

A Technical Communicator's Role in the Future of Emerging Technologies

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WRIT 8505 – Spring 2020

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Abstract

This research explores the roles, responsibilities, and duties of a technical communicator across varying fields involved with emerging technologies. The purpose of this study was to become more informed about how a technical communicator's career will change and evolve over the next few years. To find this out, I interviewed 10 people who currently serve as either a technical communicator, someone who works with emerging technologies, or both. Interviews lasted anywhere from 60 to 90 minutes and were conducted in person, over the phone, or through video conferencing software. Those interviewed included two technical writers at a medical device company, one freelancer, one 3D printing engineer, one augmented reality/virtual reality (AR/VR) specialist, one university professor, two technical writers at software companies, one technical writer from a fitness equipment company, and one physician with a background in medical devices and engineering. Interviewees answered a series of 15 questions regarding technical communication, emerging technology, current and past job duties, software programs, and smart devices. Answers were collected and results were examined to provide an educated guess as to what the career of a technical communicator using emerging technologies like smart devices, 3D printers, or AR/VR will look like in the near future.

Keywords: emerging technology, technical communication, technical writing, future, augmented reality, virtual reality, medical devices, smart devices

Introduction

The Society for Technical Communication (STC) currently defines technical communication as “a broad field and includes any form of communication that exhibits one or more of the following characteristics:

- Communicating about technical or specialized topics, such as computer applications, medical procedures, or environmental regulations.
- Communicating by using technology, such as web pages, help files, or social media sites.

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- Providing instructions about how to do something, regardless of how technical the task is or even if technology is used to create or distribute that communication” (STC, 2020).

Since the creation of technical writing as a profession after WWII (Wikipedia, 2020), technical communication has seen more and more work revolving around technology and its uses. Since the advent of the internet and World Wide Web in the 1990s, we have seen a fast evolution and creation of new technologies. The tech boom that followed saw an evolution of computers and multiple new devices, and access to the internet became imperative to perform many jobs and everyday tasks. With these brand new emerging technologies that were being produced and evolving quickly, technical communicators had the momentous task of communicating how to use these devices or applications. Today, the current trend in emerging technologies revolves around smart devices, 3D printing, and how to use and implement certain applications and programs like augmented or virtual realities.

One of the challenges of knowing where our careers as technical communicators are headed is trying to predict the future of emerging technology. With so many new and evolving technologies being introduced and upgraded at a rapid pace, it makes it difficult to predict what exactly our role as technical communicators will be in the near future. Even now, as I write this during the midst of the COVID-19 pandemic, my current job went from working in a hospital office space to typing on my laptop in the comfort of my own home. Working from home during these unprecedented times has been made easily accessible thanks to Virtual Private Networks (VPNs), teleconferencing software (Google Hangouts, Zoom, Skype, etc.), and mobile devices. Had this pandemic taken place a few decades earlier, many more of us would be without jobs since the technology of the past was not equipped to handle such a mass migration of working online. Presently, in 2020, the role of the technical communicator has evolved from only writing user guides and product manuals to being an all-around technology expert. So much more is expected of us: creating websites, writing code, editing video and audio, and making infographics are just a few examples of how our duties have changed since

the advent of the internet.

After working in several different industries over the past decade, I decided I would like to explore and understand the roles, responsibilities, and duties a technical communicator has when dealing with emerging technologies like smart glasses, 3D printers, or augmented and virtual realities. In their 2015 essay titled *What is an Emerging Technology?*, Rotolo, Hicks, and Martin define emerging technology as:

“A radically novel and relatively fast growing technology characterized by a certain degree of coherence persisting over time and with the potential to exert a considerable impact on the socio-economic domain(s) which is observed in terms of the composition of actors, institutions and patterns of interactions among those, along with the associated knowledge production processes. Its most prominent impact, however, lies in the future and so in the emergence phase is still somewhat uncertain and ambiguous” (p. 4).

