


Online Communication in the Digital Age
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Lecture – 11
Introduction to Technical Communication




Good morning dear friends and welcome to this module. Having discussed the nuances of computer mediated communication, today we shall look at the concept of technical communication in detail. We will also try to differentiate and thereby outline various facets, types and uses of technical communication in the context of online modes. Over the last decade, the term technical communication has undergone several revaluations and redefinitions owing to technological developments in media. Let us first look at the broader scope of the term.

What is Technical Communication?

- Technical communication refers to the process of exchanging technical or specialized information amongst individuals or groups of people to help them interact with technology or solve complex problems related to it.
 - It is a broad field that involves the creation and dissemination of information related to technology and its uses.
- Technical communication involves two aspects of writing: one that communicates work or is associated with the workplace; and the second that focuses on technology or technical subject matter.



Source: <https://youtu.be/kpTMEBKp9nA?feature=shared>

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The term technical communication refers to the process of exchanging technical or specialized information amongst individuals or groups of people to help them interact with technology or solve complex problems related to it.

It is a broad field that involves the creation and dissemination of information related to technology and its uses. Technical communication involves two aspects of writing. One that communicates work or is associated with the workplace and secondly, the aspect

that focuses on technology or the technical subject matter that is the core technical content. Technical communication shares with various types of audience the knowledge of or actions related to tools, systems and procedures.

It should also be differentiated from other forms of communication such as business communication or literary or subjective communication. Dissimilarities lie in difference of purpose, immediacy of communication and identification of audience.

- The first aspect, writing for or in the workplace, is often narrowly defined to organizational communication, but some scholars argue for a broader view that includes private settings such as homes as well, especially after the pandemic.
- The second aspect, writing related to technology, is often limited to specific branches of science, engineering or technology; but also includes knowledge, actions, and tools that are conducive to the generation of the document as well.
- It encompasses a range of written, oral, and visual communication that helps people interact with technology effectively and efficiently, in the context of evolving digital tools.

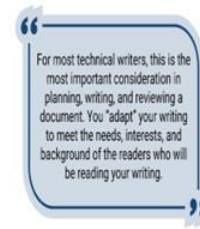


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The first aspect writing for or in the workplace is often narrowly defined to organizational communication. But some scholars argue for a broader view that includes private settings such as homes as well especially after the pandemic. The second aspect that is writing related to technology is often limited to specific branches of science, engineering or technology.

But at the same time, it also includes knowledge, actions and tools that are conducive to the generation of document as well. It encompasses a range of written, oral and visual communication that helps people interact with technology in an effective and efficient manner in the context of evolving digital tools and of course with their help. Therefore documents that we often use, for example, user manuals, interactive simulations, videos and tutorials that enable digitally enhanced learning or collaborative tools within workplaces, social media blogs and all forms of technical documentation fall under the umbrella category of the term technical communication.

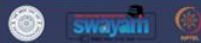
- At its core, technical communication is about making complex information accessible and understandable to a wide range of audiences.
- A technical writer who creates a user manual for a new software, and a project manager who uses technical communication skills to communicate project goals and progress; are both engaged in forms of technical communication.
- Both roles demonstrate technical communication skills, but in different contexts. The technical writer focuses on creating user documentation for technology, while the project manager communicates project information and fosters collaboration among stakeholders.



