# HOW TO CALCULATE THE TRUE VALUE OF YOUR TOOLS

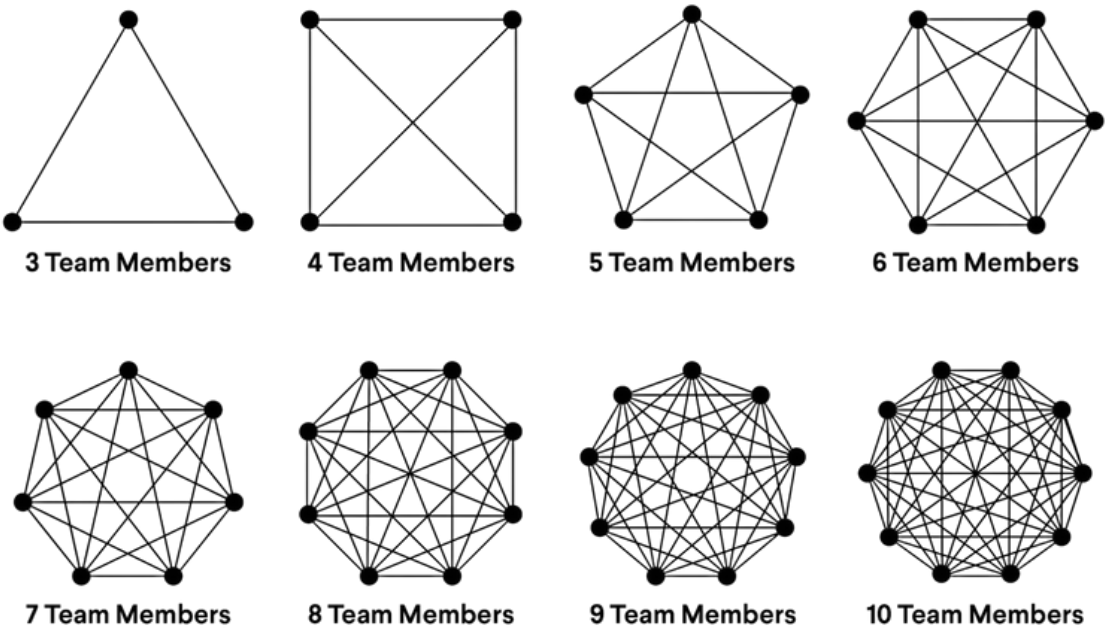
A deeper look at organizational complexity from *Chapter 1: The CPR Framework*

