

Content Delivery via Facebook Messenger Bot

1. The Technology

Chatbots are computer programs that use artificial intelligence to hold conversations with real people. Although there have been some noteworthy failures — such as [Microsoft's ill-conceived Tay bot on Twitter](#) — Americans are becoming more accepting of chatbots. According to recent research from contact center solutions firm Aspect, [70% of consumers would prefer to “talk” to a chatbot](#) for simple to moderate transactions and interactions.

In April 2016, Facebook began allowing people to [deploy chatbots on its Messenger app](#), and [the number of bots on the platform now totals over 33,000](#). Examples range from [Pizza Hut's ordering bot](#) to [a holiday gift suggestion bot from Nordstrom's](#). There are also a handful of news organizations, including [CNN](#), [TechCrunch](#) and the [Wall Street Journal](#), who have begun using chatbots on Facebook Messenger to deliver daily content summaries. At TechCrunch's Disrupt conference in September, David Marcus, Facebook's vice president of messaging products, said that [the news vertical has worked well on Messenger](#) and receives good engagement from users. Overall, chatbots have a lot of potential for news organizations, but are not yet widely used.

2. My Hypothesis

Two years ago, the late *New York Times* media critic David Carr opined on the [continued importance of email newsletters for broadcasting content](#). He noted that even as social media and apps take over so much of our attention, email newsletters remain a reader favorite because they provide a curated summary of the most relevant and interesting content available. In 2016, not

much has changed, as media companies from [Vox](#) to the [Texas Tribune](#) are doubling down on email as the most effective way to reach readers.

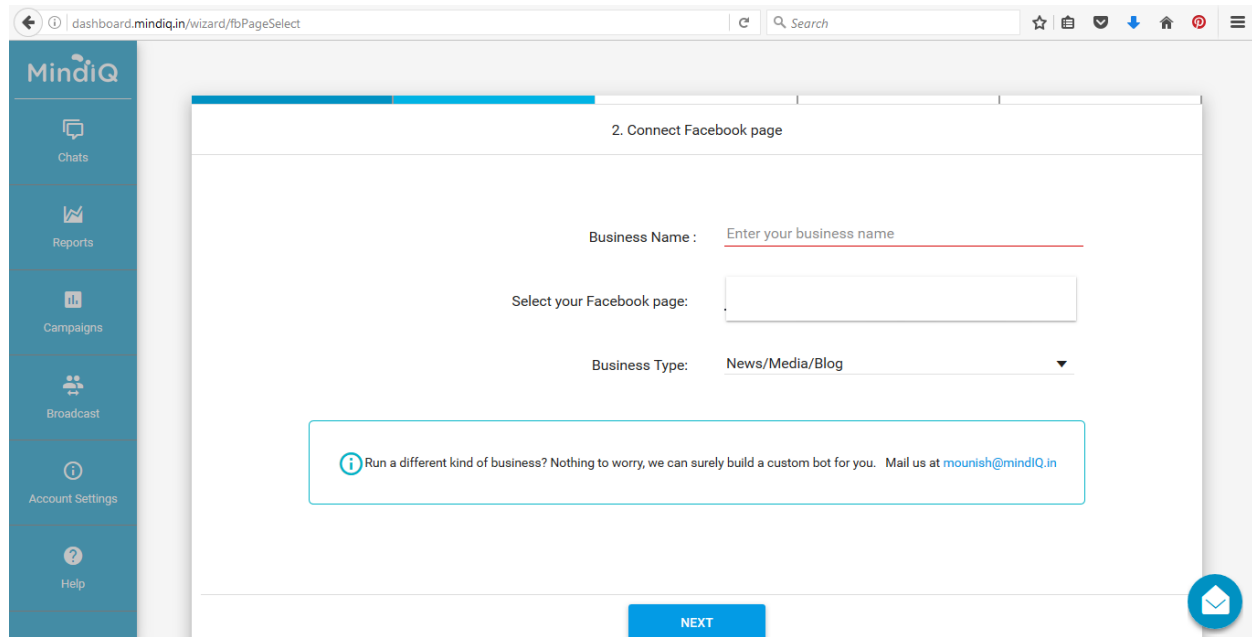
However, younger generations who have grown up with social media and messaging apps are far less likely to use email. According to Jaclyn Ling, director of fashion and retail services at messenger app Kik, [members of Generation Z are three times more likely to open a chat message received through a push notification than an email](#). While these tweens and teens may use email more as they get older and enter college and the professional world, what if they don't?

