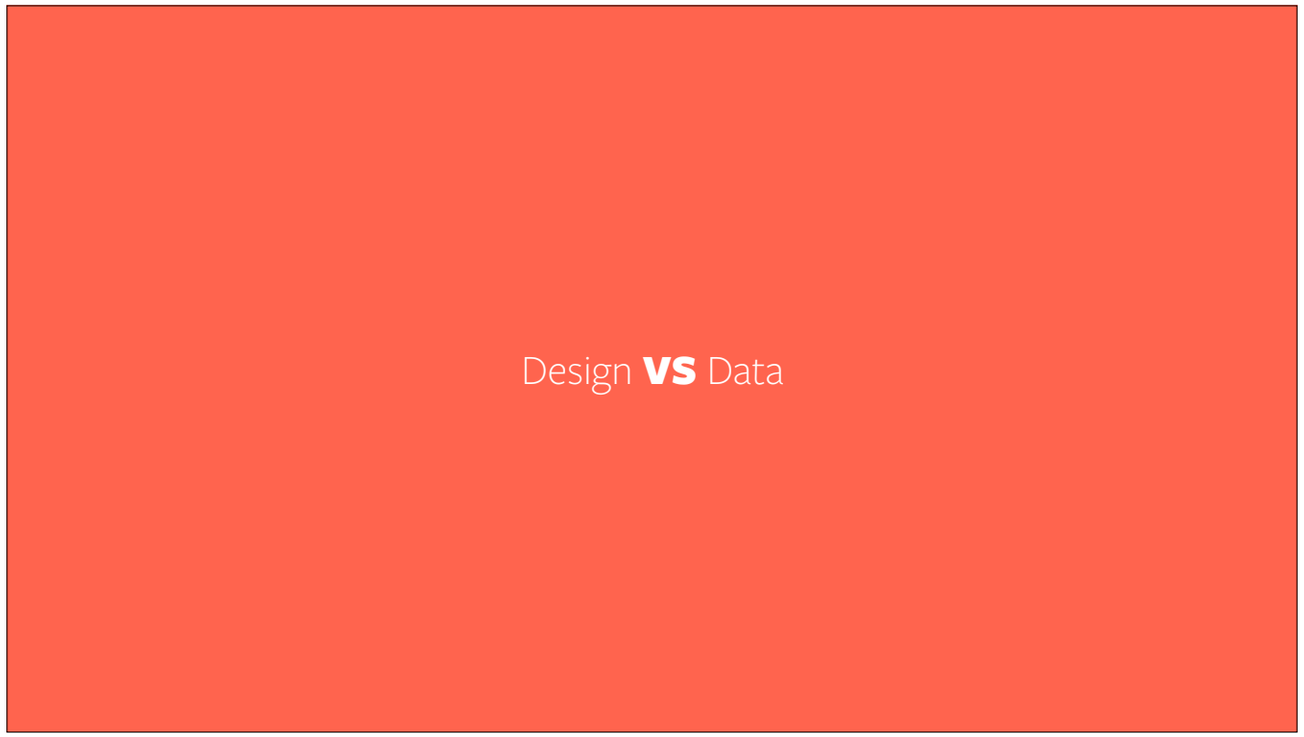
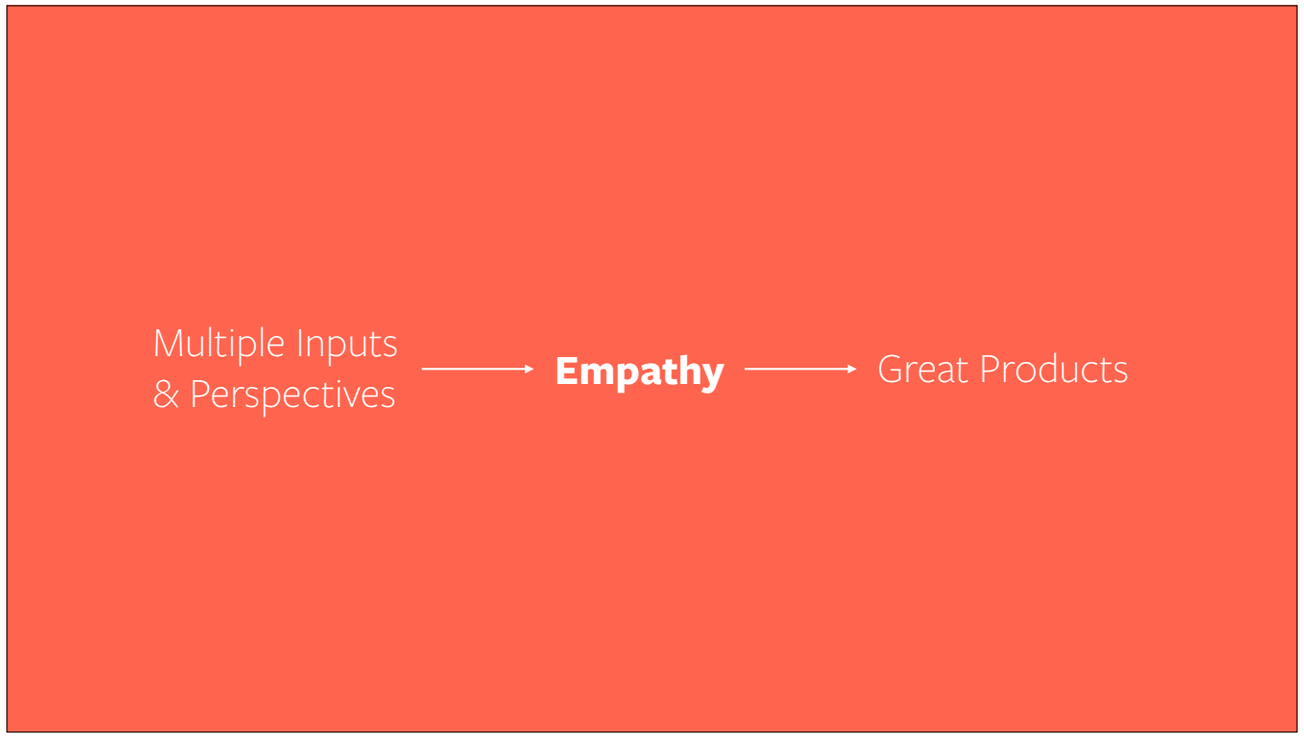



Today I'd like to talk about Design and Data.

I want to acknowledge that the whole data vs design argument has been playing out and philosophized over for decades. I am not here to talk about this today, but I do have a strong point of view on the matter, which is that both design and data are important to building great products.




The more you know about the people you are designing for and the more empathy you have for them, the better equipped you are to build great products.

There are all of these different Inputs — user research, market research, customer service feedback, behavioral data, etc, which all help you be more informed.
I want to acknowledge there are also real constraints — timelines, engineering bandwidth, abuse and fraud prevention, etc.

Data often gets a bad rap here. At worst, data can be a way to “measure” a design's success or to dictate a decision between alternatives, which can lead to a frankenstein product where each element is optimized through various A/B tests.

But data can also be used to inspire new design ideas, to drive core product concepts, to make informed micro-corrections throughout the design process, and to ultimately vet the impact of a product.

Today we are going to focus on using data in less conventional ways and I’ll walk through two examples from Facebook in which we creatively used data to help shape and evolve the design of our products

Knew nothing

Realized I knew nothing

Sought to remedy that

Relied heavily on UX research (while tolerating behavioral data)

Realized leveraging behavioral data could be a really powerful way to build products

My personal history with data goes something roughly like this:

Knew nothing

Realized I knew nothing

Sought to remedy that

Relied heavily on UX research (while tolerating behavioral data)

Realized leveraging behavioral data could be a really powerful way to build products

I majored in Graphic Design in Undergrad (2000), when the Internet was just becoming mainstream and the notion of designing for the Internet were just becoming a thing.

I was working for the American Red Cross in Chicago. Their website was a mess.
1000s of pages that were were poorly categorized and impossible to navigate through.
So I started meeting with people in all of the various departments to understand what pieces of information they felt were most important for people to be able to find, removed a bunch of content, re-organized the site architecture, and “updated” the visual design.

~~Knew nothing~~

Realized I knew nothing

Sought to remedy that

Relied heavily on UX research (while tolerating behavioral data)

Realized leveraging behavioral data could be a really powerful way to build products

And so we launched the updated site. At which point I realized I had absolutely no idea whether the new design was actually better for people or not.

I had no data on performance, clicks, abandonment, etc., nor any information from people who were coming to the site about their what drove them to come and whether or not they could find what they were looking for.