Emerging technology is also noted to be something that is capable of changing the current status quo and spans across multiple different industries. Since 2010, I have worked with educators, engineers, animators, and physicians, and each of them expressed a need for a technical communicator on their team. In order to understand the emerging technology industries of today, I sat down with several people from multiple backgrounds, including a 3D printing mechanical engineer, the lead AR/VR director at a corporate retail office, and a pediatrician with a medical device background. To understand the roles and responsibilities of a current technical writer working with emerging technologies, I spoke to several technical communicators that work with medical devices, higher education, software, or freelancing. I also looked at technologies from the past that were considered to be emerging technologies at that point in time and what role technical communicators played. I looked at a pair of Google Glass from 2013 and researched the responsibilities and duties a technical communicator may have had earlier in the decade. Adapting training materials, texts, and other instructional

documentation for Google Glass was certainly one of the more important tasks for those technical communicators involved in the project. The emerging technologies I decided to focus on were solely because I had access to them at the time. These included augmented and virtual realities, smart devices, medical devices, 3D printers, and smart glasses. All of those I spoke to and interviewed agreed that many different types of technologies will continue to develop and evolve quickly. We can expect more specified apps to be created, new iterations of smart devices, and an expansion of augmented and virtual reality software, artificial intelligence (AI), Application Programming Interfaces (APIs), and coding languages. The data received from these interviews is discussed throughout this paper to better understand the duties of a technical communicator in an ever-evolving role as technology continues to expand and evolve.

Literature Review

A review of current academic sources surrounding emerging technologies proved to be a slight challenge. The majority of those that were interviewed for this project also stated that finding academic literature written in the past few years surrounding technical communication and emerging technologies was almost nonexistent or obsolete. They agreed that by the time an academic article about emerging technology was published in a credible academic journal, the article was more than likely already out of date due to the fact that technology evolves and grows at such a rapid rate. I decided to try and find the most up-to-date articles from academic journals from the past 10 years (2010-2020), while also trying to find articles on technical communication in emerging technology. I used the University of Minnesota library advanced search functions to narrow down my search to online scholarly journal articles written within the past decade on technical communication and emerging technology. Through this, I yielded several helpful articles that will be cited throughout this paper. A compiled list of searched keywords for this literature review are seen in Table 1.

Table 1: List of keywords searched for literature review.

<i>Technical Communication</i>	<i>Technical Writing</i>	<i>Emerging Technology</i>
<i>Augmented Reality</i>	<i>Virtual Reality</i>	<i>3D Printing</i>
<i>Medical Devices</i>	<i>Artificial Intelligence</i>	<i>Smart Technology</i>

<i>Smart Devices</i>	<i>Smart Glasses</i>	<i>Future Technology</i>
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Methodology

In order to properly interview subjects for this project, I first had to fill out and submit a Human Research Determination Form to the University of Minnesota Institutional Review Board (IRB). After completion and receiving a status of “Not Human Research” from the IRB (study exemption #00008753), I was free to conduct my interviews. Interviewee answers were recorded with their knowledge, but their names and identities have been protected.

I first sought out my interviewees through my personal learning network. Three of my interviewees were former or current coworkers, one was my academic mentor from the University of Minnesota Technical Communication Advisory Board, three were contacts given to me from my current mentor, two were contacts given to me by my previous academic mentor, and one was the coworker of a family friend. Over the course of three weeks in March 2020, I scheduled ten separate 60-minute interview sessions with each person. I created a list of 15 questions that I wanted to ask them which would hopefully guide us through a large conversation about the history of the career of technical communication alongside the rapid evolution of technology. The list of questions I created is shown below in Table 2. Questions were intended to be for both those that have experience as technical communicators and those that work with emerging technologies. Most interviewed lasted the full 60 minutes, with a few interviews going upwards of 90 minutes.

Table 2: List of questions asked in order for each interview.

Number	Question Asked
Q1	<i>What is your name and current title?</i>
Q2	<i>How long have you been a technical writer, engineer, etc.?</i>
Q3	<i>When you first came into technical writing/your profession, what “new technologies” were you mostly working on/with? What was considered “new technology” when you began your career?</i>

