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Journal Article

N.B.: When citing this work, cite the original article.

Original Publication:

Jonas Löwgren , Technical communication practices in the collaborative mediascape: A case study in media structure transformation, Communication Design Quarterly Review, 2016. 4(3), pp.20-25.

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Postprint available at: Linköping University Electronic Press

<http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-131756>

Technical Communication Practices in the Collaborative Mediascape:

A Case Study in Media Structure Transformation

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ABSTRACT

Professional practices in technical communication are increasingly being challenged by the emergence of collaborative media that enable users to access technical information created by non-professionals. At the same time, these technologies also allow technical communicators to provide a continually expanding audience with knowledge and skills needed now more than ever. Through a co-design case study, researchers developed a new and innovative platform for producing and distributing technical information including user-generated content. Moreover, the events of the case included market strategies in which a professional organization moved from a reactive to a more proactive position on collaborative media. In so doing, they outlined a set of new professional roles for technical communicators including editors, curators, facilitators, and community managers.

CATEGORIES AND SUBJECT DESCRIPTIONS

H.0 Information Systems: General

GENERAL TERMS

Documentation, Design

KEYWORDS

social media, collaborative media, institutional policies, professional practices, mixed methods research

INTRODUCTION

This work addresses what we might call the collaborative mediascape—the emerging digital infrastructures empowering people to communicate without the mediation of professional mass media actors. The specific topic examined is what the new communication practices of such contexts mean for technical communication and how technical communicators can leverage their professional skills in new ways. In reviewing this area, the article uses a co-design case study to explore new strategies professional technical communicators can use to collaborate via such media. The entry also reveals how technical communicators can pool their expertise to explore the challenges and the opportunities associated with such contexts.

COLLABORATIVE MEDIA CHALLENGING TECHNICAL INFORMATION

Everyday practices of mediated communication have changed drastically in recent years, and the most significant changes have to do with participation and collaboration. Traditionally, mass media production was a job for professionals who had access to specialized production tools, skills, and distribution channels. Their audiences were largely media consumers. Today, the distinction between producers and consumers is increasingly difficult to delineate. This situation is perhaps most clearly seen in so-called social media, where all content production, curating, and editorial services are provided by the users (formerly thought of as consumers) rather than the media platform providers (formerly producers).

More generally, it is clear that, in these contexts, a growing number of non-professionals (i.e., individuals who are not employed to create, curate, or edit online content) engage in media production on various levels. Such engagements range from the most mundane content production and distribution—a simple like or a tweet in social media—to the production of highly competent and sustained artwork, novels, movies, and other creative and expressive media forms. This situation has been dubbed “produsage” (Bruns, 2008), and the

people engaging in it can consequently be called “produsers.” We refer to the class of media affording produsage as collaborative media (Löwgren & Reimer, 2013), and such media also allow for individuals to engage in a range of other practices, including non-professionals engaging in the ongoing redesign of the infrastructures themselves.

The field of technical communication is increasingly considering the significance of this development. It has been noted, for example, that the foundational objective of technical communicators and other technical information producers is to help people get the most out of their technical products. Such an objective, however, is also a concern shared by many produsers (Swisher, 2010). In other words, it is increasingly likely that a contemporary user of a technical product can find help, guidance, and other useful information created by fellow users and other actors not formally affiliated with the product.

This situation is not really new in itself—people have always tended to seek the advice of knowledgeable friends and colleagues as a complement to the official technical information (i.e., materials created by technical communicators). What the rapid growth of collaborative media practices means, however, is that the creation and distribution of and ready access to such unofficial information is increasingly produced and published online. As such, this information is becoming available to a wider range of people—including a growing number of individuals outside of one’s networks of personal acquaintances.

It can even be argued that the emergence and evolution of technical information produsage creates a challenge to established practices of technical communication. After all, such practices historically relied on a mass media structure comprised of a few professional producers creating and distributing technical information to a large number of consumers. A recent special issue of *Communication Design Quarterly*, in fact, focuses on this topic in relation to identifying the most pertinent research questions of the field (Albers, 2013). The contributions to the special issue, moreover, identify a number of open questions connecting

to this emerging context—questions such as what are (or should be) the roles of social media producers in technical communication (Arduser, 2013) and what are the top-priority needs for understanding changing user behaviors (Andersen et al., 2013). The call to action presented in that special issue aligns with similar admonitions ranging from the work of Spinuzzi (2002) on moving from a consumer model to a citizenship model, through Kunz's (2010) three stages of development, to Gentle's (2012) emphasis on communities, and Lykhinin's (2012) sense of a paradigm shift.

