



# Can Social Be Saved?

A design  
approach to  
solving for  
systems



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# Can Social Be Saved?

## A design approach to solving for systems

“To light a candle is to cast a shadow.” – Ursula K. Leguin

Bullying and rampant hate speech on Twitter. [Foreign agents sowing discord](#) with divisive content on Instagram. [Data breaches](#) and [third-party misuse](#) compromising millions of Facebook profiles, and disinformation campaigns on WhatsApp and Facebook that [incite ethnic violence](#).

This is not the social media of wedding announcements and kitten image macros. From toxicity and addiction to data breaches and disinformation, social media as we know it today is casting some harrowing shadows around the world.

The response from social media companies? Haphazard at best. From minor UX tweaks ([kill the “like” button!](#)) to ad-hoc suspension of abusive accounts, the reactive approach to the critical problems playing out on social platforms fails to address the underlying drivers that make social media so harmful.

There’s no simple fix to the scope, scale and complexity of social media’s problems, but Artefact believes the tech industry has the ability and responsibility to do better – and we’re committed to help. Join us in investigating how to save social media.

# Artefact's approach: Systems thinking

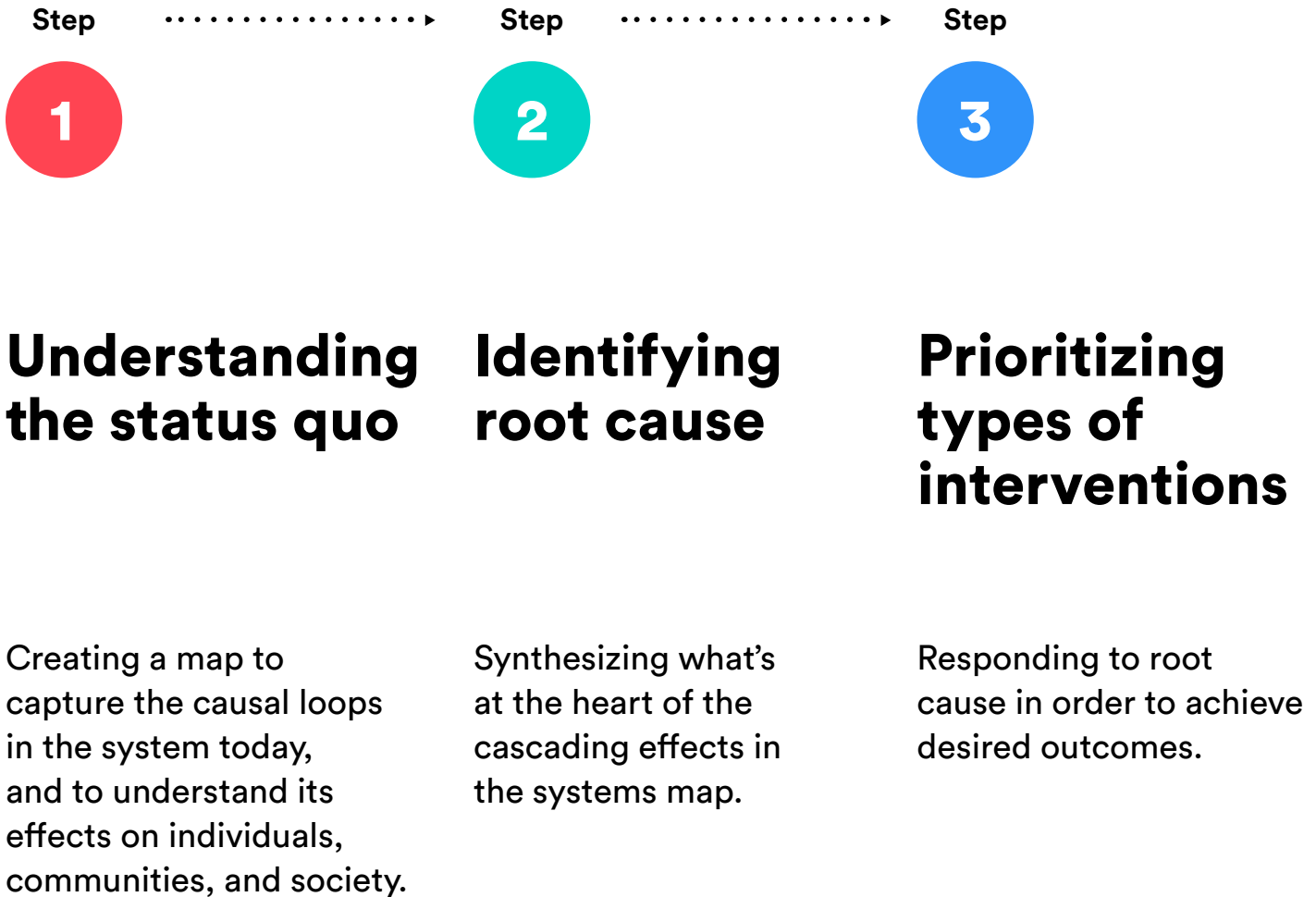
Remember the fable of the blind mice encountering an elephant? The mouse closest to the elephant's ear thinks the elephant is a fan. The trunk is a snake to another mouse, the back is a cliff to the third mouse, and the tail is a vine to the fourth. Each mouse is absolutely convinced she is correct, and that each other mouse is completely wrong. Unable to grasp that these parts might make up something bigger, the mice are literally unable to see the elephant in the room.

The typical human-centered design approach focuses on the user alone. It aims to gain an understanding of the individuals who use a product or service: their context, needs, and challenges. Yet with complex problems like those facing social media, the user is just one part of a larger ecosystem of stakeholders – a single player in a series of causal and correlating events. As designers, our first step is to reach beyond human-centered design, and approach systemic problems with systems thinking.

Systems thinking recognizes the elephant for what it is. It is a methodology for considering the whole problem space, rather than problems in isolation. Examining challenges through a comprehensive and multidisciplinary lens helps us identify root cause and create interventions with the most impact.

Social media's sheer scale of operations, users, and markets – as well as the stakeholders that influence them – create an ecosystem of dependencies that clearly constitute a systemic problem. That's why Artefact gathered a multidisciplinary team of designers and strategists to tackle the challenge. We conducted broad secondary research and interviewed subject-matter experts over the course of several months to inform our thinking.

We first examined social media's impact at an individual, community, and societal level to get a comprehensive understanding of the status quo. Next, we analyzed the causal loops that reinforce social media's impact to identify their root causes. Lastly, we prioritized what kind of interventions would best counter these root causes and identified key questions to consider when designing for them. Let's take a closer look at the process.



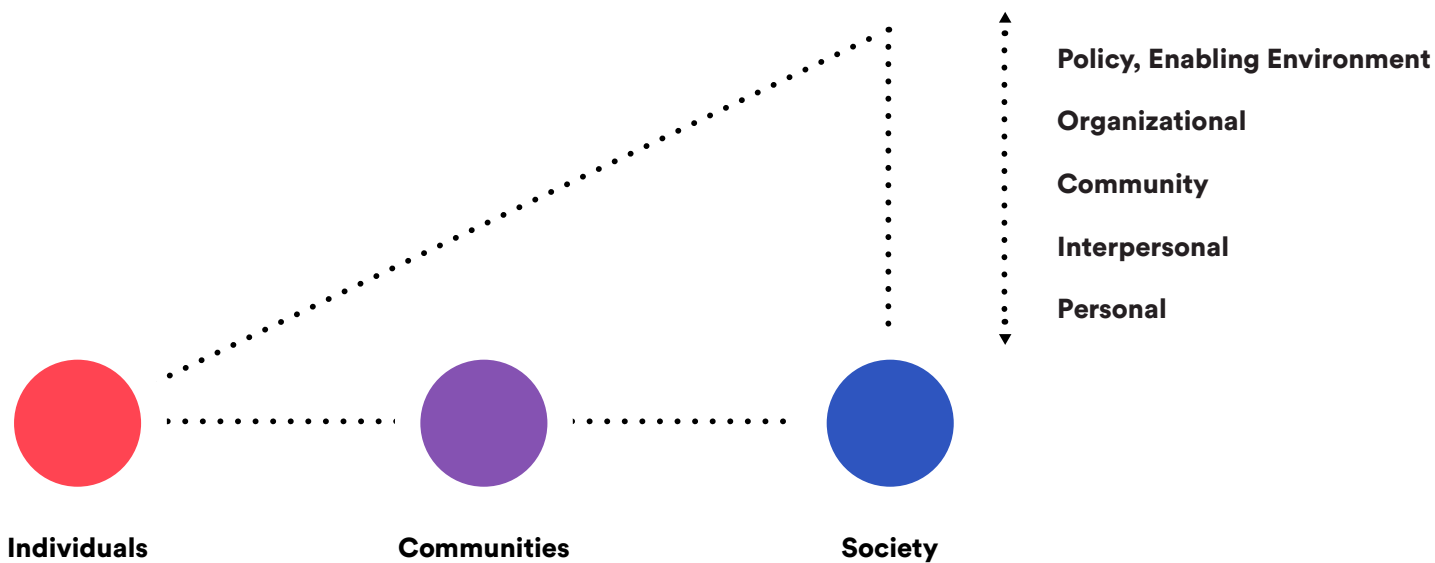
# Step 1

# Under- standing the status quo

# Understanding the status quo

What's social media doing to us?  
To investigate the outcomes of social media at scale, we broke down the consequences of these platforms into their effect on individuals, communities and wider society. Before drawing broad conclusions, we needed to first identify the specific causal loops that contribute to social media's negative consequences.