David McMurry on the importance of audience analysis

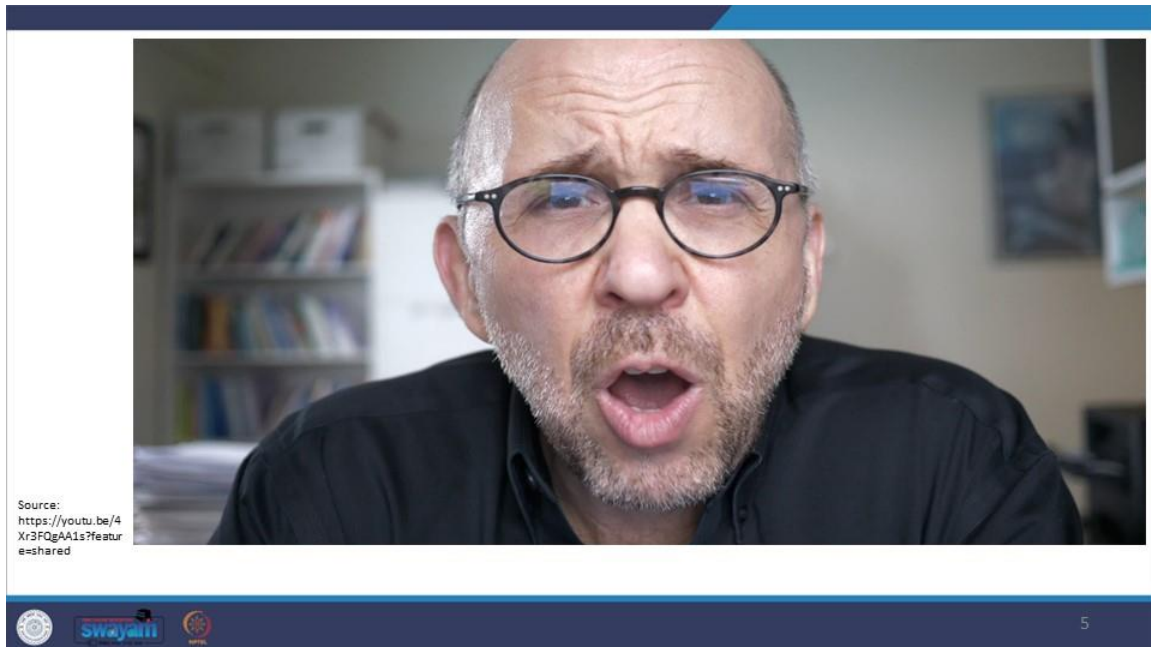
Let's face it: you're probably

Source: <https://www.archbee.com/blog/audience-in-technical-writing>



So we can say that at its core technical communication is about making complex information accessible and understandable to a wide range of audiences and that is the basic purpose of technical communication in fact. The idea behind technical communication is to pass on information in a manner which is easy to understand, which does not have any time gap between communication and understanding and which is targeted to specific audience groups using different techniques.

A technical writer who creates a user manual for a new software and a project manager who uses technical communication skills in order to communicate the goals in progress of the project are both engaged in forms of technical communication. Both roles demonstrate the skills in the field of technical communication but their contexts are different. The technical writer focuses on creating user documentation for technology while the project manager communicates information about the project and fosters collaboration among stakeholders. We shall be looking at a video in the next slide. In this video, Dr. Bruce Lambert explains using an example how simplification of complex information is the cornerstone of technical communication.



So if I were to focus on features in describing my research, I might say something like I can take two drug names in either the orthographic or the phonological representation. I can then use a variety of different orthographic and phonological similarity measures, compute a numerical similarity score between those two representations and use that similarity score to predict the probability of confusion. I can then use that probability of confusion, compare it to the actual probability of confusion in the real world and validate my predictive index. So that's a description of the features of my system in language that no one could really understand.

Or I could say something like this by focusing on the problem and the benefits. About 4 million times per year, people walk into pharmacies in the United States and they walk out with the wrong drug. One of the main reasons that that happens is because drug names are so similar that they're confusing. Out of these 4 million errors, a significant number of people get hurt because they take the wrong drug or because they fail to get the drug that they need. My work helps fewer people get hurt.

So that's it. The availability of digital communication tools in the 21st century across the spectrum of human interaction has led to the development of technical communication as a nuanced mode of communication. It can easily take various forms including written documents, presentations, videos and other multimedia formats.

- The content of technical communication can (simultaneously sometimes) target different types of audience – specialists, journalistic, hybrid etc.- and thus plays a crucial role in helping us understand and use technology effectively in our daily lives.

- It involves translating complex technical information into language that non-technical individuals, such as users or consumers, easily understand.
- Technical communication helps to bridge the gap between technical experts who design and develop technology and the end-users who interact with it.
- This can include instruction manuals, online help guides, user interfaces, and other forms of communication that aid in the use and understanding of technology by diverse societal segments.



Source: www.linkedin.com

The content of technical communication can target different types of audiences, specialists, journalists, hybrids, etc. And sometimes the same content is to be shared with multiple target audience simultaneously.

