

## Build a Tower, Build a Team

### Part 1

... **So**<sup>1</sup>, normally, most people begin by **orienting themselves**<sup>2</sup> to the task. They talk about it, they figure out what it's going to look like, they jockey for power. Then they spend some time planning, organizing, they sketch, and they lay out spaghetti. They spend **the majority of their time**<sup>3</sup> assembling the sticks into ever-growing structures. And then, finally, just as they're running out of time, someone takes out the marshmallow, and then they **gingerly**<sup>4</sup> put it on top, and then they stand back, and—**ta-da!**<sup>5</sup>—they admire their work. But what really happens, most of the time, is that the “ta-da” turns into an “**uh-oh**”<sup>6</sup> because the weight of the marshmallow causes the entire structure to **buckle**<sup>7</sup> and to collapse.

### Part 2

So there are a number of people who have a lot more “uh-oh” moments than others, and among the worst are recent graduates of business school. They lie, they cheat, they get distracted, and they produce really lame structures. And, of course, there are teams that have a lot more “ta-da” structures, and among the best are recent graduates of kindergarten. And it's pretty amazing. As **Peter**<sup>8</sup> tells us, not only do they produce the tallest structures, but they're the most interesting structures of them all.

So the question you want to ask is: **How come?**<sup>9</sup> Why? What is it about them? And Peter likes to say that none of the kids spend any time trying to be **CEO of Spaghetti, Inc**<sup>10</sup>. **Right?**<sup>11</sup> They don't spend time jockeying for power. But there's another reason as well. And the reason is that business students are trained to find the single right plan, right? And then they execute on it. And then what happens is, when they put the marshmallow on the top, they run out of time, and what happens? It's a crisis. Sound familiar? Right. What kindergartners do differently is that they start with the marshmallow, and they build prototypes, successive prototypes, always keeping the marshmallow on top, so they have multiple times to fix when they build prototypes along the way. Designers recognize this type of collaboration as the essence of **the iterative process**<sup>12</sup>. And with each version, kids get instant feedback about what works and what doesn't work.

So the capacity to play in prototype is really essential, but let's look at how different teams perform. So the average for most people is around 20 inches; business school students, about half of that; lawyers, a little better, but not much better than that; kindergartners, better than most adults. Who does the very best? Architects and engineers, **thankfully**<sup>13</sup>. Thirty-nine inches is the tallest structure I've seen. And why is it? Because they understand triangles and **self-reinforcing**

<sup>1</sup> Wujec uses “So” and “And” to start many of his sentences in his speech. Both connectors are used often in spoken English to link one idea to the next.

<sup>2</sup> When you “orient yourself” to something, you learn about it and prepare to deal with it.

<sup>3</sup> “the majority of their time” means the same as “most of their time.”

<sup>4</sup> Synonyms for the word “gingerly” include “gently” and “delicately.”

<sup>5</sup> “ta-da” is an exclamation of enthusiasm often used by performers to create a dramatic feeling when showing others something that's impressive.

<sup>6</sup> “uh-oh” is a common exclamation when something goes wrong.

<sup>7</sup> “buckle” as a verb means “to become bent as a result of excessive force.”

<sup>8</sup> Wujec is referring to Peter Skillman, the designer of the Marshmallow Challenge mentioned in Lesson A.

<sup>9</sup> “How come?” is an informal, spoken expression that means “Why?”

<sup>10</sup> Wujec makes a joke to explain that kindergartners don't jockey for power, by which he means that none of them try to be the leader of the Marshmallow Challenge team, as they know it's not important to be in charge of a spaghetti tower (unlike the adult participants).

<sup>11</sup> The question “Right?” is a rhetorical one used to get agreement from the audience. He is not expecting an answer. Synonyms include “Don't you agree?” and “It's true, isn't it?”

<sup>12</sup> “the iterative process” refers to repeating an attempt at a solution over and over again in order to get the best one possible.

<sup>13</sup> Wujec's joke is that if architects and engineers were not the best at the challenge, we would all be in trouble!

**geometrical patterns**<sup>14</sup> are **the key to**<sup>15</sup> building stable structures. So CEOs, a little bit better than average, but here's where it gets interesting. If you put an executive admin. on the team, they get significantly better. It's incredible. **You know, you look around, you go**<sup>16</sup>, "Oh, that team's going to win." You can just tell beforehand. And why is that? Because they have special skills of **facilitation**<sup>17</sup>. They manage the process, they understand the process. And any team who manages and pays close attention to work will significantly improve the team's performance. Specialized skills and facilitation skills are the combination that leads to strong success. If you have

ten teams that typically perform, you'll get maybe six or so that have standing structures. . . .

And the fundamental lesson, I believe, is that design truly is a **contact sport**<sup>18</sup>. It demands that we bring all of our senses to the task and that we apply the very best of our thinking, our feeling, and our doing to the challenge that we have at hand. And sometimes, a little prototype of this experience is all that it takes to turn us from an "uh-oh" moment to a "ta-da" moment. And that can make a big difference.

Thank you very much.

This is an edited version of Wujec's 2010 TED Talk. To watch the full talk, visit [TED.com](http://TED.com).

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<sup>14</sup> Wujec is referring to shapes, such as triangles, commonly used in architecture and engineering due to the strength they provide to a structure.

<sup>15</sup> When something "is the key to" something else, it means it is the best way to achieve it.

<sup>16</sup> In Wujec's comment "You know, you look around, you go . . .", "You know" is similar to "Right?" as it is used to engage the audience and point out he believes they will agree with what he is saying. When he says "you go," he means "you're thinking" or "you're saying." In this case, he means that as he looked around the room, it was clear to him which team was going to win. In this sentence, Wujec uses "you" three times to tell the audience that they would be thinking the same as him if they had also been in the room at the Marshmallow Challenge.

<sup>17</sup> "facilitation" refers to the act of making a task or action easier. Wujec explains that facilitation is a special skill of executive admins, as are organization and planning, two other important roles to have on a team in the Marshmallow Challenge. Wujec calls this "managing the process."

<sup>18</sup> A "contact sport" is a sport such as soccer that involves physical contact. Here Wujec uses it to suggest that a design process can be improved by close collaboration.