The sense of urgency and challenge is rather well captured in a recent call for papers (Kimme Hea, 2011) to a special issue of *Technical Communication Quarterly* on the topic of "Social media and the role of the technical communicator." As the call notes, these [collaborative media] patterns of communication and participation shift users' expectations for how they engage information, technology and each other. In these ways, social media facilitate instantaneous interactions among users and enable relatively low-cost, adaptable resources that can address a range of user concerns. As a result, users are finding traditional forms of technical support less appealing and increasingly turning to each other for information and support. Technical communicators thus need to develop effective strategies for understanding and responding to these shifting communication situations (Kimme Hea, 2011).[11]

To summarize, recent scholarship as indicated above has suggested that changes in economy, technology, and organizations have rendered social interaction and interpersonal communication increasingly important to the work of technical communicators[EU2][13].

Professional trends in this area emphasize collaborative knowledge and content creation as well as focus on distributed work and information spaces. Further, the evolution from writing to curating highlights the significance of building information environments that allow for the

production of portable content that can be easily retrieved and repurposed by a range of users across a range of formats^[14].

THE RESEARCH APPROACH: A CO-DESIGN CASE STUDY

These various developments give rise to a central, over-arching question technical communicators need to answer:

How might the mass-medial structures of technical communication practices transform in the direction of more collaborative media practices?

To examine this question, I engaged in a co-design case study together with a professional technical information producer. I selected this method of examining this research question because it offered the possibility to experiment with ecologically valid transformation ideas. This approach was also informed by the researchers' (i.e., my and my collaborator's) general knowledge of collaborative media practices as well as by the professional technical communicator's sense of practical, organizational, and financial viability.

The case I selected to study involved Sigma Technology, a medium-sized and quite established Swedish^[EU5] technical communication company with international presence^[J6]. I selected this particular case for study because of the need for long-term commitment and willingness to change, both of which factors I was confident to find in Sigma Technology. As is often the situation in design research, I drew the methodological framework from participatory action research where the researchers often perform the role of engaging in transformation processes with key stakeholders.

This particular case study started in the fall of 2010 and was still ongoing at the time of the initial writing of this entry (2013). The case is based upon a co-production project where I, as the lead researcher, formed a team that consisted of a small group of professional technical communicators. This team was funded in part from the research and development (R&D) budget of Sigma Technology, and the team took an open-ended and explorative approach to

examine the challenge of how Sigma Technology should change its practices in relation to the increasing collaborative-media experience and expectations among its customers and users.

At the same time, the kind of work researched by the team can be described as a longitudinal qualitative case study that involved using participant observation. In this context, I collected qualitative data in the form of field notes of work in the project team^[EU7] and meetings with other parties within Sigma Technology, and project documents such as^[EU8] internal memoranda, design sketches and specifications, and the like. The findings reported here are the results of inductive analysis of the qualitative data collected from a review of these materials (i.e., field notes and project documents). The following sections of this entry, in turn, introduce the professional partner, outline the main activities of the collaborative research process, and present three tentative knowledge contributions.

OVERVIEW OF THE CASE

The company Sigma Technology is a part of the international Sigma Group. It has nine offices in Sweden, including the head office in Gothenburg. Moreover, there are offices in Finland, Hungary, China, Canada and the US. The total number of employees in the organization is approximately 350 persons worldwide.

Sigma Technology is a technical communication consultancy company that provides services mainly to business-to-business (B2B) customers where technical information is needed for large, custom technical systems. (Technical communicators might, for example, produce information that supports maintenance and troubleshooting.) However, the company is also highly active in business-to-consumer (B2C) markets. As such, the organization's management understands the significance of the changing technical information expectations in relation to the emerging collaborative mediascape.

In 2010, Sigma Technology agreed to undertake a joint project where design researchers and company research and development (R&D) staff would form a team to

explore the possible futures of technical communication. As a part of this process, the team would also examine the roles of professional technical information producers, with an ultimate aim to initiate change in the company's business practices.

The R&D staff of Sigma Technology has a history of developing platforms to facilitate production of technical information, and the researchers participating in the project represented the field of interaction design. Predictably, it was decided to start the joint research project by designing a new platform to support production and consumption of technical information. The purpose of the new platform would be to explore and illustrate a more open view of technical communication, including producer as well as professional contributions. (It is reassuring to note this approach has recently been identified as a relevant research challenge within communication design. Jones [2013], for example, advocates research approaches including the creation of ecosystems/contexts that support such communities.) Moreover, the project team felt this direction could accommodate the immediate needs of Sigma Technology's customers as well as the strategic preparations for more radically collaborative production and consumption practices.

