Steel Doesn’t Float

At a recent Toronto VMware User Group I was inspired by a comment made during Mike Laverick’s keynote session. The gist of the remark was around how a ship is not really designed to float based on it’s materials, but in the way it’s constructed by using ballasts for displacement.

I’d like to expand a bit on this idea. We’ve all heard this saying before:

> The whole is greater than the sum of its parts

While its origins date back to the greek philosophers, the concept holds true today. Let’s look at the raw science of it which is that steel doesn’t float. Take your finest stainless steel cutlery and drop it into a sink full of water.

Just in case you aren’t playing along at home with the experiment I’ll give you a hint: it sinks. It is a pretty simple experiment. So now that we’ve exhibited the basics of the buoyancy, or lack of buoyancy in this case, of steel.

This is steel

So we’ve seen steel in its raw form, but as you know it can be crafted, molded, and manufactured into many different forms and products.

This…also steel

How this applies to technology is really not much different than the way it applies to create the beautifully engineered QEII pictured above. While the raw materials in and of themselves do not hold anywhere near the capability of the final product, they are necessary and fundamental building blocks for the end result.

Take the same approach when you look at software and infrastructure for your IT organization. Again the raw parts, whether static or dynamic, come together in a carefully designed way to provide services to be consumed by the customer. The customer may be your internal workforce, or they may be your clients who drive your business.

To the consumer of your services, the underlying infrastructure, the way you’ve created it and the effort to maintain it is irrelevant. In their minds it is simply a service which serves a business purpose and achieves a business result.

Our goal in IT is to take raw materials in the form of processes and technologies and bring them together to create a product which will ultimately be more important, and more spectacular than any single item that went into it’s creation.

The inverse to this is that the end product (such as our floating vessel) is only as strong as any single part of it's original construction. If we use shoddy materials to create the end product then no matter how stunning it may be in appearance, it has an Achilles heel somewhere in the system. So in the same way that we did our experiment with the fork, the beautiful ship will now be a future attraction for people to view in the "how not do do this" category.

This used to be a really cool website before it sunk

One more thing that you need to account for in the construction and creation of your end product is that the end result may have an exposure to elements that the underlying ingredients were able to withstand as standalone products. For this reason we have to really have a top-down and bottom-up understanding of the whole product and its infrastructure.

I'll close with this illustration of how the collective is weaker than the parts with the classic video of the Tacoma Narrows bridge which became an unfortunate victim of mechanical resonance. Amazing and humbling all at the same time.