Audio Transcript of Steven Cerri's Engineer-to-Leader Podcast
Episode 011: "The Future Job Market Requires a… New You!"

Hello. You're listening to the engineer to leader podcast, episode number 11. Today we're talking all about the future job market for engineers, scientists and technologists, and what you can expect. So, stay tuned.

Hi, I'm Steven Cerri, and I'm here to help you advance your engineering scientific, and technical career by showing you how to avoid the mistakes and the missteps that can slow down or even derail your promising career. And I'm the first to say that mentors, and coaches, and the right advice can make all the difference in your career success and your career speed of advancement as long as you couple it with the right mindset, the right way to think about your career path.

So how do you find the right mentor, the right information, the right advice and the right mindset to put all of this together and build a career that you want? This is the engineer to leader podcast.

Hello, this is Steven Cerri. Thank you, for joining me on this engineer to leader podcast. This podcast is about the future of the job market, and what to expect. In the next podcast, podcast 12, I'll be discussing what you can do to counteract these trends. But in this podcast, podcast 11, I want to talk about the trends and I just want to focus on predicting what is to come for engineers, scientists and technologists in the future job market. So, let's jump right in.

In podcast number two, I talked about navigating your career path. That was based on the perspective that you could select a technology, and find a job doing that technology for most of your career.

In podcast number two, the career path was essentially a straight line. Maybe there were curves, maybe there were offshoots but essentially, you are progressively advancing your career. And essentially, that's what you should be doing throughout your career.

In my estimation, in my humble opinion, you should be always looking to advance your career unless you have a specific goal that's different than that in mind, I would suggest you advance your career. And that's certainly is one way of having a long-term successful career, constantly advancing. But that doesn't necessarily mean that's the only way to do it.

And in fact, with the trends that are now in place for the job market of the future for engineers, scientists and technologists, the idea that you're going to have a progressively advancing career maybe in doubt. There may be some significant turns and detours along your path during your career.

And so, as I've often said, your career is probably not going to be a straight line. And when you get to the end of your career, you're going to look back and wonder, how did I ever get here?

So your career may be a constantly progressing advancement, but it more than likely will not be a straight line towards that advancement. It may well be a constantly trending upward career with a number of dips, and rises, and valleys, and peaks, and detours, and right turns and left turns as you progressively attempt to move more towards advancement.

Now, what is going to cause those disruptions? What will cause those peaks and valleys? What will cause those detours? Well, generally speaking, you're going to have those detours, and those peaks and valleys in any career. However, there is a disruptive technology that is on the horizon that is going to be like no other disruptive

technology before it. And the biggest disruptor in your career success in the long run is going to be AI, artificial intelligence.

It's obviously all over the news. We're hearing all about how important AI is going to be in the future, but I think it's extremely important for engineers, scientists and technologists. It is going to be a very powerful disruptor and perhaps, a powerful disruptor on the level of the following.

It may well be like the discovery, and harnessing of electricity.

It may be equivalent to the Industrial Revolution.

It may be equivalent to the invention of the gasoline engine.

It may be equivalent to the invention of the personal computer.

But I think beyond any shadow of a doubt, it may well overtake any of those as a disruptor of life in the workforce as we know it.

AI, however, is not a simple disruptor.

It's not like the advancement of biotechnology.

It's not like the advent of space travel.

It's not even like the advent of the Smartphone.

All of these rely on current or near current technology in order to make the advancement, and the enhancement that comes about. So, biotechnology is the advancement of biology, and Biological Sciences by adding technology, miniaturization, and computerization to that process.

Space travel made a whole new environment in which we could explore, but we're still exploring with the same philosophical mindset, and structure that we had before space travel and the same thing with the iPhone. The iPhone is just putting a personal computer of sorts into your hand.

The technology that is going to come with AI will change the way that life moves forward on an everyday basis on an on a job basis. So this is going to be a significant, significant change in the way we as scientists, technologists, engineers, work, and contribute to society and to the technological investment in the world.

Let me give me an example of what it might look like using a past situation, and the past situation that I want to talk about is the Apollo 11 moon shot. This year is the 50th anniversary of the Apollo 11 flight to the moon. When the Apollo spacecraft was being developed, wind tunnels were necessary, and were used to evaluate aerodynamic characteristics of rockets, and the capsules and of aircraft. Wind tunnels were used to evaluate the performance of objects, vehicles, spacecraft, aircraft, and automobiles in a fluid environment, usually the atmosphere.

Wind tunnels were often the only way to evaluate certain flight and fluid characteristics of vehicles. There was just no other way to do it.

Fast forward to today. Then came along powerful computers, personal computers, powerful personal computers, and then the software programs to mathematically model the higher order equations that represent the fluid motion, fluid dynamics and the thermodynamics of the fluid motion over the bodies.

And all of a sudden or very quickly at least, analysis that once required large wind tunnels now only needed a powerful desktop computer, and some advanced mathematical modeling software.

So for that reason, there are only a few large wind tunnels remaining in the United States. They are just not necessary. And those remaining wind tunnels are only used when special analyses are required that can't be modeled.

So, the higher order analysis that can be put into software or that could be put into software was putting wind tunnels on an endangered list, or at least almost obsolete. In my estimation, the same thing is going to happen with AI.

Artificial Intelligence will remove work that can be automated, and it will be automated. What will be left as far as I can tell, will be at least two major categories of human work that AI will not be able to take over, and those two major categories are human-to-human or interpersonal communication, which means, leadership, management, inspiration, motivation, influence, and negotiation.

Interpersonal communication is the foundational tool for leadership, for management, for inspiration, for motivation, for influence, and for negotiation. Face-to-face or phone-to-phone, the interpersonal human communication is something that AI cannot do. AI cannot influence, AI cannot manage, or lead, or inspire, or motivate, or negotiate. It's a data driven process, an on or off analysis. So that is the first category that AI will not be able to appropriate in the human job market.

The second is **judgment**, which means, that judgment is the ability to make good sound decisions with less than adequate or optimal information. Now, I know that AI will be able to extrapolate. That's what AI will be able to do. AI will be able to extrapolate and figure out what is possible, but AI cannot perform judgment calls.

When AI beat the latest and greatest chess masters, and chess computers, and learned all sorts of different new and unique chess moves, it didn't do it because it had imagination. It did it because it had the ability to analyze every possible move that could ever have been made. So AI will not be able to replace human judgment, and being

able to predict and to extrapolate is not the same as human judgment.

Human judgment is still an intangible that is, at least to this day, difficult, if not impossible to model.

So if I were to conclude where the future lies for you as technological, scientific and engineering people, whether you are a seasoned, 20-year veteran or whether you've just gotten out of college, your future lies in melding technology with your ability to communicate interpersonally at a very, very effective, and high level of performance and to be able to develop judgment, which is based upon experience and intuition and a sense of what is the right choice which comes about from experience even if you don't have sufficient data to make you have 100% confidence level.

So at this point, I'm suggesting that these two capabilities, interpersonal human communication and being able to develop judgment, good sound judgment are the things that will keep you employed as AI begins to whittle away at those things that can be programmed away.

So for now, just keep in mind these two ideas as critical to your long-term career success; interpersonal communication, which includes influence, management, leadership, inspiration, motivation and judgment. Judgment is the ability to make sound decisions without seemingly sufficient information to predict the outcome with some certainty.

In the next episode, the next podcast, podcast number 12, I'll discuss the major impediment that could keep you from being able to develop your capabilities in interpersonal communication and in judgment. So, I'll see you next time. Be well.

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Steven Cerri