~~Knew nothing~~

~~Realized I knew nothing~~

Sought to remedy that

Relied heavily on UX research (while tolerating behavioral data)

Realized leveraging behavioral data could be a really powerful way to build products

The realization that there was a big gap between my decisions and knowing their impact on people drove me to study Interaction Design at Carnegie Mellon.
At Carnegie Mellon I was introduced us to the concepts of ethnographic research, interviews, diary studies, and so on, or in short — how to actually design for people.

~~Knew nothing~~

~~Realized I knew nothing~~

~~Sought to remedy that~~

Relied heavily on UX research (while tolerating behavioral data)

Realized leveraging behavioral data could be a really powerful way to build products

After graduating from Carnegie Mellon, I joined Google in 2005 and there I was shocked to learn design and UX research were two different roles because coming out of graduate school they felt like one and the same to me. It didn't take me long to realize though that this partnership between design and research made everything twice as fast and better.
This partnership and approach to building products was how I worked across all projects at Google — figure out the best thing we could build (within reason) and make it great.

When I ran into projects which were about optimizing e.g., Google search results formats or Google ads background colors,
I approached them with a mixture of curiosity and pessimism. Did these changes really matter? If so, to what things and for how long (since we knew novelty was such a big factor). All of our experimentation and testing helped us inform what we were designing. At the same time, we still had to think about the overall systems we were designing e.g., how we could augment standard web results to accommodate any combination of richer media such as images, videos, places, maps, etc.

We also continued to lean heavily on UX research, including eye tracking and lab studies.

This POV persisted throughout my time on Google Maps, YouTube, as well as several teams within Facebook including Profiles and Privacy. We collaborated closely with UX research and looked for opportunities to build new products or make existing ones better.

~~Knew nothing~~

~~Realized I knew nothing~~

~~Sought to remedy that~~

~~Relied heavily on UX research (while tolerating behavioral data)~~

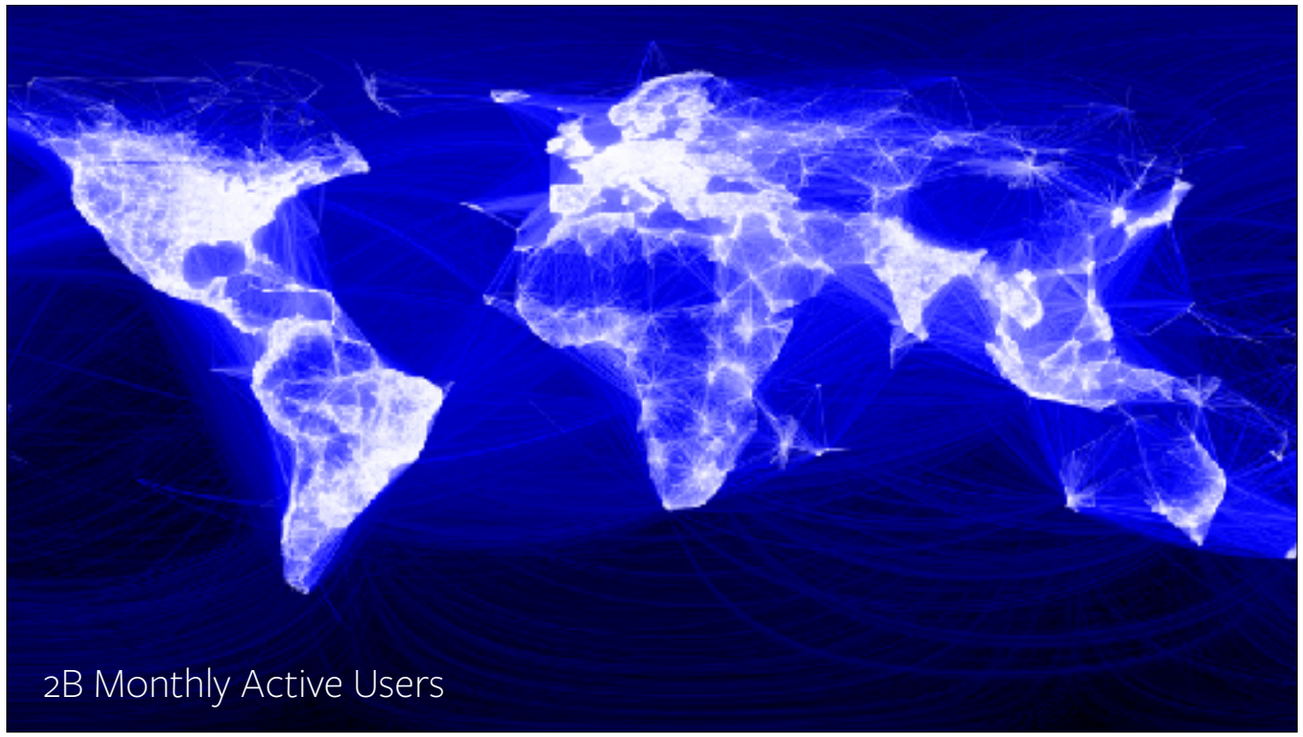
Realized leveraging behavioral data could be a really powerful way to build products

Let's fast forward to joining the Facebook Growth team, where I currently lead the design teams that work on products like Friendship Videos, Birthdays, and Memories, as well as our Social Good products.

There has been a lot of press about Facebook's growth team over the years. If you haven't heard much, the tldr version is that FB had the first engineering and product teams working on growing the number of people who use Facebook. This is a model which has now been widely adopted by the industry. Prior to this, growth was driven by marketing functions.

Facebook's Growth team has been relentless, creative, and incredibly successful in continuing to grow Facebook's user base. It is by far the most data focused team I have ever been a part of and while at times frustrating, the clarity of focus, the rigor around data analysis, and the efficiency of momentum have been incredible to witness and partake in.

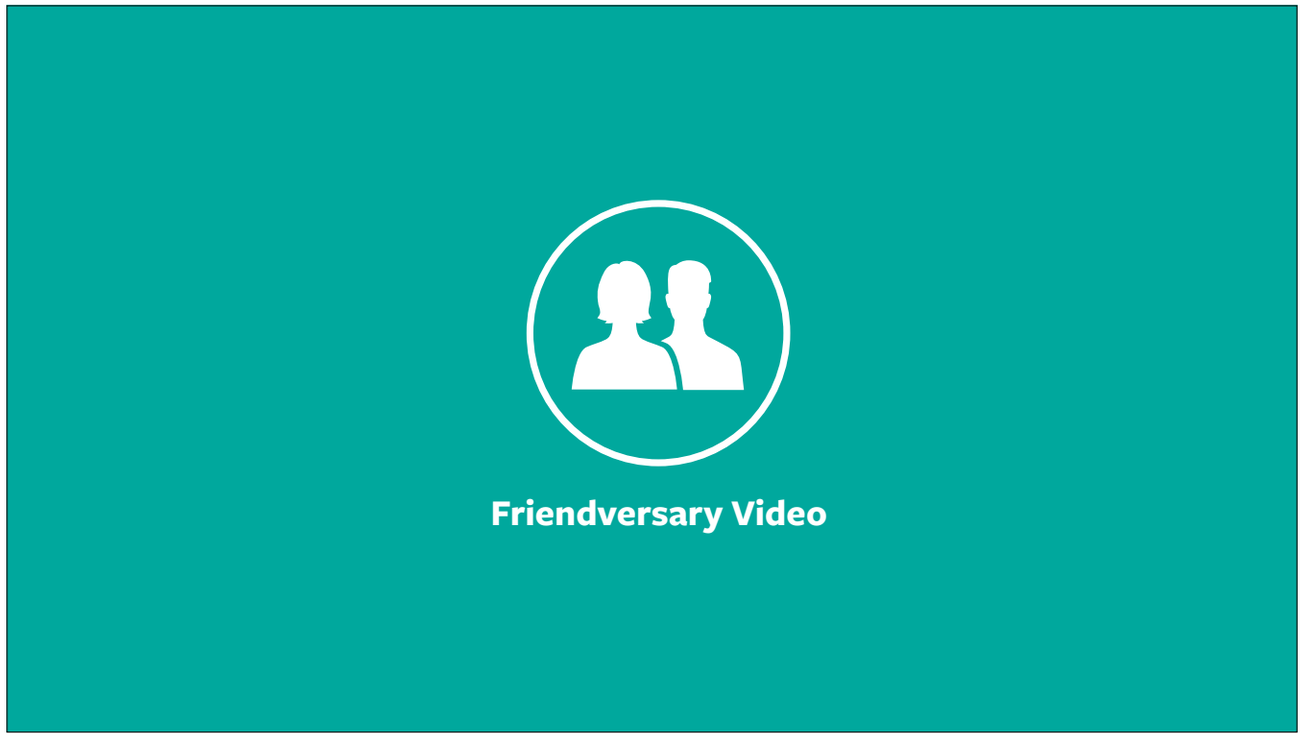
It has also fundamentally shifted my perspective on the role of data in building products, and I want to share a few examples of the unconventional ways we leveraged data to design better products.

