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Where unexpected paths lead to great discoveries.

–Wayne Hodgins



Confusing “flapping” with “flying”

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Wayne Hodgins, strategic futurist and “corporate evangelist” at Autodesk, brings his keen foresight and thought-provoking perspectives to his podcast series *Off Course – On Target*.

In this podcast, Wayne shows that with new ideas and new technologies, we often get stuck when we try to mimic the experts. Instead, we need to focus on identifying and understanding those essential elements that can help us make those quantum leaps forward, and take us to where we really want to be.

WAYNE HODGINS: Hello, and welcome to another podcast here on *Off Course - On Target*, where unexpected paths lead to great discoveries. I'm Wayne Hodgins, and today I'd like to share a short story I've been telling for years which many have said have helped them to think outside that proverbial box to get some new perspective on solving some of their more vexing problems. This is the story about how we often confuse “flapping” with “flying”.

Now, since as far back as my memory goes, I've always been a flier. I still have vivid dreams of flying like a bird, soaring up into the sky. And perhaps out of this interest, several years ago I got curious about why we suddenly succeeded with human flight after so many centuries of failure. Think about it. We tried to fly for thousands of years, almost for as long as we've been on this planet. And to say that we failed would be putting it mildly. We failed spectacularly, perhaps leading to phrases like “die trying” and “fatal flaws.”

Yet, around 1900 or so (depending on who you want to credit with the first powered heavier-than-air flight) we suddenly succeeded. Why? How? What changed? And in my pursuit of these questions about the sudden success with flight, I believe I discovered a fatal flaw in the ways we approach most large and small problems, and developed some great insight into how to succeed faster and better with unbelievable results. This is what I'd like to share with you today in this episode on flapping.

Now, the fatal flaw in most of the previous attempts at flight followed what sounds like a very logical path: find and copy the experts. Is flight possible? Look out the window! Birds and bees do it, so sure, it's possible. And if they can do it, so can we! More logically, let's study how they do it and copy them so we can do it too. Thus, almost all the failed attempts at flight involved wings that flapped...many of them even covered with feathers. Even brilliant minds, the likes of Leonardo da Vinci, found themselves boxed in by this artificial constraint, as most of his designs, even, for mechanical flight, also involved these fabulous mechanical contraptions for flapping wings.

And what struck me about the first successful flights was that they didn't flap. In fact, to the best of my knowledge, there has never been a successful powered flight by wings that could flap. So from my point of view, what we humans seem to have done was to step back mentally and look for what I call the essence of flight, the essential elements of success. What are the absolutely critical characters in flight, the principles of flight?

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Now, while there is some debate on the details of just exactly how flight works, flight seems to have two essential elements: lift and thrust. And it turns out that back in about 1783, this fellow Daniel Bernoulli came up with a detailed understanding of lift and what causes it. Now, as most of us might remember from our basic science education, lift happens on a wing when air moves over one side faster than the other. And so, when our focus shifted to lift and thrust instead of flapping and copying, when we stopped copying those experts and just went for the essentials of lift and thrust any way we could get them, flight and the follow-on breakthrough followed very quickly. And I do mean quickly. Not only did we succeed suddenly, but consider how fast this initial success took off and flew upwards.

Now, as I said, the first flight is somewhere around 1903. Some say earlier, in the late 1890s. But in any case, it was Chuck Yeager who broke the sound barrier next in 1947, less than 50 years later. In fact, in '54, the B-52 bomber's maiden flight had it lifting 77, 000 pounds, or 35, 000 kilos of payload and flying at about 550 miles an hour, or about 880 kilometers per hour. In 1958, Pan-Am started nonstop jet flights between New York and Paris in the Boeing 707. In '69, we first landed on the moon. And the 747 that many of us have flown on carries 800, 000 pounds. Wow! Now, that is stunning progress and a great example of another favorite topic of mine, exponential change, and how the rate at which what we all change is occurring.

Exponential change is something very difficult for us to grasp, because this rate of increase is just so foreign to us. But think about this example of flight. I thought Marshall Brain had a great way of putting it in his book called "Robotic Nation, " when he described it: "Imagine we were to travel back in time to about 1900 right now. And imagine I'm up on a soapbox saying that by 1955, millions of people will be flying at supersonic speeds in sleek aircraft and traveling coast-to-coast in just a few hours." After thousands of years of spectacular failure, we went from barely being able to fly a few feet to being able to circle the earth at supersonic speeds in just 50 years. Imagine that rate of progress.