My hypothesis for my field test was that content sent via a chat app like Facebook Messenger is an effective way to reach younger generations. I planned to test this hypothesis by sending the same piece of content to two groups of people; one group would receive an email “newsletter” while the other would sign up to receive an update via a Facebook Messenger bot. Then, I planned to survey the two groups about their experience and compare the results.

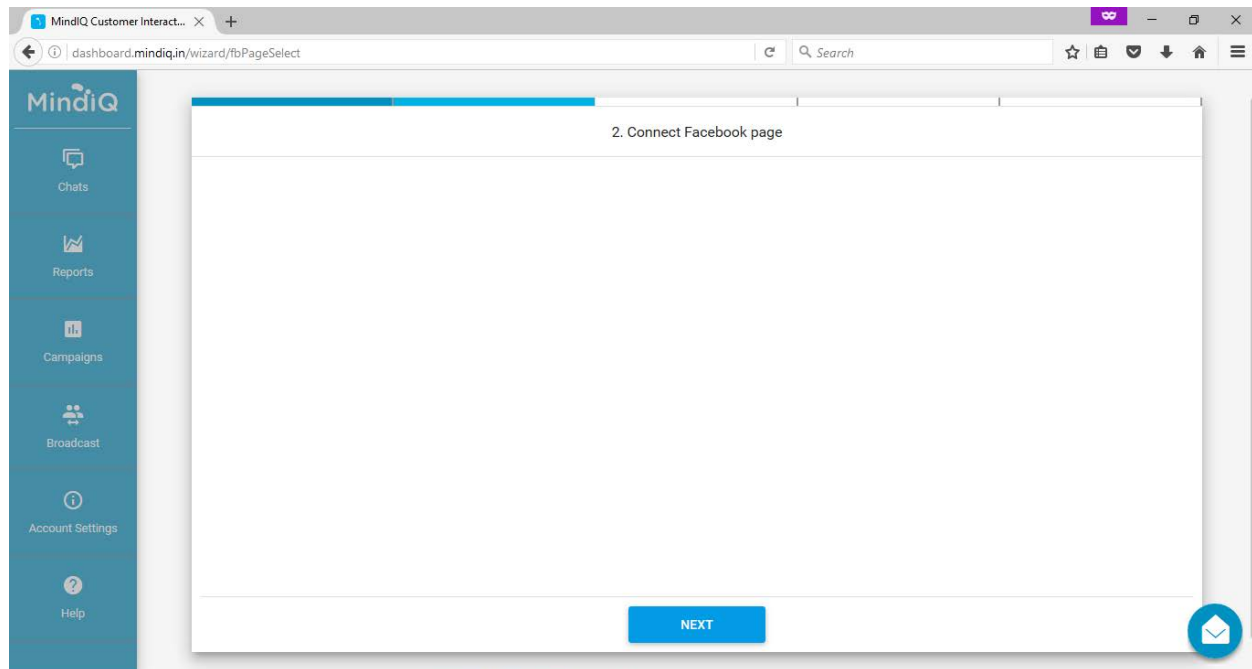
3. The Field Test

My initial plan was to use an out-of-the-box content delivery bot from [MindIQ](#) linked to the RSS feed on my class blog. In my first attempt to set up the bot, I neglected to first set up my Facebook page, so I quit the bot setup and planned to go back and finish at a later time. I also emailed the MindIQ customer service team to confirm that I was doing the setup correctly. One of the founders, Deven, suggested we schedule a time to Skype chat to go over the setup. Deven and his team are based in India, so timing was a little tricky, but we made it work.

