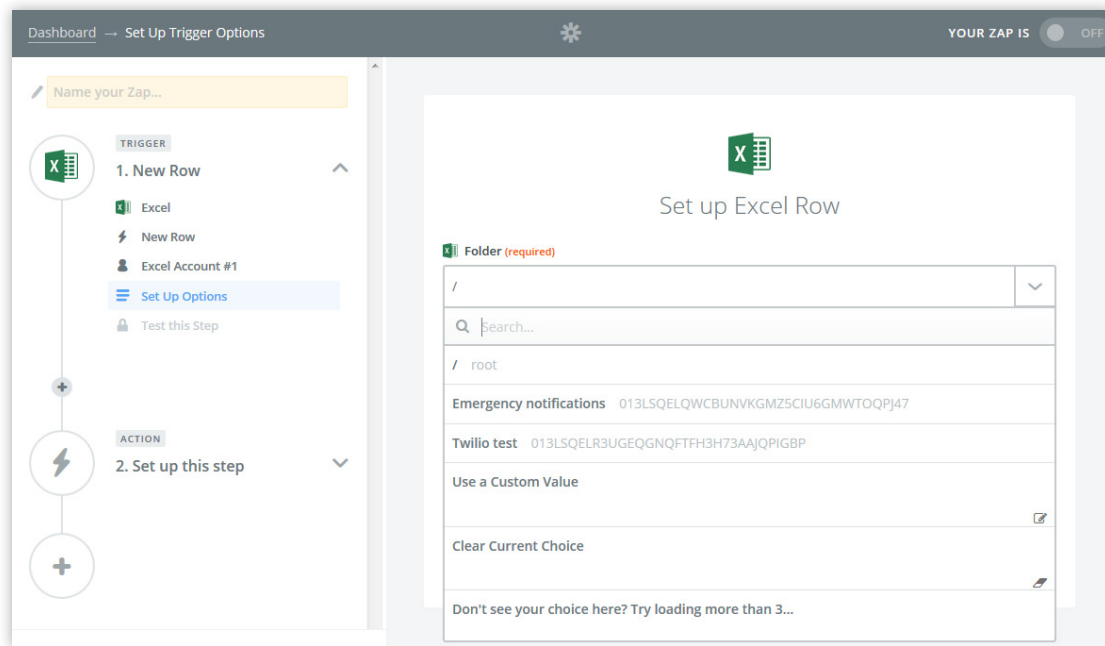
For spreadsheets your trigger can be either when a row is updated or a new row is added. To make it easier to see what has been changed, we've chosen “New Row”.