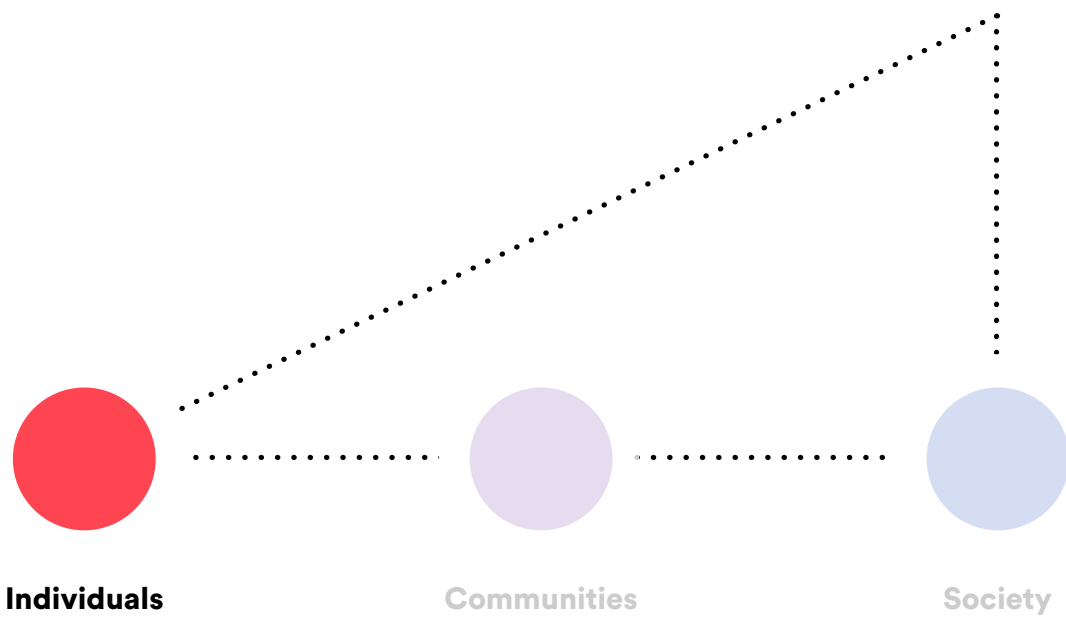




# Creating causal loops

The base unit of systems thinking is the causal loop, which captures a sequence of events that feed back into itself. The loop indicates whether an event causes the increase (represented by a '+') or a decrease (represented by a '-') of another event. A good indication that a causal loop is likely unsustainable is if the entire loop is only increasing or decreasing. Take the drought cycle, for example: temperatures rise, increasing water evaporation, increasing moisture held in the air instead of precipitation, increasing the drying of soil, further increasing temperature again.

Let's examine the causal loops that reflect the impact of social media.



## The individual impact

The impact of social media on the well-being of individual users is closely linked to an increase in prolonged “screen time” across mobile phones, tablets and computers. “All screen activities are linked to less happiness, and all non-screen activities are linked to more happiness,” San Diego State University Professor of Psychology Jean M. Twenge wrote in a 2017 article for *The Atlantic* titled, [Have Smartphones Destroyed a Generation?](#) She continues, “Eighth graders who spend 10 or more hours a week on social media are 56-percent more likely to say they’re unhappy than those who devote less time to social media.” Moreover, when teens have more engagement online and fewer interactions in person, [feelings of depression and loneliness increase.](#)

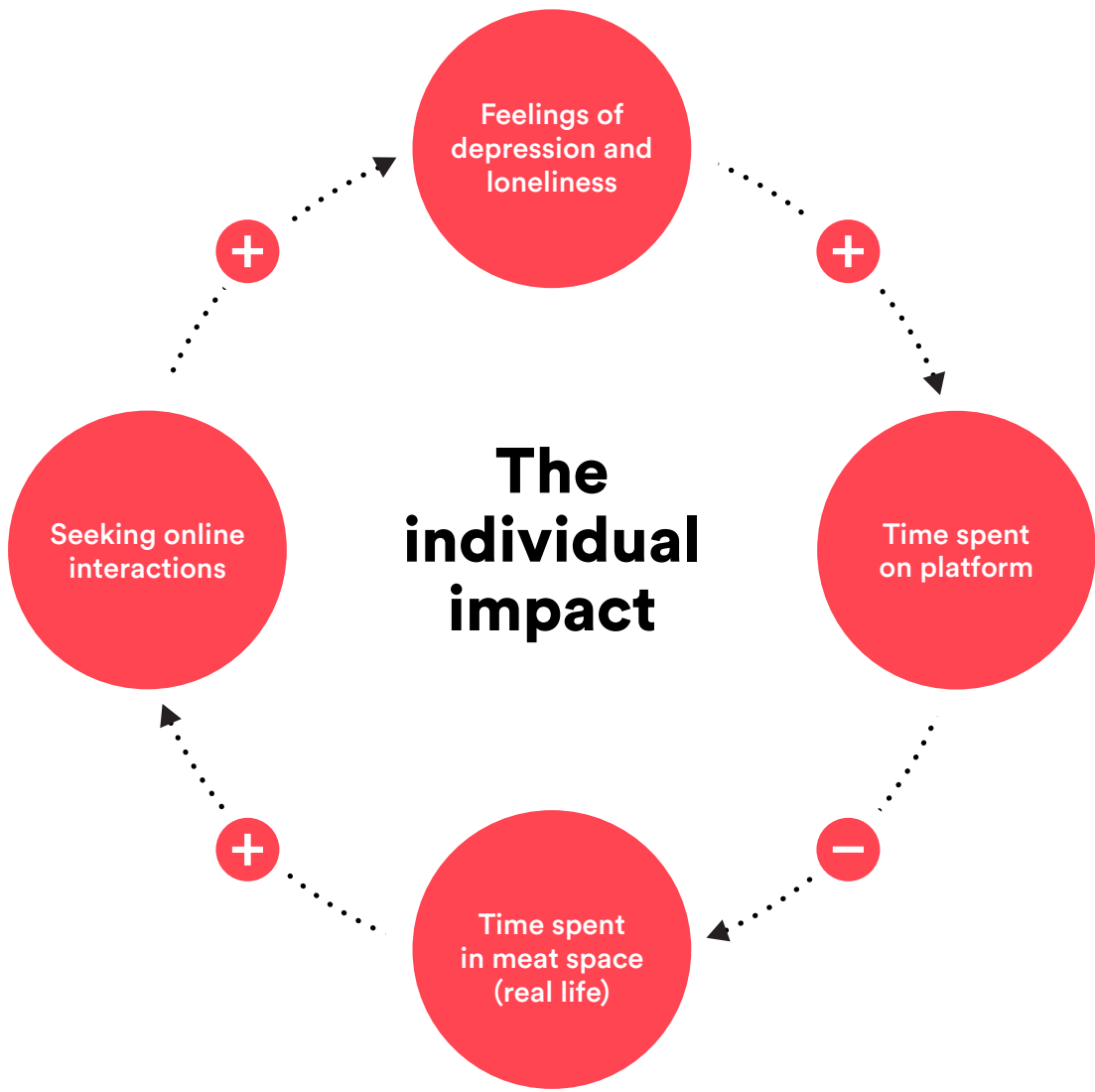
Social networks scale the natural human desire for validation by encouraging users to cultivate a dizzying number of connections, then providing the tools to instantly

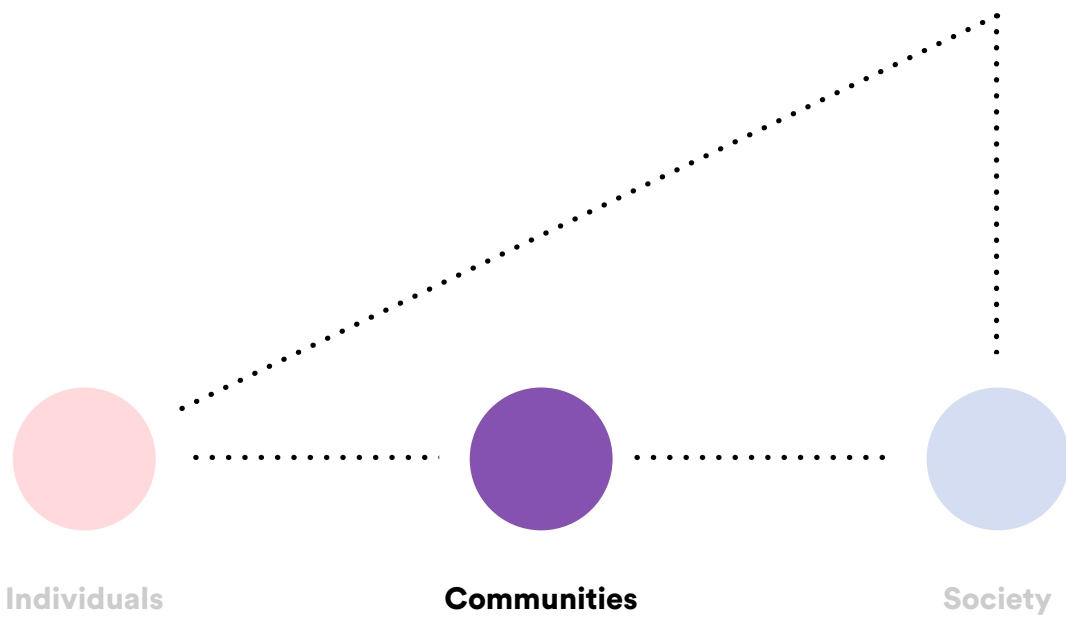
compliment or scorn. The performative nature of social media contributes to comparison culture and feelings of “missing out.”

