

Bringing inter-cultural clashes of knowledge production into view: the case of organizational change and participatory design in social benefits work in Canada

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Introduction

In Canada's largest province, the Ontario Ministry of Community and Social Services is responsible for providing welfare and disability social assistance to approximately 700,000 of the province's most vulnerable citizens. In the last fiscal year it provided over \$1.5B in assistance at a cost of \$177M (Cdn\$). The service offices employ more than 7,000 benefits delivery workers across 290 provincial offices. In the late 1990s the government initiated a complete overhaul of both the technology and labour process of benefits delivery work. These changes 'went live' in 2002 offering a valuable opportunity to explore large-scale change in terms of adult learning, technological and labour process in the public sector. At the same time, the *Working IT: Learning Technology in the Public Sector* project was established to examine these changes in partnership with the representative union, the Canadian Union of Public Employees (CUPE).

Drawing on in-depth, semi-structured interviews with front-line benefits delivery workers across three different service delivery sites (small, medium and large), interviews with Help Desk information technology (IT) service personnel and related union officials (n=70), as well as a survey which sampled benefit workers from across the province (n=336), our study has explored and documented the changes as a highly contested political economic struggle involving power and knowledge (e.g. Hennessy and Sawchuk 2003; Sawchuk 2003a, 2005).

In this paper I focus on the dual cultures of knowledge and learning that have come to shape the development and use of the newly implemented technology—called Service Delivery Model Technology (SDMT)—fore-fronting systems of design and class struggle in everyday life.

Specifically, our findings address the relationship between leading-edge technologies, the struggle between workers and multiple levels of management and control in the public sector, as well as the role of an expansive participatory design analysis of computer artifacts. Much of what's said below revolves around what's known as Participatory Design (PD and its relationship to workplace learning. PD represents a unique school of thought in the design literature that focuses on how users and designers interact and mutually inform each other's activity. In the second half of the paper I summarize original qualitative and quantitative findings that show the relations between and political economic significance of localized versus centralized cultures of knowledge production. I conclude that negotiated PD throughout both the initial 'front-end' and ongoing 'back-end' design-in-practice is necessary and must recognize the class dimensions of change processes.

The core point of departure for the *Working IT project* in this paper is the impulse to understand technology as neither an isolated device, tool nor machine, but rather as an elaborated historical, socio-technical configuring (e.g. Fleck 1993) process that is inherently conflictual (Sawchuk 2003a, 2004). This orientation will allow us to see the significance of—and indeed the power struggles that inform—the design process as a whole in terms of both its initial or front-end phases and its ongoing back-end design-in-practice phases; the literature on which we can now turn.

Front-end, back-end and political economic dimensions of participatory design

In terms of front-end design, PD approaches revolve around the principle that users should be the center of initial designed changes; that users know what they need as well as if not better than designers; and that ultimately it is the user, not the designer, that must actually put the technology to use. Thus front-end design process is thought to be most effective when establishing a structure of cooperation and engagement amongst designers and users. A fundamental fear meant to be addressed by PD is that where requirements of work are ignored new systems can quite literally make it impossible to get the job done (Kuhn, 1996; Eason, 1997). The literature also shows, however, that PD is still not a dominant perspective when we look at actual design practice. One key problem that might account for this disconnect between theory and practice, at least according to Muller et al. (1997), is that the term "participatory" is erratically defined leading to equally erratic outcomes. Olsson (2004) shows that, the term 'participatory' can at times refer to very low levels of user-engagement where their concerns and practices are roughly approximated (and not infrequently simply imagined by designers). In the higher levels of designed, front-end engagement users are occasionally given access to the process to the point where they can serve as a functional member of the design team.

Of course, front-end design is important because it is here that a great many principles and presumptions become solidified into a technological system, however, various quality testing protocols aside, front-end activities are only an initial phase of process as a whole. Far less often addressed is design-in-practice or back-end design. As the social constructivist design literature says, back-end design centers on the problem of *what users actually need and do*,

and over the course of the last fifty years, socio-technical design research focused on this question has seen a steady expansion (e.g. Béguin 2000; Suchman, Trigg and Blomberg 2002). The fact that users do not utilize the system as might be expected, modifying it momentarily or durably, is a corner-stone of the social constructivist tradition which argues that socio-technical configurations are, in effect, significantly 're-designed' in their everyday use.

Many PD analysts have maintained that the failure of specific efforts lies in technical issues such as organizational inertia and general resistance to change or more general problems of execution in terms of stronger support for user engagement and more adequate models of consultation. Challenging these conclusions, some analysts (e.g. Greenbaum and Kyng 1991; Forty 1986) have identified the role of power relations in design, for example, arguing that PD may be transformed into a trap for users that participate under conditions where they share responsibility for the outcomes which are not ultimately under their control. Boivie et al. (2004) detail how users engaged in the actual front-end design activities are frequently at a marked disadvantage in relations of designers and come to be colonized by the culture of professional design and/or management.