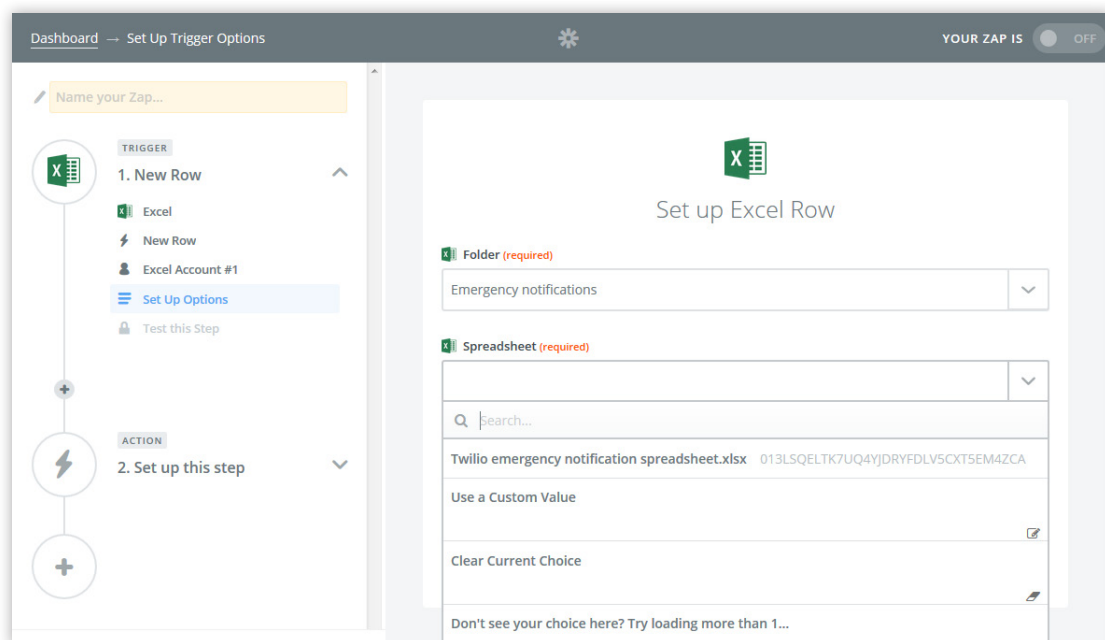


### 3.4 - Connect your Office 365 or Google Drive account and select the spreadsheet.

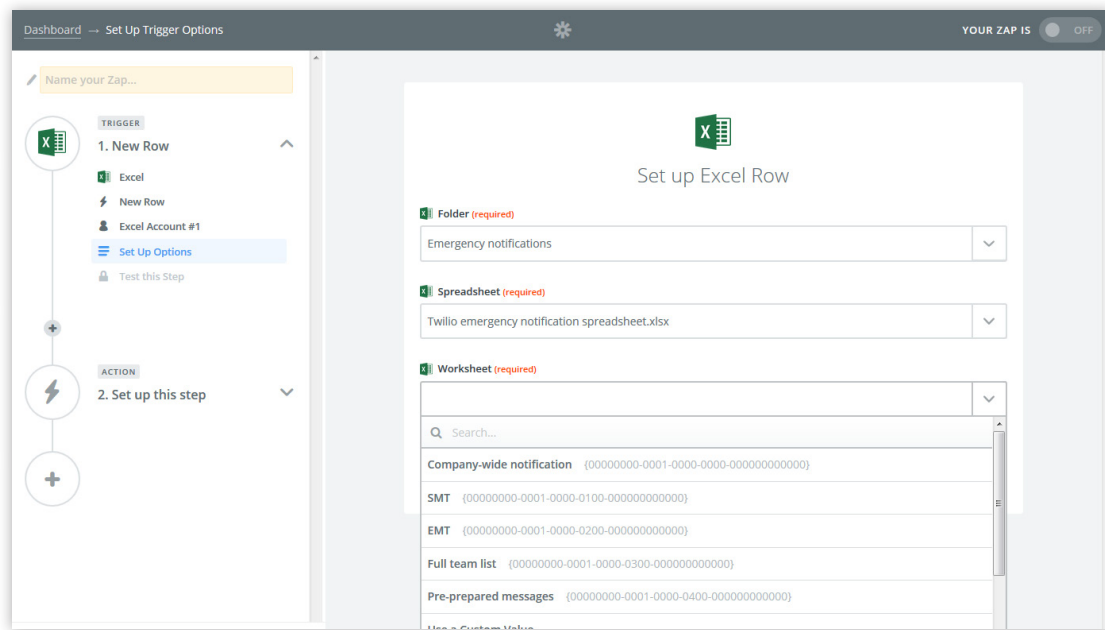
At this point, you will need to be signed in to your Office 365 or G Suite. We suggest creating a specific folder for this spreadsheet.