And therefore, it plays a crucial role in helping us understand and use technology effectively in our daily lives. We can say that it also involves translating complex technical information into a language that non-technical individuals, for example, users or consumers can easily understand a particular technological idea or for that matter more specifically a product. It also helps to bridge the gap between technical experts who design and develop technology and the end users who interact with it. This can include instruction manuals, online help guides, user interfaces as well as other forms of communication that aid in the use and understanding of technology by diverse societal segments. Therefore, technical communication now involves the use of digital tools to convey complex information in a clear and concise manner.

It supports the successful integration of technology into our work and personal activity. Digital tools and platforms that offer a wide range of connectivity services have changed the way people communicate with each other. These tools have made collaboration also easier, especially when working across different schedules and different time zones. As a result, technical communication has become a critical skill for individuals working in various industries including technology, academics, governance, engineering, healthcare and finance, etc. And it leads us to the concept of technical competence.

Technical Competence

- Technical competence refers to the knowledge, skills, and abilities required to perform tasks, solve problems, and achieve results in a specific technical domain.
- It encompasses a wide range of factors that contribute to an individual's effectiveness in a technical role.
- Technical competence is a combination of knowledge, skills, problem-solving abilities, adaptability, and effective communication within a specific technical domain.



Technical competence refers to the knowledge, skill and abilities required to perform tasks, develop problems and achieve results in a specific technical domain. It encompasses a wide range of factors that contribute to an individual's effectiveness in a technical role. Technical competence can be said to be a combination of knowledge, skills, problem solving, attitudes, adaptability and effective communication within a specific technical domain. There are three essential prerequisites to achieve effective technical communication. Primarily, we can say that it is based on one's own subject area.

Subject Competence

- Subject competence refers to the comprehensive understanding, knowledge, and expertise an individual possesses in a particular subject area.
 - A high level of knowledge and understanding of the subject area, including key concepts, theories, terminology, and historical developments.
- It calls for the ability to analyze, evaluate, and interpret information and ideas related to the subject area.
- This involves the capacity to think critically, identify patterns and draw connections.



Source: www.ethz.ch.com



The subject competence refers to a comprehensive understanding, knowledge and expertise an individual possesses in a particular subject area. A high level of knowledge and understanding of the subject area including key concepts, theories, terminology, historical developments and latest inputs as far as the research is concerned are the basic requirements. Subject competence calls for the ability to analyse, evaluate, link together information, interpret it and also ideas related to the subject area regarding the futuristic developments. This involves the capacity to think critically, identify patterns and draw connections. A competent professional possesses comprehensive knowledge of the subject matter.

Challenge is to present it in a proper and timely manner so that people can understand it without any time gap and without any revision.

- Competence is also the ability to formulate research questions, design appropriate research methodologies, collect and analyze data, and draw conclusions.
 - Actively seek opportunities to expand your knowledge and skills through various channels such as books, academic journals, online courses, webinars, workshops, and conferences.
 - Subject competence is often assessed through examinations, research projects, presentations, and practical demonstrations.
- It is a foundation for further specialization, research, and professional development within a specific subject area.

COMPETENCE FRAMEWORK



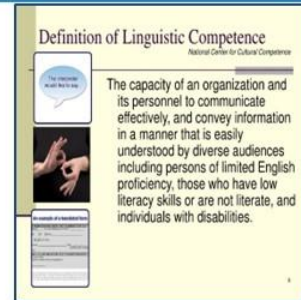
Source: www.ethz.ch.com

So, competence is also the ability to formulate research questions, to design appropriate research methodologies, collect and analyse data and draw conclusions. It is a foundation for further specialisation, research and professional development within a specific subject area, particularly when we talk about actively seeking opportunities to expand our knowledge and skills through various channels. And we can also say that our subject competence is often assessed through examinations, research projects, practical demonstrations, presentations and participation in different type of events related with our core area. Technical competence, particularly in today's world when because of the digital means available to us, communication is very quick and immediate is not limited to static knowledge only.

It also involves the ability to adapt to evolving technologies, methodologies and practices, in short to stay updated with the trends in industry as well as in research.

Linguistic Competence

- In technical communication, this refers to the ability to effectively convey complex technical information using appropriate language and communication techniques.
- Linguistic competence includes maintaining consistency in the use of terms and adhering to established standards within the field.
- When adapting the document to wider audiences, it involves avoiding jargon, explaining technical terms, using examples, and employing everyday language to enhance clarity and accessibility, empathizing with the requirements of the audience.

