

TECHNICAL COMMUNICATIONS: STRATEGIES FOR SUCCESS

Chrys Shea
Shea Engineering Services
Burlington, NJ, USA
chrys@sheaengineering.com

ABSTRACT

This paper is an accompaniment to a keynote presentation at the 2013 Pan Pacific Microelectronics Symposium. It discusses various technical communication vehicles, typical audience, exposure and interest levels, and how to adapt information to best fit the delivery method. It also identifies specific opportunities to maximize the ROI of technical communications and offers simple tips for improving writing quality.

INTRODUCTION

In technology-based organizations, everyone needs to communicate technical topics effectively, regardless of job function or level. People need to share information with coworkers, suppliers and customers. Customer communications are particularly important to companies that want to demonstrate their leadership in the marketplace. Technical publications can draw attention to an organization's superior technologies or value propositions, strengthen the brand, and raise market awareness of new products.

There are many ways to communicate with customers about new products or technological advancements, and employing the right ones can be instrumental in a product's early success. Strategic communication efforts select the best media to optimize exposure to potential customers, and then deliver information at a level with which the audience connects comfortably.

Successful technical communications reach the right people, deliver messages that are easily understood, maximize the utility of the information, and use the simplest language possible.

SELECTING THE RIGHT MEDIA

Media selection is based on understanding the target market. Is it comprised of advanced technology researchers or production engineers? Operations managers or process developers? The key is in knowing the audience and where they typically look for information. The best media choice for a technical message is the one that provides the best exposure to the potential customer base. Figure 1 shows a variety of technical communication vehicles, each designed to reach different portions of the technical community.



Figure 1. Technical communications vehicles

Technical Papers at conferences reach higher level technologists and technical managers who attend conference presentations or review conference proceedings. The exposure of a technical, or "white" paper, is narrower than other media, but the audience always has a strong interest in the topic. In supporting sales or marketing efforts, white papers generate high credibility levels for the organization, demonstrate technology leadership, and provide good sales collateral.

Magazine Articles extend to a wider audience than white papers. Magazines are browsed by technical personnel at all levels from operator to executive, and in a variety of different disciplines like engineering, purchasing or quality. The readers' interest levels in any specific topic vary considerably, so while the message becomes available to many people, not all will read it.

Magazine articles often offer the highest ROI of any market-focused publication because they can reach so many potential customers, have excellent electronic accessibility and are more user-friendly than most white papers.

Presentations and Webinars provide broad exposure to an audience with above-average interest in the topics. Technicians, engineers and first-level managers typically attend on-line or in-person presentations to learn more about their primary job function or broaden their knowledge of related fields. Attendees often bring pre-determined questions for the presenter based on their experience, and can be expected to formulate new questions based on the

presentation's content. Presentations and webinars offer organizations excellent opportunities to showcase their capabilities and help technologists develop personal connections with colleagues.

Applications Notes are targeted to - and accessed by - product users or potential users. The exposure of product-specific information is limited to the technical personnel, but with extremely high interest in the content of the documents. Current users will access applications notes for help or information; potential users will consider their quality and usefulness as an indicator of customer service capability when making purchasing decisions.

Blogs also provide excellent avenues to showcase talent, personalize technical connections and discuss specific products, but present more risk factors than traditional communication conduits. Successful blogs represent companies professionally, with fresh installments on a regular basis, and build a fan base that helps propagate their message through peer-to-peer networks. However, blogs that contain too many unsubstantiated opinions, exhibit excessive commercialism or have long lapses between entries can reflect poorly on the sponsoring organization and turn away more readers than they draw.

ADAPTING STYLES FOR VARIOUS MEDIA AND AUDIENCES

Information can be conveyed in a variety of formats. Optimizing the delivery style for the medium and the audience improves the effectiveness of the message. Figure 2 lists some of the different communication vehicles that use varying styles.



Figure 2. Communications tools with varying styles

Test reports are most often used internally or with development partners. They are the record of an experiment or test, and should include as much information as possible because they are likely to be reviewed by researchers in the

future. Documentation should include test equipment models, parameters, vehicles, participants, materials and lot numbers, dates and times. Most of this information can be captured photographically. Reports should contain as much raw data as practical, and the names and locations of files containing large amounts of data should also be included.

Organizing and retrieving information can be facilitated by using presentation formats (e.g. Power point) instead of traditional written formats (e.g. Word). Pictures and numbers tell stories better than words, are usually easier for technical professionals to produce and are less affected by language barriers. Emphasis should be placed on report content, not format.

The technologists who review test reports are far more interested in the details of the test than the format of the delivery. They will be using the information as background for future research or as the basis for customer-focused technical communications on the product.

Technical Papers formalize test information for publication at conferences and in journals. They should focus on experimental methods and findings, and present as much relevant data as possible. Results should be discussed and interpreted in the context of the application.