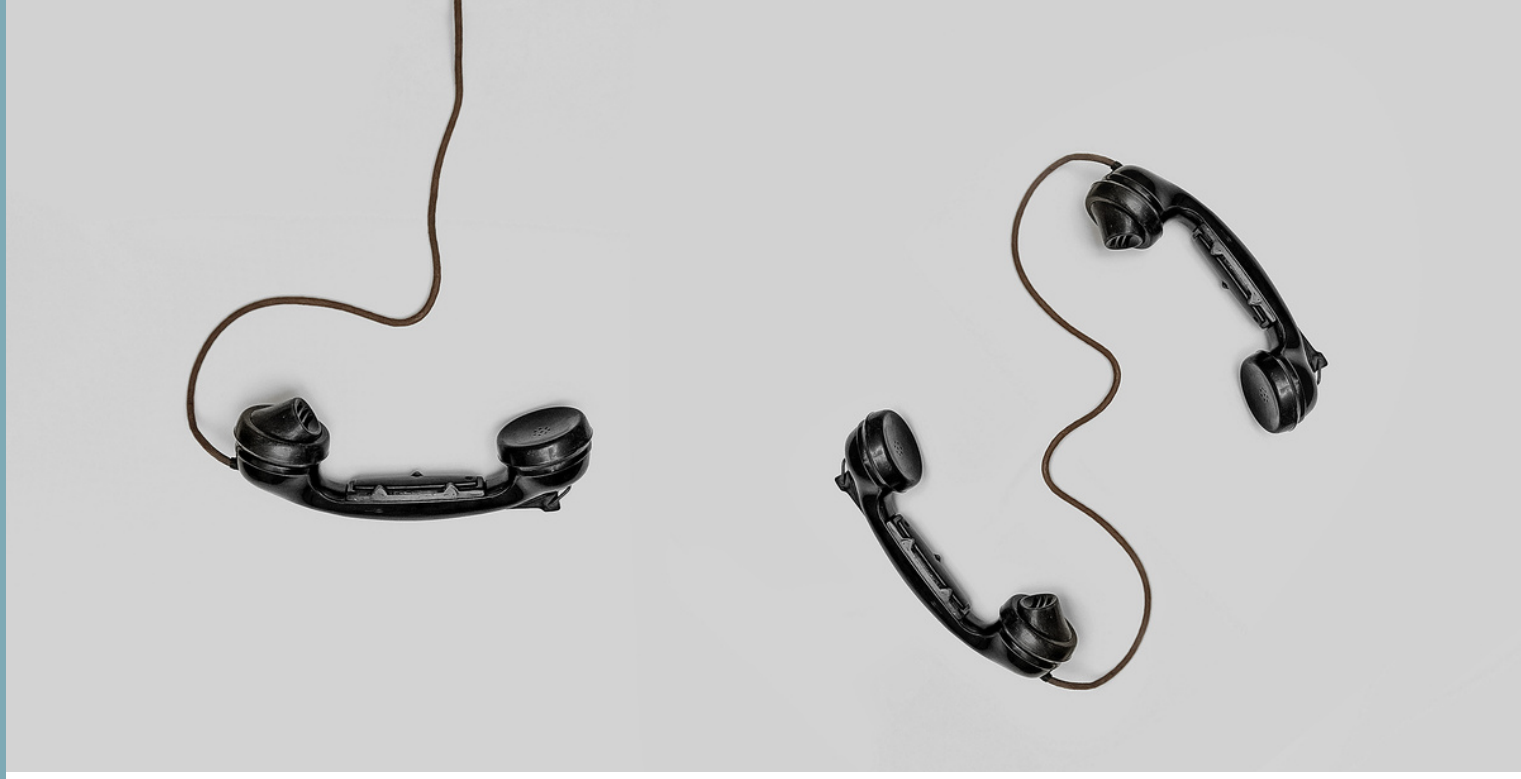
# COMPLEXITY SCALES EXPONENTIALLY

In Chapter 1 of *Come Up For Air*, I addressed the challenges that organizations face when overwhelmed with work and no proper processes are set in place. The standard solution to this issue is to hire more people, which may not always be the best option. What many business leaders fail to recognize is that *complexity scales exponentially with team size*.

As a company grows, more effort is spent to manage and train more employees. Additionally, workflows become more complex, and therefore, it becomes difficult to apply process improvements. In other words, the more people you hire, the more complicated things get.

Moreover, communication becomes more complex. As the figure below illustrates, the more people are involved, the more opportunities for interactions to take place.





In the book, I also touched on Metcalfe's Law and how it best explains the network effect. As a quick refresher, the formula states that "the value of a telecommunications network is proportional to the square (n2) of the number of connected users of the system."[1] The value of the tool increases proportionally as more people acquire it because there are more possible connections.

But there's a downside to this. The more connections there are, the more complexity and noise there is. For the math folks out there, you can actually calculate the number of unique possible connections in a network (or group of people) by using the following formula where "n" is the number of people:

$$\frac{n(n-1)}{2}$$

Why does this matter? Because every new team member added to an organization adds exponential complexity. So you may actually be causing more harm than good by hiring new people, as it makes working together even more complicated.

The lesson here is that it makes more sense to get the full "value" out of your current team and tools before adding new people into the mix. With enough efficiency gains, you may even be able to accomplish enough additional work that hiring another person isn't even needed.



[1] https://en.wikipedia.org/wiki/Metcalfe%27s_law

The CPR Framework helps solve this problem by ensuring that everyone on the team is already working at max efficiency, and any new people are brought into a system that is already working well. Part of this is optimizing how the team works together. But a big part of it is optimizing the use of tools so that teams are getting the full value out of each—meaning everyone is using them in the right way and at the right time.

*I've actually created my own formula to calculate the "actual value" of a tool, which is similar to Metcalfe's Law. It looks like this:*

$$\frac{c^2 - c}{n^2 - n}$$

In this formula, "c" is the number of people using a tool correctly and "n" is the total number of people using it.

Again, the math itself is not important—the underlying principle is that the value of a tool goes up proportionally to the square number of people using it correctly. In other words, you can only get the "full" value out of a tool if everyone is using it correctly and the value goes down quickly if people aren't using it correctly. If you only have 10 out of 100 people using a tool correctly, for example, you do not have 10% value of the tool. The actual value is about 1% because the 90 people using it incorrectly are affecting the way everyone works, decreasing the efficiency of the team as a whole.

The CPR Framework serves to help teams get the full value out of both their people *and* tools. It's the best place to start because you'll also quickly get more output without increasing payroll and you'll quickly get the full value from every new person you bring on.

**Book a call to learn how we can help you get the most value out of your tools.**