In his book “*The Attention Merchants*,” Columbia Law School professor and technology writer Tim Wu writes, “Like all attention harvesters, Instagram has not stirred any new yearning within us, merely acted upon one already there, and facilitated its gratification to an unimaginable extent. Therein lies the real problem.”

## The causal loop

Time spent on social platforms necessarily reduces the time someone spends having interactions “in real life.” We’ve seen how “screen time” contributes to feelings of depression and isolation, which reduce the desire to engage in the physical world and further fuel time spent online seeking connection.





## The community impact

“The best lack all conviction,  
while the worst are full of  
passionate intensity.”

– William Butler Yeats

If social media is designed to keep individuals engaged on the platform as much as possible, what does this do to our communities?

Social media platforms make advertising dollars off of every minute of user attention. Companies therefore build algorithms to recognize patterns that entice users to spend as much time on their platforms as possible. The Facebook newsfeed, for example, [specifically curates content for each user](#) based on their history of engagement with posts given a variety of factors. These include who posted, how other people engaged with the post, what type of post it is, and when it was posted.

These algorithms reveal that what resonates the most are posts that appeal to negative emotional engagement. Social networks rely on their users’ tendency to behave tribally in moments of anger, excitement, anxiety, or fear, and leverage it to increase time on platform. “Divisive content is the king of online media today,” YouTube content creator Matt Lee told The Guardian in a [2018 article](#). “YouTube heavily boosts anything that riles people up. It’s one of the most toxic things: the point at which you’re breaking down is the point at which the algorithm loves you the most.”

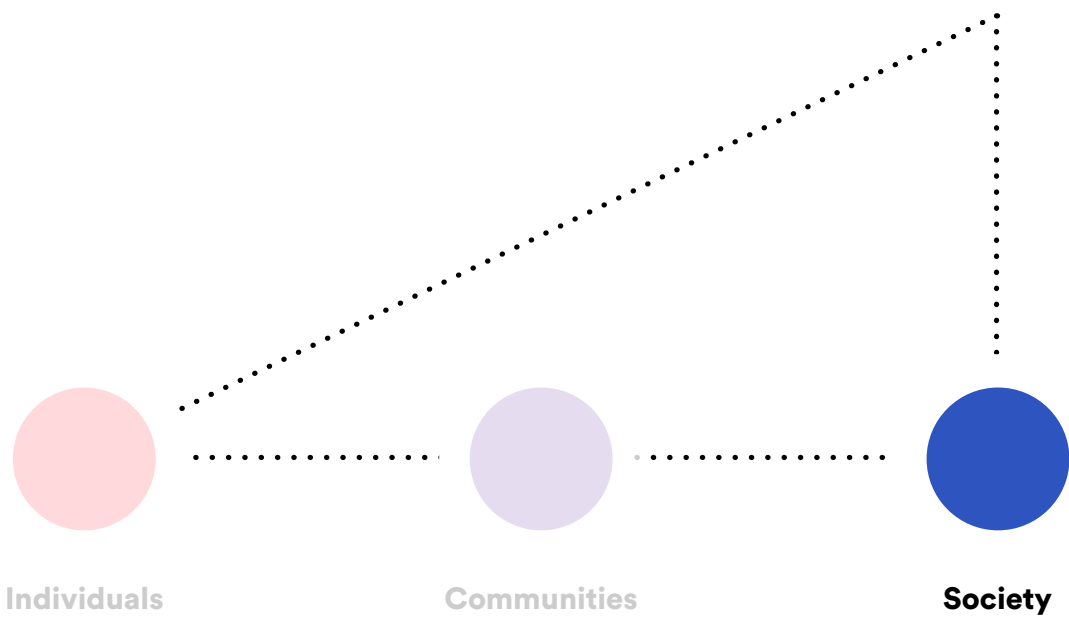
Sensational content drives engagement, creating a social media environment that is toxic and polarizing. This environment all too often spills over into the “real,” physical world.



## The causal loop

The more time someone spends on a social network, the more of their data is harvested for profiling and microtargeting. Social media algorithms are designed to curate content in order to keep each individual engaged on the platform as long as possible. This is best achieved by provoking emotion – often by surfacing sensational or radical content – that in turn keeps users glued to the platform.





## The societal impact

We now see how social media platforms are designed to keep users engaged as long as possible, often by surfacing sensational content. The societal consequences of this behavior are momentous:

- 3A The spread of misinformation and disinformation,**
- 3B The gutting of the independent press in ostensibly democratic countries,**
- 3C The reinforcement of authoritarian governments in non-democratic countries**

## The spread of misinformation and disinformation

Social media's tendency to surface and promote divisive content both contributes to, and is exacerbated by, asymmetrical media literacy and a lack of equitable access to news and quality information.

A [2018 joint report](#) on access to news in the U.K. conducted by the Reuters Institute for the Study of Journalism and Oxford University revealed that, "There is greater social inequality in online news consumption than in offline news consumption [...] Lower social grade individuals use significantly fewer online sources on average." The report continues that poorer U.K. residents were more likely to discover their news via distributed platforms like social media than to seek out news from reputable sources.

The lack of media literacy extends beyond socioeconomic status to age differences, as well. According to a [2018 study](#) by Pew Research Center in the U.S., individuals over 49 years old were less likely to correctly identify factual

statements from opinion statements when compared to their younger counterparts. This can lead to people believing and sharing misinformation (accidentally false information) and disinformation (false information shared deliberately), further adding to its amplification.

Algorithms are not the only ones at fault. Political strategists know that information shared on social networks impacts how people – and poorer populations or those with lower media literacy in particular – form opinions, contribute to political dialogue, and eventually, vote.

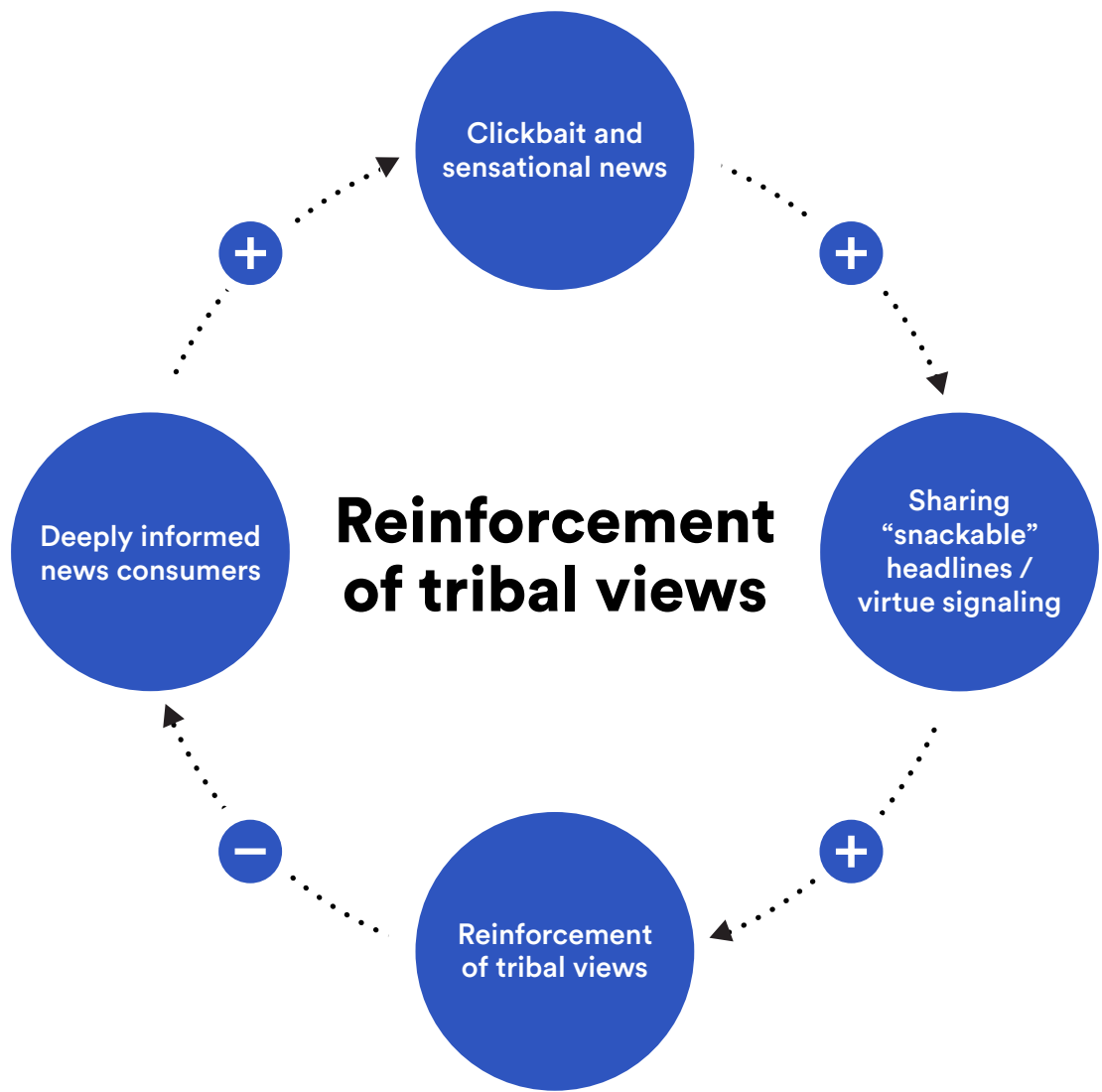
The campaign of Brazil's new far-right president Jair Bolsonaro was [allegedly bolstered by orchestrated social media brigades](#) that planned to spread disinformation weeks before the election via messaging platform WhatsApp. This is not an isolated incident; [the same technique has been used](#) in countries such as Mexico and the Philippines, catapulting candidates on a wave of disinformation and misinformation on

