



**ESPA**  
**ELECTRONIC SYSTEMS**  
**PROFESSIONAL ALLIANCE**

**ELECTRONIC SYSTEMS INDUSTRY**  
**WORKFORCE UPDATE**  
**2018**

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***Gateway to your EST Career.***

## ELECTRONIC SYSTEMS INDUSTRY WORKFORCE UPDATE

### REVISED OCTOBER 2018

#### INTRODUCTION

The same rapid changes in technology that have impacted everyone’s daily life over the past decade or two have also brought extraordinary change in the systems which deliver entertainment, functionality, energy efficiency, and security to buildings -- from single family homes to skyscrapers, hotels, and multi-use venues. This has resulted in a huge demand for skilled personnel in a wide range of positions in an industry most people are not even aware of. The demand has remained huge (and constant) for over five years. This document is intended to provide a current perspective on what the industry does, how it is growing, and the challenge to find qualified people that virtually all employers are facing.

#### DEFINITION OF TERMS



By definition, “electronic systems” can include just about anything that plugs in or has batteries. There are electronic systems in automobiles, aircraft, and even spacecraft. But in general the term is applied to low voltage systems and subsystems installed in buildings. Not to be confused with the work done by electricians, this includes low-voltage technologies such as audio, video, control systems, security and surveillance, and the infrastructure that supports these systems – copper, fiber optic, and wireless.

Much of the same technology is applied to both residential and commercial projects, but used differently depending on the application. The companies who design and install these complex systems are essentially integrating several subsystems into one, so you will often see them referred to as systems integrators. The personnel who install, service, and upgrade these systems in the field are known as Electronic Systems Technicians (ESTs).

#### CAREERS

The career paths are diverse and go well beyond the ESTs in the field. As in any technical industry, there are a variety of skillsets needed to make a project happen; from sales to designers, engineers, project managers, and programmers. All of these are specialized, but all rely on a similar fundamental body of knowledge. And many of these positions are filled by people who started out as entry-level technicians then advanced by learning and gaining experience within the industry.

#### INDUSTRY GROWTH

Although electronic systems are often retrofitted into existing structures or installed as part of a remodel/refurbish project, most of the growth is related to the uptick in new construction.

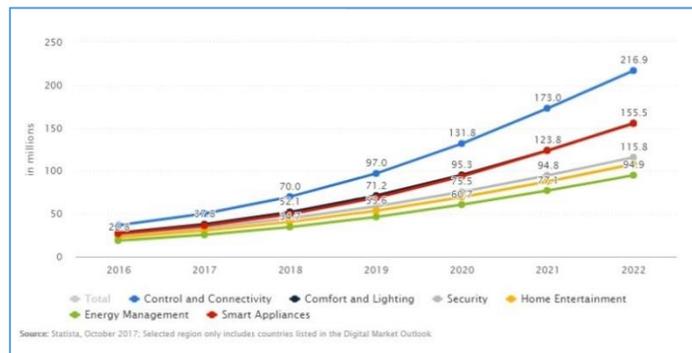


Figure 1 - Smart Home Growth

In the U.S. this has been rapid in the last few years. Housing starts will hit 1.25 million in 2018, after six consecutive years of growth,<sup>1</sup> and overall installed smart home revenues are now over \$20 billion<sup>2</sup> annually (a 23% increase year over year). This is due to a number of factors, including new entertainment technologies, the widespread use of mobile and voice-controlled devices, and the concept of “aging in place” as baby-boomers retire. Over 40 million US homes now have some sort of smart home controller, generating \$1.2 billion in recurring service revenue.<sup>7</sup> All of these trends are global, and the U.S. is leading the way, especially in residential systems, where revenues are expected to triple by 2021.

Commercial new construction, and therefore their electronic systems, is seeing similar growth rates. U.S. new construction starts are expected to nearly double from 2011 to 2022,<sup>5</sup> and these new projects require more and more technology. The global pro A/V market is predicted to top \$230 billion by 2023, with \$70 billion in the U.S. alone.<sup>3</sup> Growth is especially strong in education and health care. There is also a lot of crossover among various types of contractors: Most residential integrators are doing some light commercial projects,<sup>1</sup> and security companies are now doing more audio, video, and control systems. Remember, the same EST fundamentals support work in all of these sectors.

### DEMAND FOR QUALIFIED WORKERS

In each of the last five years, both commercial and residential integrators reported that finding and retaining qualified people was one of their leading challenges. In fact, the most recent survey of residential integrators indicates that this is by far the biggest challenge they face.<sup>1</sup> All of the industry associations have now turned their attention to raising awareness and promoting training programs to meet this demand. Federal and state workforce development funding for 21<sup>st</sup> century jobs is increasing rapidly, and a combination of skills in electronics and networking is exactly what is needed.