I'm not going to digress any further into this topic of exponential rates of change, but if you're interested, please check out a previous posting and podcast I've done here on *Off Course - On Target* called "[Living in a World of Exponential Change](#)," and you'll get lots more there. But getting back to flight, what I'm hoping the story will illustrate is that we could often do well to avoid the temptation to follow what appears to be such a logical path of following the experts, this flapping idea, and instead, recommending that we focus on identifying the essential elements of whatever we're trying to do, and figuring out how to have these essential elements met with new methods, new materials, and new technology. Unfortunately, from where I sit, I see a whole lot of flapping going on around the world. That is to say, a lot of copying what used to work, or what the experts are doing in another context.

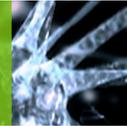
Now, looking at so-called e-learning, or online learning provides some insight into this, or one example at least. The goal here, as I understand it, is to improve learning and performance, right? And we all know about learning, education, and training. So we study it. We see that lots of it involves textbooks and other content. So that must be what learning's all about, right? Let's digitize all the books and put them online, and that'll make this huge difference! Bzzt. Wrong. No significant difference from a learning and performance standpoint, at least.

Hmm. That wasn't it. OK, let's study it again. Ahh! Blackboards! That's what's common when we see great learning taking place! Let's go high-tech and change their color to whiteboards, and then put them online! Digitize them! That'll do it, right! Bzzt. Wrong again. No significant difference.

Drat! OK, let's take another look at this learning. Aha! Classrooms. That must be it! Let's replicate

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them, put them online. Ooh! And let's add some really high-tech features like putting everyone in a virtual desk, and let them raise their virtual little hands! That'll do it, right? Wrong. No significant difference, again.

Well, you kind of get the point. A whole lot of flapping going on there. Copying what used to work— at least, what worked in a different context, some could argue. And when I look at most other professions and practices of so-called innovation and progress out there, I see a lot more flapping than results and innovation.

Now, to be fair, to some extent, the flapping stage is inevitable as we explore and discover, and there is much we can learn from this stage. However, my hope and recommendation is that we can recognize this flapping phase as just that: a phase in a much longer process towards significant improvement and progress. A phase that we can either avoid altogether if possible, or at least make it as short as possible and learn as much as possible from it. Instead, let's devote as much energy as possible to understanding the essential elements.

Going back to the example of learning, what are the essential elements of great learning? We know it's possible. We've all got at least one memory of an experience of fabulous learning: a great teacher or coach, a time when it all just clicked and that bulb in our head lit up brightly. However, these moments also seem to be extremely rare. So the goal, at least as far as I can imagine what I'd like it to be, is how can we increase the frequency of these experiences to be daily or multiple times every day? And by studying the examples of peak learning, we can and we are understanding the essence, the essentials of learning, ever better.

In fact, much like the case of Bernoulli, who had provided the details for lift over 150 years before people noticed it and applied it to flight, there is also a massive amount of existing research on learning, cognition, the brain, and many other related areas, for us to take advantage of. But we seem to continue to ignore or remain ignorant of most of them, and most often, this is very well-founded and proven research.

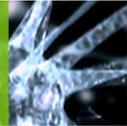
Note, too, that Bernoulli's principle was not at all specific to flight, which is yet another lesson to be learned here, which is, let's look for inventions, innovations, and ideas way beyond our specific area of interest, and be ever-watchful for some of these truly profound and most often very generic principles that do relate to the essence of what we are trying to do. And then, let's adopt them and adapt these general principles to our specific interests by applying the context, such as how Bernoulli's general principles of lift were so successful when applied to the context of flight.

As per my assertion at the beginning, the rate of change is exponential, and so too, then, is the need for innovation to be happening exponentially faster. And flapping is just not going to get us there. Hence, I hope that we can all try to stop some of this flapping or copying what worked in the past, and focus instead on identifying and understanding these essential elements for which we can use the new means and methods to achieve quantum leaps towards the end results we're looking for.

I'm convinced that when we do so, our flights of fancy and our ideas will also suddenly take off and jump onto that same exponential curve of ever-increasing success as was the case with the first human flight. Watch out for the traps of common sense and apparent logic, and don't be afraid to challenge some of those experts, those who are saying that flight's just not possible, or as some like to put it, "It's hard to soar like an eagle when you're surrounded by turkeys."

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So happy takeoff and landing. I'm Wayne Hodgins and I want to thank you for joining me here on Off Course - On Target for this episode on flapping. I hope you'll come back often and for more unexpected paths that will lead us to great discoveries.

To hear this podcast, please visit

http://waynehodgins.typepad.com/ontarget/files/ocot_unlearning.mp3.