Facebook, Twitter, and WhatsApp.  
Clever campaigns exploit vulnerabilities  
in the platforms, taking advantage of the  
algorithmic mechanism that bubbles up  
sensational content, ensuring its virality.

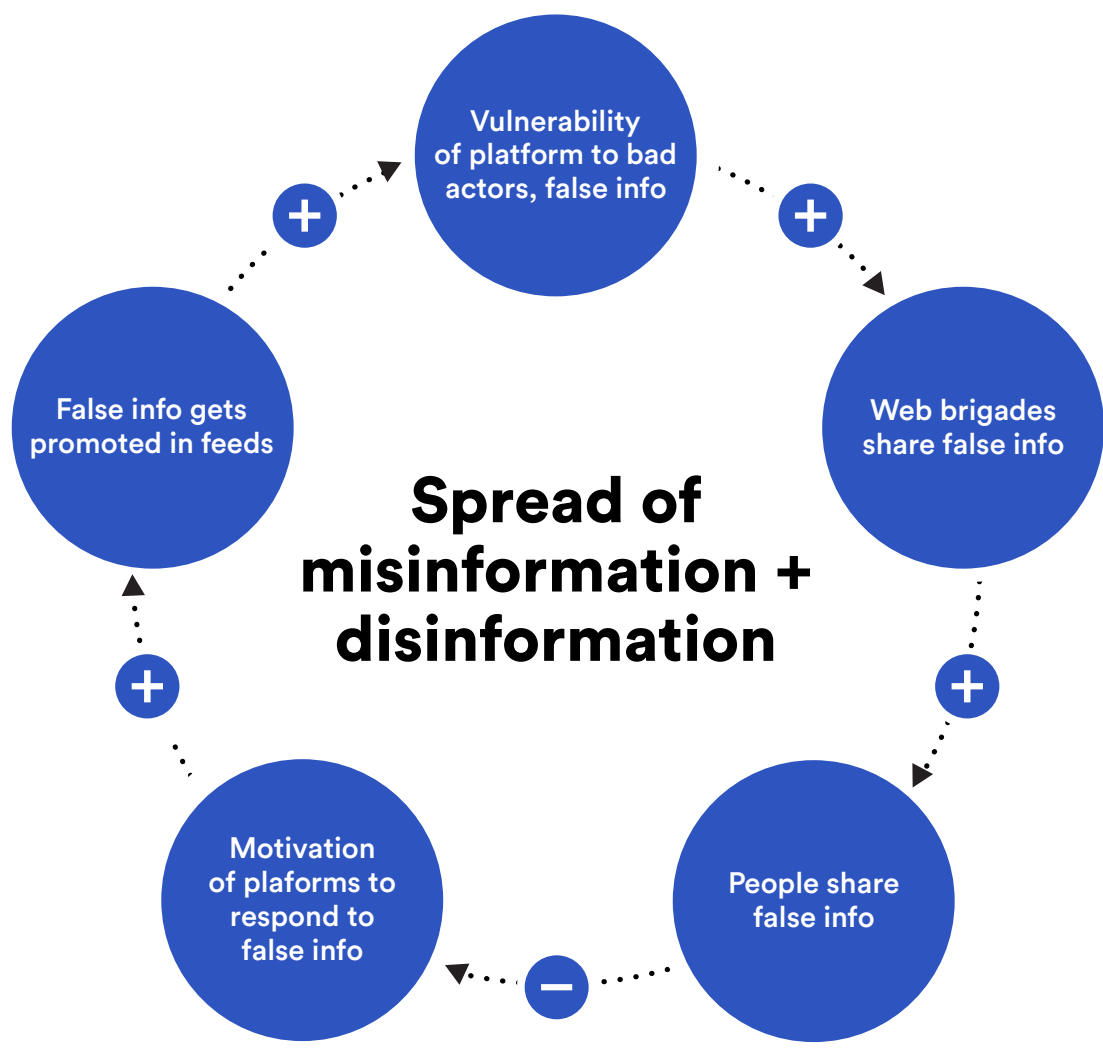
## The causal loop

Two causal loops contribute to the spread of misinformation and disinformation. Firstly, clickbait or sensationalized news provoke an emotional reaction that encourages users to share it out of outrage or a desire to virtue signal. A user's network sees the post, which spurs them to share as well. The spread of simplified, out-of-context content that reinforces existing views is detrimental to society's ability to discuss issues with nuance, driving users back to sensational bites of news.

Secondly, sensational content walks a fine line between fact and fiction. Social networks cannot adequately moderate false information when algorithms are designed to surface the most engaging content possible. This in turn promotes the spread of such false information, making social networks vulnerable to misinformation and disinformation. Bad actors – from individual trolls to calculated campaigns – exploit this vulnerability by sharing disinformation, which contributes to its organic spread across social media.







## The gutting of the independent press in ostensibly democratic countries

The spread of misinformation and disinformation on social media impacts global societies in different ways. In liberal democracies, it has challenged an independent press and contributed to a lack of trust in traditional institutions.

Digital media has unequivocally replaced the local newspaper. Since the mid-1990s, the number of daily newspapers and their circulation, staff and advertising revenue have all been [in steep decline](#). With so much of our attention focused on social networks, advertising revenue that used to sustain newspapers now heads straight to major social media platforms. Platforms that do not see themselves as media organizations, much less adhere to journalistic standards.

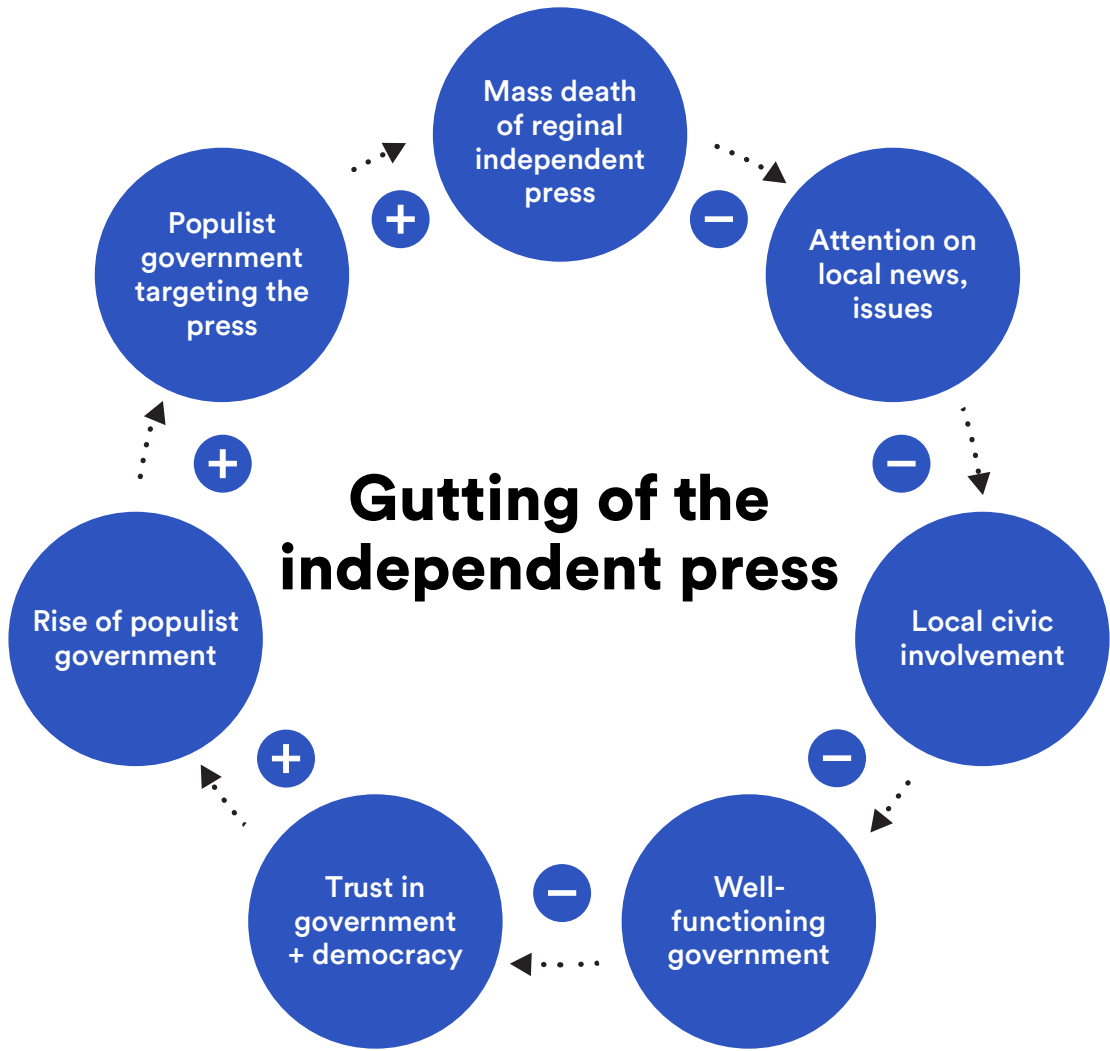
As Franklin Foer puts it in his book *World Without Mind*, “Over the past decade, journalism has come to depend unhealthily on Facebook and Google. The big tech companies supply journalism with an enormous percentage of its audience – and therefore a big chunk of revenue. This gives Silicon

