Every month we at http://www.wastedtalent.ca/blog ask our panel of engineers a general question from a reader. Have a question? Send us an email! Jam@wastedtalent.ca

Justin asks:
Q: Have you worked with technologists and what do engineers think of technologists and their abilities?

Jim - Cement Industry, Pennsylvania, USA

Sure, I work with technologists. The term “technologist” is more common in Canada than the States, but the concept is the same. Somebody has to take the measurements, and repair things that break. Goodness knows I can’t do it. At times technicians or technologists can be aggravating because they tend to pay extreme attention to detail and get hung up on questions of fact or precision that might seem not to matter in the “big picture”. So do the top executives in my company……but I digress. The scientific method requires both theoreticians and experimentalists, and the engineering method needs both engineers and technologists working together.

Scott - Semiconductor Industry - Massachusetts, USA

I'm not entirely sure who you mean by "technologists" - if you mean the suit-wearing types who work for magazines like CNET and write articles, I have little use for them. All they do is make our stock price go down for no good reason.

Now, if you're talking about the people who I'd call "technicians", that's another story. Technicians are the people who make a lab actually useful. Engineers might be the ones to design things, but the technicians make them work in the real world. And the good technicians probably know as much about the design as the engineers do.

I'd say in any organization there are two sets of people you want to keep on your good side - the secretaries and the technicians.

Dan - Diesel Engine Manufacturing - Illinois, USA

Full disclosure: I had to ask what a technologist was before writing this. In my company, the test engines are run by technicians who have very similar credentials to the technologists (without a diploma or training, in some cases), and it's very useful. They maintain our test
engines and prototype equipment and do the actual testing, though the engineers either checking in or are there assisting with the testing. Having someone there who is very intimate with the practical knowledge of a particular engine frees me to focus on designs which may span several platforms. It's certainly a job the engineers could do (and have done, when the union has been on strike), but most engineers I talk to are happy to have them around.

Thomas - Software Consulting – Singapore

Justin you had me feeling pretty inadequate because I had to go look up what a technologist even was before I could answer this question. I have never worked with a technologist and I don’t think I ever will.

Developing software is quite a bit different because we have no actual “production line” for our products. Once the product has been designed by an architect and evaluated by the engineers, we just code it. Every person on the average development team is physically capable of writing the whole piece of software. The only reason we separate roles is to play on strengths. Somebody who can architect a solution is better used designing new and innovative processes instead of grinding out VC++ code. You can think of a developer as a technologist, but a developer usually has the same training and background as the engineer/computer scientist above them so it is really not a perfect analog.

Dyson - Mechanical Technologist - Yukon Territories

Because I am a Tech I have to say that we are Truly Awesome and are respected by other engineering professionals. The cold reality is that this is not always the case, and like any other profession there is the good, bad, and the ugly for both Techs and Pros. I can't speak with any authority of how tech's are treated in the southern parts of Canada, but up here we are generally treated as knowledgeable professionals and we behave as such. Actually, I'm also curious to what the other panel members have to say...

Johan: Software, Domotics Industry, Netherlands

No, I've never worked with a technologist. In fact, I had to refer to Wikipedia (http://en.wikipedia.org/wiki/Engineering_technologist) before I even had a broad grasp of the concept. So, with no first-hand experience on the subject, I'm left to talk about the concept in general. From what I understand though, an engineering technologist is similar to what the software industry calls code monkey. This is a software programmer who has no hand in the software design. There appear to be tons of them in India and other prime outsourcing countries. The idea is that the software architect will design the software on an abstract level, and the programmer(s) will implement the design and deliver a final, working project.

The common pitfall here is that it's vitally important for the programmer(s) to understand not only the 'what' of the design, but also the 'why'. The best way, I feel, to do this is to
involve the programmer in the design process. But that would miss the whole point of outsourcing.
So in summary, while I do think that it is possible for one team to handle the design, and another to handle the implementation, it is very difficult to get it right if the implementation team isn’t involved in the design.