While researchers like Suchman et al. (2002) argue for 'socio-material analysis', here I suggest that we need analyses that are also historical, economic and political as well. It is through such approaches that we can make visible the assumptions that belie the term 'cooperative' or 'participatory' design in order to carefully assess the conditions under which the terms can be accurately used, and see how alternative cultures of knowledge production can emerge and come into conflict.

The *Working IT* project and technological design

In 2004, headlines of a national newspaper officially announced what workers had known about the new changes in benefits work from the start. The new system that had costs the government hundreds of millions was not working well for either workers or clients. Looking closely at the design and implementation process we can begin to see the degree to which proprietary interests of the private sector consulting firm along with the ideological commitments of the right-wing provincial government ultimately left little room for effective involvement of workers and their representative unions. The result, as we've noted elsewhere (Hennessy and Sawchuk 2003; Sawchuk 2003b, 2004, 2005), was a classic top-down, front-end loaded design process which featured not only very modest gestures toward worker participation but, in fact, troublingly modest use of work analysis.

From a social constructivist perspective, in a sense, all design requires participation. Thus, the relevant question becomes what kind of participatory structure are we talking about, who is participating, under what conditions, and importantly, what are the terms of reference of the design process. A key issue highlighted in our interviews was the notion of the new inflexibility of the technological/work systems which expresses a marked misapprehension of client's lives,

'irregularities' within which are in fact the norm, which in turn requires not standardization but worker flexibility and the use of judgment, skill and knowledge. Another point raised in these comments in fact highlights the lived political economic character of the process as a whole. In other words, what makes sense from the standpoint of the designers and employer makes little sense to workers and vice versa. These standpoints define, among other things, the distinction between those who must work with the system to meet both their own needs and the needs of poor and disabled citizens for whom they're responsible versus those who manage the system who must necessarily orient to matters of accountability, cost-savings and so on: a matter which is, obviously, both political and economic. As one worker put it concisely when asked whether they thought whoever designed the system had any social worker experience, "I certainly hope not, I really do because if they are they're in the wrong field" (SC13).

In terms of day-to-day life under the new system, 'who would create a system without an undo button' was the million dollar question that almost every benefit worker we spoke to ruminated upon. To begin to answer this question we need to think about the basic assumptions that labour process theory has illuminated in terms of the need for managerial/system control, and the way these needs ultimately were expressed in terms of system rigidity. In this context, it is virtually impossible to separate out this 'back-end' design work with the work processes themselves where benefits workers are literally caught between the irregularity of client lives and a technical system that requires 'regularized' responses. Workers said, "SDMT is the neediest client we have. It demands info. Every ounce of your time. If I have a client, I forget that they're there. As it so absorbs you, and making a mistake completely puts you behind the eight-ball" (HCA).

Being 'behind the eight-ball' amidst an inflexible system revolved around several key system characteristics, virtually all of which, like the input of dates (of any additional wage earnings, incarceration, doctor visits, new dependents, living arrangements, rent due dates and so on), if reflecting the uneven realities of client's lives, frequently 'snagged' the system to produce errors as well as an enormous amount of extra work. As most worker remarked, SDMT was "insanely date sensitive"; this they discovered in the course of daily practice and not organized training. The response of local supervisors, many of whom are former benefits workers, has of course been varied. Predictably, some felt caught in the middle themselves. Nevertheless, in the classic industrial Scientific Management formula of dividing tasks and dividing workers to increase system control, workers have noted initial feelings of isolation and abandonment in their struggles to learn and use the technology. A work process, once rooted in the autonomy, skill and judgment of professional social work, has been radically divided to form an electronic assembly-line with clusters of workers dealing with different aspects of a client case. Again, the result is the need for heightened direct and technical management; as workers often reveals, "We're absolutely micro managed to the point – they taught you what you had to do in a day, and your supervisor would check in with you to make sure you were where you were supposed to be every hour of the day. Absolutely every detail" (HA03)

In Hennessy and Sawchuk (2003) we offered an initial documentation and analysis of the

dynamics of this neo-Taylorist division of labour. What we didn't highlight, however, was that resisting this force from the beginning was the impulse toward the re-collectivization of labour in the context of this 'back-end' design. This re-collectivization impulse, commonly assessed in industrial sociology but rarely extended to social services work, is enhanced not only by the new-ness of the system naturally drawing workers together to learn informally from each other in the cracks and crevices of time they can create in their workday (sometimes being penalized by management for doing so), but also by the novelty of the system for managers which puts supervision at something of a disadvantage.

Part of the front-end design of the system was, of course, a trouble-shooting system to respond to various problems that would emerge. This was designed in terms of a centralized, multi-tiered Help Desk system, staffed largely by former benefits workers seconded originally in the front-end design process, whose task it was to sort complaints and register those that were system errors as 'tickets'. Important to note here is that this sorting of which responses were attended to, which were placed in low priority and which were ignored was ultimately controlled by the original consultant firm that designed the system; the improvement of which was ultimately a source of proprietary value for their future design work.