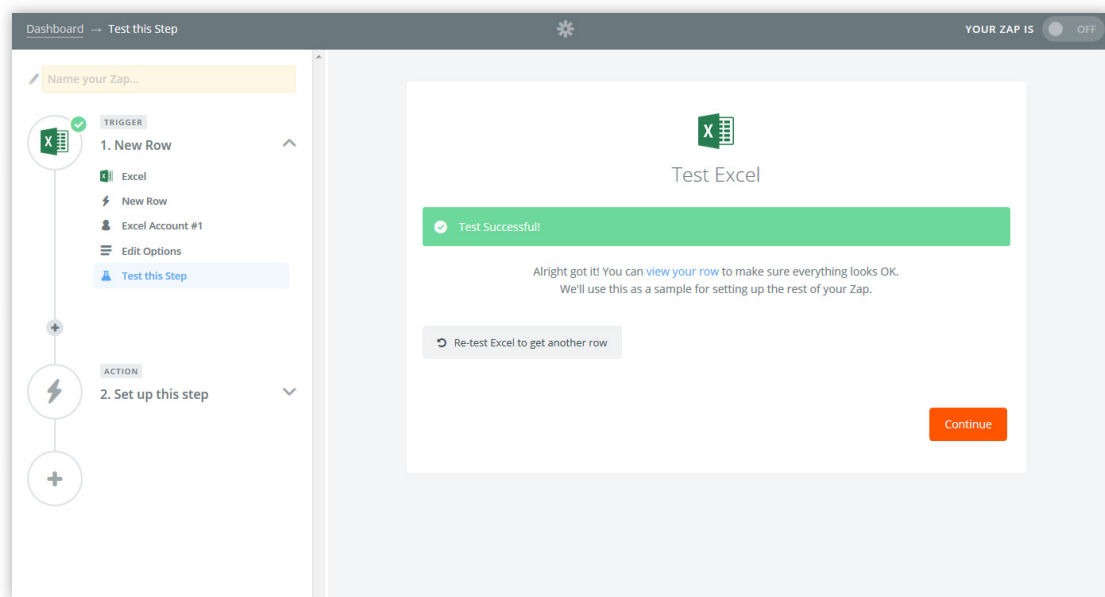
Select the file:



Select the specific worksheet:

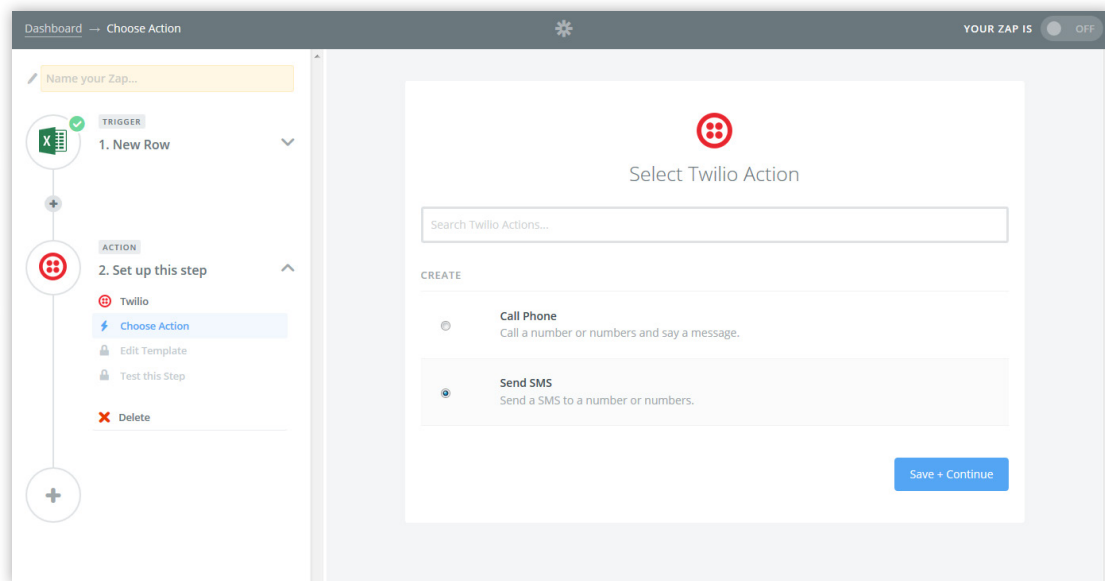


Zapier will now check the first row of the sheet in order to test (this is why we recommended adding your own name and number on the first row).