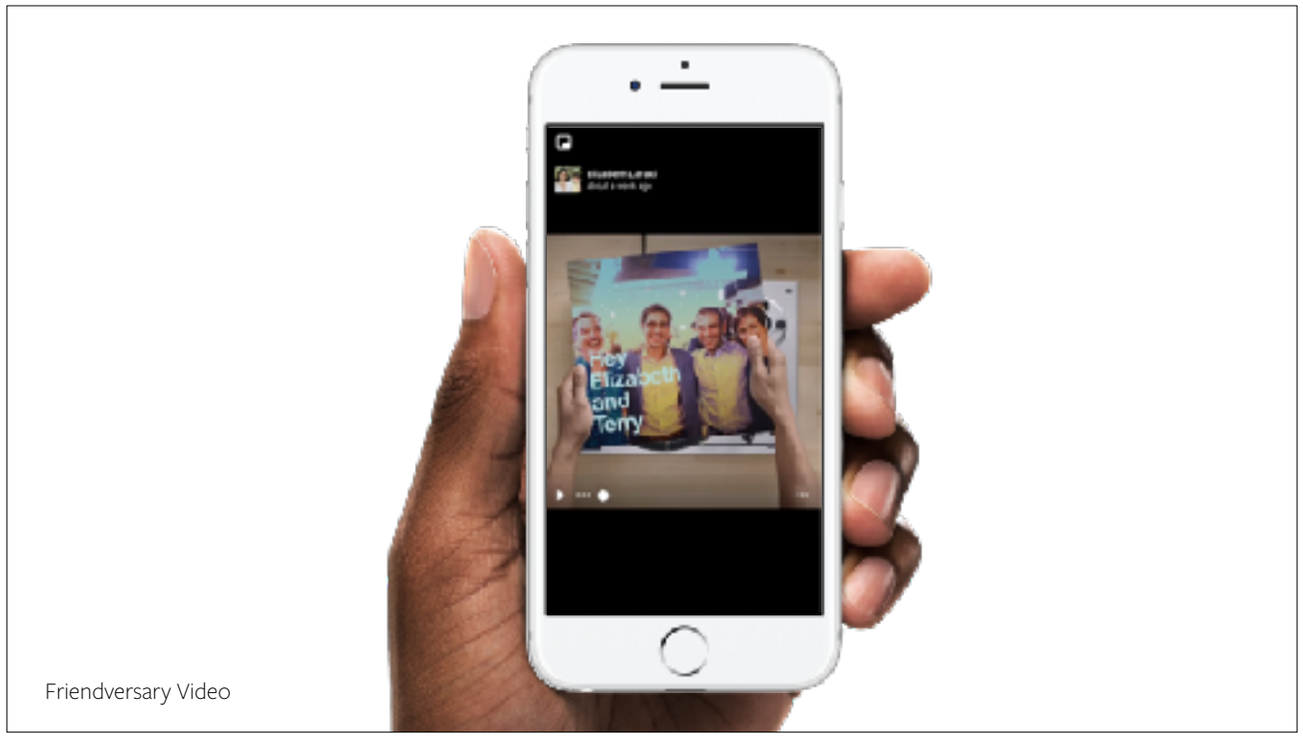



To caveat, Facebook has 2 billion monthly active users — which is more than a quarter of humanity.

So, yes we are sitting on top of a truly incredible wealth of data, which is an incredible luxury.

But regardless of where you work or what you work on, I still think some of the ways we've used this data can absolutely be applied to any product where you have access to data.


Friendversary Video




Friendversary Video

We'll kick off by watching this short video of me and my friend, Terry.

This may seem like a short, trivial video that some creative team just dreamed up and put together, but under the hood it was massively scaffolded by data.

# Friendship

We know Friendships are important to people
and we wanted to be able to recognize this and help people celebrate the friendships that matter to them.
Following the notion of anniversaries,
we came up with the concept of Friendversary — the day you became friends with someone on FB.

The actual date may or may not be reflect the start of your friendship, but it does provide a good excuse to celebrate someone you care about.

We considered a spectrum of ways we could celebrate this event — basic text-based greeting message to video, to digital cards and even physical gifts.


Initial Friendversary Experiments

We started out small. We created a quick concept that showed your and your friends profile pictures with a little message that said happy friendversary!
Or, if it existed, a photo or photo collage of you and your friend together.

We started experimenting with these to see how people felt about them by running A/B tests and conducting qualitative studies.
In general, people really enjoyed this opportunity to recognize and celebrate their close friendships.

It also became clear that when you included rich media for a close friendship, this notion resonated more with people and we saw that they also engaged more with the product. Given this, we decided to create a personalized video for each Friendversary — we knew a video could tell a nice story of friendship and we knew that videos had been received well for other moments in the past.

**Workstreams**

- Video Creative
- Product Experience
- Data

We started by simultaneously exploring:

(1) Video creative — the Overall look and theme

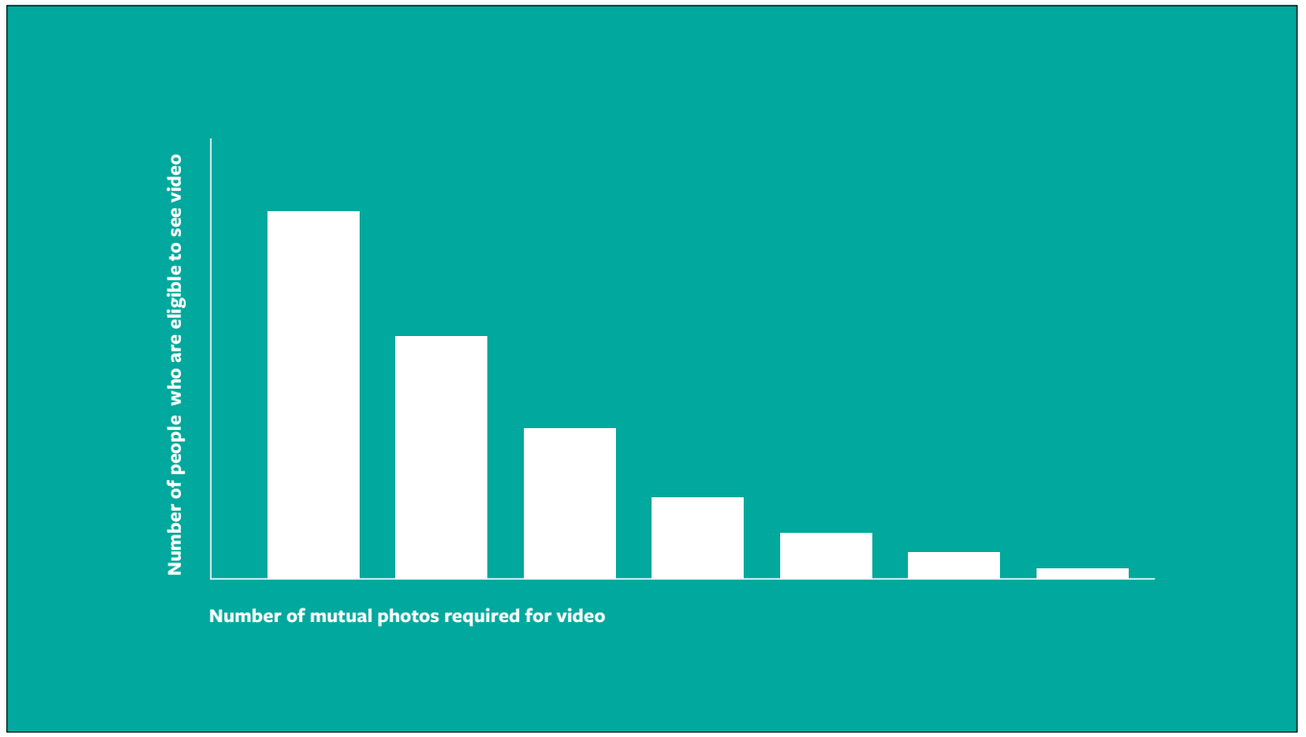
(2) Product Experience — How people came across these videos, what they could do with them — how a pair of friends could celebrate together.