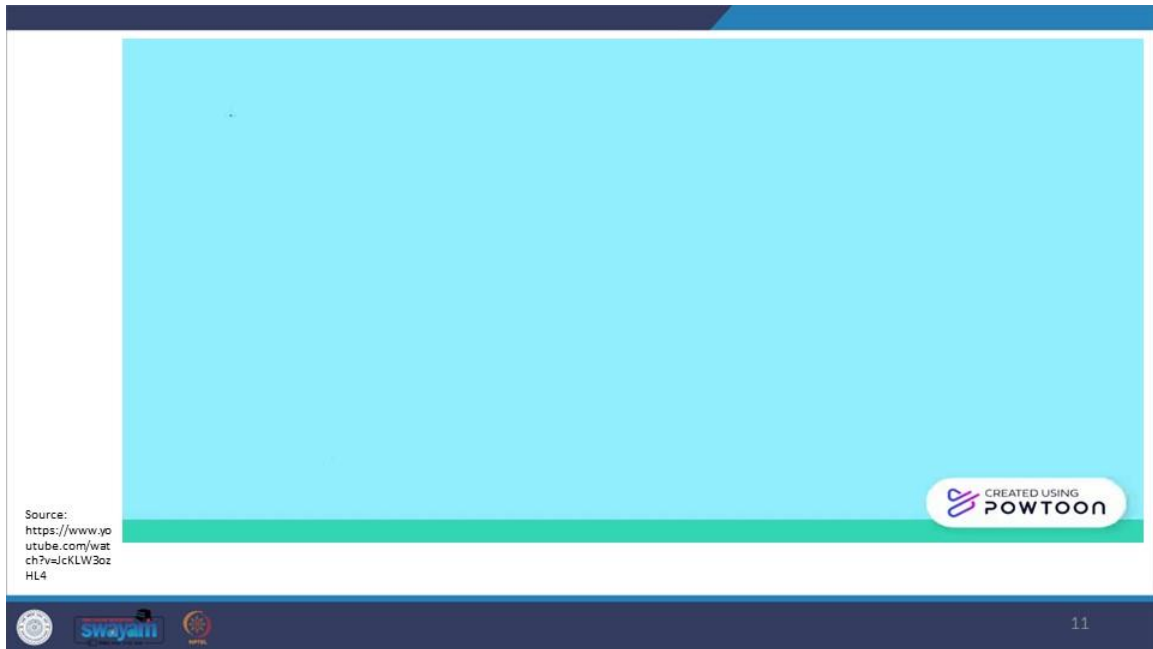


Source:
<https://www.ilovelanguages.com/linguistic-competence-vs-linguistic-performance/>



Within the framework of technical communication, linguistic competence refers to an individual's ability to effectively convey complex technical information using language which is appropriate and audience centred and an awareness about the changing and fast evolving communication techniques. Among other things, it also includes maintaining consistency in the uses of terms, referencing to the abbreviations and adhering to establish standards about references and other details of documentation practiced within the field. Also when adapting the document to wider audience, it involves avoiding the jargon, explanation of technical terms in a proper manner, understanding the background of the target audience, identifying the context within which the technical content is being shared, using examples if required and employing an easy and perhaps an everyday language to enhance clarity and accessibility, empathising with the requirements of the audience continually. It also suggests that as a writer in the context of technical communication, we should also be aware of the level of digital competence of the target audience.

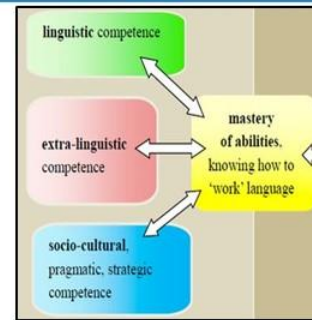
In the next slide, we have a video. We are referring to a video of a linguist, Dell Hymes, who has expanded upon a concept of Noam Chomsky. Chomsky has talked about linguistic competence, whereas Dell Hymes is introducing the idea of communicative competence. Communicative competence is using interpretive skills to create and connect with others.



For this reason, he developed a theory of communicative competence. A language user needs to use the language not only correctly based on linguistic competence, but also appropriately based on communicative competence. He developed the four components of communicative competence, linguistic, sociolinguistic discourse and strategic competence. Linguistic competence is the knowledge of the language code, not only grammar, vocabulary, but also phonetics and the writing rules. Sociolinguistic competence is the knowledge of sociocultural rules of use. Discourse competence is the knowledge of how to produce and comprehend oral or written texts.