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Q4	<i>How have you seen your chosen field evolve over time, from when you started to today?</i>
Q5	<i>What is the biggest challenge facing technical writers/those in your chosen field today? What was it when you started your career? Why do you think that is?</i>
Q6	<i>As someone that works as an inventor/innovator/with emerging technology, what do you do to best communicate your innovations to others?</i>
Q7	<i>What software programs do you find to be most helpful today? What are the least helpful? What were programs you used when you first started?</i>
Q8	<i>What has not changed in the field of technical writing, engineering, etc.?</i>
Q9	<i>What are your personal opinions on smart devices? Consider phones, watches, glasses, Echo/Alexa, doorbells, home security, AR/VR, etc. Do you find them to be helpful? How could they be improved?</i>
Q10	<i>How do you think your job will change over the next decade?</i>
Q11	<i>What do you see as a threat to the future of new tech? Why?</i>
Q12	<i>How do you stay “ahead of the game” in your industry?</i>
Q13	<i>What problems do you think the emerging technology of today is trying to solve?</i>
Q14	<i>How could a technical communicator assist in your field of work?</i>
Q15	<i>Do you think a technical writer would be an asset to your team? Why or why not?</i>

The few interviews that were conducted in-person took place before the stay-at-home order issued during the COVID-19 pandemic and was deemed safe to do so by myself and each interviewee. There were three interviews that took place in-person, and, coincidentally, they were with the three people that were not technical communicators (e.g., the engineer, the AR/VR specialist, and the physician). Only two interviews took place over the phone, and the remaining five interviews all took place via the video conferencing software Zoom.

Results and Discussion

Of the 10 interviews I conducted, four were men and six were women. Two of the men were not technical communicators, but rather a 3D printing engineer and an AR/VR specialist. The other two men were either currently technical communicators or had previous experience as a technical communicator. Of the six women interviewed, five were either current or former technical communicators. The remaining woman was a pediatric critical care physician who specialized in medical devices. Ages of those interviewed ranged from mid-30s to low-60s, so each person interviewed was at a different point in their respective careers and lives. Each interviewee was made aware that I would be taking notes during our conversation and their answers would contribute to the results and discussion portion of this project. Once all interviews were completed, answers were stored on a secure server and were only shared with those that were involved in the spring 2020 semester class WRIT 8505 at the University of Minnesota.

Analysis of Questions 2-5:

Beginning with the seven people that were current or former technical communicators, they had a range of years of experience between them. The least amount of experience (though hardly considered "inexperienced") was one technical writer that had been at their company for nine years. The person with the longest technical writing career had been involved in some form of technical communication since 1987. The rest ranged from the late 1980s to the early 2000. As for the three people that were not employed as technical communicators, their experience with new or emerging technologies ranged from 10 years (beginning their career in 2010) to 27 years (beginning their career in 1993). The remaining person began their career in the year 2000 and had 20 years' experience with products that were considered "new or emerging technology".

When asked what was considered to be new technology when they began their careers, a variety of answers were given that spanned three decades' worth of technology. Hardware products like the Microsoft Surface, Xerox machines, smart phones, heart valves, and personal computers and laptops were mentioned, as well as software products and applications such as AutoCAD, HTML, Adobe InDesign and Framemaker, Microsoft Office, Dreamweaver, Word

Perfect, Quark, DITA, XML, content management systems, and various smart phone apps. It was interesting to note that those that mentioned hardware products were mostly those that were older and had been in their careers for twenty years or more. Almost everyone noted some type of software product in their answer, except for the physician.

When asked about how their chosen fields have evolved over time, the AR/VR specialist noted how more and more companies are switching to gaming engines to power their computers, especially companies that create visuals or render multiple images. He noted:

“The biggest evolution I’ve seen is having a game engine evolve into a new channel where you’re not just creating games, but visualization.”

Others discussed the rapid evolution of smart devices, namely smart phones. The 3D printing engineer discussed how many iterations of the smart phone has come out since its inception, and how some smart phones today are better at doing CAD work than a \$30,000 computer. The physician also mentioned smart devices, but mainly discussed the rapid evolution of smart phone apps and how specialized they’ve become, noting “there seems to be an app for every little thing these days, even medical software”. Those that had technical communication experience noted the progression and growing importance over the years of UX (user experience) design, DITA, Adobe products, Google Suite, cloud infrastructure, and communicating through multiple different types of media. Besides hardware and software, others discussed how the job itself of being a technical communicator has evolved over time. One person in academia noted how duties have shifted from creating whole documents to creating modules or unstructured content to structured content. Others noted how companies now rely on their technical writers to have some graphic design experience or experience creating their own visuals. Two technical communicators noted that the job used to feel “unimportant” when they started, but nowadays the job feels more secure and necessary.