Trian - Groundwater Monitoring Industry – BC

I haven’t actually worked with technologist but I think they fit a specific need and are valuable colleagues. I think in several cases their responsibilities overlap with engineering responsibilities. I sometimes think it’s my job to set things up so that a technologist can take over. There are several design tasks where detailed engineering analysis is not required but a good technical understanding of physical principles and manufacturing is required. I imagine designing parts to ensure proper fit and function rather than load carrying capacity in many obscure situations. One example of that could be tool and fixture design for assembly equipment. Circuit design and specifying appropriate off-the-shelf components in order to set up control systems may also fit the bill. Through years of experience in several fields and various regulations and standards being developed, there are many technical tasks that are well constrained and involve similar applications. I think technologist are perfect for situations where a technician doesn’t have enough of the design and decision making experience but the level of analysis and responsibility (and liability) does not warrant a professional engineer.

Angela – Sustainability Industry – Vancouver

It seems to me like engineers are trained to see the bigger picture, and technologists are trained to see the details. Engineers are also put through more educational rigor because we’re legally liable for what we design. It is extremely difficult to take both the broad view and the detailed view, and so it makes sense to train two different sets of people. Both of us need to work together if our projects are going to succeed.

I don’t work directly with technologists in my line of work, which is unfortunate because all of the ones that have crossed my path have been interesting and capable people. I’ve often been jealous of the hands-on nature of a technologist’s work!

Bruno - Polytechnique - Junior Software Engineer - Quebec (OIQ)

I am currently working with technologists a lot because in my field, (I am a junior software engineer). As opposed to many other engineering fields, you are not obligated by law to be an engineer to do the job I am doing. Covering the reasons why would take a while, so I will keep this for another post if necessary.
Most technologists I have worked with have a very deep mastery of their tools (programming languages in my case) where engineers were educated in seeing the big picture. In the company where I work, everyone knows their responsibilities and everyone is good at them. Engineers need technologists and technicians to help them with the overly technical parts of their job. I’d go as far as saying that being a good software engineer does not make you a great programmer. It makes you a great system designer, a good analyst or whichever part of software engineering interests you, but not a great programmer. That's where we need technologists to help us do the job the right way. Engineers and technologists can learn a lot from each other if they are open to it.

However, a lot of engineers think too highly of themselves and despise technologists. That's the reality, but hey, some technologists hate engineers too. They just can't see that both can be smart people with good ideas. I know I can.

Robert - Oil and Gas Industry - Texas, USA

I haven't worked with technologists, at least not in the sense that they would call themselves that, however the people who I work with could be considered either close to or the equivalent of a technologist. That would be supervisors/treaters. What they do, at least where I am, is call/run the frac jobs. This largely entails knowing what equipment can run what, when to tell people to change rates on the various adds that we run, and essentially what to do given how the well reacts to the treatment (based on the pressure of the well).

I think it's great working with them. They're more knowledgeable in the workings of the job then I am, and if there's an equipment issue or something goes wrong, they've usually been around long enough to know how to fix it, or at the very least work around it. Their abilities vary depending on the supervisor, but that's a given and is the same for basically any profession. Some can figure out what's wrong and instantly know how to fix it because they've been around for long enough, so the job can continue without much delay. Others however take a lot longer, or usually cause problems when treating the job, which causes much longer delays. Honestly, they do the same things that we're expected to, the only difference is that we're more knowledgeable in the technical aspects of the job and they're more knowledgeable in the operational side of the job. If it came down to a choice between an engineer and a supervisor for who can run the job better, I'd usually put my money on the supervisor, largely because they have more experience. So in conclusion, if the person is a good supervisor, or at least one that knows what they're doing, then I respect their abilities because chances are, they've been around for longer than I have and will continue to be around doing the job long after I've left.

Kimberly - Computer Science Undergraduate - United States

To be honest, I had no idea what a technologist was until I looked it up on Wikipedia. I've never worked with a technologist before, so I can't really comment what I think of them and their abilities. From reading the description, however, I'd say that we engineers need all the help we can get sometimes, so the more the merrier! :)
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