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# Divergent Thinking vs Convergent Thinking



**Phil Charron**

Executive Vice President

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**Brian** recently pointed everyone in the office to the [Wikipedia article on Design Thinking](#). I never thought to go to Wikipedia to learn about what we do, but it's always good to see what the crowd thinks, so I dove in—and I'm glad I did.



One thing that caught my eye that I haven't stopped to think about for a long time is the difference between **Divergent and Convergent thinking**. It is so integrated into what we do, that we just don't stop to think about the theories behind these two methods of thinking. We often rail against tired concepts in our industry like "think outside the box," yet we still try to capture what that phrase meant before it became a cliché. It's good to go back to the basics once in a while.

In my words: divergent thinking is taking a challenge and attempting to identify all of the possible drivers of that challenge, then listing all of the ways those drivers can be addressed.

In practice, it's more than just brainstorming. Some analysis is needed so you don't put **too many tools in your swiss army knife**, but you shouldn't hamstring yourself with too many constraints, either.

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There are many extreme examples of divergent thinking out there. Twitter, for instance, created an online service without a clear practical application – then launched it to see how people used it so they could refine it. That doesn't mean that launching something and then figuring out what the market is for it is a bullet-proof strategy. In Twitter's case it worked, in most cases it doesn't. You just don't hear about the failures because... well... they failed.

Convergent thinking, on the other hand, is the practice of trying to solve a discrete challenge quickly and efficiently by selecting the optimal solution from a finite set (again, these are my words).

There are a lot of memorable examples of convergent thinking out there that demonstrate the necessity for this technique. For instance, how about that scene in Apollo 13 where the astronauts are trying to generate enough power to get the capsule back to Earth? The chief orders his team to make the capsule simulator "cold and dark" and create "the exact same conditions they've got" – right down to the readings on all of the instrument panels. One of



solutions are limited to the constraints of a hard reality.

The challenge in Design Thinking is framing the challenges correctly when you want a specific result. Frame it one way and you may be leading the group to spend two months brainstorming when all you needed was a hammer four weeks ago. Frame it the other way and you could end up with a team chasing every problem with the same old hammer while your competition invented the screwdriver.

Here's an example of the same problem framed for divergent and convergent thinking:

### **Convergent example:**

I live four miles from work. My car gets 30 MPG. I want to use less fuel in my commute for financial and conservation reasons. Money is no object. *Find the three best replacement vehicles for my car.*

### **Divergent Example:**

I live four miles from work. My car gets 30 MPG. I want to use less fuel in my commute for financial and conservation reasons. Money is no object. *What options do I have to reduce my fuel consumption?*

The problem is the same, but the questions change slightly. The Convergent example asks for a vehicle, whereas the Divergent example doesn't rule out options like moving closer to work, telecommuting, walking, carpooling, taking public transportation, etc.





problem. The divergent example may take more time to investigate – but you may discover an option that is completely different than what the user has asked you to do – like start your own company from home or invent a car that runs off of air. Or, if your brain works like Mike’s did when I asked for an illustration, you may expose your inner Inspector Gadget.

A lot has been said and speculated about Steve Jobs and the design process since he passed. The **reality distortion field** he was known to exude may have been his way of imposing convergent thinking at just the right times. Insisting that you need to ship in three months when everyone tells you it will take ten months can quickly move a group from divergent to convergent thinking. NOTE: This is a very dangerous tactic very few people can pull off. Among other things, you need a unique character, extensive platform knowledge, an abnormally talented team, and a high tolerance for failure to know when to play this card.

As designers outside of the reality distortion field, one of our jobs is to pick the right thinking method to ensure the project’s (and our client’s) success.

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