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The Bottom Line: A Christian Perspective on Engineering

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The Bottom Line: A Christian Perspective on Engineering

Abstract

"Holistic engineering means the entire process is as important as the final product."

Posting about faithful stewardship in engineering from *In All Things* - an online journal for critical reflection on faith, culture, art, and every ordinary-yet-graced square inch of God's creation.

<https://inallthings.org/the-bottom-line-a-christian-perspective-on-engineering/>

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The Bottom Line: A Christian Perspective on Engineering

Justin Vander Werff

Sam Walhof

October 26, 2021

This essay is a reflection from Dordt engineering professor (Justin VanderWerff) and student (Sam Walhof) following a research project.

Justin VanderWerff:

One of the primary reasons that I felt God calling me to serve in engineering education was to pass on to students an awareness that God does care about their engineering work. I have a deep desire to help them recognize that God's Word should equip them and inform them for their daily tasks in engineering. If they are truly living holistically in gratitude for Christ's amazing work for them, then indeed God's Word *must* be foundational to their 8-to-5 work.

One of the drawbacks I have discovered in serving now for over 13 years as an engineering faculty member is that service in Christian higher education just doesn't leave much time for "real" engineering work and the creativity, joys, and challenges that come along with it. However, occasionally God does open the door for such work to happen, and this past summer I had the opportunity to meld student perspectival development and real-world engineering service in a unique way. I mentored three students who worked as student-engineering consultants for a local electrical engineering design-build company, Interstates, based in Sioux Center. This type of summer experience we have coined as an "externship," because while the experience is similar to an engineering internship, the students actually bring their own outside, external knowledge (and the faculty advisor's experience) into the work to provide valuable consulting expertise to the company. At the end of the experience, I challenged one of these students, Sam Walhof, to reflect on the experience, focusing particularly on how he saw his Christian perspective playing a role.

Sam Walhof:

In our externship experience, we were tasked with analyzing metal supports built by Interstates in their prefabrication shop to support the electrical equipment they mount on buildings. Prefabrication saves Interstates time and money in the field while also decreasing hassle and

increasing safety on job sites. Interstates wanted to streamline both the design and manufacturing process by choosing common support types for us to analyze. Our final product was a digital folder of spreadsheets that, when given inputs, would provide the weight capacity for several different bracket designs.

During a summer research presentation session, I was talking to a professor about our project, explaining how our work would help streamline the design, build processes, and save Interstates money and time. He concluded our conversation by saying, "So it's all about the bottom line?" Somewhat confused, I agreed, and we both moved on.

That statement stumped me. Here I was, a Dordt engineering student, taught that engineering is glorifying to God and service to others, and someone had pointed out that all I was doing was saving a company money. I wasn't offended, but I did not think or feel that it was only about the bottom line. The days I spent programming those spreadsheets never felt like they were about money. It seemed like so much more.

Reflecting on that brief conversation, I realize that this engineering project contains many aspects that could be connected to faithful stewardship as a Christian. I could point out how proper supports mean less wasted material, or how communication was improved between the design team and prefab shop. The money saved might be used by Interstates for their training program that helps high school students get two-year technical degrees. We helped the shop better understand the materials they work with. All these benefits align with a biblical perspective of stewarding God's creation and loving our neighbors.

However, all those benefits still could have been established even if I was not a Christian. And thus, we arrive at the greatest challenge of Christian engineering: How is Christian engineering different if it does the exact same thing? A Dordt engineering student who paid attention in class might say something revolving around how Christian motives are different. Part of me wants to believe that is totally true, but the other part of me thinks the first is looking for an excuse when I fail to adequately incorporate my faith into work. Does it fall somewhere in between, or is it the wrong question entirely?

The question is narrowed too much if we only consider the final product, which, in a materialist society, is often the focus of engineering. At Dordt, I was taught the concept of holistic engineering, meaning that engineers look at the work from many angles, with an emphasis on the spiritual and societal effects of the work. It is founded in the belief that if every action of a Christian matters to God, then every action of a Christian engineer also matters. Holistic engineering means the entire process is as important as the final product. Holistic engineering includes the onsite consultations, the board room meetings, and the everyday interactions. It is the CAD drawings, the coffee breaks, and the phone calls that throw a wrench into the plan.

With this perspective, we can see that even if the brackets look the same or the company spends the same amount of money, Christian engineering will be different in process because of Christian perspective influencing an engineer's thoughts, actions, and attitudes. Someone doing engineering work faithfully will challenge corruption, inspire hope, and make people feel heard. If Christian engineers are in the world but not of it, as per God's instructions in Romans 12 or 1 John 2, then it is critical that something about our work should be intrinsically different, even without tangible evidence in the final product.

And so, we return to the first question: "So it's all about the bottom line?" Maybe in broad terms it was, but to me, it was so much more. I learned about myself, the industry, my colleagues, and Interstates. I gained proficiency in useful engineering skills. I learned to listen well and provide useful feedback that the company appreciated. It was also about more than the bottom line for Interstates. They valued bringing us on as students, with little authority in our fields, and encouraged our ideas. Through the whole experience, I learned that engineering is more of a process than a product, and I saw Interstates' recognition of this as well. Doing engineering as a Christian, it seems, does not always have to result in a drastically different outcome, but it will certainly look different along the way.

VanderWerff:

When I began teaching at Dordt, beyond the desire to disciple students in thinking Christianly about engineering, I hoped to grow in my understanding and conviction of what specifically and tangibly is different about doing engineering Christianly. In some ways, 13-plus years into this journey, I'm still searching. But I think Sam is definitely onto something here. There are the occasional times when the obedient engineering decision will obviously be different than the worldly decision. But many times, the faithful decision and outcome might look awfully similar to the worldly approach. In these situations, even though the final decisions or products may not seem unique, a faithful Christ-follower will have made those decisions with an awareness of God's guidance and a desire to make those decisions in accordance with His Word. The journey for Christian engineers will look different, as they strive for daily obedience along the way. It is a joy and a blessing to see my students get a taste of this bigger vocational sense of what might be otherwise thought of as mundane engineering work. I pray that the Lord will keep revealing to all of us what that daily faithfulness looks like in the tasks and callings He has placed before us.