(3) The data — began analyzing data to understand how much (and what kind of) content people had (such as photos, check-ins, etc.)

This third piece was critical. Had we ignored it and just focused on the video creative only, we would have shot for a much richer story that told the arc of a friendship and included lots of amazing, beautiful rich media of you and a friend.

In turn, we would have created an incredible experience for 1-2% of people on Facebook. Everyone else would have missed out entirely because they wouldn't have had enough content on Facebook for us to create a video for them.

It was really important to dig deep and understand the underlying content and the intersection of relationships, so that we could deliver something that felt good and that lots of people could enjoy and appreciate.

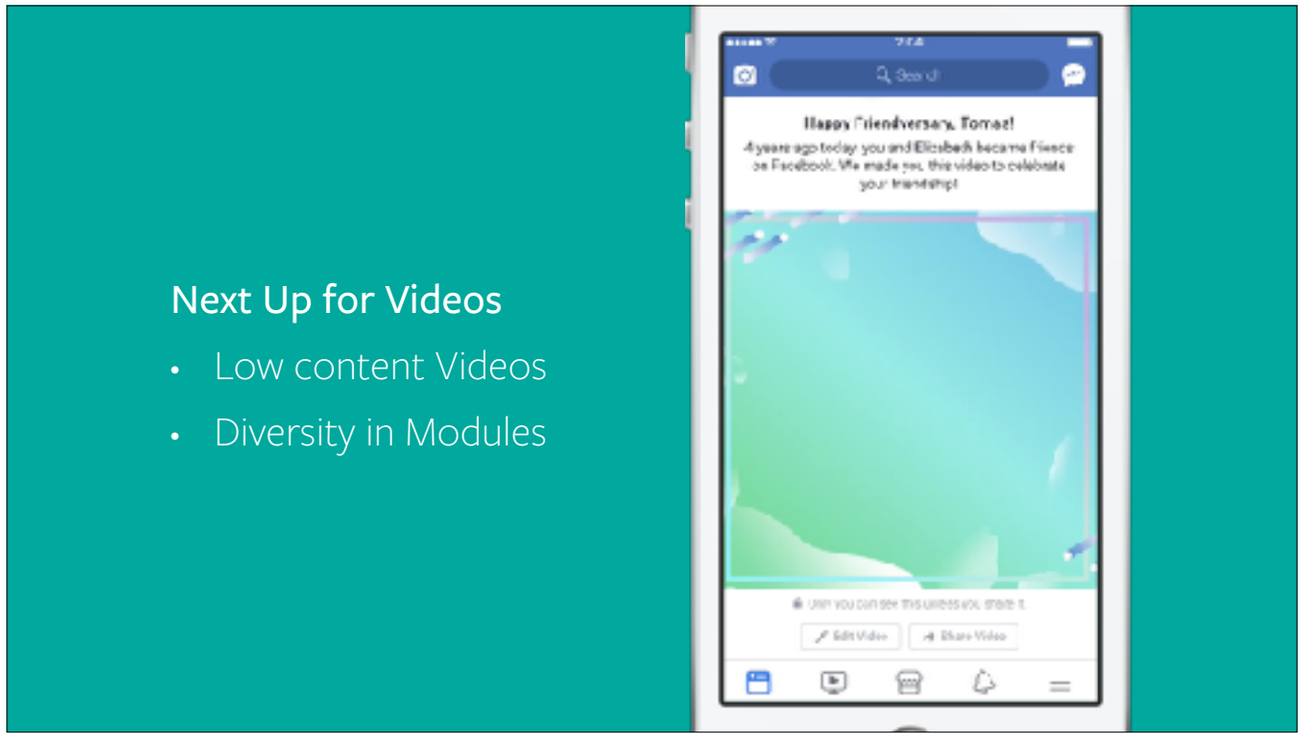



This is obviously not a real graph, but using photos as an example, the more photos a video required, the fewer people would have enough content to create a video for their friendship. This holds true for any content type.

Video Content


We constructed a video that required 5 photos of you and a friend — these included photos that you both were tagged in, or that one of you uploaded and tagged the other, etc.

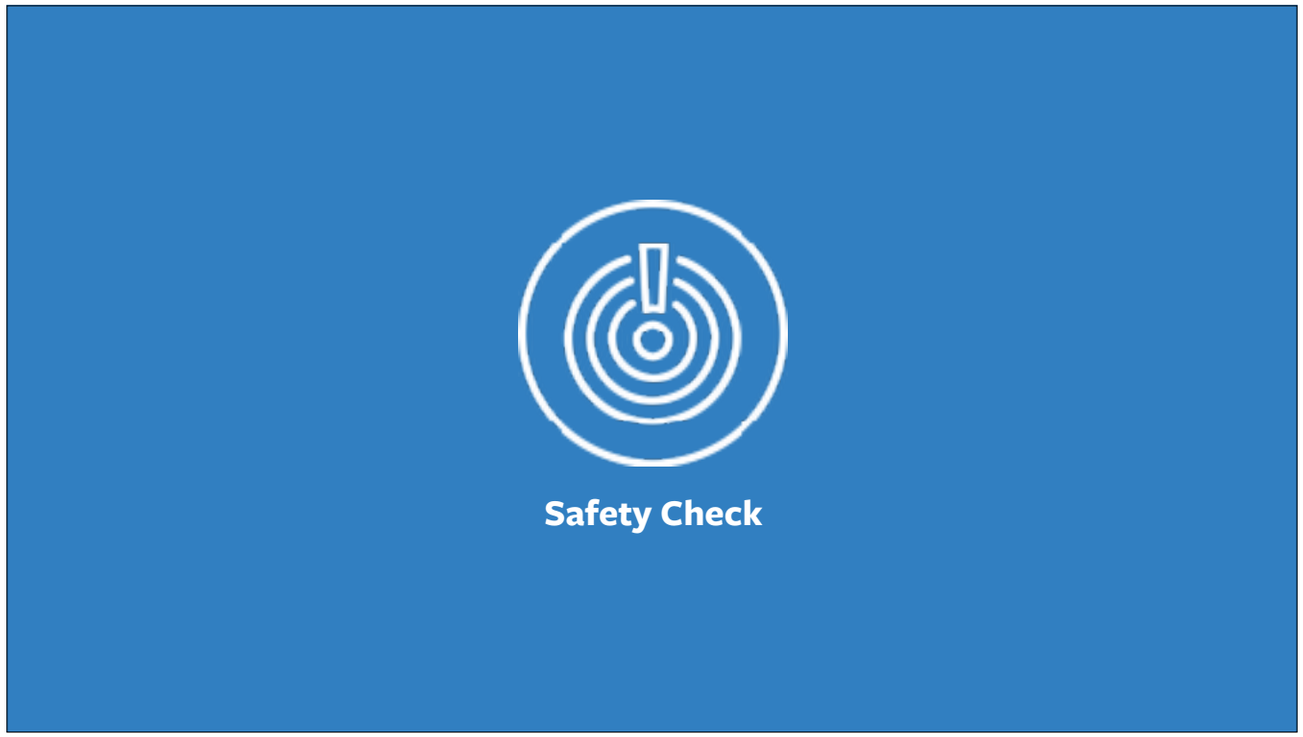
By creatively displaying these videos, and splicing in video content that wasn't personalized, we were are able to create a video that felt content-rich and unique to you and a friend in celebrating your friendship.



