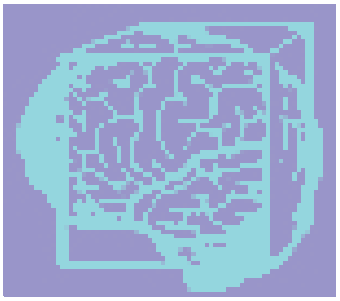
Larry Smith

Life "Outside the BOX"

We have all heard the expressions concerning this **"outside the box"** stuff. Usually it has to do with people who don't really think or act like other people do, or others think they should. But how does that apply to us as engineers? What does it take to be "outside the box"?

First, let's look at a definition for the "box".
This "box" is bounded by the constraints we are under. A place where things are always done the same way: by the same rules, for the same reasons, where life is calm and peaceful, where no one makes waves, or by my way of thinking BORING.
To me living in a constrained box tends to take "extreme" thinking out of the whole equation. We become something akin to robots. We do things simply because that is the way we were taught. We have no other reason, we just copy the past. Therefore, we get stuck inside this "box".
I am not saying that this "box" is a bad thing. I really think that results come from inside the "box". However, I have concluded that ideas generally come from "outside the box". It is like progressive changes (i.e. step by step changes, little ideas, logical steps) are developed inside this box, and quantum leaps (ideas, logical conclusions) blossom outside these boxes, and have to be brought inside to be of use.
So this box has become our comfort zone. An area where we know if we do these things, this way, what the



result will be and we don't have to work very hard to get things done.
So now we have defined this "box" we all live in one way or another. Let's move outside these "boxes". Into a bigger "box", into a "box" only bounded by the limits of what we can think or dream about. A "box" that in some ways is not limited by reality.

Let's get "outside the box".
Can you give me an example of people who think "outside the box"? How about science fiction writers? They take the bare threads of innovation and technology and stretch it into possible conclusions of what the future might evolve into. What is the big difference between them and "outside the box" engineers? Engineers take those bare threads and weave them into real innovations that DO impact our future.
That is how technology develops, people taking solutions or ideas from one box, many boxes or just out of the blue and applying them to problems or processes inside other boxes. Don't you think that this might be the key to this "outside the box" stuff? Could it be we are not "outside the box" thinkers? Could it be we just have enough knowledge about multiple boxes that we can take solutions and mold them to work inside different boxes? Or at least change the "box" so other things can now exist inside it.
To look at this a different way, we must be secure enough, both in our box and in other boxes to apply the knowledge and solutions of one box to another box. This may explain why engineers are such techno-geeks. They are gathering information and knowledge from other boxes so they can apply it in their own world. At least that's a good excuse we can tell our wives and bosses.
It all goes back to, "The difficult

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we do quickly, the impossible just takes a little longer." The little longer may only be a quest for the right technology to apply to a particular situation or problem. It may only take a little imagination.

So what is imagination? Is it living in another world? Making reality into dreams? Making dreams into reality? One way to describe imagination is, "Only those who can see the invisible, can do the impossible". Is that it? A person must have the ability to understand and "see" how different pieces could work together in order to create something totally new. Is it a matter of visualization?

When you put people together who are "outside the box" thinkers they interact in ways that seem to take things to a new level. They see things that others can't see. They understand things before "normal" people even grasp what the conversation is about. Yet they seem to have the same vision. They all come at something from a different direction. From different experiences and knowledge, however, they visualize the same end result. They seem to be able to achieve more, think bigger, elevate their thinking and create MAGIC.

Speaking of magic, what is this magic that we humans have always been entranced with? Are magicians merely people who were and are thinking and working "outside the box"? I know a former protection engineer who always explained protection work as "smoke and mirrors". I think that was his way of explaining to people outside this area of expertise, that you just have to trust us. "It works", but I will never be able to explain it to you in terms you will understand.

I firmly believe, we need people who are comfortable inside these "boxes". We need people who are comfortable "outside these boxes", or in different "boxes". We also need people who are "chameleons", people who can change themselves so they appear to belong in many different environments (many boxes). People who can morph ideas and solutions in such a way they become useful in many different "boxes".

I think we should sample life in as many "boxes" as possible along our journey. We should include activities that are outside our "engineering box". Then those experiences and the knowledge gained from them will stimulate our thought processes inside our "boxes".

As these concepts develop and evolve both inside and outside a "box", we as engineers always seem to be waiting. Waiting on the hardware to catch the software. Waiting for the software to catch the hardware…

The most frustrating part is the ideas always seem to be ahead of the technology. We know the ideas will work we just have to wait for the technology to make it feasible, or cost effective. Occasionally the need is so great, the idea so good, that the cost factor almost disappears. In those cases the benefits and what is learned along the way tend to be worth the effort, sometimes the benefits spill over and aid society as a whole. Do you know where Velcro came from?

Just think about the results of the work developing the first transistor. From that chunk of stuff we now have computers you can hold in your hand. As a result of these computers we now have that technology (computers) applied across every possible application. I even saw one mounted in the door of a refrigerator!

Is this a case of doing things simply because they're possible? If so what do you call the conclusion that something is possible, but may not be practical? Is it not realization?

As we are developing these across the box solutions we need to be aware that the reality of the solution may NOT be the best solution. It may not even be a good solution. So keep yourself grounded in reality as you use your imagination.

Well that sums up my general experience of what life is like "outside the box". For some of us it is a wonderful place to be. It can also be a very scary place. It may even be a very lonely place. It is often a frustrating place. Sometimes you get the impression that no one understands where you are coming from. Sometimes you even question your own sanity. But in the end I don't think I would trade life out here for being stuck inside a "box".

I have been told my presentation style is very akin to preaching. If preaching is: Knowing what you believe. Telling others about what you believe. Why you believe it. And even attempting to convince them they need to believe the same things. Then I am guilty of preaching.

So that's my sermon for today. For those of you who got lost during my ramblings, the sermon points were: Imagination, Visualization, and Realization.

I now leave you with one thought. Just remember:

Everything runs on smoke. You let the smoke out. It don't work no more.

Until the next time.

Yours from way outside the box.

Larry