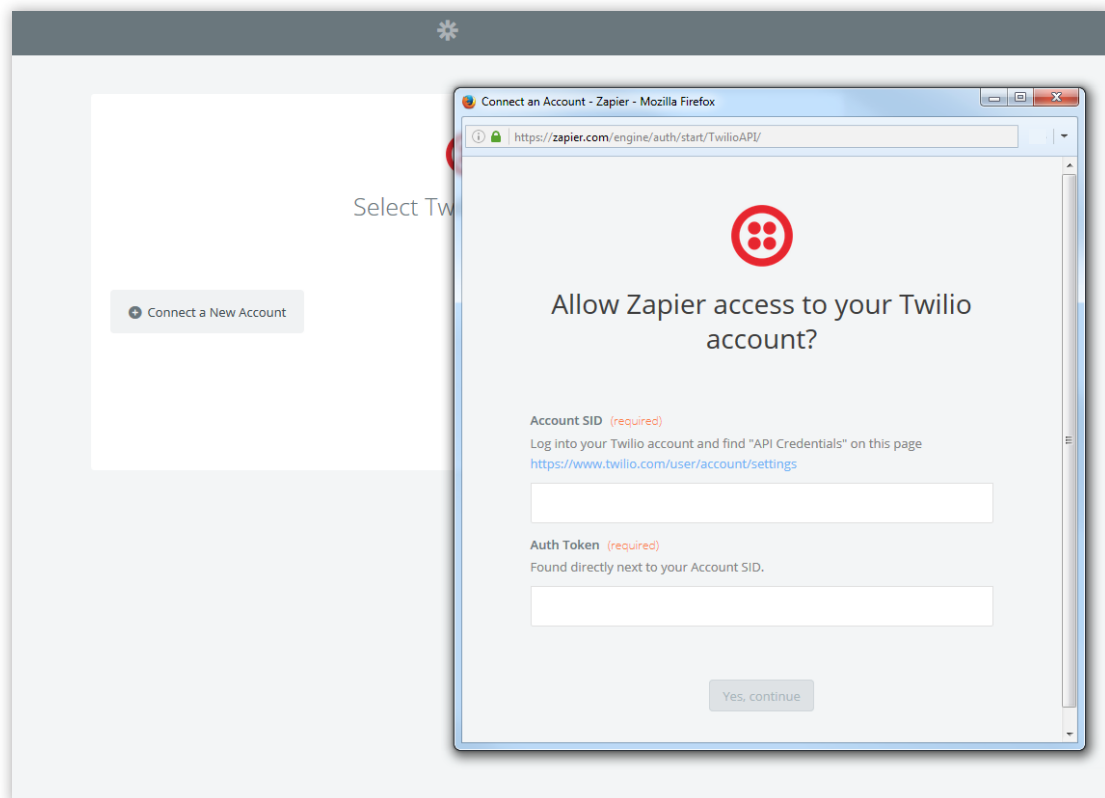
### 3.5 - Create the action

Choose Twilio as the app and pick your action. In this case, we are opting to send an SMS here but you could choose an automated voice call.



### 3.6 - Connect your Twilio account

Go to your account Console Dashboard in Twilio to find the Account SID and Authentication Token. Add this into Zapier.



### 3.7 - Set up the action

Choose the "From Number". If you have only set up one number this will be your only option.

Dashboard → Set Up Send SMS Template

YOUR ZAP IS OFF

Name your Zap...

TRIGGER

1. New Row

ACTION

2. Send SMS

Twilio

Send SMS

Twilio Account #1

Set Up Template

Test this Step

Delete

Set up Twilio SMS

From Number (required)

To Number (required)

Required number format: 15554443333 or 44111222333. Can send to multiple numbers with commas: 15554443333,44111222333

Search...

New Row

Job title	Test title
Mobile phone number	+4 4123 456 789
Name	Test
ID	2
Row	2

Missing choices? Re-test step 1.

truncate and only send one message.

