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Dialing Up Discrete Mathematics at Time Warner Cable

When I started at Time Warner Cable (TWC) I didn't know much about cable TV, the Internet or digital phone. All I knew was that if one of those products didn't function correctly, a technology tantrum was likely in my future.

I've realized there are a great many employees at TWC invested in making my favorite products work. They're not magical elves, as I had originally suspected... they're engineers and computer scientists, employees that use science, technology, engineering and math (STEM) to create, test and deploy new products. Like Matt Cannon, a Director of Engineering at TWC.

Matt and his team design TWC voice products and test them for quality assurance. Meaning, when I call my Mom using Digital Phone, the call gets to my Mom, the connection is clear and the line doesn't go dead when she's on the verge of giving me a great piece of gossip.

While all facets of STEM play a critical role in Matt's work, the skill he relies on the most is math, which he embraced as a teen:

"One of the best things I learned from studying math and computer science in college wasn't how to solve differential equations or crack calculus formulas, it was that I had trained my brain to rationally look at a problem, understand which factors were variable and use the information at hand to form a solution.

Seventy-five percent of my work is problem solving. Designing a new voice product is like being given a box of Ikea furniture parts with no directions. I see a bunch of wood, an Allen wrench. How do I put this stuff together so that it looks right and doesn't collapse when I put weight on it?"

With each new product or product enhancement, Matt looks at all of the things that figure into a product's success, like the available technology with which to build a new product,

environmental factors and existing infrastructure. He considers all variables in an effort to deliver a product that works, is easy-to-use and, when introduced to the Time Warner Cable network, doesn't break any other products that customers rely on.

What's so cool about Matt's job? He can look at a product used by millions of customers and say "I helped build that." Without his appreciation for STEM, in particular his relationship to math, Matt might still be looking at any empty box of parts.