Lastly, when we discussed what challenges each interviewee was facing, those that were not technical communicators, as well as three technical communicators, mentioned how “staying current” is a constant struggle when dealing with emerging technology industries, with one person noting:

“Right now, if you’re not focused on the tech industry and not dialed into tech events, you won’t be able to keep up with how fast things are moving – things I worked on six months ago are drastically different now.”

Two others noted that time and money have always been and will continue to be an uphill battle for any industry, especially when it comes to spending money on new software or new machines. The 3D printing engineer discussed the constant challenge of machine user interfaces and how these are always trying to be simplified down during each new iteration or trying to make things easier to understand. He specifically noted that the biggest struggle with user interfaces is the coding behind them, since the code is what makes the machine work. One technical communicator said challenges are typically situational depending on the company. Another technical communicator mentioned how staying current with regulations and standards according to each country was a challenge since they seem to change or update every few years. She specifically noted “it takes about 2 years to figure out how to do this job correctly”. Finally, one technical communicator commented on work processes, stating that common daily interruptions were challenging to work through (i.e., office small talk, phone calls, and daily life). He also noted that there are sometimes organizational barriers to work through, including not being able to talk to certain company departments (like marketing or sales), having bad research teams, and poor feedback channels.

Analysis of Questions 6-10:

As we approached the discussion of working with and/or being an innovator of emerging technology, I received a variety of responses. When asked about the best way to communicate innovations to others, the three interviewees that were not technical communicators had similar responses. Each of them noted the importance of live demonstration of their product, because they learned best by doing instead of reading instructions. With live demonstrations, they said it was easier to get their point across to possible investors by showing them what they mean instead of providing a written explanation. The 3D printing engineer noted that when he tries to explain things, he typically uses analogies. All three of the non-technical communicators expressed the desire for a scientific technical writer to be able to better express their ideas on paper instead of relying on live demonstrations. They specifically noted how difficult it was to

filter out technical jargon, but still be able to correctly explain a product to those that are not technologically savvy. Two-thirds of this group also expressed how live demonstrations take a significant amount of time and cost companies a lot of money, so they are not always the best path to take when trying to explain a product or invention. It should also be noted that two-thirds of the non-technical communicators have invented at least one product and have been issued patents for their inventions. From those that have experience as technical communicators, their answers mostly leaned towards discussions of software programs and user experience. One technical writer that worked at a software company discussed the importance of machine learning and data processing. This particular software company has different teams of technical writers, including an entire team dedicated to AR/VR and how customers interact with that data. There are also more teams for different technologies that search for, process, and index mass quantities of data. A documents team records machine learning processes, mainly for external audiences or customer-facing documentation. Much of the work that this software company does revolved around data collected from users and the user experience. Another technical communicator also noted the importance of user experience when trying to best communicate emerging technologies to others. An easily workable and user-friendly dashboard on exercise equipment was a must on each and every product created by their fitness company. This meant the technical writing staff needed to create a simple dashboard out of icons and few words in order to communicate how to use a treadmill, elliptical, or other exercise machine. The one technical communication professor at a major university stated that since she was not currently working in the industry and was focusing on teaching the technical communicators of the future, she relied on others in her network to inform her of how best to communicate innovations or other emerging technologies to her students. She also noted how she would visit with past coworkers, attend conferences or webinars, take online refresher courses, and read online slide sets to see what others in the field are doing to best communicate new technologies.

When we discussed what the most and least helpful software programs available today are, only three of the 10 people interviewed mentioned Darwin Information Typing Architecture (DITA) and structured authoring as being the most important programs to learn.

Those that expressed this were the professor, the technical writer at the fitness company, and one of the software technical writers. The other software technical writer was the only person to mention text editing programs, like Atom or Brackets, stating:

“The best thing you can have is a text editor that you love! The rest of what you’ll interact with won’t be your choice of what to use.”

A couple others did note how important programs typically change from company to company, but technical writers of tomorrow should still be familiar with, for example, Adobe Creative Suite as well as Microsoft Office. Four of the technical writers discussed their love-hate relationship with Microsoft Word. They found Word to be helpful for tracking changes, spelling and grammar checks, and document layout (landscape or portrait), but found that document design was better executed using Adobe products. Adobe InDesign, Illustrator, and FrameMaker were the specific programs mentioned as helpful document designers. It should also be noted that learning HTML, XML, and other coding languages was brought up as something that future technical communicators should have in their skill set. The freelance technical editor mentioned that PowerPoint has nowadays become more helpful and used as a program for graphics as opposed to using it for presentations. The physician echoed their frustrations with PowerPoint and said they have started using other presentation software like Prezi or Adobe Spark.