When I logged back in to my account for a second attempt at building the bot, the dropdown menu for connecting a Facebook page was blank:



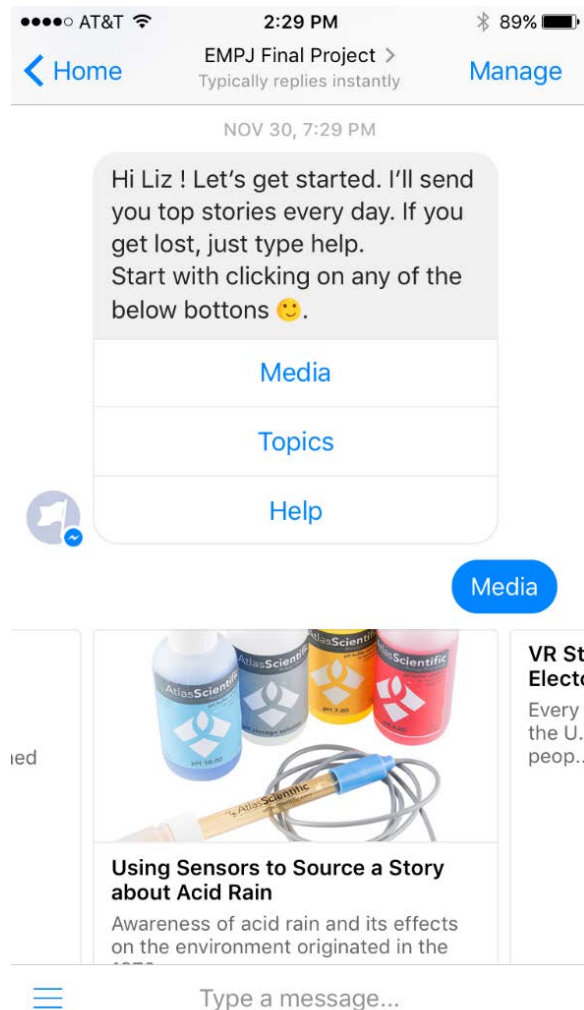
Deven let me know there was a caching problem because I had quit in the middle of setup the first time. He tried to fix the issue, but it ended up getting worse:



After another round of emails and Skype chatting, Deven said he would just have his team build the bot for me if I gave him the RSS feed for my blog and made him an admin on my Facebook page. However, after a week went by, Deven and his team still had not set up the bot,

and Deven stopped responding to my emails.

At this point, I knew I had to get the bot up and running as soon as possible in order to have enough time to test it and carry out the actual field test. So, I logged back in to my MindIQ account. This time, the setup worked as it should and I was able to connect my Facebook page and RSS feed. I'm not sure what happened to Deven, but I never heard from him again.



The next step was testing the bot on myself. I went to the bot page on Facebook Messenger and went through the initial messages to sign up to receive content. The interface for the bot was nicely designed, with buttons to help you get started and a gallery display of recent blog posts. At the same time, there was no way to personalize any aspect of the messaging, which was a definite negative. The bot also did not understand much outside the preset commands.

Everything seemed to be working so I published a new blog post ... and nothing happened. At least not right away. The next morning, I received a message from the bot with

my latest blog post attached. Success! Again, there was no way to control when the broadcast went out, which I found to be a serious drawback to MindIQ.

Over the next week, I recruited 10 of my Communications@Syracuse classmates, most of whom were Millennials, to be my test subjects for the field text. These test subjects were recruited

via a Facebook Messenger group message, so all of the test subjects had at least some familiarity with chat apps. I randomly divided the test subjects into two groups of five so that half would receive an email “newsletter” and half would subscribe to the Messenger bot. The Messenger group successfully subscribed and started interacting with the bot.