Valley influence over the entire profession, and it has made the most of its power.”

More alarming is the causal relationship between the death of newspapers – particularly at a local level – and a decrease in civic engagement. Portland State University’s Lee Shaker [conducted a study in 2009](#) on civic engagement in Seattle and Denver, two major metropolitan areas that each lost a local newspaper. He found that “civic engagement declined in a statistically significant way” in the year after the cities lost their local papers. [A 2015 study](#) by Danny Hayes of George Washington University and Jennifer L. Lawless of American University echoed these findings, revealing that a decrease in local news reduces political awareness and participation. Less awareness and participation lead to less-functional institutions and less trust in those institutions.

## The causal loop

As the decline of regional, independent press reduces a community's attention to local news and issues, they are less likely to participate in civic pursuits. Less participation results in a poorly functioning local government, eroding trust in these institutions. This gives rise to populist movements that target traditional institutions – including the press – which puts further downward pressure on the sustainability of local news sources.



## The reinforcement of authoritarian governments in non-democratic countries

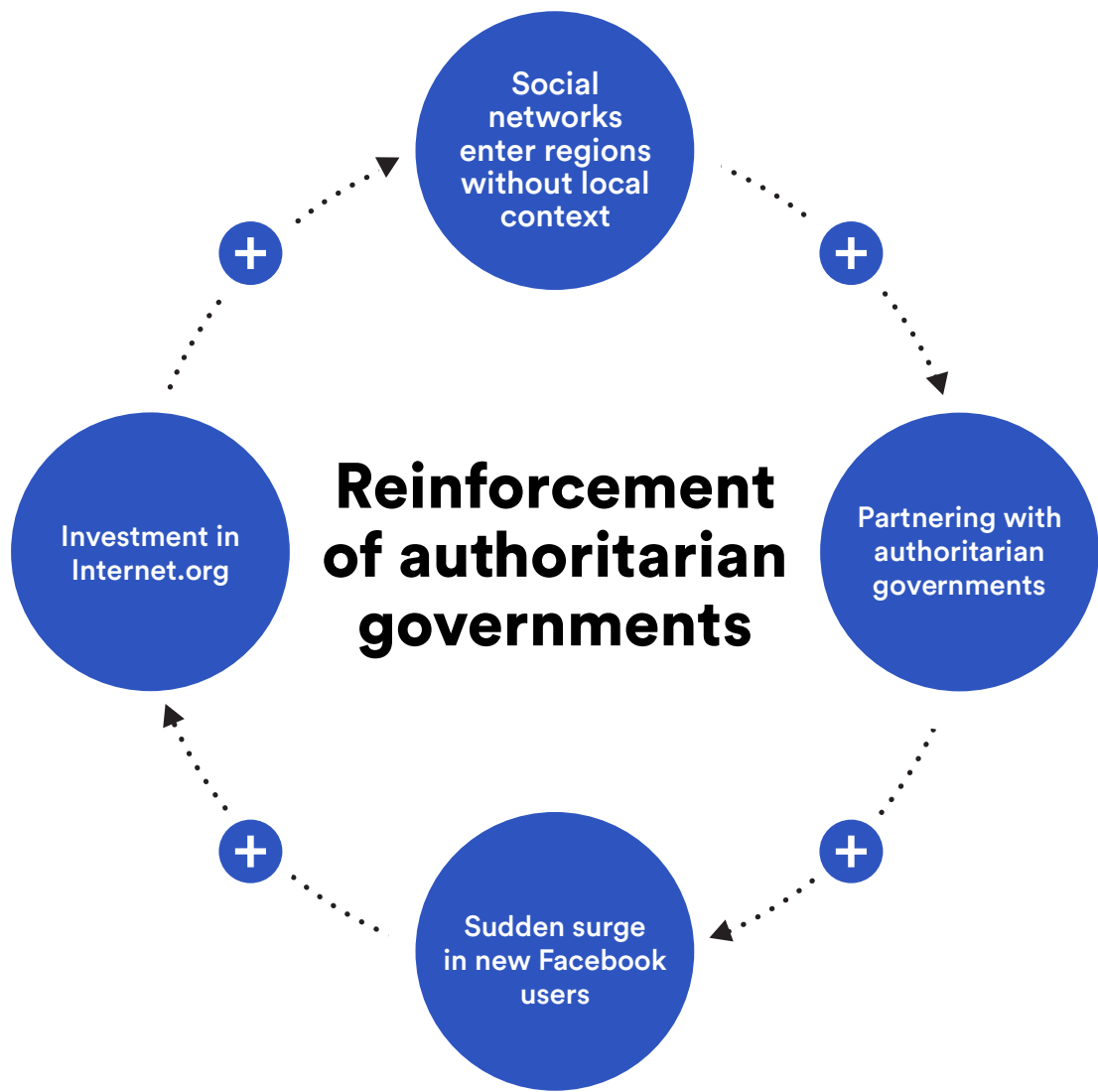
As social networks aggressively expand into countries that are not liberal democracies, authoritarian governments leverage the platforms to advance their agendas. It is particularly easy to spread misinformation and disinformation on social networks in countries where moderators have little to no understanding of local dynamics or in-country tribal conflict and oppression.

A 2018 [New York Times article](#) revealed that the military police in Myanmar used Facebook to systematically spread misinformation and hate speech about the targeted Muslim Rohingya population. According to human rights groups, these incendiary posts directly led to violence and contributed to genocide against this minority population. In another example, Facebook moderators were [slow to respond to racial slurs and posts inciting ethnic violence in Sri Lanka](#) because they lacked Sinhala-speaking staff and moderators.

Even more damning is Facebook's partnership with authoritarian governments such as those in Myanmar and the Philippines to further expand its presence in those countries through the use of Facebook Free Basics. Free Basics is a service on Internet.org, a Facebook-led partnership to bring parts of the Internet to developing communities – typically through a pre-filtered Facebook feed. Although the sudden influx of new users helps Facebook maintain its growth, it comes at the direct expense of the rights and safety of its users in these societies.

## The causal loop

With Internet.org, people who would otherwise not have Internet access are afforded limited connectivity for the price of their data and digital profile. As Facebook seeks ever more users, it enters markets where it doesn't understand the cultural context at best, and actively partners with authoritarian governments at worst – partnerships that drive more investment back to Internet.org.



## Step 2

# Identifying root cause



# Finding the deep structure: what is the core problem leading to these cascading effects?

The worst labyrinth is not that intricate form that can entrap us forever, but a single and precise straight line.