As we discussed the ways technical communication and jobs involved with emerging technology has stayed consistent over time and how they will grow and develop over the next decade, several key findings were discovered. These findings are outlined in Tables 3 and 4 and compare consistencies with future developments.

Table 3: Tasks that have remained consistent over the years.

Consistencies
<i>Working in teams</i>
<i>Ability to write clearly and concisely</i>
<i>Structuring communications</i>

<i>Chunking and the use of white space</i>
<i>Knowing/identifying/analyzing your audience</i>
<i>Good writing takes time</i>
<i>Not enough direct customer contact</i>
<i>Interactions with engineers, software developers, coders</i>
<i>Knowing the background of a project</i>
<i>Dealing with constraints (time, money, space, materials, tools, etc.)</i>
<i>Large-market companies absorbing small start-ups and their technology</i>

Table 4: What to expect in the future of technical communication and emerging technology.

Future Developments
<i>Content creation will be impacted by machine learning and we will not be as involved</i>
<i>More focus on AI, wearables, mobile devices, and software</i>
<i>Smartphones will become more like personal computers (PCs) – will be able to “dock in” to a workstation with your smartphone</i>
<i>Less boundaries between documents and products</i>
<i>People will need less and less training on devices since they will have grown up with technology</i>
<i>We will rely more on images and video</i>
<i>Less written manuals; printed manuals will turn into websites</i>
<i>Apps will become more specified</i>
<i>Technical communicators will need to be technology experts as well as writers and editors</i>
<i>More specialization of products and documentation</i>
<i>More working remotely/through virtual private networks (VPNs)</i>
<i>Things will become more and more interdisciplinary</i>
<i>There will be fewer strategic technical communication jobs</i>

Analysis of Questions 11-15:

Throughout the final group of questions, we began with what they see as threats to the future of emerging technology and their chosen fields. The majority of the group (six out of 10) expressed a concern regarding data security or cybersecurity, identity theft, and data mining. According to Jordan Frith's 2017 article *Big Data, Technical Communication, and the Smart City*, big data could have the potential to put people out of a job. Frith notes "big data might replace some professionals, just as many technologies have automated processes in the past. But...big data projects will often not replace the need for people with technical communication skills" (p. 183). Conversely, two people (both technical communicators) expressed that they thought data security had actually gotten a lot better in recent years and it was becoming less of a threat. So, while big data might negatively affect others, those that are technical communicators might have an advantage. The last two people, since these interviews took place right before the shelter-in-place order in Minnesota during the COVID-19 pandemic, expressed concerns over money and the economy. They specifically noted the challenges that will arise for future technology and those that work specifically with or invent new technology since funding may be scarce. One interviewee also discussed how we may be putting ourselves out of a job if things continue to become more and more user-friendly – people would need less or no instruction if technology advanced to the point where they wouldn't need us as the middle-man. Finally, one technical communicator said that the main threat is "bad people" and that "tools are just tools"; it is the people behind these tools that should be considered threats, not the tools or programs themselves. However, this particular technical communicator also said:

"The threat is that people will always use tools for purposes designers didn't have in mind – sometimes it's great and you find new uses..."

The next question pondered how each respondent "stays ahead of the game" in their respective industries. The vast majority (nine of 10) talked about some sort of social networking event. These included attending conferences in person, speaking with those in the same or related fields, watching webinars, going through conference slide decks that were posted to the web, or attending user groups. Other methods that were mentioned included the use of social media sites like Twitter, Slack, or LinkedIn to keep current more up-to-date with news

surrounding new technologies. Only one person noted the importance of academic research, while three people deemed academic articles on emerging technology or, more specifically, technical writing and emerging technology, to be relatively unhelpful since by the time an article on the subject gets published, it is more than likely already considered out of date and rendered obsolete by the emerging technology community. Of these three, the AR/VR specialist particularly stated that academic papers regarding augmented reality are scarce since the technology evolves so quickly and past iterations become labeled “out of date” within a month. He also stated:

“It’s hard to have a deep fundamental academic understanding [of augmented and virtual realities] – everyone is so busy writing the tech itself, but not focusing on publishing the academic side of things – there’s an implied understanding, but no deep understanding, and it’s hard to document this”

Other communicative means included visiting technical writing blogs, subscribing to newsletters, and looking at what the competition is doing.