Strategic competence is the ability to recognize and repair communication breakdowns before, during or after they occur. Linguistic competence in technical communication combines domain-specific knowledge with effective language skills. It enables professionals to convey complex information accurately to ensure user comprehension and facilitate successful communication. Today, online communication has evolved to adapt verbal language to reflect speed and diversity. Linguistic competence becomes even more important and critical in these contexts.

- When creating technical documentation, competence involves using clear and *logical organization*, providing step-by-step instructions, and incorporating *visual aids* or diagrams where appropriate.
- It involves checking for grammatical errors, ensuring consistent language use, and improving the overall quality of written or spoken technical communication.
- In global contexts, linguistic competence in technical communication also considers cross-cultural aspects.
- Awareness of cultural norms, idiomatic expressions, and potential language barriers ensures effective communication across cultural boundaries.



Source: [www. quora.com](http://www.quora.com)

While creating technical documentation, we must also use a clear and logical organization, providing step-by-step instructions, incorporating visual aids of diagrams where appropriate and using the links in an effective manner. It also involves checking for grammatical errors, ensuring a consistent language use and improving the overall quality of written or spoken technical communication. In global context, linguistic competence in technical communication also considers cross-cultural aspects. An awareness of cultural norms, idiomatic expressions and potential language barriers ensures effective communication across cultural boundaries. In cases where technical communication needs to be translated or localized for different languages or cultures, linguistic competence becomes even more critical.

Translators or localizers must possess a deep understanding of both the source and the target languages along with the technical subject matter to ensure accurate and effective communication across different linguistic and socio-cultural contexts.

Organizational Competence

- In technical communication, this refers to the ability to effectively plan, manage, and execute technical communication projects within an organization or team.
- Technical communication projects often involve multiple resources, such as subject matter experts, writers, editors, designers, and software tools, which entails effectively allocating and managing these resources.
 - Facilitating effective communication, establishing workflows, and coordinating efforts to ensure smooth collaboration and integration of different components of the project.



Source:
<https://www.youtube.com/watch?v=eiKkIjynsgeU>



The idea of organizational competence refers to our ability to effectively plan, manage and execute technical communication projects within an organization or team in a lateral or upward or downward manner. Technical communication projects often involve multiple resources such as subject matter experts, writers, editors, designers and a person who can use different software tools which entails effectively allocating and managing these resources. Facilitating effective communication, establishing workflows and coordinating efforts to ensure a smooth collaboration and integration of different components of project. Organisational competence requires actively engaging with these different and diverse stakeholders, seeking their input as well as seeking their timely feedback and addressing their requirements as well as expectations during the continuation of the project.

- In some industries, technical communication must comply with specific regulations, standards, or legal requirements.
- Organizational competence entails ensuring that the technical communication materials adhere to these requirements and are in compliance with applicable guidelines or regulations.
 - This ensures that the correct and up-to-date versions of technical documents are accessible to the relevant stakeholders, and any changes or updates are properly tracked, reviewed, and approved.



Source: Powerpoint

In some industries, technical communication must comply with specific regulations, legal requirements and standards. So we must ensure that the technical communication materials adhere to these requirements and remain in compliance with applicable guidelines or regulations. This also ensures that the correct and up-to-date versions of technical documents are accessible to all relevant stakeholders and any changes or updates are properly tracked, reviewed and approved. Technical communication involves a range of elements designed to efficiently deliver intricate information to a specific audience. Let us now attempt to summarize some of the notable features of technical communication that characterize its efficacy.

Features of Technical Communication

Reader-Centered (level and extent):

- Such writings must take into account the context of the reader and provide adequate supplementary information wherever necessary.
- Reader-centered documents concentrate on providing information that helps people learn, perform tasks, or make decisions.
- While technical documents can still have a distinct personality or voice, the focus is on delivering information that is useful to the readers.

