Ohio House of Representatives Committee on Education and Career Readiness Representative Andrew Brenner, Chair

Jennie Zamberlan, President Avantia, Inc.

Chair Brenner and members of the Education and Career Readiness Committee, thank you for providing me the opportunity to testify on House Bill 170.

My name is Jennie Zamberlan. I am the Founder and President of Avantia,, Inc., an Information Technology firm headquartered in Cleveland, Ohio that specializes in building custom software systems. I have started and successfully grown three Information Technology companies and have over 40 years of work experience. I serve on multiple Boards and mentor other business owners and start-up companies.

I started my current company, Avantia, Inc., in 2000 and we are celebrating our 17th year in business. Avantia has been on the Inc. 5000 list of fastest growing companies in 2007, 2008, 2015 and 2016. Today, the demand for custom software is accelerating as new technologies paradigms (e.g., mobile, cloud computing, IOT, etc.) represent opportunities to improve efficiencies, support new business models and vaporize traditional industries.
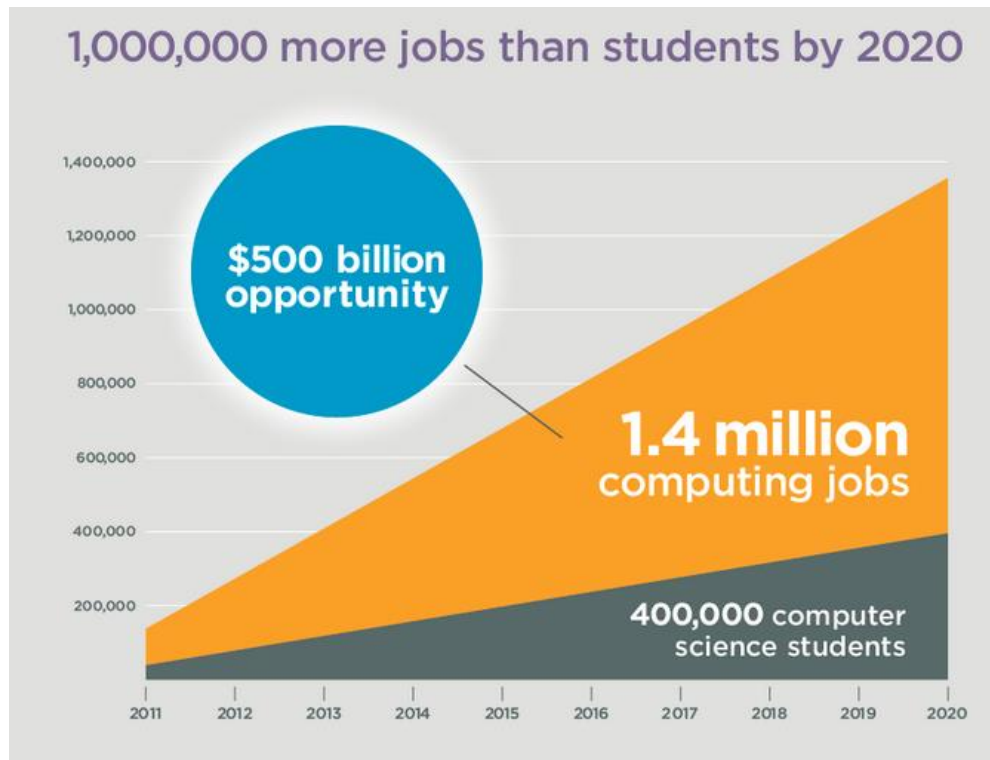
To address the shortage of software developers, in 2013 I co-founded Software Craftsmanship Guild, a 12-week fulltime coding boot camp. We were one of the first boot camps to teach Java programming, and the one of the first with a .NET curriculum in the country. Software Craftsmanship Guild was acquired by Learning House in 2015.

Every aspect of our modern lives is increasingly dependent upon technology. Yet the statistics predict that we are facing a large deficit of skilled workers to fill the future technology jobs:

- 23% increase in software developer jobs in the next 10 years.
  - *Bureau of Labor Statistics*

- 31 million jobs will open up as baby boomers retire, and 24 million new jobs will be available by 2020 leading to a shortfall of 5 million workers with postsecondary education and training.
  - *Georgetown's Center on Education and the Workforce*

- By 2018, there will be 1.4 million tech jobs but only 400k people to fill

those roles.
- *Bureau of Labor Statistics*

I would not be in the Information Technology field today were it not for a "computer math" class that I took in 1975, my senior year at Valley Forge High School in Parma, Ohio. I had no prior exposure to computer programming nor did I know anyone who made their living as a programmer. My teacher told me that I was good at programming and suggested that I consider it as a career option. After high school, I attended a yearlong vocational program for computer programming and started working as a programmer in 1976.

How is that 41 years later we have public schools in Ohio that lack robust computer science curriculum? We have technology in every classroom, but we are *not teaching computer science*. The critical thinking and creative problem solving skills gained through computer science curriculum are foundational to almost all other career paths.

From a business perspective, the number one issue we face is the shortage of skilled Information Technology workers. We need to support our public education system in the mission to prepare our students for the post-industrial era jobs that will help Ohio and the United States to prosper. It is a simple matter of supply and demand: if we don't have the appropriate supply

of skilled workers, the jobs won't be here. Other states and other nations are recognizing the need for computer science and are mandating curriculum starting in Kindergarten and continuing through High School. We need to support our teachers in implementing quality computer science curriculum, and we must ensure access for all students in all grades, regardless of their zip code.

House Bill 170 is an important piece of legislation that will support building the pipeline of a skilled population positioned to compete in the digital future that is transforming our work, our lives and our world.

The elements of this bill that will help achieve the vision for the future include:

- Establishing standards for computer science
- Funding to support professional development for our teachers
- Computer Science as a subject that can satisfy graduation requirements in math, science or electives

Chairman Brenner and members of the committee, thank you for the opportunity to share with you my perspective on behalf of Ohio businesses on the importance of computer science in K-12. I would be happy to answer any questions you might have.