Next, we discussed what problems emerging technology of today is trying to solve, and a variety of answers were given. Those that were not experienced technical communicators talked about the need for trying to solve data security breaches and the spread of fake news. They also noted how they are trying to figure out how to make products faster, more durable, and more cost-efficient for both the producer and consumer. The AR/VR specialist discussed how they are trying to figure out how best to visualize products accurately and to scale. Those that were current or former technical communicators commented on how structured authoring and the use of content management systems are working towards being more in touch with an audience and the customer’s journey. One technical writer posited a question on how emerging technology could possibly help with getting more people to review their work. Another technical writer and editor expressed that we as technical communicators solve emerging technology problems everyday by being the ones that take a newly designed product and make it usable by both a new user and an experienced user. This same person also wondered how emerging technology could assist with product testing.

We then discussed how a technical communicator could assist in their respective fields. This question was mostly created for those that work in emerging technology fields, and was not intended for those that are practicing technical communicators. Of the three people that worked with emerging technologies, the physician noted the most ways a technical communicator could assist in the medical field or with medical devices. Specifically, she said:

“There’s a three-way communication that needs to happen. You could be sending a kid home with home tech to use, and doctors aren’t the ones that monitor the kid at home. [The patient] may come to clinic once a month and a physician only has 10 minutes to try and figure things out, so lots of information gets lost. We are not communicating well how best to use the equipment.”

She discussed how information typically gets lost in the transfer of the patient from the hospital staff to being cared for solely by the parents at home. Most doctors aren’t doing the best job of explaining how best to use certain medical devices, so assistance from a technical communicator stationed at a hospital to help families understand how to use certain medical devices would be greatly appreciated during these scenarios. The physician also noted how a technical communicator would consider immigrant populations and would be able to communicate technologies to international audiences. The AR/VR specialist discussed how a technical communicator in his field would be the perfect liaison between technical and creative teams or other teams like business or marketing. He also stated that the major corporate retailer he works for would benefit greatly from staffing more technical communicators, especially if they had experience working with newer technologies.

Lastly, we discussed whether or not a technical communicator would be an asset to each person’s team. The response was an overwhelming amount of yesses, where 10 out of 10 people interviewed expressed the great need and desire for technical communicators in every field. When asked if a technical communicator would be an asset to their companies, specific responses of note included the following:

In the 3D printing industry:

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"Machine-human interface would benefit from getting the language correct, but also 'the rest of it' – we need someone who knows how to take the jargon out of words and visuals. Technical writers are critical for communication and documenting our work."

In augmented/virtual reality:

"Yes. Absolutely. As teams evolve and get bigger and more tech comes, that skill is so important."

In medicine:

"We need someone to help with grants, publishing, communication between groups; someone to help with videos, infographics, presentations... there are lots of people doing design things that don't know what they're doing."

In the software industry:

"Technical communicators are a tremendous asset - based on customers and engineer feedback, our customers would have a tremendous struggle trying to adopt our products without documentation."

In the medical device industry:

"Yes, 100% absolutely - communication is so key in the company. We are team builders by nature; we facilitate communication through multiple groups."

In fitness equipment companies:

"Every team benefits from having a technical writer, 100%. To have someone to write something in a manner that a five-year-old and a 50-year-old could understand is huge."

In freelancing:

"Every company needs at least one tech writer."

In academia:

“Yes, definitely – [companies need] someone whose primary focus is the user or the audience to best communicate to the user clearly; someone that can analyze a situation or task and come up with a plan or strategy. We as technical communicators analyze situations differently. We’re looking for different things.”

From this, we can then begin to draw conclusions on how technical communicators are, indeed, a key asset to any company's success.