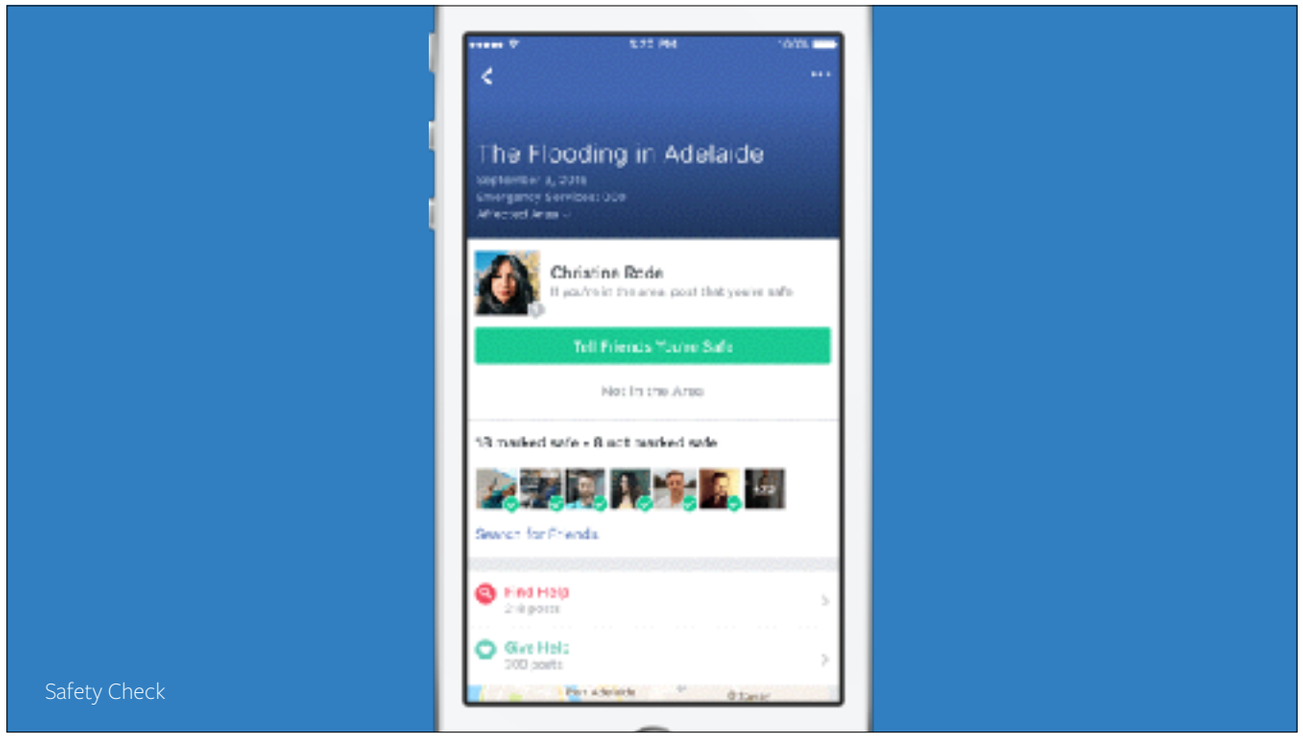

15M people see Friendversary videos each day

But we assumed that these videos would get old b/c it was the same video wrapper over and over. So we started creating a more module-based way to create these videos and with different vignettes and creative interludes, which is starting to roll out.

We also wanted to bring this richer story-telling or celebration to more people. So we created multiple videos that could scale to the amount of content you and a friend had on Facebook. This video here requires no mutually tagged photos or other content and is just rendered using your and a friend's profile photos.




During times of crisis, people come to Facebook. Even in the wake of devastating storms and other disasters Facebook is one of the first places people come to, in order to check on others and let their loved ones know they are OK.




Safety Check

In 2014, we launched Safety Check, which makes it easier for people to do this.
People in an area affected by a disaster are prompted to mark themselves safe and then their friends and family are notified.

Since it launched, safety check has activated for more than 850 disasters, including:
recent hurricanes in Puerto Rico, Florida, the Carribean, and Houston,
the earthquakes in Mexico, flooding in Peru, and in India and Bangladesh,
the wildfires throughout the western United States and Canada,
and many more.

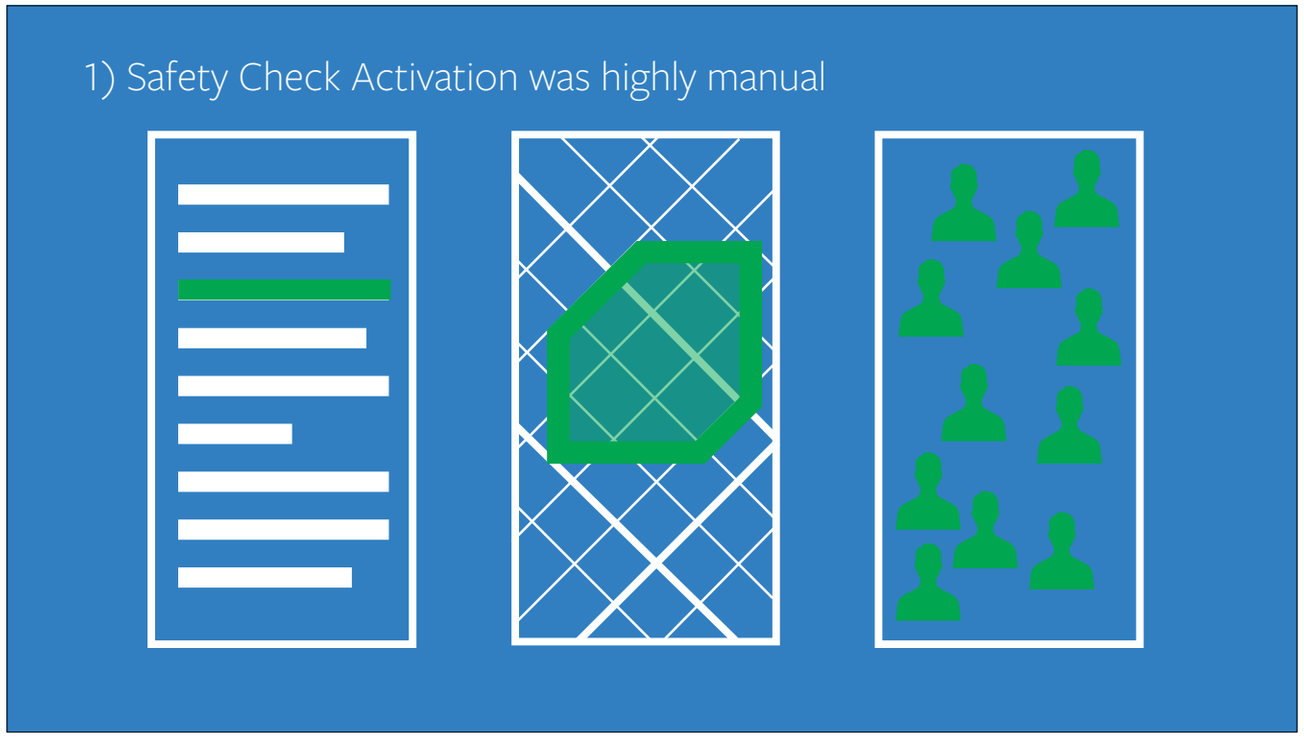
Through safety check, over 2 Billion people have been notified that a friend of theirs in an impacted area was safe.

Today I am going to walk through how we substantially evolved this product through a collaborative effort between data, engineering, and design.


Safety Check was a pretty straight forward product.

Facebook received an incoming stream of disasters from a third party, which included things like typhoons, earthquakes, building fires, airplane delays, etc.
We then monitored these and evaluated their severity and relevance based on things like scope, scale and duration for a given crisis.
When a crisis crossed our threshold, we would blast everyone in the geographical area at the top of their newsfeed to ask if they were OK. When people responded yes, we would notify their friends and family that they were safe.

In 2016, two years after it’s launch, Safety Check had activated 39 times across the globe and more than 1B people had been notified a friend was marked safe.




1. It was a highly manual process to activate Safety Check

Individuals at Facebook had to:
Monitor for disasters
Decide when a disaster had crossed threshold to launch
Respond to a pager request to activate
Define the geographic area (often for an area of the world they knew nothing about)
Give the crisis a name

2) The Product Experience was aggressive


2. The product experience was really aggressive

We believed this was an important communication
If activated, everyone in the affected area received a large alert at the top of their newsfeed
The product experience further reinforced the high threshold to launch

