What is Communication Design?

Clay Spinuzzi

University of Texas at Austin

In 1997, I worked with a team to conduct my first qualitative research project, a study of how software developers used code libraries when developing a common codebase (McLellan et al. 1998; Spinuzzi 2001). In particular, I was interested in how developers used inline comments to understand their own and others' code. At two sites, the developers used comments pretty much as you might expect: as notes for interpreting and communicating information about the code. But at the third site, developers essentially ignored the comments. One compared the comments to an approaching car's blinker: it might or might not indicate intent, but you'd be foolish to trust it. Another set his editor to gray out comments so they wouldn't distract him. A third used comments - not to interpret the code, but as landmarks for navigating it. "If I have 50 lines of code without a comment," he told me, "I get lost. It takes me a while to actually read the code and find out what it's doing. But if I have comments I can separate it into sections, and if I know it's the second section in the function, I can go right to it."

This quote made a huge impression on me, since it emphasized how much users will sometimes bend and repurpose communicative artifacts. We tend to think of communicative artifacts - such as texts, pictures, and voice communication - as *being* the communication. But as William Gibson once remarked, the street finds its own uses for things. In my subsequent research, I have seen people link complex, expensive sets of data together with a sticky note (Spinuzzi 2003); use an expensive database system solely to convert copy-and-paste data from one format to another (Spinuzzi 2008); and mark up printouts of customer databases, turning them into elaborate call lists (Spinuzzi 2008).

If we think of communication solely as designed into artifacts, we're hard pressed to understand what's going on in these

examples. These people are clearly *misusing* the communication artifacts - that is, they're using these communication artifacts in ways contrary to their design. And yet, without these misuses, the work falls apart. It's only through these little misuses, these improvisations, that people can establish the flexibility to hold together what would otherwise be irreconcilable parts of their work.

We've used texts for a long time to perform work - in fact, evidence suggests that writing evolved from a quirky Sumerian accounting system (Schmandt-Besserat 1992). But texts are now central to work, particularly knowledge work: as more of our time is devoted to manipulating symbols and information, and as digital technologies allow us to connect more easily and broadly across time, space, organizations, and disciplines, we do more and more of our work through texts.

And so many texts! In my research, I see people constantly using multiple texts: email, memos, timesheets, checklists, sticky notes, databases, forms, and the list goes on and on. These texts form complex ecologies - they are more than the sum of their parts. The texts come from different times, places, and fields - they're designed for different purposes - but they are changed in relation to each other. A database *plus* a map yields a sophisticated policy tool; source code *plus* scripts *plus* comments yields a collaborative problem-solving environment; a printout of outstanding accounts *plus* an annotation system yields a running account of progress at work. These text ecologies are customizable, allowing individual workers to tailor them. But they are built on shared texts, allowing workers to develop shared work and shared assumptions.

These text ecologies, however, tend to be organic: they are idiosyncratic, they grow out of haphazard innovations, they typically occur as tactical reactions to recurrent situations. They're largely unplanned. They're "invisible": It's unlikely the boss is going to review a worker's sticky notes and checklist annotations and get a sense of that worker's shape or productivity. Text ecologies tend not to be designed. That's what gives them their flexibility, but at the cost of a coherent strategic stance. That is, they're not planned, and thus they often don't scale well; transfer well; lend themselves to being taught; or lend themselves to directed change.

Not that this problem hasn't been addressed. But it's often addressed in terms of a master plan: a formalization. For instance, software in the 1980s and 1990s tended to gather all the texts in a given work domain and reproduce them in an interface (e.g., desktop publishing software). But that doesn't work well: it's too rigid. From another direction, fieldwork-to-formalization methods aim to map out the texts in a given domain, then reconstruct these functions in a centrally planned manner. But this approach also has its limitations: it attempts to fix and control texts, and it focuses primarily on internal texts - and that's not going to work, since digital technologies have led to texts that can be shared across organizations. For many kinds of work, there is no interior to the organization.

For these reasons, I argue that communication design must go beyond *individual* communication artifacts (texts, pictures, and voice communication) to examine systems, sets, or ecologies of communication artifacts. We must particularly look at how people are currently interrelating these communication artifacts, especially in surprising or counterintuitive ways. And as we attempt to redesign these systems, we must make sure that they retain the flexibility and extensibility they need in order to respond to future challenges.

Works Cited

McLellan, S., Roesler, A., Tempest, J., & Spinuzzi, C. (1998). Usability testing application programming interfaces as input to reference documentation. *IEEE Software*, *15*(3), 78-86.

Schmandt-Besserat, D. (1992). Before Writing, Vol. 1: From Counting to Cuneiform; Vol. 2: a Catalogue of Near Eastern Tokens. Austin: University of Texas.

Spinuzzi, C. (2001). Software development as mediated activity: applying three analytical frameworks for studying compound mediation. Proceedings of the 19th annual international conference on Computer documentation (pp. 58-67). ACM Press. doi:http://doi.acm.org/10.1145/501516.501528

Spinuzzi, C. (2003). Tracing genres through organizations: A sociocultural approach to information design. Cambridge, MA: MIT Press.

Spinuzzi, C. (2008). Network: Theorizing knowledge work in telecommunications. New York: Cambridge University Press.