Choose the number you will be sending the message to. Here you can choose the column that the number will be selected from in Excel / Google Sheets and you should see your own number here. Add the message that you want to send (copy from the pre-prepared messages in your spreadsheet).

You can also choose to split the message by choosing "Yes" in the appropriate field. If your message is longer than 140 characters and you do not choose "Yes" to split the message, you will only send the first part. Note - this does mean that if your message is 2 or 3 140 character SMS messages long, you will pay for 2 or 3 SMS' per recipient.

From Number (required)

To Number (required)

Required number format: 15554443333 or 44111222333. Can send to multiple numbers with commas: 15554443333,44111222333

Step 1 Mobile phone number

Message (required)

Due to a major road accident, it is not possible to access the office. Please do not travel into the office until instructed.

Media URL (optional)

Must be a URL that Twilio can download (so private URLs or files may not work)

Split Message? (optional)

Should we split the message and send multiple SMS if the message is more than 160 characters? Otherwise we will truncate and only send one message.

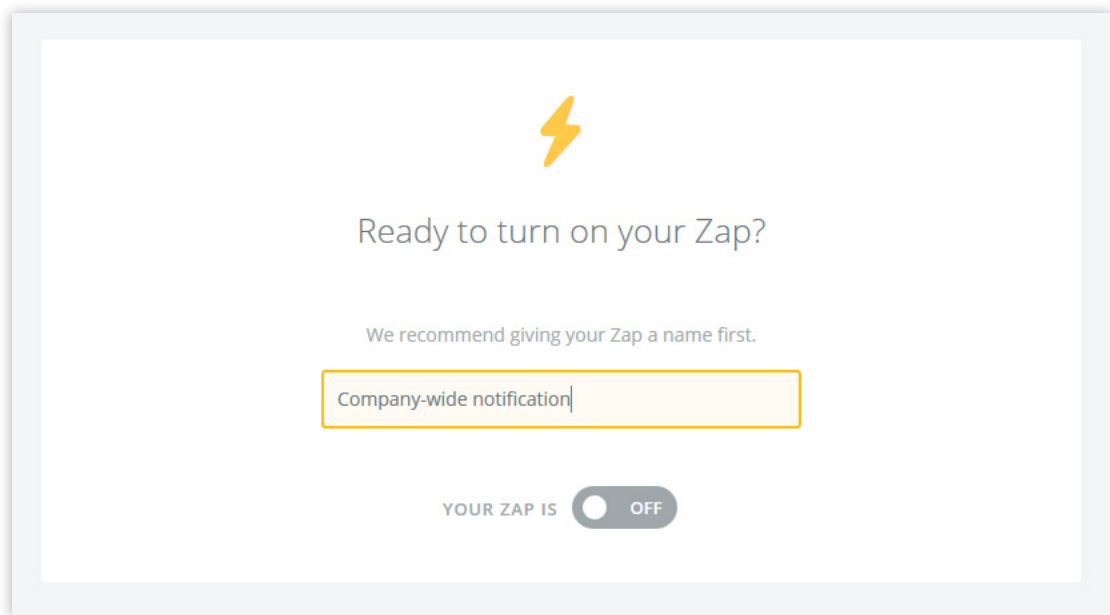
yes

Search...

yes

### 3.8 - Name the Zap

If you are going to have multiple messages, give the Zap a distinguishing label. Additionally, if you are going to use multiple types of message (like SMS and voice) include this in the name too.



Ready to turn on your Zap?