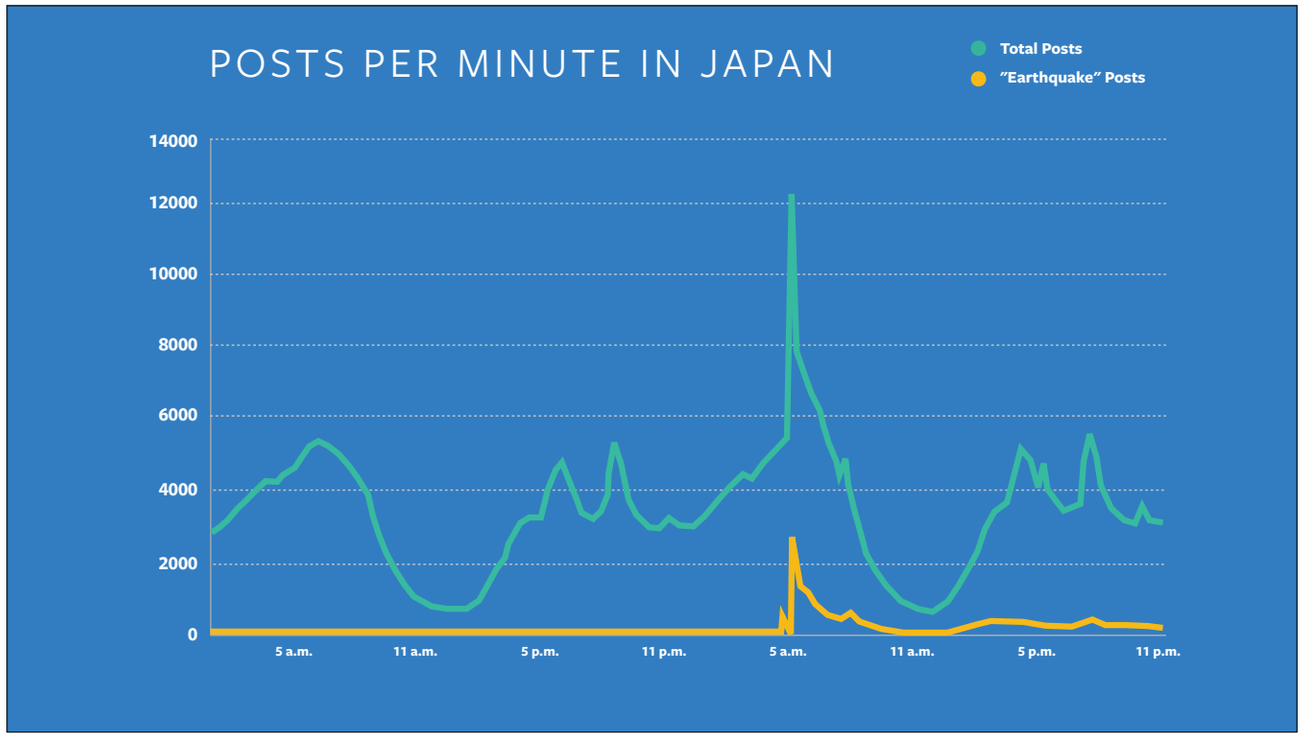
Because it was so binary (all or none), this added scrutiny to which disasters we launched for and people began to expect it for all sorts of disasters. We were accused of bias for favoring launching for Western crises and more so, we knew that Safety Check wasn't all the product we wanted it to be and thought it could be.

**Goals**

- Quick to Activate
- Relevant and Useful
- Democratic
- Appropriate for any crisis in any community

We really wanted Safety Check to be a tool that could activate quickly,
was relevant and useful in times of need — and did not create panic or false alarm.
We also wanted it to be a tool that was democratic and could be used by any community, regardless of the size or scope of the crisis.

The team started brainstorming alternate models for how safety check could work and pretty early on started looking at the data to see what we could learn.




At the same time, the team started digging into the data.

We saw an interesting pattern -- around the time of a crisis, there was a huge spike in conversations on Facebook in the affected area.
This intuitively made sense — people in these communities were coming to Facebook to share updates about the crisis and check in on family and friends.

Heres a graph of the total posts in Japan during an earthquake last year. You can see there is a spike at 5am, the time of the earthquake.

When we look at posts with the term “earthquake” in them, we get an even stronger signal that something happened right at 5am.

This pattern repeated across many different crisis types and people's posts and was a great signal for how important/relevant the incident was
We realized this could potentially serve as the trigger for activating Safety Check.

To confirm this theory, we looked back on all Safety Check launches and parsed through our data on how well they had been received at the time of launch

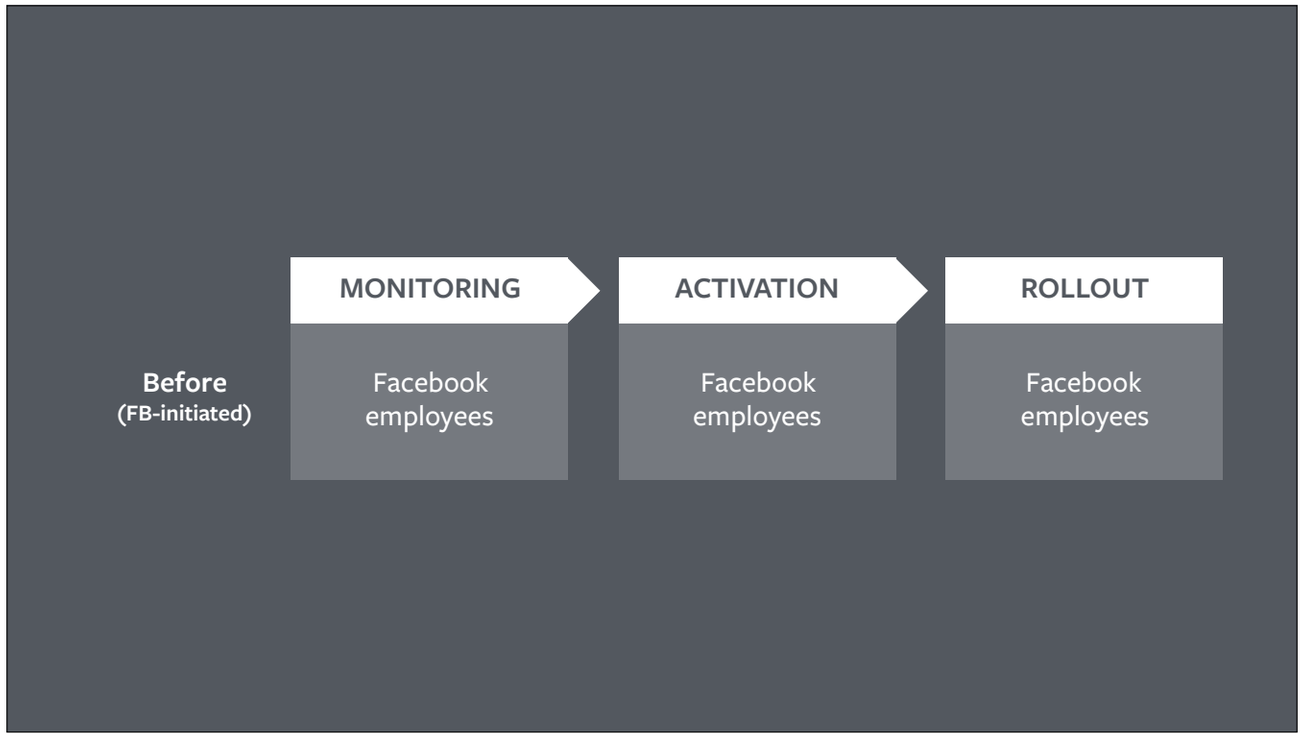
We then correlated that with the amount of posting that had been happening about a given crises.
It was pretty clear — the more people had posted about an event, the more relevant the activation of safety check had been.

More importantly, we learned that the metrics we had been using for initiation like number of people impacted, casualties, injuries, etc. was completely uncorrelated with launch reception.
An example of this was in Jakarta, where there had been a terrorist grenade attack downtown. There were very few casualties, but there was tons of fear and hysteria and consequently posting on Facebook.
A contrary example is when we launched for a typhoon in Indonesia and people started saying “I’m barely wet!” and we just obviously didn’t know that this typhoon wasn’t a big deal.

Based on the words people had used in their posts for different disasters, we created a list of keywords associated with each crisis type e.g., wind, rain, storm, fire, smoke, evacuation, shelter, flood, etc.


And we modified the safety check activation flow to work like this:

Facebook receives a 3rd party alert about a crisis
Start monitoring for posts in the impacted area that include matching keywords for a known crisis.
When we see words that match our list for the disaster, in this example “EVACUATING”  “FLOODING”]
We prompt those people to ask if they are safe.
After responding, people can invite their friends and safety check will go viral (or die out) from there.