White paper language is the most formal of all publications types: avoid the use of slang, personal pronouns or attempts at humor in technical papers, as they are published by respected institutions. Proper formatting is important to comply with publication guidelines and project a professional image. Technologists reviewing white papers will most likely be seeking data or test methods, and are familiar with accepted reporting formats and industry-specific jargon.

Magazine Articles need to quickly capture the attention of the potential reader. They should be short (less than 1500 words), focus on results, and demonstrate the data with good graphics. The graphical element is critical to capturing the attention of a potential reader browsing a magazine; time spent on improving graphics quality is a wise investment. Another key element to pique the reader's interest is a compelling introduction – three sentences that describe a problem, its implications, and the payoff of a new solution.

Raising the article's visibility with potential readers who do not browse the magazine is also important. In the age of electronic media, an article published in any trade journal is now instantly available via the internet. Key words should be embedded within the article to optimize search engine hits. Social media, networking groups, blogs and even email signatures can provide links to new articles when they are initially published; hardcopy reprints are available for

handouts. If the article is based on a previously published technical paper, the original study should be cited. Links should be provided for interested readers to learn more about the product or contact the primary author.

Web Pages, like magazine articles, should be compelling, providing the payoff in the headline or introduction, and should also embed key words to optimize search engine performance. Current guidelines for key word placement include usage at the top, middle and end of the copy, at a rate of 4-5% of the word count. The graphical layout of the page should not be too visually intimidating or busy and key information should be visible without scrolling. Numerous calls to action – options like “contact us,” “request a quote,” or “download a brochure/tech paper/presentation” should be present on each page.

Web page visitors are technically-oriented individuals investigating new products or solutions, and a company’s web page is often that potential customer’s first interaction with the provider. It needs to make a great first impression, and encourage the visitor to click to another company page instead of the “Back” button.

PowerPoint Presentations are the most frequently propagated form of information. They are often forwarded among parties and reviewed without the benefit of a presenter. Therefore, points should be very clear in the copy, leaving little open to interpretation. Summaries of complex slides or important takeaways should be highlighted with boxes or different fonts to make the key information as prominent as practical.

Graphics should be used wisely. Ideally, at least every other slide should provide some visual interest, but only relevant graphics should be incorporated. Graphics are meant to communicate, not decorate. Relevant graphics would include depictions of processes, equipment, usage or applications associated directly with the product; irrelevant graphics would include clip art and random subject-related images. Images that are not original should cite the source, even if they are copied from the internet.

Different technical levels of presentations should be prepared based on the expertise of the audience, and are discussed in the next section.

Live presentations are personal representations of an organization, and should be executed with the highest levels of professionalism. Time constraints should be respected. Most presentations average one minute per slide; they should be sized accordingly prior to the presentation. Extra slides should be hidden or removed, not quickly passed by mid-presentation. In-person presenters should dress professionally, review and understand the slides, face the audience, and make eye contact with audience members.

On-line presenters should prepare their presentation and check their internet connection, audio and video feeds prior to the web meeting. Headsets typically provide clearer sound than speakerphones; different camera positions, subject backgrounds and room lighting can dramatically affect image quality, and should be determined in advance.

To maximize the ROI of Webinars, they should be recorded and made available online for on-demand viewing.

Applications notes should focus on proper usage as determined by the product’s specification or results of its development testing. Language should be formal and to the point; format should be well-organized and not distract from content. Readers are usually very familiar with the technology and want quick and easy access to information.

Blogs or Newsletters are the most casual form of technical communications, and offer authors a great deal of latitude in content and style. Language is more casual, often including slang, abbreviations and personal pronouns. Humor is typically rewarded in the form of increased readership and fan mail. Bloggers can offer opinions or insights without the typical requirements of substantiating data or citation of references.

Blogs offer new levels of freedom, but bear new levels of risk. To be effective, they need to stay fresh, demanding time from the blogger on a regular basis. Controversial or polarizing statements can draw heavy traffic and raise visibility, but can also draw heavy fire. A blog’s audience could be anyone in the world – including a potential customer or boss.

MAXIMIZING ROI

There are several ways to maximize the ROI of technical marketing communications campaigns. Low cost pieces that offer high potential exposure like magazine articles or webinars naturally provide good ROI at the individual level. At a higher level, returns can be maximized across the entire campaign by leveraging existing data, using the same information across multiple communication platforms, and unifying the appearance of the communications tools wherever possible.

Typical product development tests produce reams of good information that is often underutilized. To capitalize on performance, benchmark or beta testing, review the research results from the user’s perspective, which may be different from the developer’s. Enlist a skilled user to perform an in-depth review, if necessary. Publish test results from the user’s view point, highlighting the features and benefits that apply directly to them.