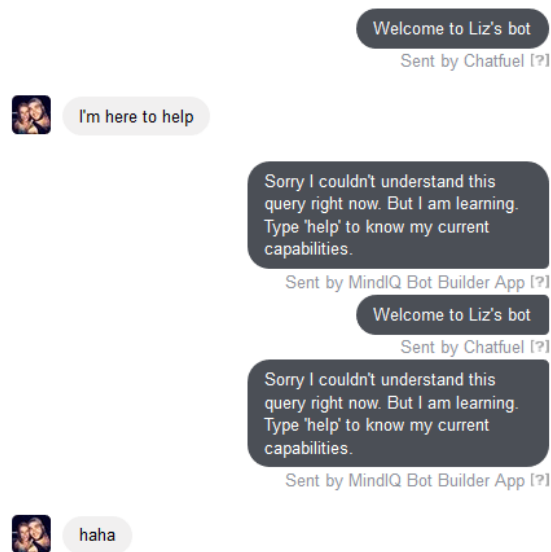
One feature I didn’t know existed but that one of my testers discovered in chatting with the bot was the ability to bring up all content on a certain topic by sending a message with that topic to the bot. For example, sending “virtual reality” to the bot called up all the blog posts I had written that mentioned virtual reality. Although this wasn’t the aspect of chatbots I was testing, I can see how it would be a very useful feature that could replace the search function on a media organization’s website.

Getting back to the test, I published another blog post, and the next morning emailed out my “newsletter,” with the expectation that the bot would send out an update with the blog post to all the subscribers. Unfortunately, that’s not what happened. I’m still not sure why my bot stopped working, but the content broadcast aspect never functioned again. It’s possible Facebook Messenger stopped communicating with the bot because I was not publishing very much content and not enough people were interacting with the bot.

With MindIQ not working, I next attempted to build a bot from scratch using the RSS plugin in [Chatfuel](#). After a lot of trial and error, I still was not successful. Then, one of my classmates noted that Chatfuel has bot templates. One of them, based on TechCrunch’s content bot, had the RSS functionality I wanted to use. However, even with the template, I still could not get the bot to send out a broadcast when I published new content on my blog.

My last ditch effort with Chatfuel was to set up a workaround whereby I would send out only the latest update from my blog at a certain date and time. I knew this was not the prettiest or

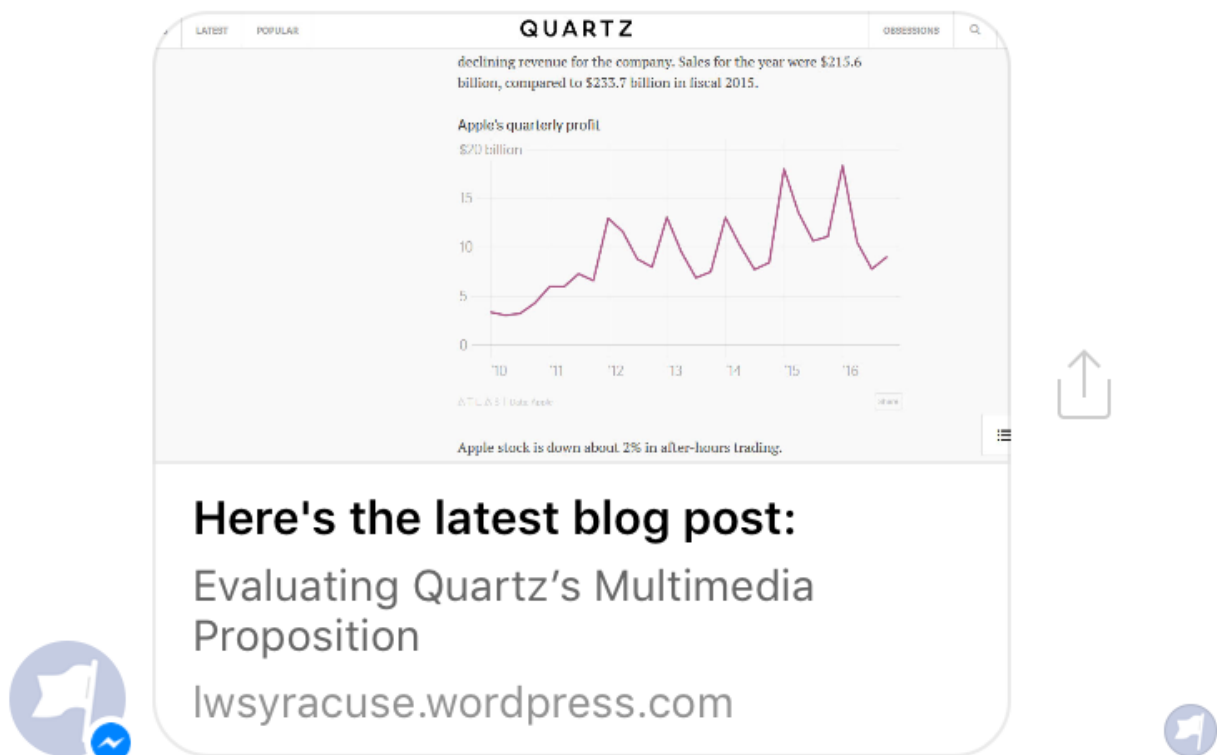
most efficient way to achieve what I was trying to do, but A) time was running out to complete my field test and B) it was important that I send out the same piece of content to the group testing the Messenger bot as I had sent to the “newsletter” group in order to limit differences of opinion based on the content itself rather than the content delivery.