Conclusion

From the previous analysis of the 15 questions asked of each participant, we are then able to draw the following conclusions. The technical communicator of tomorrow should be prepared to become a technology expert as well as have a solid foundation in the basic technical communication skills like writing, editing, chunking, audience analysis, and document design, especially if they desire to work in an industry that involves emerging technologies. We will be expected to know multiple software programs and platforms, including applications in Adobe Creative Cloud and Microsoft Office, like FrameMaker, InDesign, Illustrator or PowerPoint, Publisher, and Word. We must also be able to adapt to new environments quickly and efficiently, and be eager and able to learn and use new applications. We should be prepared to be coders as well as writers, and should take the time to learn HTML, CSS, and other coding languages. We should also have a favorite text editor to use, whether it be Atom, Brackets, or Visual Studio Code (among others), and be familiar with using Git and Github and creating both static and complex websites. DITA and XML will continue to thrive throughout our careers, so having a grasp on these programs and other content management systems will still be useful. A push for less printed materials and more instructions given through images and videos or websites is anticipated, so we will be expected to know how to create, embed, and edit code, videos, and audio files. In fact, “in this day and age of enhanced technologies that allow for so much more than a static, one-dimensional drawing on a piece of paper, 3D is playing an expanding role in the world of technical documentation, especially when the documents are able to be viewed online at the manufacturer's website” (Cavier-Hill, 2018). A bigger focus towards artificial intelligence, wearables, mobile devices, smart devices, user experience

design, and software should also be expected. Considering the COVID-19 pandemic, we will see a workplace shift, allowing more technical communicators to work remotely and communicate through virtual private networks (VPNs) and video conferencing software. When working with emerging technologies, we will need to be on top of the ever-changing rules and safety regulations that go hand-in-hand with evolving technology.

Bearing all this in mind, we can see how much emerging technologies will affect our roles as technical communicators. We will need to be as versed in coding or learning new software as we are in writing and editing. However, we must not “abandon all the resources and techniques we've used in teaching technical writing and editing in the past...we must certainly add to them, and adapt our courses to the...processes that did not exist just a few years ago. And those of us in industry must likewise add to our knowledge base and retool our skills to be effective professionals” (Hayhoe, 2007). Our careers as technical communicators will only continue to shift and evolve right alongside the rapid evolution of technology, so keeping a finger on the pulse of emerging technology will give all technical communicators a significant advantage in the job market.

Acknowledgments

The author would like to acknowledge and thank her family and friends for the continued encouragement and support during her journey through graduate school, namely her fiancé Marty. She would also like to provide praise and thanks to Professor Ann Hill-Duin for the incredible guidance she has provided throughout this program. Her unwavering support and natural talent for teaching has not gone unnoticed.

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A Technical Communicator's Role in the Future of Emerging Technologies

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April 2020



Purpose

Explore and understand the roles, responsibilities, and duties a technical communicator has and will have when dealing with emerging technologies like smart glasses, 3D printers, or augmented and virtual realities across multiple different industries



Methodology

- Performed 10 interviews
- Asked each participant a list of 15 questions
- Interviewees were working in healthcare, engineering, corporate retail, and academia
- Questions focused on the practices and procedures of technical communicators in their respective industries
- Background research was conducted using scholarly journals

Key Findings

Consistencies

- Working in **teams**
- Ability to write clearly
- Structuring** communications
- Chunking
- Knowing your **audience**
- Good writing takes time
- Not enough direct **customer contact**
- Interactions w/ engineers, coders, software developers
- Knowing the **background** of a project
- Dealing with constraints
- Large-market company absorbing small businesses and their tech
- Using **white space**

For the Future

- Content creation impacted by **machine learning**
- Focus on **AI**, wearables, mobile devices, software
- Smartphones will be more like PCs
- Less training** on devices
- Reliance on **images and video**
- Less written manuals**; printed manuals will become websites
- Apps** will be more specified
- Need to be **tech experts**
- More **specialization** and interdisciplinary
- We'll **work remotely**
- Fewer strategic roles



Conclusion

- **The technical communicators of tomorrow will be expected to know these programs:** Framemaker, MS Word, DITA, content management systems, text editors, Github/Git, InDesign, XML, Illustrator, Oxygen, Zendesk, Titania, Sharepoint, Slack, PowerPoint
- Tech writers need to **be on top of regulations and safety** - with rapidly evolving tech and those regulations changing all the time, this is a constant challenge
- **Knowing your audience** and having a solid foundation of **writing and editing** is still imperative for success