However, the design of a new platform meeting short-term as well as long-term goals turned out to be a non-trivial undertaking. The work started with an explorative phase, examining different conceptual directions. The project then moved into detailing a moderately collaborative platform for technical information production and consumption. Still, the momentum of the work left something to be desired—it seemed as if the prototypes made and the stories told in the project did not fully resonate with core priorities within the company. The breakthrough came in early 2011 when the explorative design process was focused on facilitating collaboration in technical information production.

In hindsight, it is obvious that the initial approach of considering production and consumption together was too far removed from Sigma Technology's existing production

practices and customer demands to be fully relevant. Reframing the task as one of primarily supporting production made it easier to relate to market demands and existing company practices. Thus, it made more sense for the professionals on the project to devote time and effort to the joint work. The project team then created a rationale in order to connect to the long-term research goals. That rationale was formulated as follows.

Technical information producers in our own company and among our customers will benefit in the short term from using a platform that supports rapid and flexible production. That platform also provides the necessary infrastructure to go from traditional distinctions between production and consumption to more open, collaborative forms of knowledge management and cultivation. The transition can be made whenever the customers and the markets are ready for it.

From this point on, work proceeded rather smoothly to the point of launching the platform DocFactory, which has now been used and sold by Sigma Technology since 2012 (see <http://sigmatechnology.se/services/docfactory/>).

The next section of this paper provides a little more detail on DocFactory as one of the preliminary research results. First, however, it should be noted that other project activities took place in parallel with the platform development. Most significantly, the researchers were fortunate to be invited into management levels of the company at a relatively early stage. For example, I was asked to run a half-day workshop for the whole management group during a 2011 retreat on the topic of collaborative-media challenges to technical communication. Importantly, this meant that the joint research project gained visibility and implicit top-level approval. Following the workshop, division managers who had been participating invited me to engage with their technical writers and information architects, as well as some of their more important customers. Those mini-interventions generally took the form of jointly exploring the implications of collaborative media practices for technical communication.

Specifically they were used for identifying and assessing the new roles available for professional technical communicators in the collaborative mediascape.

The project team considered my engagements with customers as a strategically important activity for the joint research goals, based on the idea that creating customer demand for innovation would be the most powerful incentive for the company to actually implement changes. Those changes would in turn position the company for new market segments and give it more of a proactive position. As a researcher, my engagements with company management levels and customers complemented the work in the small project team quite nicely. They enabled me to collect data for a more comprehensive picture of requirements, expectations and transformation processes throughout the company, as indicated in the next section of this paper. (The collaboration between researchers and Sigma Technology is still active at the time of writing, but enough ground has been covered to warrant the formulation of three preliminary results.)

PRELIMINARY RESULTS: PLATFORM AND STRATEGIES

To reiterate, the question underlying the case study reported here was how the mass-medial structures of technical communication practices could transform in the direction of more collaborative media practices. The work so far has yielded three preliminary results, each providing a piece of an answer to that question.

Result 1: [EU9]A platform for collaborative production and consumption

First, a new software platform has been designed and deployed for collaborative production and consumption of technical information. The platform is called DocFactory, and it amounts to a web-based infrastructure for information management plus a set of tools and interfaces to support the practices of technical information production and consumption. The information architecture is fundamentally topic-based (which in itself represents a challenge

to the legacy document-based practices of many key customers) and finding relevant information in a topic base is supported by faceted browsing integrated with semantically augmented search tools.

The main point of the platform in relation to this paper is that there are no fixed production and consumption configurations. Instead, the architecture allows for the creation of custom components on top of a given topic base. For example, Sigma Technology has used it to develop mobile documentation repositories where users can

- Add local expertise to the generic product information
- Provide maintenance systems offering context-specific support information
- Allow for multi-language online help for software (see Figure 1).

<Insert Figure 1 here[J10], next para is the intended caption>[EU11]

Figure 1: Samples of DocFactory applications, including (a) a conventional production environment for technical information; (b) a simplified technical-information browser for mobile access; (c) a context-specific tablet browser where scanning a QR code on a ventilation system installation filters the technical information to retrieve only the topics pertinent to the current model (the illustration is a montage); (d) integrated language variants of online help information.

From a research point of view, the design of the software platform and its subsequent use show the significance of a flexible architecture supporting current practices based on mass-medial production. It also represents experimental practices involving produsage and user-generated content.