I reached out to the five people in my Messenger group and asked them to go through the signup process again for my new bot. One comical bug occurred because I had not disabled my MindIQ bot before setting up the Chatfuel bot, so the bots started talking to each other. (Based on the conversation, I wouldn't worry about the bots rising up against us just yet.)

Otherwise, I was able to subscribe the five test subjects to the Chatfuel bot. Using a plugin from [Zapier](#), I programmed a broadcast to send out my most recent blog post the next morning. Aside from a slight hiccup that Chatfuel was using Greenwich Mean Time (even though it said it would use the local time of the Facebook Messenger user), the blog post was broadcast as planned:

SAT 2:59 AM



4. The Results

In order to gauge what my focus groups thought about the field test, I sent out a survey with five basic questions about their experience. One person did not respond to the survey despite my reminders, so I received surveys from the five newsletter test subjects but only four Messenger bot test subjects.

The first question asked the subjects, “Without going back to look at it, what is one thing you remember from the blog post?” Here I was attempting to see if the content delivery platform had any impact on how well the test subjects recalled the subject matter they read. Based on the responses I received, there was not much difference in recall ability between the two groups. In both groups, some respondents wrote detailed descriptions of the blog post they had read and some wrote only a few words on the basic premise.

The next question asked the subjects to rate the overall experience on a scale of 1 to 5, with one being terrible and five being fantastic. Overall, the subjects rated the newsletter higher with an average rating of 3.8 compared to an average of 3.5 for the Messenger bot, which would go against my hypothesis. However, the Messenger bot rating was skewed by one person rating it a 1. The median rating for both the newsletter and the Messenger bot was 4. With such a small sample, it is hard to determine which presented the overall better experience. Based on responses to subsequent questions, I would guess that negative perceptions of the Messenger bot had more to do with my failures in producing an effective and dynamic bot rather than the content delivery method itself.

The third question asked respondents to write something they liked about the content delivery method. Interestingly, many of the responses were similar for those that received the “newsletter” and those that interacted with the Messenger bot. While one of the newsletter subjects wrote, “It was easy to read and digest,” one of the Messenger subjects wrote that “the content was well organized and easy to digest.” Overall, both groups pointed to the ease of use of the content delivery platform. While this partially supports my hypothesis that content delivered via Facebook Messenger is an effective way to reach digitally savvy younger readers, it was again difficult to make any value judgments on newsletters vs. chat apps.

Next, I asked the subjects to tell me something they thought could be improved about the content delivery method. For this question, the responses were different for the two groups but within each group touched on similar themes. Those that received the newsletter thought the overall design of my email could have been improved. Since I didn’t have access to an email newsletter creator like MailChimp, I simply sent an email with the blog title, a short description and a thumbnail size photo. One comment I received suggested, “I would add some color and video if possible to the

newsletter to make it interactive.” Another respondent thought I should improve the “branding” of the newsletter: “I knew to expect something from Liz, but I was[n’t] exactly sure what the newsletter would be about as a going concern.” These critiques probably do not say much about my hypothesis one way or another. Additionally, one person — who had said they didn’t like the delivery of the newsletter when asked what could be improved — also said they were unlikely to sign up for content delivered via Messenger in response to a later question, so that did not support my hypothesis that chat apps might be a good alternative to newsletters.