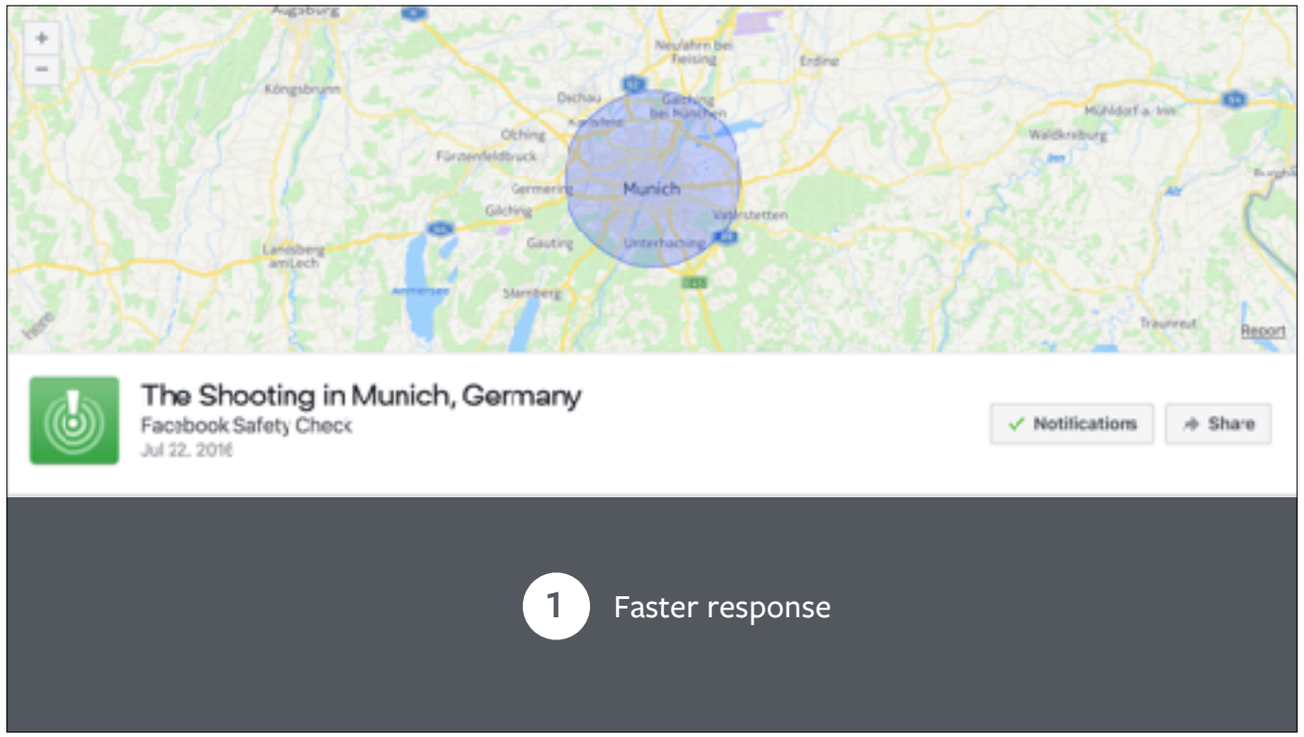



Original activate flow was highly manual and relied on individual FB employees in Menlo Park.

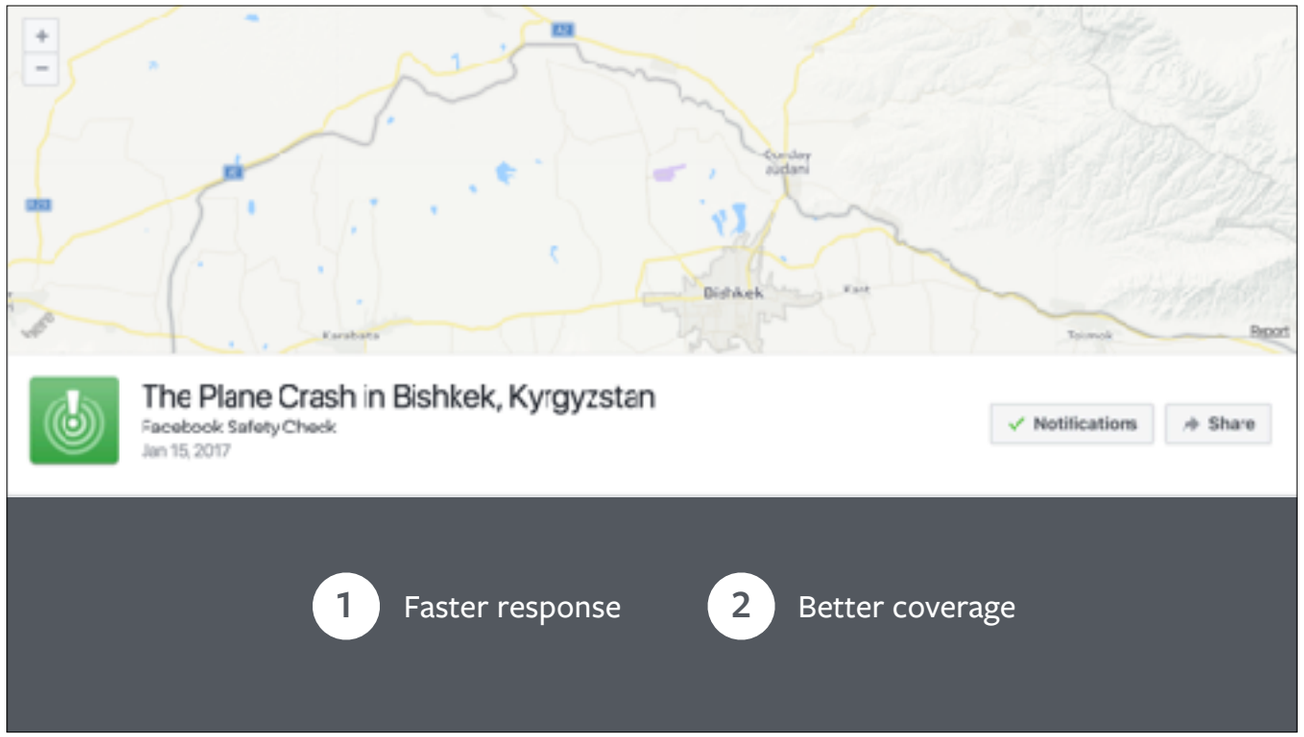

The modified product flow looks quite similar to the original, under the hood things work quite differently to make it a much better product.

Now it’s the community who determines which events are relevant and worthy of safety check and safety check is applicable to a much wider range of disasters, including large-scale natural disasters, as well as building fires or explosions.

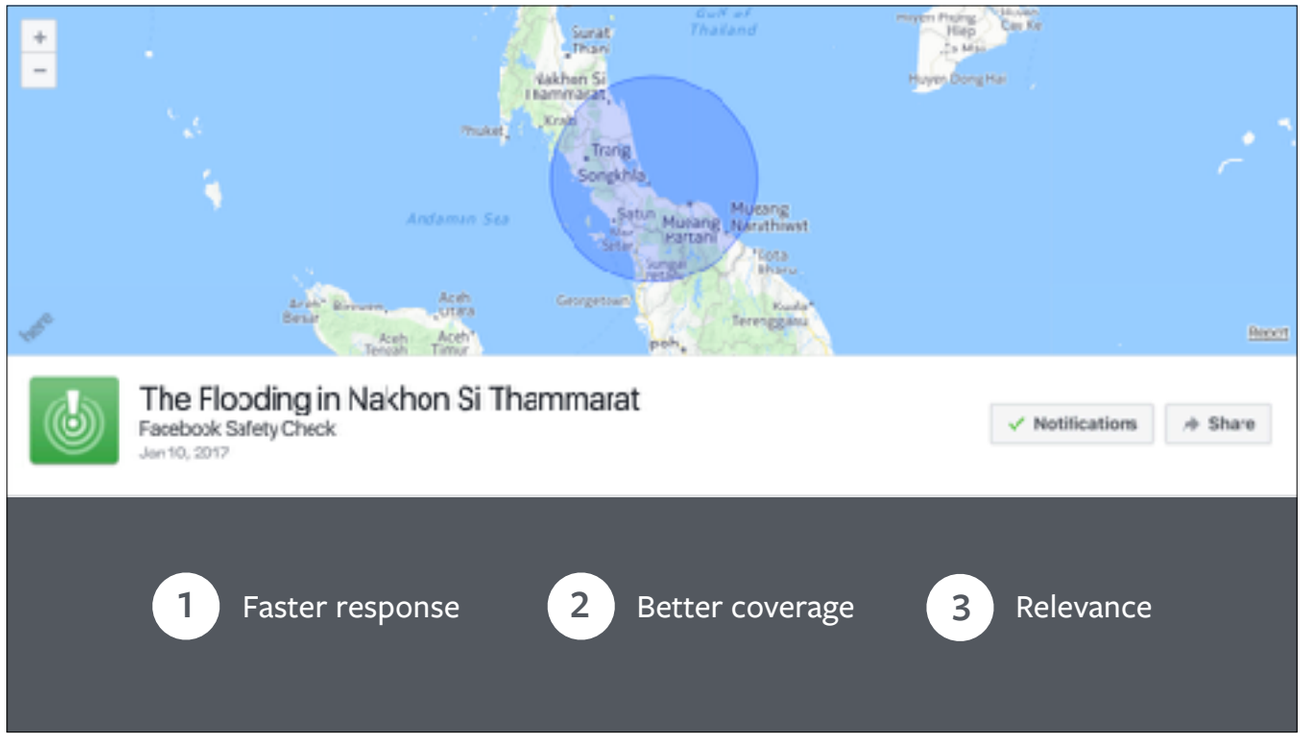
I just want to run through a few quick examples




One example is the shootings in Munich last year.
We Received alert from third party and automatically started monitoring posts in Munich.
Within 18mins of the shooting, we delivered a safety check prompt to first person and the product rapidly rolled out from there.




