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. This document is intended to bring some clarity to what the industry does, how it is growing, and the demand for qualified workers.

DEFINITION OF TERMS

By definition, electronic systems could include just about anything that plugs in or has batteries. There are electronic systems in automobiles and 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. Like 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 and 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 growth in new construction. In the U.S. this has been rapid in the last few years. Housing starts are estimated to be 1.2 million in 2016, the highest since before the recession¹, and overall installed home technologies are annually around $20 billion.² This is due to a number of factors, including new entertainment technologies, the widespread use of mobile devices, and the concept of “aging in place” as baby boomers retire. Commercial new construction, and therefore the electronic systems, are seeing similar growth rates, and in fact was not
hit as hard as residential during the recession, mostly due to the longer project cycles. Growth is especially strong in education and health care. These trends are global, and the U.S. is leading the way, especially in residential systems, where “smart home” revenues are expected to triple by 2021. We are also seeing a lot of crossover between various types of contractors, ie: residential integrators doing more light commercial, and security companies doing more audio, video, and control.

DEMAND FOR QUALIFIED WORKERS

In each of the last two years, both commercial and residential integrators reported that they expect their staffing to increase an average of 14% per year. These additions are in all types of positions. During the recession, the biggest challenge faced by integrators was generating sales. Now in the last few years the challenge has been finding the people to do the work. Industry associations have turned their attention to helping member companies identify qualified candidates, and every major association we know of has started initiatives to raise awareness in the academic channel and promote programs which train people to work in the industry.

Due to the shortage of talent and increased workload, compensation has seen a solid upward trend. Most commercial integrators will be awarding pay increases of 5-8% across the board this year, the highest increases reported since 2005. Residential integrators report even higher compensation increases, averaging 10% from 2013 to 2015. The average annual base compensation for an experienced EST (commercial and residential) is $44,000 to $48,000, and most are seeing a lot of overtime as well as incentive pay. Entry-level technicians start out lower but can advance very quickly. Engineers, designers, and programmers earn more, and many of them started their career as entry-level technicians.

NEXT STEPS

Most of the “hot” career paths for the 21st century are well known, such as health care and IT. But not so with the electronic systems industry. So 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. Other associations are also reaching out to various demographics, such as career changers and veterans, to let them know of the opportunities that are abundant in the industry.

The Continental Automated Building Association (CABA) is currently developing a white paper which will better define the skills and knowledge needed for various careers, and make 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”, 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 should include 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 rooms 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.

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, and a well-trained and certified individual is virtually assured of immediate employment. Every major market has at least 100 potential employers eager to identify qualified applicants.

The ESPA program was founded by three leading industry associations (NSCA, CEDIA and CTA) and is also recognized by ESA, CABA and CompTIA.

For more information, www.espa.org or certification@espa.org.

REFERENCES