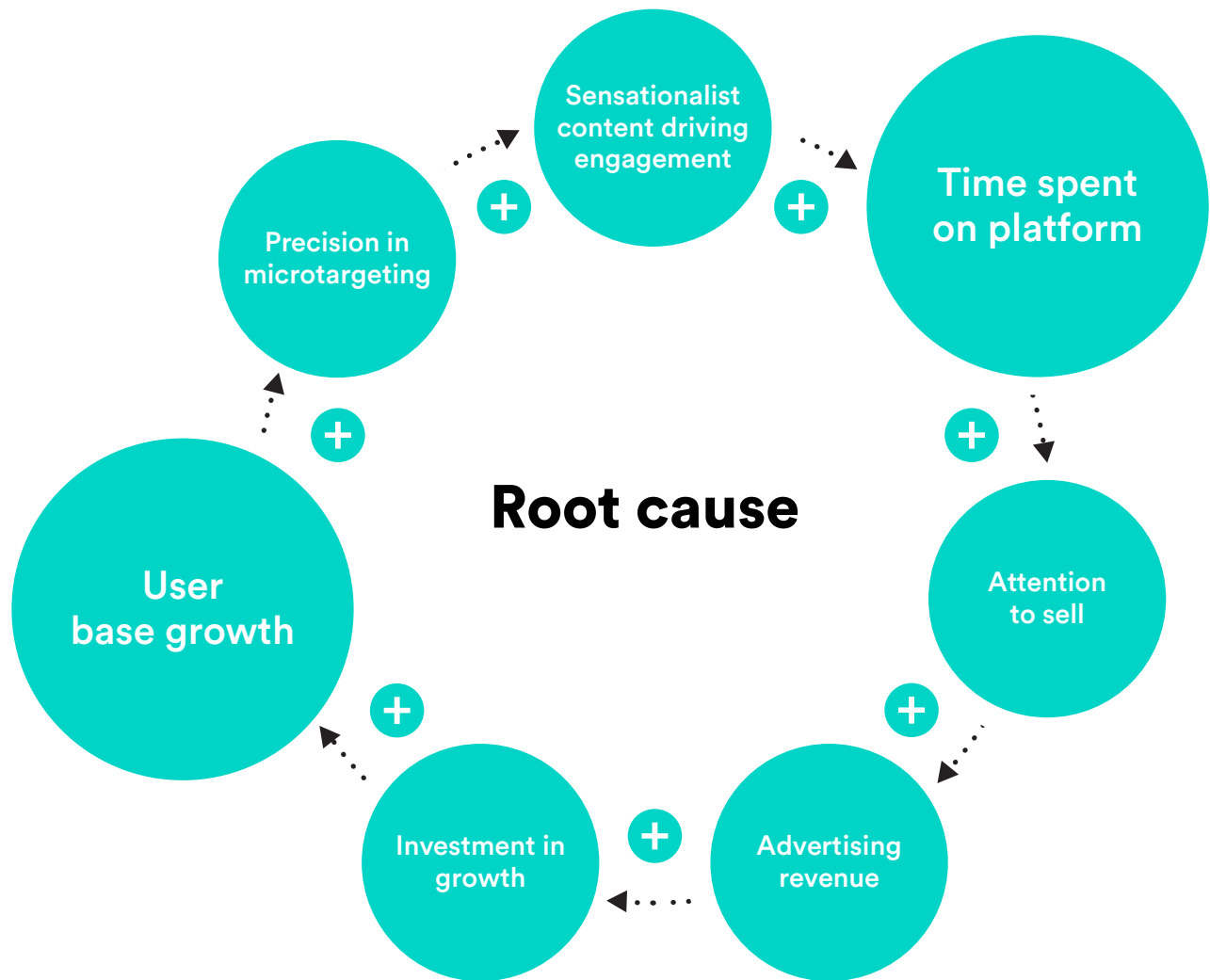
– Jorge Luis Borges

Responding only to the consequences of social media without addressing the root cause of the problems are akin to treating symptoms of a disease, rather than the disease itself. When we synthesize the causal loops identified in social media today, we see a larger relationship from which root causes emerge. All of the loops that we identified – the impact on society, communities, and individuals – all stem from a single core causal loop that identifies root cause.

The need to increase active users drives microtargeting to better capture the attention of those users. This microtargeting serves users the content that is most engaging to

them – and often most sensational – encouraging people to spend more time on the platform. The more time someone spends on a social platform, the more advertisements can be delivered to them, generating more money for the platform. But each user only has so much time. The advertising revenue must be funneled back into attracting more users in order to continue the business. The result is a self-reinforcing, unsustainable causal loop compounded by the root causes of user growth and time spent on platform.

These root causes are no accident. Like any business, investor expectations determine the design and business decisions of social media companies. And investors are driven by two factors: user growth and the attention-selling business model.



# Root cause: User growth imperative

The scale at which social networks operate is directly linked to the growth imperative that drives their decision-making.

Ever-increasing daily active users keep investor pressure at bay and even serves as a proxy for revenue, according to Dan McComas, former product head at Reddit. “From the inside, I can tell you that the board is never asking about revenue,” McComas said in [a 2018 interview with NY Mag](#). “They honestly don’t care, and they said as much. They’re only asking about growth. They believe that if they have a billion unique visitors a month, that they have a property that is going to be worth a ton of money in some way eventually. They really do look at it in that abstract way.”

Facebook is the only organization on Earth that has access to the data and social activity of more than 2 billion users spread out over every continent. Relatively small in comparison, Twitter has more than 300 million users, and

YouTube’s more than 1 billion users watch more than 1 billion hours of video each day. But these numbers alone are not enough to appease investors. To echo a [2018 Bloomberg report](#), “To keep investors happy, it can’t just remain massively profitable – it needs to keep growing, which means getting more people online.”

The fastest way to continue to add users at scale is by entering new markets. In the case of Facebook, this satisfies investors whose short-term goals punish the company’s stock price when growth targets are not met. As of 2018, user growth for both Facebook and Twitter are [stagnating in the U.S. while experiencing the most growth internationally](#).

It is this quest for scale that gives the negative outcomes of social media an outsize impact. The growth imperative creates the reluctance to address any problems that may limit it.

# Root cause: Attention-selling business model

There's another reason social media companies resist seeking solutions that may cause people to spend less time on their platforms: their profits explicitly depend on the amount of attention people cede to their site. The equation is simple: more eyes for more time, equals more attention on the advertising that lines social networks' pockets.

Former Deputy CTO of the U.S. Nicole Wong said [in an interview with Recode](#) that when she worked at Google, search was designed based on, "comprehensiveness, we want all the information we can get; there's relevance, meaning we deliver the right response when someone asked a question; and speed. Those were the three pillars of search." Over time, she continued, these pillars were replaced with personalization, engagement, and speed.

The widespread personal data that social networks collect – spanning demographic, location, usage, connections, and more – serves as the foundation for microtargeting of advertisements as well as content that reinforces time spent on platform. Capturing as many users' attention for as humanly long as possible fulfills the need for ever-increasing scale – and ever-increasing advertising revenue.

## Step 3

**How do we  
solve the  
problem?**

# Determining categories of intervention

The many problems of social media are not just the unfortunate consequences of human nature played out on a neutral platform. By now, we see the root causes of user growth at all costs and an attention-selling business model are by intentional design. In other words, the negative consequences of social media illustrate their parent companies' priorities in action.

To begin to solve a systemic problem like that of social media requires a multifaceted approach – and we don't have all the answers. Yet by disrupting the root causes of user growth (scale and speed) and time spent on platforms, we can challenge the problematic cascading effects of social media. Let's examine three potential intervention categories that – taken together – have the potential to address these root causes.

- 1 **Thoughtful regulation and policy change**
- 2 **Reforming how social networks measure success**
- 3 **A new philosophy of user experience and behavioral incentives**

# Thoughtful regulation and policy change

The global regulatory environment lacks a robust understanding of the implications of unfettered growth and consolidation in the tech industry.

[The dominance of companies](#) such as Google (which has an 88-percent market share in search advertising) and Facebook (which controls more than 70 percent of social media on mobile devices) is breathtaking. A very small number of companies monopolize user attention in a way that obliterates any potential competition.

An improved regulatory environment would challenge the dominance of these powerful companies, limit their growth, and check their personal data collection activities. This should curb their ability to rely on attention-monetized advertising revenue. For example, perhaps Facebook's acquisitions of Instagram and WhatsApp should have drawn more scrutiny from anti-trust regulators.