Producing technical documents from laboratory data requires an investment to formally write up the work and

develop the graphics. But once these baseline items are established, they can be used over and over again in all publication platforms. A conference paper and presentation pose the biggest initial challenge, but yield everything required to quickly and easily produce articles, webinars, web pages, blog entries and other sales tools. Figure 3 illustrates a typical progression of communication tools that result from a research study.

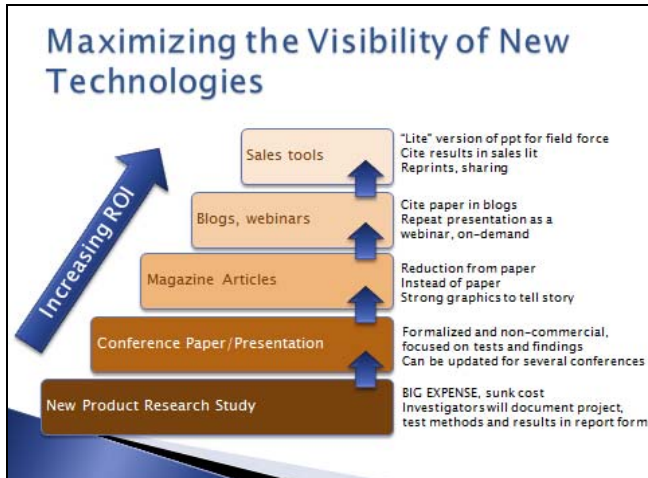


Figure 3. Technical publications evolved from research studies

The choice between a white paper and a magazine article depends on target market and the level of technological advancement. In some cases, skipping the formal paper and publishing articles are the best choice. If a technical paper is published, however, it should be cut down to produce at least one magazine article following its initial publication.

Conference presentations usually contain detailed information of interest to audiences highly skilled in the subject matter, but may be too complex for the typical customer to appreciate or the sales associate to confidently deliver. Conference presentations often contain a great deal of higher level information like statistical analyses and in-depth discussions. They communicate concepts among experts, in the parlance of experts. To communicate similar concepts among professionals of typical proficiency, the key information should be structured appropriately, introducing any new terminology and focusing on the impact of the results. The simpler versions of the information are more likely to garner the attention of average customers than the complicated versions designed for the experts. If presentations are based on conference publications, they should always reference original papers and presentations (when available) to offer more details for interested individuals.

Well-written web page copy is often repurposed for brochures, advertisements or other sales materials. Because

web pages offer so little space but must be very compelling, their messages are usually as concise and as powerful as possible. Good web copy not only improves customer perceptions over the internet, but also pays dividends for the general sales and marketing efforts.

Unifying the appearance of data, charts and graphics improves interchangeability of graphical elements among different documents and platforms, and helps identify the brand. Microsoft Office easily enables the use of corporate identity colors with its Theme Colors function. Setting the colors takes less than five minutes, and once the theme is set, Excel charts, Power point graphics and Word illustrations all automatically apply the company colors to every creation. Using consistent colors and fonts for chart areas, data points, trend lines, labels, titles and other elements across all publications helps develop a style that is easily recognized and associated with a company or brand. In situations where publication guidelines preclude the use company of logos, templates or trade names, organizations can rely on their use of color and style to differentiate themselves from their competitors.

TIPS FOR EFFECTIVE COMMUNICATIONS

Technology workforces are very diverse in background, education and location. The effectiveness of any technical communication can be improved by simplifying its language, reducing its word count and integrating graphics.

Simplify language:

- Avoid plurals and articles (a, an, the), as they do not exist in some languages and do not translate well
- Use only present verb tense and active verb voice
- Substitute small words for big ones
- Write short sentences or cut long ones into two

Reduce word count:

- Eliminate useless modifiers like quite, very, rather
- Edit out superfluous phrases like "in other words," "that is to say that," "of course," "generally speaking"
- Target prepositional phrases for condensing
- Bulletize lists

Use graphics:

- An annotated picture is more effective than a written description
- Pictures and graphs translate better than words
- Visual images capture attention

A final tip for authors: *model your writing style based on what you like to read, not how you speak.* The information will naturally flow in a more concise, easy-to-read format.

CONCLUSIONS

Technical communications about new products or technologies can raise market awareness, demonstrate technology leadership, create new avenues for connecting with customers, and strengthen a brand.

Creation of technical communications can present numerous challenges in terms of selecting the right communication vehicle and delivery style, and in ensuring clarity of the message. Understanding the target market is the first step in formulating a communications plan and serves as the cornerstone on which everything is built. Ask three questions:

- Who is the target audience?
- Where do they typically search for information?
- Are they interested methods, data or results?

The answers provide the keys to publishing the information in the right place and delivering it at the right level.

Strategically planning technical communications and integrating them as part of new product introduction marketing initiatives will improve the overall effectiveness and efficiency of the marcomm campaign, and speed the return on investment in the new product.