Another example is for a plane crash in small area in Kyrgyzstan.
Previously we had such high criteria for launching SC, it would been nearly impossible for a small community to meet those criteria.
There was No global media coverage of this incident, but  the community was talking about it and believed it was important and that was all that mattered.




A third example is for flooding in Thailand at the beginning of this year.
Targeting would have been really challenging b/c sitting in Northern California, nobody here knew which areas were experience the worst flooding or which areas were at higher elevations.
Floods are particularly difficult b/c they are of course not a circle, but they travel the edge of water boundaries.

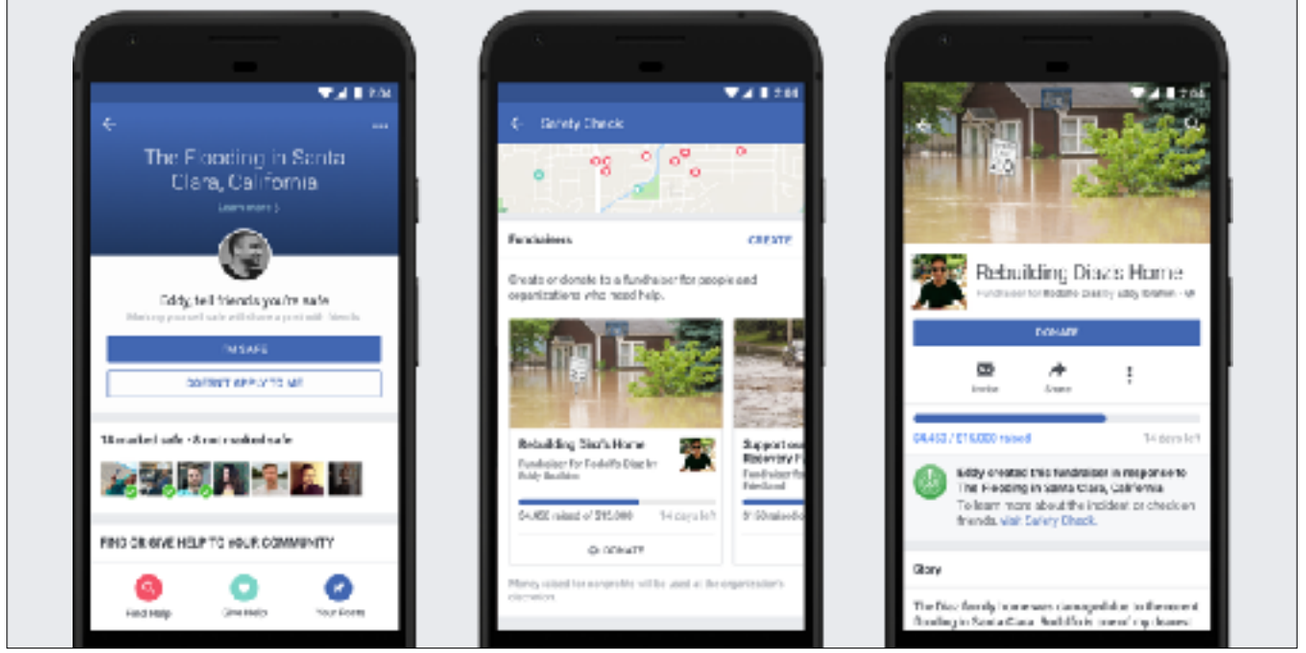
**Improvements**

- Quick to Activate
- Relevant and Useful
- Democratic
- Appropriate for any crisis in any community

As I mentioned earlier, at this point, Safety Check has launched for more than 800 crises and more than 2B people have been notified that a friend or family member is safe.

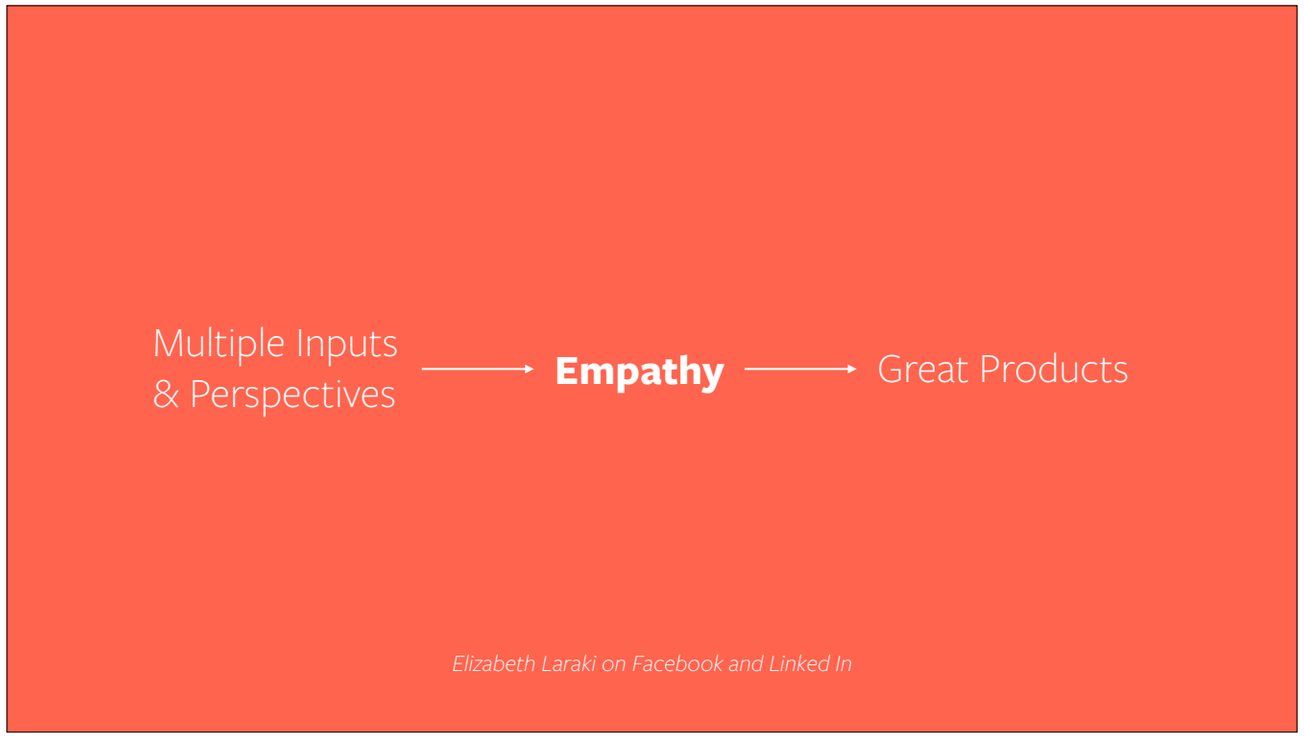
Safety Check activations are now faster and more relevant to the communities affected by crises.
Safety check now supports a whole spectrum of events, rather than just large scale disasters.

## Crisis Response Tools




Additionally, the team has been working to extend Safety Check into a set of tools focused on crisis response that also include:

- connecting people on the ground who need help with those who can offer help,
- providing better access to timely news and information,
- and also giving people the opportunity to raise money for the communities affected by the crisis.




And that wraps up Safety Check.

We've walked through two unconventional ways that we, as product teams, developed or evolved product concepts through using data.
First, with friendship videos, using data to build up enough scaffolding to understand our creative bounds and to ensure that the product had the potential to be successful.
Second, with Safety Check, using data to be able to change the product under the hood, make it far more useful for people and empower communities at the same time.

Neither of these products would have existed in their current forms without data. Or design. Or engineering. Or UX research. Or without the sweat and tears from many different disciplines. Rely on your partners and learn from them and look for their perspective.

The more you know about the people you are designing for, the more empathy you have for them and better equipped you are to build great products.