



White paper

## **Size matters**

The dynamics of teams

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Scoutwest, Inc.

## Size matters

In 1975 Fred Brooks wrote a wonderful, and recommended book named “The Mythical Man-Month.” The book explains in detail why adding more people to a development project does not make the project shorter, and can even make it take longer. I haven’t read the book recently, so I feel comfortable discussing the subject without excessive plagiarism. It is an important dynamic of product development that often escapes us.

Have you ever seen a resource allocation chart where resources are added to a project schedule to account for all the time needed? The assumption is that X number of development hours can be filled with Y resources each working Z number of hours. It’s simple math. Yet, for some reason it never works, and the more people that are added, the longer the project takes. Why?

My belief is that human beings don’t work quite like collective machines. You can’t just add up their individual efforts to arrive at a cumulative total. The human group-dynamic is more complex. Human beings operate in a leader/follower configuration, and most people are followers. Even very intelligent people require clear leadership to inspire productivity, and the farther they are from the luminaries, the less productive they will be. Every group needs true visionaries to inspire the rest to achieve goals. Without them, people will plod slowly along and achieve almost nothing.

I’ve seen small groups of two to six people produce more than fifty people could. In small groups, people are closer to the luminary, and that inspiration doubles their productivity. People feel a sense of “mission” or “calling” that puts them into a whole different productivity category. They get the feeling that their mission is important and they will complete it regardless of the obstacles. They are Davids in a world of Goliaths. That dynamic is sometimes not present in large groups of people. People in larger groups with more limited access to visionaries feel

isolated. They have no one to follow. I believe that the ratio of leaders to followers is a big factor in scaling up a project.

Sometimes there is no clear luminary in the group, and everybody wants to have his “expert” opinion heard. That makes too many chiefs and not enough Indians. Decisions are made by committees and endless meetings, with everyone jockeying for preeminent recognition. I’ve seen that happen, and it’s not productive. At first glance it seems like a lot is being discussed, but the members aren’t really working as a team. True teamwork happens when everyone is happy with his position, at least for the time being, and has unlimited access to leadership. It’s best in this case to agree upon a team leader and ask the other candidates to willingly follow.

In addition to leadership and teamwork, there are other group dynamic issues to consider. Another big one is communication and interaction inefficiencies. For every person on a team, there may potentially be interaction between every other member. That means that there is a multiplication of instances where team members interact. The number of potential interactions is calculated by the formula  $(n \times (n-1))$ , where  $n$  is the number of team members. For instance, a team of 3 could have 6 potential interactions, while a team of 10 could have 90. These interactions will occur on a regular basis, perhaps every day. This assumes that every member has a need to communicate with every other member. In practice, this rarely happens, but you can see how communication and interaction becomes an efficiency issue when more members are added to a team. Additional team members mean more defects and issues created during development. Each issue carries with it a multiplication of human interactions, as the issue is being discovered, tracked, fixed, and verified.

This is not a case against large project groups. Large groups are sometimes necessary, but you must be aware that they come with certain efficiency challenges that must be overcome.

## About Us

Scoutwest, Inc. develops and publishes project management and time tracking products for consulting, manufacturing, government, and general business applications.

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We specialize in packaged software for timesheets, project management, time tracking, defect tracking, and issue tracking. Standard Time is a web-based timesheet that also runs on Windows, Palm OS, and Pocket PC. It can be used for client billing and task management. Standard Issue is used for bug tracking and general issue tracking.

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