For the Messenger group, the main issues dealt with the functionality of the bot. Because I ended up going with a quick-and-dirty solution for sending out my content, I did not spend much time on making other aspects of the bot user friendly. I was also limited to what features were available in Chatfuel. One comment I received noted, “It would repeat messages at times.” Another said “personalization of content” could be improved. Two responses suggested options for receiving more content or receiving content more frequently. In terms of my hypothesis, this suggests the subjects were interested in receiving content via Facebook Messenger if the experience were improved.

For the fourth question, I asked whether the respondents were currently subscribed to any email newsletters from media companies. The purpose of this question was to determine familiarity with and affinity for email newsletters. In both groups, all but one of the respondents said they subscribe to email newsletters.

Finally, I asked all test subjects how likely they would be, on a scale of 1 to 5, to sign up to receive content via Facebook Messenger if that were an option from their favorite media brand, with 1 being “not at all likely” and 5 being “very likely.” Individual answers varied widely in both groups. The person in the group that received content via Facebook Messenger

who said they did not subscribe to any newsletters had said in a previous response “I’m easily annoyed by email newsletters,” but at the same time gave a neutral response to whether they would subscribe to content via Messenger in the future. Overall, the group that had received the content via Facebook Messenger had a much higher likelihood of signing up for such a feature, with an average of 3.5 and a median of 4. Those that had received the “newsletter” rated their likelihood of signing up for content via Messenger an average of 2.8 and a median of 2. This would suggest that those who experienced content delivery via Facebook were more receptive to the idea than those who did not, which supports my hypothesis.

5. Conclusions

Looking at all of the survey responses in total, it seems safe to say a Facebook Messenger bot is an effective way to deliver content as I hypothesized, however it is not necessarily more or less effective than an email newsletter. At this point in time, email newsletters likely will still reach a wider audience simply because readers are very familiar with them and most media organizations offer them in some form. Many of my test subjects indicated they would be responsive to receiving content via chat apps in the future if the experience were to be improved. My limited technical expertise with broadcasting bots certainly had an impact on the results of the test and the survey responses. I think I would have to do more rigorous testing with a larger test group and a better bot in order to fully confirm or negate my hypothesis.

6. What Could Be Improved

There were many things that could have been improved in order to maximize the impact of the technology I used in my field test. The most obvious would be to present a more professional looking email “newsletter” and chatbot. Based on the comments I received, the chatbot needed to have more functionality than just spitting out a piece of content if it were to

really present a great user experience. It would have been better if I could have taken some time to learn the types of queries subscribers might make and program a few standard responses. My test subjects also wanted options in terms of the types and frequency of content they received, which was beyond the scope of my capabilities in the limited time I had.

Early on, I made a decision to use my personal school blog as the content for the newsletter and chatbot because I wanted to test the content delivery method, not the content itself. However, another way to compare the two content delivery methods would have been to have my test subjects sign up to receive content from media organizations that already offer content in the form of newsletters and chatbots. For example, I could have asked my focus group to subscribe to a newsletter or content bot from the *Wall Street Journal* or CNN. By testing my hypothesis with a real media brand, the technical and design drawbacks of my own newsletter and bot would not have gotten in the way of my test subjects' experience of the content delivery method. Additionally, I could also have asked the test subjects to sign up for both methods of content delivery and then compare the two to see which they liked better, which would be a more effective way of testing my hypothesis.

Finally, I recognize that I was not able to find the ideal test subjects for my hypothesis because I don't actually know enough members of Gen Z to form a focus group. Although my focus group consisted of digitally savvy Millennials, people from that age group likely have different opinions on email and messaging apps than Gen Z. A better way to test my hypothesis would have been to find a group of Gen Zers who don't really use email or don't subscribe to email newsletters and find out if that is a content delivery method they like or if they would prefer content delivered via a messaging app.