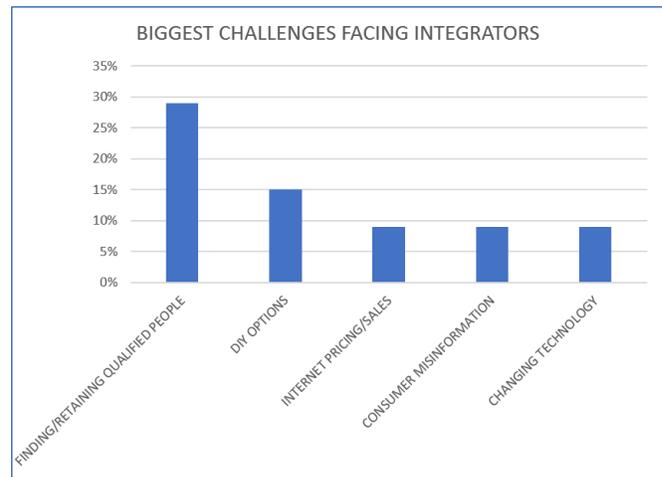


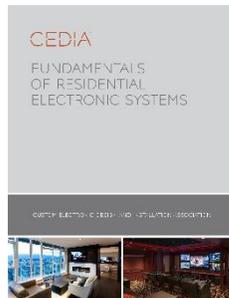
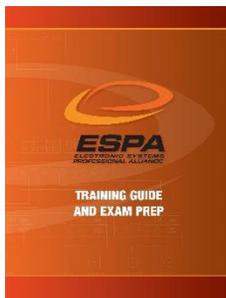
Figure 2 – System Integrators' #1 Challenge

Due to the shortage of talent and increased workload, compensation has seen a solid upward trend. Most commercial integrators have been awarding pay increases of 5-8% across the board over the last few years, the highest increases reported since 2005.<sup>4</sup> Residential integrators have reported even higher compensation increases, averaging 10% from 2013 to 2015<sup>6</sup> and continuing at a similar rate today. The average annual base compensation for an experienced EST (commercial and residential) is in the \$44,000 to \$50,000 range, and most are seeing a lot of overtime as well as incentive pay.<sup>2,4</sup> Technicians with under two years of experience are now averaging \$16 to \$20 per hour depending on region.<sup>7</sup> Most are getting a lot of overtime as well. Engineers, designers, and programmers earn much more, and many of them started their career as entry-level technicians.

## NEXT STEPS

Some of the “hot” career paths for the 21<sup>st</sup> century are well known, such as health care and IT. But not so with the electronic systems industry. Therefore, a concerted effort is being undertaken to make young people aware of the exciting and rewarding careers available. NSCA’s Education Foundation has launched an initiative known as Ignite, to “spark interest in technology” among high schoolers. CTA, CEDIA, and Avixa (Audiovisual and Integrated Experience Association) are all getting involved in more training and workforce development. There is a great deal of new interest in training and certifying career changers via the adult education channel.

The Continental Automated Building Association (CABA) recently released a white paper which better defines the skills and knowledge needed for various careers, and makes recommendations to the academic channel on how to prepare people for these positions.



The Electronic Systems Professional Alliance (ESPA) offers training resources and an industry-recognized certification for entry-level ESTs, regardless of which of the career verticals they pursue. This can be dropped into an existing electronics or IT program as an enhancement, offered as a free-standing “fast track” program for adults, or used as the foundation of a more comprehensive electronic systems program which also includes a broad introduction to the

technology and terminology of the industry. This type of program includes all of the subsystems someone will need to understand when they go to work, regardless of what role they take on. CEDIA offers the Fundamentals of Residential Electronic Systems book, which complements the ESPA basics by introducing topics such as audio, video, control, security, and home theater. Some additional content should be included to cover disciplines unique to the commercial side, such as conference room technology and digital signage. The ideal outcome of a comprehensive program is for the student to be prepared to enter any sector of the electronic systems industry with a solid set of skills that will shorten their learning curve on the job and allow them to advance quickly. Holding certifications from ESPA and CEDIA will greatly assist them in gaining employment. In addition, since today’s systems are so dependent on the network, training and certification in computers and networking (such as CompTIA A+ and Net+) makes a candidate even more attractive. ESPA staff can assist with the implementation of any type of program, from a fast-track 60-hour adult education night class, to a full semester or more of electronic systems education. ESPA also works with training partners to grow admissions through student outreach and enhances placement by connecting graduates with job openings.

Qualified ESTs are needed in every part of the country. Our challenge is to identify high school career centers, community colleges, and post-secondary tech schools who can provide this much-needed training and certification.

## CONCLUSION

The electronic systems industry is growing rapidly and changing constantly. A career in this field offers great potential for advancement, and a work environment that will always be challenging as new technologies are introduced. The current demand for qualified employees is higher than ever, wages are increasing, and a well-trained and certified individual is virtually assured of immediate employment. Every market, large and small, has potential employers eager to hire qualified applicants.

## ABOUT ESPA

The ESPA program was founded by three leading industry associations with a mission to build a robust pipeline of entry-level ESTs through training and certification. Many other associations have joined in the mission as industry partners.

## ESPA FOUNDERS

National Systems Contractors Association (NSCA) [www.nasca.org](http://www.nasca.org)

Consumer Technology Association (CTA) [www.cta.tech](http://www.cta.tech)

Custom Electronic Design & Installation Association (CEDIA) [www.cedia.net](http://www.cedia.net), [www.cedia.org](http://www.cedia.org)



## ESPA INDUSTRY PARTNERS



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3. *Avixa Industry Outlook and Trends Analysis 2018*
4. *National Systems Contractors Association (NSCA): 2015 Compensation and Benefits Report*
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6. *Custom Electronic Design & Installation Association (CEDIA): Benchmarking Survey 2015*
7. *CTA/CEPro Wage and Salary Report 2018*