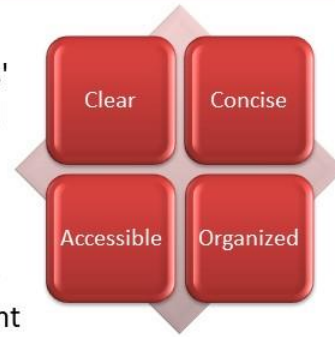


When we talk about the features of technical communication, we can list them as being empathetic, contextual, supplemented and engaging. Now what do we mean by these words in this context? Our writings should be reader centered. That means that we must recognize the technical level of our audience and adjust to it. The extent of the background information which has to be supplied as well as our identification of the requirement of supplementary information has to be done at our level. We must remember that the onus of clear understanding of the document by the reader or the audience lies on us as the writers of a technical communication piece.

The onus of understanding in the context of technical communication is never with the reader and this is the primary difference between literary and business communication and the features of technical communication. Reader centered documents concentrate on providing information that helps people learn, perform tasks or make decisions. While technical documents can still have a distinct personality or voice, the focus is on delivering information that is not only useful to the readers but also an objective one. Technical documents prioritize the needs of the readers over the writer's personal thoughts and emotions unlike literary pieces. The subsequent section of this course will emphasize the importance of reader centered writing and designs to help you bridge this concept in a more comprehensive manner.

Accessible and Efficient

- An effective technical document should meet the readers' expectations of quickly finding the information they need and receiving clear answers to their questions.
- Instead of lengthy technical passages, the content should be presented in concise sections, addressing the main queries readers may have. This enhances the overall user experience, saving time and effort in searching for relevant details and increasing productivity.
- Accessible and efficient communication is not an abstract concept. In cases of lawsuits, inaccurate, unclear writing is treated similarly to any other defective product or liable to injury, damage, or loss.



Our technical writing should be clear, concise, accessible as well as organized. When we talk about the clarity of a document in the context of technical communication, we mean not only a suitable and clear language which is devoid of circumlocutions and the use of jargons but we also refer to a clarity of organization in which different portions of the write-up are properly managed as per our identification of the reader's requirement. That also suggests that instead of writing lengthy and verbose technical passages, we should be able to write in a concise manner which passes on only the required information and does not have any fuzziness. This enhances the overall user experience, saves time and effort in searching for relevant details and increases productivity. The accessible and efficient communication in fact is not an abstract concept.

In cases of lawsuits, inaccurate, unclear writing is treated similarly to any other defective product or liable to injury, damage or loss. And particularly in the context of digital mediums of communication available to us, clarity as well as efficiency and accessibility have become the core concerns now. So we can say that a well-crafted, accessible and efficient technical document demonstrates professionalism and expertise. It also enhances the reputation and credibility of both the document creator and the organization they represent.

Often Produced by Teams

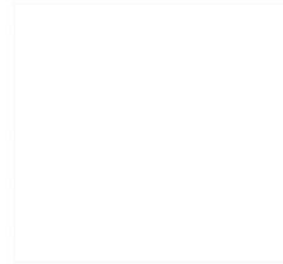
- Instead of being created by a single writer, complex documents are typically the result of team efforts consisting of various individuals with different areas of expertise.
- The teams responsible for producing technical documents can be organized in different ways, together at a single site or location or virtually.
- The collaborative nature of technical document production recognizes the complexity and interdisciplinary nature of the subject matter.
- It allows for a comprehensive and well-rounded approach to developing documents.



Technical documents nowadays are often produced by team efforts. They are normally not created by a single writer nowadays because they are complex because of several factors we have already discussed. The teams which are responsible for producing technical documents can be organized in different ways together at a single site or location or they can be virtual teams. The collaborative and interdisciplinary nature of technical document production recognizes the complexity and interdisciplinary nature of the subject matter. It also allows for a comprehensive and well-rounded approach to developing our documents. Team collaboration enables the pooling of knowledge, skills and resources to develop comprehensive and accurate technical documentation.

Delivered in Paper and Digital Versions

- Technical documents have the flexibility to be delivered through various media formats, allowing for different methods of consumption and access by the target audience.
- Technical communicators must possess not only strong writing skills but also the ability to consider page design and make appropriate choices regarding the media format.
- They need to think about how the content will be presented visually, ensuring readability and user-friendly navigation in digital formats while also considering the potential requirements of print formats.