7. The Future of Content Bots

In the process of attempting to build a Chatfuel chatbot based on the template of the TechCrunch Facebook Messenger bot, I decided to subscribe to the bot. I then reached out to Travis Bernard, Director of Audience Development at TechCrunch, to learn more about how the site is using the bot and what kind of engagement they are receiving from users. Through my phone conversation with Travis, I learned a great deal about how content bots are being used today and their potential for the future.

TechCrunch launched its Facebook Messenger bot in April 2016. Through November, the bot has gained 90,000 subscribers who engage in two million user sessions per month, which means users open the bot and look at it two million times each month. Travis said the bot was competitive with TechCrunch's standalone app in terms of usage. While TechCrunch's daily and weekly high level newsletters have more subscribers than the bot, Travis said bot subscriptions are outpacing subscriptions for weekly topic specific newsletters. He was very proud that Facebook's David Marcus said [TechCrunch's chatbot was one of the best news bots on Messenger](#) at TechCrunch's Disrupt conference in September.

The reason TechCrunch built a content bot was somewhat different from the premise in my field test. Travis noted that it has become much harder to get attention from readers in Facebook's newsfeed because of algorithm changes. A Messenger bot is like "a feed within the newsfeed" that gives users content in a "less noisy" location. Facebook and other social apps also encourage users to stay within the app rather than go off to another app or the mobile web. In the future, content bots may be the only way to reach readers. "Bots are like the new websites," Travis said. This prediction should scare media brands — who already worry about ceding too much control of their content to Facebook — but it doesn't seem too far off when considering an

increasingly mobile internet experience dominated by a handful of apps.

In addition, Travis said that in the past two years TechCrunch has expanded its coverage beyond insider tech news and has thus expanded its audience, but that audience may not be interested in the full gamut of topics found on the site. Unlike an email newsletter, TechCrunch's chatbot allows users to subscribe to a very specific subset of news. Travis said if a user wanted to only get updates on Elon Musk, he or she could subscribe to a feed of Elon Musk news in the bot. "I think that's a pretty powerful thing," Travis said.

I see this as one of the main advantages of chatbots over newsletters going forward. It strikes a nice middle ground between a newsletter, which readers have no control over, and a social media news feed, which readers must invest a lot of time in to curate and can overload readers with too much content. A few of the respondents to my survey said they wanted to receive more customized news updates, either via email or Messenger bot. It's not hard to imagine a future where all readers subscribe to personalized chatbot feeds instead of email newsletters.

On the subject of personalization, I was surprised that none of the news bots I subscribed to on Messenger offered the ability to customize when content was delivered. The *Wall Street Journal* sends bot content in the morning like many newsletters, CNN sends it at noon, and TechCrunch sends an update at 8 p.m. While I'm sure media organizations have tested what time users are most likely to view their broadcasts, I would expect users would be even more likely to view content if they could control the timing of delivery.

One other functionality that TechCrunch currently does not have with its Messenger bot but hopes to implement in 2017 is breaking news alerts. This seems like a no brainer to me for chatbots. While news organizations currently offer alerts for their own standalone apps, adding alerts to chat apps would enable them to reach a far larger audience who may not want to have

multiple news apps on their phones. I was surprised that the other news bots I tested also weren't using this functionality. Obviously news organizations would have to balance how many alerts and briefings they send to users via chat apps, but breaking news is definitely something I think we'll see more of from chatbots in the near future.

When I told Travis about my field test hypothesis — that messaging apps would be a good way for media organizations to reach Gen Z — he said that that age group is not yet part of TechCrunch's core audience but agreed chatbots could be a good way to reach demographics that use social apps more than email. Content marketers have already found success in targeting Gen Z customers with the chat app Kik. According to Kik, when H&M and Sephora send quizzes through their chatbots, [70% to 90% of subscribers complete the quiz](#). In my view, this shows there is huge potential for news organizations to reach Gen Z through this medium. Perhaps the content will have to be packaged in a different way to make it more interactive and less like a newsletter, but I predict members of Gen Z — and probably the rest of us — will be getting their news from chat app bots very soon.