# Cyclicality: Missions and Metrics
by Sep Kamvar

There is an old Zen story about a man riding a horse, galloping frantically down a path. His friend, who is sitting by the side of the road, calls out "Where are you going?" The man replies: "I don't know. Ask the horse!"

When we build our tools, we often depend on metrics to guide our development. We keep graphs of unique visitors and pageviews and watch them closely. This keeps us honest. It's hard to convince anybody that we're building a useful tool if our metrics show that nobody is using it.

But we must take care when we use metrics. Metrics can be like the horse in the old Zen story. Once we decide on them, they have a habit of setting the agenda. As the old adage goes, what gets measured gets managed.

The standard metric for a country's economic welfare is GDP. I find this strange. If the government decided to give millions of dollars to the country's richest people so that they can buy yachts from one another, that would increase GDP. So would clearcutting our national forests to build strip malls, outsourcing the raising of our children, and incarcerating large swaths of our poor.

If we temper the language a bit, we might find that this description is not so far from reality.

My point is that metrics shape behavior. Joseph Stiglitz describes this mechanism nicely: "What we gather our information about, and how we describe success, affects what we strive for." Political leaders who want to grow the economy, he says, will focus policies on things that increase GDP, even when GDP does not correlate with societal well-being.

Which brings me to my second point: all metrics leave something out. Often, they leave the most important things out.

In 2007, Stanford offered a course called "CS377W: Creating Engaging Facebook Apps". The course assignment was to build a Facebook application that, according to the course website, would "focus on solving a problem for a broad audience." It was an intensively metrics-driven class, and the key metric was user numbers. By the metrics, the results were astonishing: in the course of the 10-week term, the apps collectively reached 16 million users.

The flipside was that the applications themselves were underwhelming. Most of them allowed users to do things like rank the attractiveness of their friends, send virtual hugs and have virtual pillow fights. The substance of the applications reflected what the metric

left out. If it were possible to measure the value of a user's attention, or how enriching an application is to her life, the course projects would likely have been quite different. But sometimes, the important things can't be measured.

It is useful, therefore, to have missions to balance our metrics. Of course, each tool should have its own mission. But if I were to suggest one mission for all tools, it might be this:

Every tool should nourish the things upon which it depends.

We see this principle at varying levels in some of our tools today. I call them cyclical tools. The iPhone empowers the developer ecosystem that helps drive its adoption. A bike strengthens the person who pedals it. Open-source software educates its potential contributors. A hallmark of cyclical tools is that they create open loops: the bike strengthens its rider to do things other than just pedal the bike.

Cyclical tools are like trees, whose falling leaves fertilize the soil in which they grow.

At the top of the stack, all tools depend on nature and human nature. They depend on the sun, trees, minerals, and fossil fuels to provide their raw materials and energy. They depend on the creativity of builders to give them form. And they depend on the attention of their users, without which they would languish.

An ecosystem of cyclical tools would therefore nourish nature and empower people. A fully cyclical software application may, for example, use peer-to-peer data centers powered by its users, consisting of biodegradable, fertilizing microprocessors. It would be open-source and provide APIs to empower the creativity of builders, and a clean design and useful purpose that cultivates the concentration of its users.

If some of this sounds like science fiction, so did manned lunar vehicles in 1950, or self-driving cars in 2000. We have a tendency to achieve what we focus on.

It’s difficult to build cyclical tools because the alternative is so tempting. Cars are faster than bikes. FishVille reaches more people than Moby Dick. At first, cyclical tools appear to be lower-power, slower-growth, and more expensive than extractive tools.

But you can’t measure the impact of tools on their own. You must measure them by the ecosystems that they co-create.