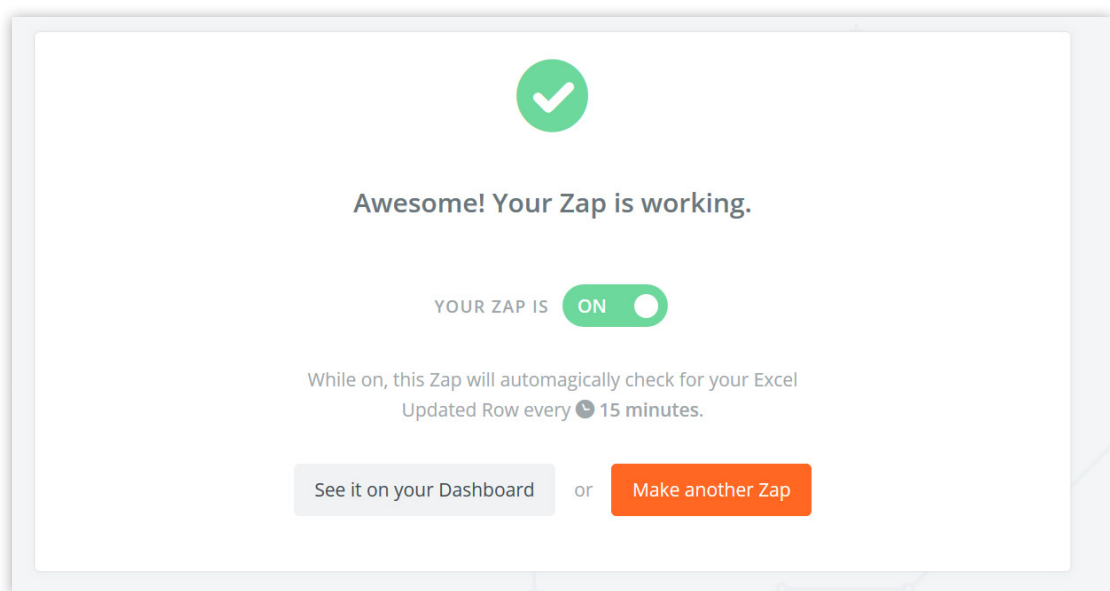
We recommend giving your Zap a name first.

Company-wide notification

YOUR ZAP IS ☐ OFF

### 3.9 - Make it Live

Turn the Zap on. Zapier is now checking the worksheet every 15 minutes for any newly added rows.



Awesome! Your Zap is working.

YOUR ZAP IS ☒ ON

While on, this Zap will automatically check for your Excel  
Updated Row every 15 minutes.

See it on your Dashboard or Make another Zap

## Step 4 – Send the Mass Notification

Now you're set up, sending out a message is simple. Just go to your spreadsheet and copy any or all rows from the full team list and past it into the "Company-wide notification" worksheet:

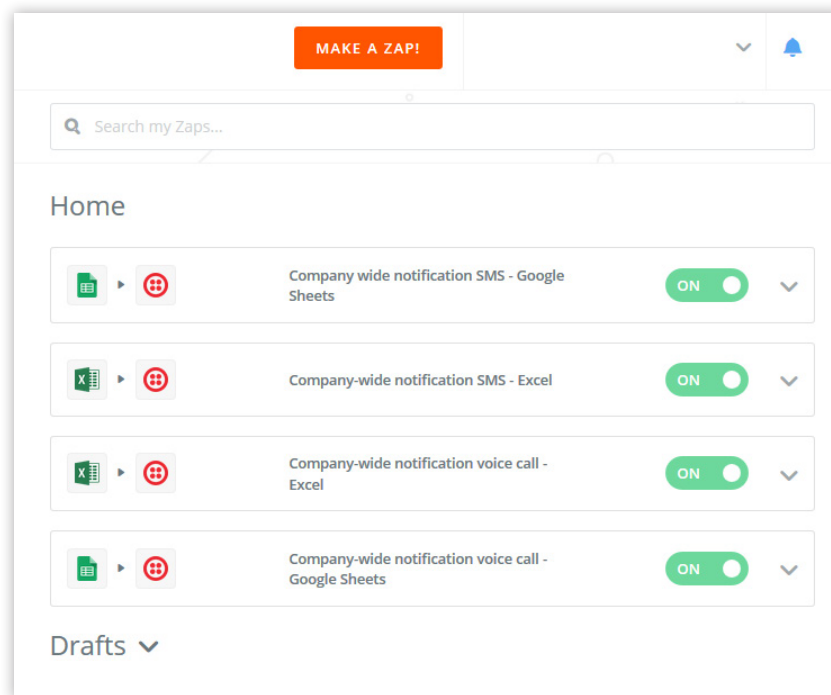
	A	B	C	D	E	F	G	H
1	Name	Job title	Mobile phone number	Team	SMT Member	EMT Member		
2	James	Managing Director	+44 1234 567 789	Director	Yes	Yes		
3	Victoria	Financial Director	+44 1234 567 790	Director	Yes			
4	Dean	Operations Director	+44 1234 567 791	Director	Yes	Yes		
5	Jenny	IT Director	+44 1234 567 792	Director	Yes	Yes		
6	Steve	Operations Manager	+44 1234 567 793	Management		Yes		
7	Sophie	Production Manager	+44 1234 567 794	Management				
8	Paul	Sales Manager	+44 1234 567 795	Management				
9	Louise	Marketing Manager	+44 1234 567 796	Management		Yes		
10	Matt	Accounts Manager	+44 1234 567 797	Management				
11	Charlotte	Project Manager	+44 1234 567 798	Management				
12	Dominic	IT Manager	+44 1234 567 799			Yes		
13	Ellen	HR Manager	+44 1234 567 800					
14	Simran	Supervisor	+44 1234 567 801					
15	Elisabeth	Supervisor	+44 1234 567 802					
16	Tim	Technician	+44 1234 567 803					
17	Amy	Technician	+44 1234 567 804					
18	Dominic	Technician	+44 1234 567 805					
19	Dan	Technician	+44 1234 567 806					
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22	Tom	Marketing Executive	+44 1234 567 809					
23	Peter	IT Support	+44 1234 567 810					
24	Stuart	Accounts Assistant	+44 1234 567 811					
25	Rob	Accounts Assistant	+44 1234 567 812					
26	Rowan	Customer Service Executive	+44 1234 567 813					

Within 15 minutes your message will be sent.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Name	Job title	Mobile phone number											
2	James	Managing Director	+44 1234 567 789	Director	Yes	Yes								
3	Victoria	Financial Director	+44 1234 567 790	Director	Yes									
4	Dean	Operations Director	+44 1234 567 791	Director	Yes	Yes								
5	Jenny	IT Director	+44 1234 567 792	Director	Yes	Yes								
6	Steve	Operations Manager	+44 1234 567 793	Management		Yes								
7	Sophie	Production Manager	+44 1234 567 794	Management										
8	Paul	Sales Manager	+44 1234 567 795	Management										
9	Louise	Marketing Manager	+44 1234 567 796	Management		Yes								
10	Matt	Accounts Manager	+44 1234 567 797	Management										
11	Charlotte	Project Manager	+44 1234 567 798	Management										
12	Dominic	IT Manager	+44 1234 567 799			Yes								
13	Ellen	HR Manager	+44 1234 567 800											
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26	Rowan	Customer Service Executive	+44 1234 567 813											

## Step 5 – Repeat

Now simply repeat these steps to create messages for your SMT, EMT or to add any additional voice calls. And that's it. You now have a working Mass Notification Service and redundancy in your internal communications.



## Additional Features and Advancements

Using just these three tools, there are a number of other features you can create.

Zapier connects apps and builds workflows without the need for developers. A very simple addition would be to add an email notification, sent to personal email addresses to accompany the SMS and/or voice message.

At the time of writing, Zapier connects over 500 apps, so you can also plug these messages into any other communications platforms you use, such as Slack or Yammer.

If you can devote some development time you can go beyond the integrations offered by Zapier and build specific features.

For instance, at Databarracks we've integrated Twilio with our proprietary service desk which means we can send messages to customers of specific services, or in specific locations, to quickly warn about any local incidents that might affect their operations and require them to invoke DR.

In addition – mass notifications aren't limited to emergency situations. They can be useful for any situation when usual means of communication aren't available, such as:

- Communicating with the IT team when doing maintenance on systems
- Organising teams working on off-site projects