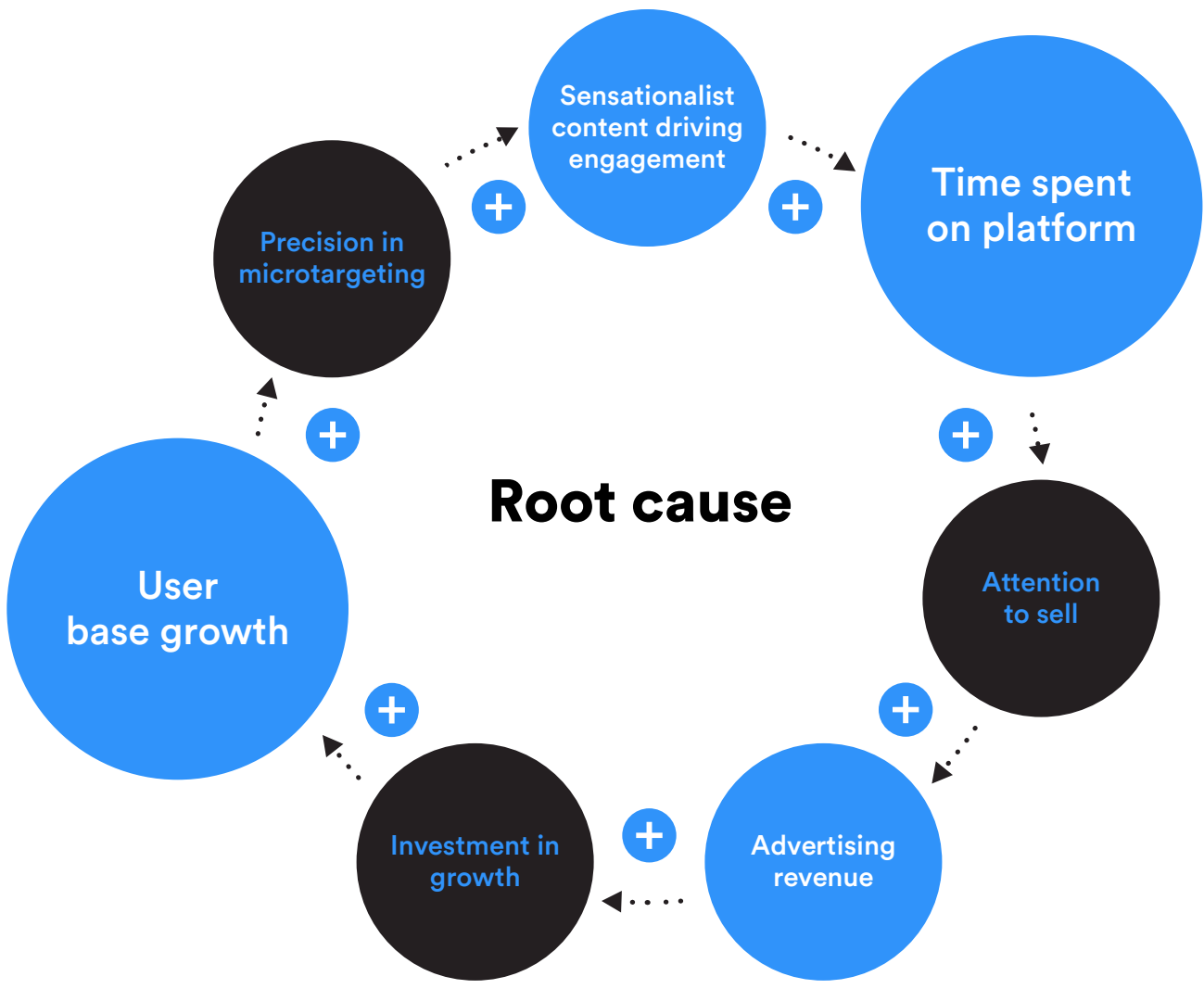
Another angle is to consider personal data protection as a human right. Regulation such as the E.U.'s

[General Data Protection Regulation](#) is a step toward the concept of data protection as a right, rather than a commodity.

To consider long-term interventions in this category, we can ask ourselves:

- How might policy makers create an environment in which data privacy is a fundamental human right?
- How might government foster industry competition?

Thoughtful regulation and policy change have the potential to address factors of microtargeting, user attention available to sell, and investment in growth that contribute to the root cause loop.





## Reforming how social networks measure success

Like any company, social networks want business that lasts. We need to remind them that hypergrowth is like a supernova: it burns bright but only for a short while. The metrics with which social media companies currently measure success – an ever-growing user base and ever-increasing engagement – are fundamentally unsustainable.

Not only is the current advertising-based business model detrimental to individual and community health, it is simply bad business. Social networks are already experiencing attrition in the U.S., and if trends prove correct, the model will simply not work in emerging markets and the global South. According to a [Mozilla digital advertising report](#), “[...] digital advertising in emerging markets has additional limits to growth: the addressable audience is relatively small (compared to traditional media), usage is fragmented across devices and channels, and consumption is highly constrained by data affordability, all of which make it more difficult to conduct effective ad campaigns.” Eventually, social media

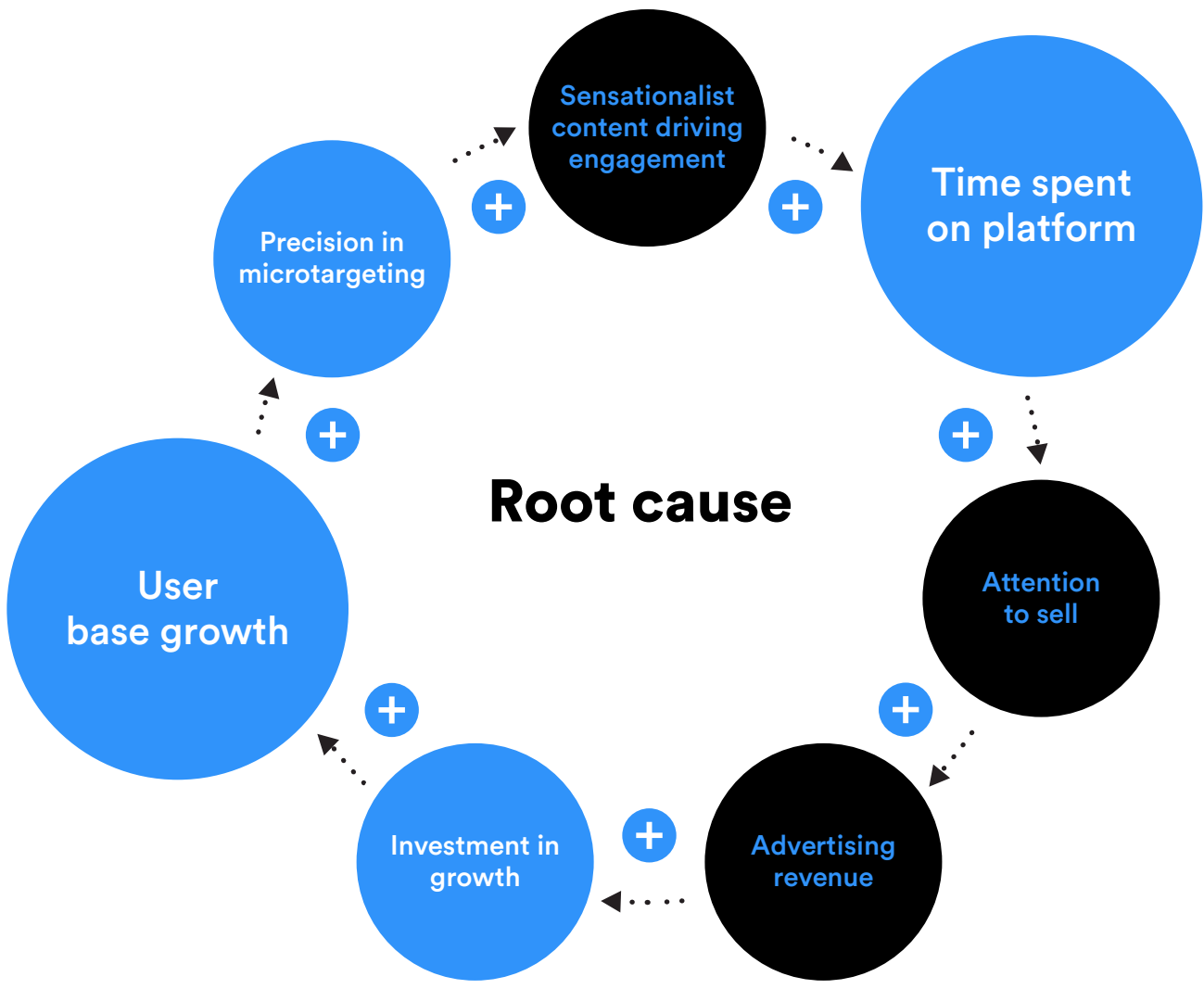
companies will run out of profitable new eyeballs to capture.

In order to sustain global profits in the long run, social media platforms will need to find an alternative to their attention-selling, advertising-driven business model. As Nicole Wong [pondered](#), “What if [after] everything that we’ve learned in the last two years, we say, ‘That’s not the Internet we want to live with’? [...] what if the pillars [of design] were accuracy, authenticity and context?”

To consider long-term interventions in this category, we can ask ourselves:

- How might investors create metrics that emphasize quality rather than quantity of both user engagement and thoughtful growth?
- How might social media companies innovate on business models that are not advertising-dependent?

Let’s see where this impacts root cause.



## A new philosophy of user experience and behavioral incentives

By now we know that social media companies are actively resistant to making user experience changes that may stymie user growth or engagement. This results in design decisions and algorithmic content prioritization that cause harm.