Source: <https://www.youtube.com/watch?v=IstmKnaYRo>

Nowadays our documents in the context of technical communication can be delivered either in a paper or in a digital version. They now have the flexibility to be delivered in different media formats which allow for different methods of consumption and access by the target audience. Therefore, we must have the ability to consider the page design and make appropriate choices regarding the media format. We should be able to think how the content will be presented visually ensuring readability and user friendly navigation in digital formats while also considering the potential requirements of print formats. By leveraging different media formats, technical communicators can reach a wider audience, cater to diverse learning preferences and enhance the usability and accessibility of the information they want to convey.

It emphasizes the need for technical communicators to possess an understanding of how different media choices can influence the effectiveness of their communication efforts.

Technical Communication Online

- Online platforms and forums serve as hubs for technical discussions: These platforms, such as Stack Overflow, GitHub, Reddit, Quora, and specialized industry forums, provide a dedicated space for individuals to engage in technical discussions.
- Users can post questions, share insights, and participate in conversations related to specific technical topics, tools, programming languages, or industry-specific challenges.
- Online platforms and forums provide immediate access to a vast amount of information. This accelerates the learning process and helps individuals find solutions efficiently.



Source:
<https://www.youtube.com/watch?v=enrTLKqMGgo>



So, online platforms and forums serve as hubs for technical discussions. These platforms such as Stack Overflow, GitHub, Reddit, Quora and specialized industry forums provide a dedicated space for individuals to engage in technical discussions. Users can also post questions, share insights and participate in conversations related to specific technical topics, tools, programming languages or industry specific challenges. Online platforms and forums provide immediate access to a vast amount of information.

This accelerates the learning process and helps individuals find solutions efficiently. Such online platforms and forums also facilitate networking and collaboration among technical professionals. Users can connect with like-minded individuals, industry experts and potential collaborators leading to opportunities for joint projects, mentorship and career development. And it has brought about several major shifts in today's context.

- Platforms like Microsoft Teams, Slack, and Google Workspace provide real-time document sharing, video conferencing, and task management capabilities, allowing geographically dispersed teams to collaborate seamlessly.
- Presentation software like PowerPoint and Prezi enable technical communicators to create engaging and visually appealing presentations that enhance understanding.
- Virtual and Augmented Reality systems, along with the advancements in machine translation and natural language processing, have further improved the accessibility and accuracy of technical communication across language barriers.



Source: www.dominiontech.com



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Platforms like Microsoft Teams, Slack and Google Workplace provide real-time document sharing, video conferencing and task management capabilities allowing geographically dispersed teams to collaborate seamlessly.

Modern softwares like PowerPoint and Prezi enable technical communicators to create engaging and visually appealing presentations that enhance understanding. Virtual and augmented reality systems along with the advancements in machine translation and natural language processing have further improved the accessibility and accuracy of technical communication across language and cultural barriers. We can say that technology is reshaping the forms of technical communication. Conventional practices and technical writing have to accommodate these digital changes. Digital changes have added to the accessibility and efficiency of communicating complex technical information.

Global communities linked together through digital technologies have led to the sharing of social, political and financial interests that transcend regional and national boundaries. By effectively communicating research findings and innovative solutions, technical communicators can raise awareness, mobilize support and encourage collaborative efforts to tackle these challenges on a global scale. Translations of research papers and technical documentation make technical knowledge accessible to a wider audience, allowing researchers from different linguistic backgrounds to contribute and learn from each other.

Conclusion

- Technical communication plays a crucial role in establishing standards and ensuring interoperability across different countries and industries.
- This allows for seamless communication and integration of systems, products, and services on a global scale.
- It further fosters localization; technical communication helps overcome language barriers, allowing products and information to reach a broader global audience.
- Successful collaborations in such settings require communication that embraces and reflects this diversity.



Source: www.vectorstock.com



In conclusion, we can say that technical communication plays a crucial role in establishing standards and ensuring interoperability across different countries and industries. This allows for a seamless communication and integration of systems, products and services on a global scale.

It further fosters localization. Technical communication helps overcome language barriers, allowing products and information to reach a broader global audience in their own languages. Successful collaborations in such settings require communication that embraces and reflects this diversity. Technical communication thus plays a vital role in technology transfer, enabling the dissemination of advancements from one region or country to another. It also helps in fostering economic development and progress worldwide. The COVID-19 pandemic has highlighted the dependence on digital tools across workplaces as well as essential role of technical communication across workplaces.

In the next module, we shall discuss it further. Thank you.