What becomes clear is that the need for proprietary control by the private sector company, which in turn, fuelled a process in which selected tickets led to system wide patches (fixes) caused further challenges, and in fact additional workaround responses. This failure of the Help Desk system lent further support for the re-collectivization of labour within the back-end design process. Thus the labour process and back-end design provided the (contradictory) basis for the re-collectivization of labour while resisting it at the same time; in turn, setting the stage for both embedded conflict and intensified micro-management.

Linking with the kind of social definition of technology I outlined earlier, one way of thinking about this back-end design work is to see it in terms of class struggle/resistance in the conventional sense, the pivotal element of which is worker knowledge. The back-end design processes and the localized forms of knowledge they throw forward are rooted in these emergent informal learning communities are in turn solidified by various informal means.

We get emails from our [LBE's] and they call it workarounds. They say here is the workaround for this. I have subfolders on my email because I keep them all and I have about 40 and they're titled; that's the title—workarounds. [And] we need it, we have to have it because if we don't the technology doesn't work. The technology as they've given it to us doesn't work—it's faulty. (SC133)

As mentioned, this local back-end design is in turn solidified in the form of countless memos, that our research project has collected, which circulated widely and rapidly on virtually a weekly basis across virtually all local offices.

From a certain perspective, one can see that two different cultures of knowledge production developed on parallel tracks: one that is centralized vis-à-vis the Help Desk system to be incorporated into overall system patches but done so in ways that are not visible to workers and subject to proprietary control; and another represented by local knowledge and fixes that in effect remodeled the technology at the local office level. What exactly constituted a relevant 'ticket-able' problem at the central level was thus organized primarily by the needs and interests of profitable business for the private consultant company. On the other hand, what constituted a relevant problem amongst the myriad local fixes were the direct needs of workers and their clients. That these parallel tracks frequently represented conflicting interests is found, of course, in workers' comments that they had to 'workaround' the *a priori*, front-end logic of the system in order to serve clients and to survive the daily work intensification and heightened technical surveillance. Moreover, even though necessary and informally encouraged by Local Business Expert's (workers who were suppose to help others) and in some cases by local office managers, this local knowledge could not only provide the foundation for formal legal sanction in front of a judge were a case to be reviewed in court, but was also liable to sanction through formal policy, procedures and protocol in the workplace were it to be applied

An important, contextualizing question to ask of course is how wide-spread are these local responses? A preliminary answer to this is available from our survey. Our initial province-wide survey (n=336) sampled worker views through a mail-in questionnaire, distributed to workers with an eye toward representing potentially relevant effects of geographical region and different sized offices in the summer of 2005. Response rate for this was approximately 30%. More detailed analysis of our survey is forthcoming but for our purposes here, we can note basic descriptive statistics. Over 78% of benefit workers surveyed reported using workarounds. In addition, our survey also included the option of listing the "most important work-arounds that [they] have learned since the new benefits delivery system has been implemented". In response, out of a sample of 336 workers there were listed over 250 *unique* workarounds (total number of workarounds listed was 320). There is good reason to believe that, due to the extra effort of having to hand-write each example on the survey, this is in fact a very conservative estimate. The most common clusters of workarounds included: *ghosting information* where dummy variables are regularly inserted in order to proceed in the system; the wide-spread use of *shadow systems* in order to locally time when and how information would be entered into the system to avoid 'snags'; *jolting* or re-booting of the system in order to reset categories; *generalizing* client conditions to match legislative regulations while avoiding system error situations; and so on. These are quite separate from the many additional workarounds benefit workers used to simply work more efficiently.

Conclusions

Change is never easy, and it should be noted that all attempts to change complex work/technical systems are an enormous endeavor which always feature significant glitches, problems and the need for interactive response. While PD literature is rife with technical observations on better front-end practice, much less often articulated is the need for better

back-end design-in-practice models of participation. It is by conceptualizing back-end design in particular that we bring, in the case of the Working IT project, the dual, clashing cultures of knowledge production that defined technological change. Indeed, it is these contradictory, political economic dimensions of competing local and centralized knowledge systems and learning cultures upon which they depend that have remained virtually invisible in the literature. It should go without saying (but it won't) that central here is the old-fashion notion of *good faith consultation*; something rarely amenable to aggressive right-wing employers or the private sector consultants whose interest it is to centralize and privatize the very forms of knowledge that system development depends upon the most.

One could say, in the case of Ontario benefit delivery workers, that the window of opportunity for such changes has closed, but, in particular given the potential flexibility of web-based technologies such as SDMT, I think this would be premature. New forms of negotiated, participatory design-in-practice, may be achievable under the right conditions.

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