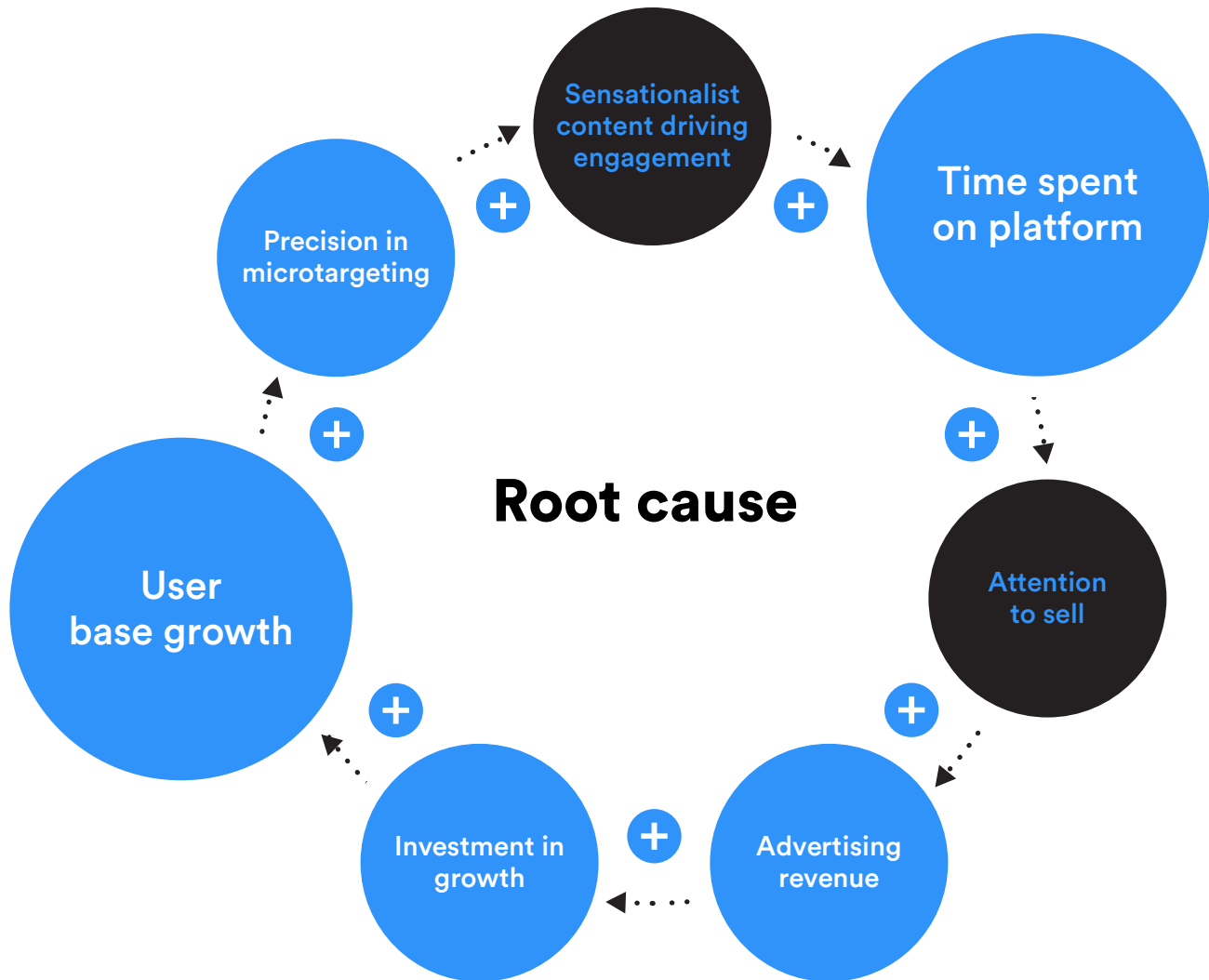
As Tristan Harris, former Google Design Ethicist and Co-founder of the Center for Humane Technology, [succinctly put it](#), “[Big tech is] changing our democracy, and it’s changing our ability to have the conversations and relationships that we want with each other.”

Designers have a role to play in altering these consequences. Behavior scientist and Founder and Director of the Stanford Behavior Design Lab [B.J. Fogg’s behavior model](#) is often used to influence how users interact with the products and services we design. Rather than using this model to make products seductively addictive and capture as much attention as possible, social networks and their designers could use these techniques to steer toward healthier behavior.

To consider long-term interventions in this category, we can ask ourselves:

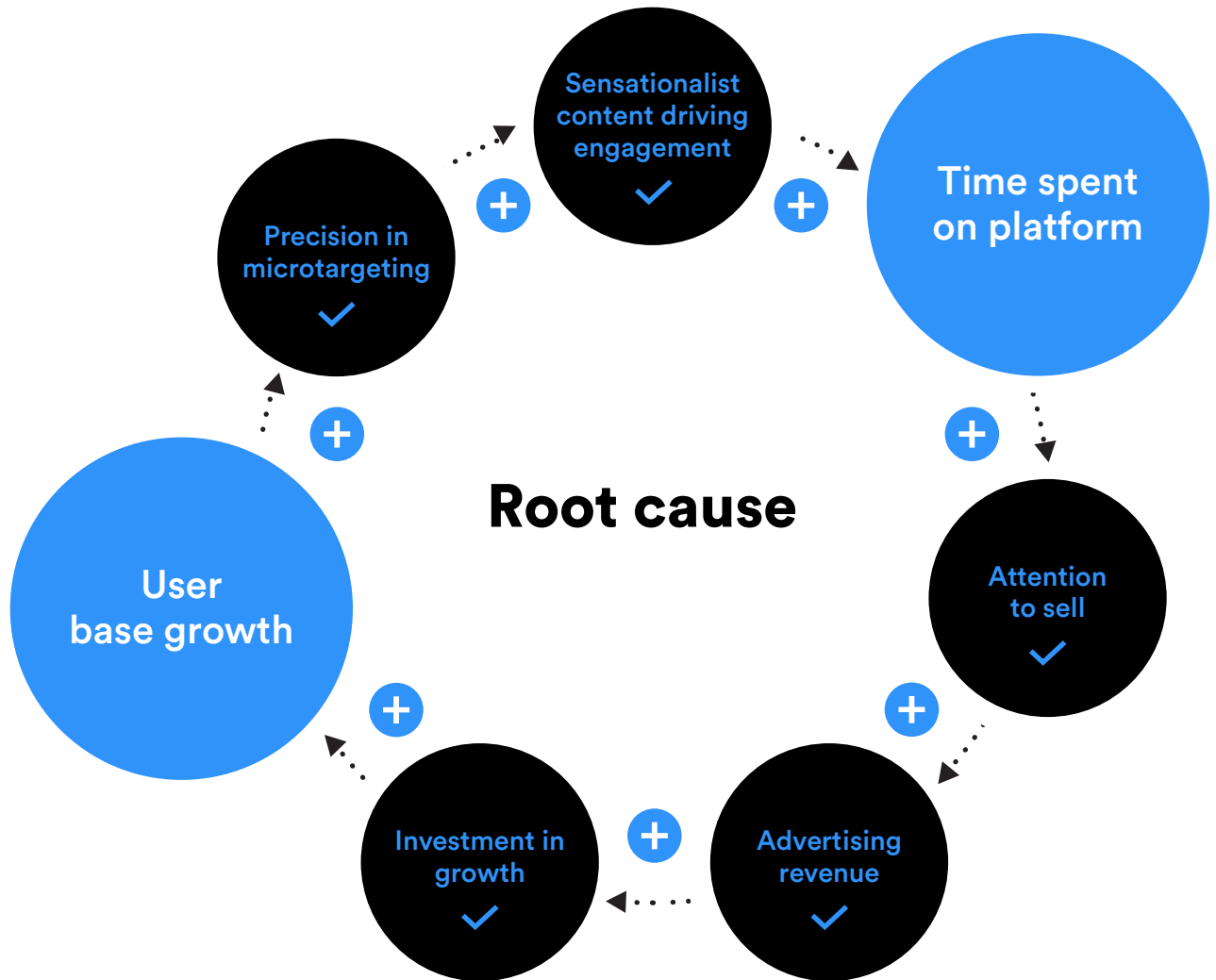
- How might social media companies design for bridging diverse people, rather than polarizing and driving them apart?
- How might social media companies use behavior change models to steer toward healthy relationships with their products? To steer toward healthy interactions between users?

Of course, better user experiences are not enough in and of themselves to create meaningful change. A less-addictive user interface will make very little difference without the other two categories of intervention. We ultimately need a shift away from the current consolidation of power in very few tech company hands, and a change in the way they make their money.



# Systemic interventions

Taken together, these interventions are concerted steps toward resolving the actions that feed into social media's root cause loop. By addressing the sale of user attention; a reliance on advertising revenue; investment in growth at all costs; precision in microtargeting; and sensationalist content to drive engagement, we can begin to solve for a system that relies on time spent on platform and user base growth.



# Conclusion

# Beyond Social

# Beyond social: Systems thinking to tackle intractable problems

Social networks contribute to consequences that extend far further than any single tech company, but each social media platform has the ability to make a difference. We encourage social networks to reconsider growing in ways that are unsustainable. Explore a new business model. Remember that users are humans with complex social dynamics and varying levels of digital literacy. If we can remind these organizations that social platforms are people – not users – we can remind the tech industry of our collective humanity.

We also hope to inspire designers and companies across industries to use our systems thinking approach to solving intractable problems. By 1) understanding the status quo, 2) identifying root cause, and 3) prioritizing interventions, we can consider complex problems in a more holistic way. This has its own ripple effect: as designers with a broad view,

we can be more thoughtful – and not just disruptive – in our work. We can better consider the effects of what we make and be more creative when thinking about solutions in tandem. When we broaden our ability to problem solve, we have greater positive impact on the world.



# Can Social Be Saved? A design approach to solving for systems

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## More systems thinking resources

[Systems Thinking For Social Change](#)

David Peter Stroh.

Chelsea Green Publishing, 2015.

[Systems Practice](#)

The Omidyar Group

[Thinking in Systems: A Primer](#)

Donella H. Meadows.

Chelsea Green Publishing, 2008.



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