Result 2: [EU12]Proactive market strategies

Second, in the course of the joint project, Sigma Technology has started devising market strategies that can be characterized as aiming to move from a reactive to a proactive

position on collaborative media. Examples include working with selected customers to start exploring implications of a more collaborative approach to technical communication. They also include organizing a series of annual public events with invited speakers under the heading “The Future of Technical Communication.” Moreover, in the fall of 2011, Sigma Technology commissioned a national survey of its technical communication producers and customers to assess the current level of best practice and expectations for the future.

Briefly, the survey that gathered over 300 responses (mainly from the B2B sector) showed

- Technical information is deemed to be of growing importance
- More than half of the respondents were dissatisfied with the time it takes to find relevant information
- “Social media” were not an integral part of professional technical communication practices but half of the respondents expected them to be within two years

Sigma Technology made significant efforts to publicize the survey results widely, and at the time, these results were presented as the first in a series of annual surveys. The business goal of the survey was to emphasize the leadership of Sigma Technology in the field of technical communication.

The survey, however, did not attract much interest from the ICT trade press, the company’s own evaluation was that the beneficial effects did not justify the costs, and the survey was never repeated. Nevertheless, it demonstrated serious commitment to exploring the collaborative-media requirements and expectations among core customer segments, which must be interpreted as a step beyond the complacency of established mass-medial practices.

Result 3: [EU13] Internal strategic discussions

Finally, and perhaps most importantly, we can observe that internal strategic discussions are starting to take shape inside Sigma Technology. One such discussion concerns the role of the professional technical communicator in a possible future beyond mass-medial

practices—a context where most of the technical information is produced by producers and other third parties. Technical writers and information architects within the company increasingly consider, not only in formalized workshops but also in their everyday work, what it would mean to work as an editor, a curator, a facilitator or a community manager (see also [Lindh, 2013] for a related study on future scenarios for professional technical communication).

Another strategic discussion starting to appear in the company involves the ultimate concern of technical communication—to help users get the most out of their technical products—and how that concern is in fact shared by several departments in typical product organizations. There is an increasing tendency to seek initiatives across boundaries and specifically to integrate traditional mass-medial development-time technical communication activities (such as producing help systems and user documentation) with activities such as training and support that are conventionally regarded as after-market activities. The general sense in Sigma Technology is that software is probably the market sector where this boundary crossing has the best chances of success.

CONCLUSIONS

The work reported here provides a snapshot of how technical communication practices can transform along with the mediascape in which they are situated—or, more generally, how a somewhat entrenched mass media structure can transform in the direction of more collaborative media practices. It is presented here with the intention to draw attention to the changing conditions of technical communication and to provide an example of possible implications. Specifically, it offers three main findings that can serve as the basis for the transformation and development of best practice in similar organizations of professional technical communication:

- The power of production and distribution tools to shape the practice of professional technical communication appears considerable. In order to align with the emergent collaborative mediascape and the resulting expectations among customers and users, it is sensible to seek production and distribution platforms that accommodate the co-existence of and gradual transition from professionally produced content to user-generated content.
- As is inevitably the case in organizational development, change on the grassroots level of technical communicators is facilitated by high-level decisions concerning the position of the company. The case study here showed how decisions to aim towards a more proactive position on collaborative media were implemented, even at considerable cost.
- A successful transformation from a mass-medial production structure to one oriented towards collaborative media implies that technical communicators no longer produce content as one of their main tasks. At the same time, the case study is clear on the position that this does not imply obsolescence. Quite to the contrary, professional technical communicators see a wealth of meaningful (and ultimately billable) roles in the collaborative mediascapes of technical information, including editorial, curatorial and facilitatory work as well as after-market opportunities including training, support and community building and management.

By learning from and expanding on findings such as these, professional technical communicators—and the organizations that employ them—can better prepare for current and evolving notions of produsage in the modern mediascape.

ACKNOWLEDGMENTS

The credit for the work here belongs equally to my collaboration partners and eventually good friends inside Sigma Technology, and particularly Niklas Malmros, Tomas Eriksson, Mårten

Wikström and Sandra Nilsson. I am also grateful for comments on earlier versions from Jonatan Lundin and Brigit van Loggem.

Figure 1c is a montage. The image of the ventilation system is property of IV-Produkter AB, used with permission. The image of the tablet computer is by Justin14, published at Wikimedia Commons, used under CC Attribution Share-Alike 3.0. The rest of the image material is property of Sigma Technology, used with permission.

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