The Impact of the Organizational Culture of Test-beds on the Action Research Case Study Process: Some Preliminary Findings from TEAM Canada

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Abstract

Action research encompasses a set of disciplined methodologies that pursue action and research at the same time through the use of collaborative dialogue, participatory and iterative decision making, inclusive democratic deliberation, and the maximal participation and representation of all relevant parties. Action research makes extensive use of case study methodology and of direct communication and interaction with the subjects of the research ("test-beds"), who are at the same time participants and contributors in the research activity. Thus, under action research, test-bed organizations are active co-participants and stakeholders in the process of inquiry, rather than passive research subjects. The goal of this highly interactive and inclusive research approach is to more readily and immediately transform the research into practical, reflective, pragmatic action directed toward solving 'real-world' problems. Accordingly, as a matter of course, action research forges collaborations between community members and researchers in a program of action and reflection toward quick and responsive positive change. As with any collaborative venture, there inevitably are challenges to overcome and compromises to be made in relation to the individual goals and expectations of each of co-participant. This paper will discuss these issues in relation to the impact that the specific organizational cultures of the TEAM Canada test-beds have had on the ability of the case study action research teams to develop and implement preservation plan recommendations in organizations in the academic, and governmental sectors, while highlighting the types of compromises that the co-participants found it necessary to make to achieve worthwhile results.

Background

The InterPARES 3 TEAM selected its primary research methodology, action research, on the basis of the assumption that the type of organizational setting and culture of the organization or unit it would work with to implement InterPARES 1 and 2 findings would have an impact on what can be implemented and how. In other words, whether the test-bed has a hierarchical or flat structure; is writing-based or meeting-based; works following standardized workflows, routine processes and procedures or according to creative processes and unstructured or semi-structured procedures; or is service-oriented or knowledge-oriented matters a great deal to its willingness and ability to make certain choices regarding the management and preservation of its records. This assumption was supported by several sociological and organizational theories that have examined the nature of organizational cultures, the behaviour of people in social contexts, the interaction of structure and function, the impact of technology on organization, etc.

We identified as relevant to our implementation purposes in a variety of organizations Giddens' theory of structuration, and adaptive structuration theory (AST). The former is relevant because of its idea of the mutual interaction between structures (i.e., the organization), functions (which may include, *inter alia*, records management processes, methods and tools) and actors (e.g., the users of a records system), each factor changing in response to the others;[1] and the latter because it draws on the concepts of structuration theory to study the interplay existing between social structures, human action and advanced information technologies (e.g., an ERMS). Particularly relevant is Orlikowski's concept of "duality of technology," derived from Giddens' "duality of structure," which allows us to see technology (including "records and archival technology") as created and changed by human action (i.e., an outcome) and, at the same time, as a structure that both facilitates and constrains human action (i.e., a medium).[2] Also useful to InterPARES 3 purposes is Hofstede's definition of organizational culture, the dimensions of national culture he identified and, above all, his categorization of organizational typologies.[3] We used this understanding to develop the specific action research methodology that guides our case studies.

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[1] Anthony Giddens, *The Constitution of Society. Outline of the Theory of Structuration* (Berkeley: University of California Press, 1984).

[2] Wanda J. Orlikowski (1992), "The Duality of Technology: Rethinking the Concept of Technology in Organizations," *Organization Science* 3(3): 398-427; JoAnne Yates and Wanda J. Orlikowski (1992), "Genres of Organizational Communication: A Structurational Approach to Studying Communication and Media," *Academy of Management Review* 17: 299-326.

[3] Geert Hofstede, *Culture's Consequences. Comparing Values, Behaviors, Institutions, and Organizations across Nations* (Thousand Oaks: Sage Publications, 2001). See the analysis of Hofstede's ideas in Gillian Oliver (2004), "Investigating Information Culture: A Comparative Case Study Research Design and Methods," *Archival Science* 4: 287-314.

Action research encompasses a set of disciplined methodologies that pursue action (for example, the preservation of authentic digital records) and research (for example, the impact of technology on the concept of record) at the same time through the use of collaborative dialogue, participatory and iterative decision making, inclusive democratic deliberation, and the maximal participation and representation of all relevant parties. Test-bed organizations are *active* co-participants and stakeholders in the process of inquiry, rather than *passive* research subjects. The goal of this highly interactive and inclusive research approach is to readily and immediately transform the research into practical, reflective, pragmatic action directed toward solving 'real-world' problems.

The specific methodology selected to conduct action research is ethnographic in nature. Creators of records, their users, records managers and archivists form a community of practice—**the archival environment**—for which social interaction creates meaning and defines values. The InterPARES researchers place themselves within an archival environment that has identified digital records preservation objectives or issues to **gain the cultural perspective** of those responsible for records. **Observation** of the environment results in detailed description of the test-bed, its administrative and managerial framework, and the digital entity/ies under study, supported by extensive **interviewing and analysis** of the test-bed's documents. The descriptions are formalized in a "Contextual Analysis," a "Diplomatic Analysis," and an "Activity Model," while the interviewing results in the answers that the researchers provide to three sets of questions: on the existing policy/ies, record system(s), and records. The analysis of this material by all researchers of the regional, national or multinational TEAM responsible for the case study in question produces action items that are implemented, the outcome of which is reported back to the TEAM. The process continues in an iterative way until the archival environment and all TEAM researchers are satisfied with the solutions found for the identified objective or issue and the case study is completed. The entire process is guided by a case study flowchart, which ensures that all steps are followed in the correct order, and is concluded by a final report. Each document produced in the course of the case study is structured as to form and content on the basis of a template used for all case studies of InterPARES 3, so that the findings can be compared. However, this highly controlled methodology is yielding results that are far from controlled or, as it turns out, controllable, well beyond the expectation of high variability of outcomes that constituted its fundamental tenet.

The already mentioned concept of "duality of technology"[4] had prepared us to see technology as created and changed by human action (outcome) and, at the same time, as a structure that both facilitates and constraints human action (medium). We also knew that the creation of digital records takes place in a less systematic fashion than that of traditional records, being in most organizations a decentralized process that is often in the hands of people who did not receive a proper administrative education. If it was not for the rules built in the computer technologies that people use for creating their records (e.g., templates that prompt uniformity in records' form, or work flows embedded in records systems), today's 'bad records' would lead to badly performed functions—which may still be the case when those developing information technology tools have no understanding of administrative or archival requirements. This is the reason why our researchers studied the mutual relationships existing among the three components of a structurational model: 1) technology (i.e., archival tools and methods); 2) human agents (e.g., archivists and records managers, developers of IT-based recordkeeping systems, users); and 3) institutional properties of organizations, including organizational culture and ideology, control mechanisms, management strategies, as well as external stakeholders' interests, socio-economic conditions, and the legislative and regulatory environment. This study helped us to cope with the unexpected, but did not entirely prepare us for what we found.

We will now discuss a few findings from Canadian case studies without revealing the names of the archival environments.

Case study findings

Three universities wish to develop a general policy for e-mail management that applies across all academic, operational and governance units, excluding at the outset the acquisition of ERMS or other complex and expensive technologies. The universities are public and are located in the same geographical area (thus, they have the same juridical-administrative context) and share fundamental characteristics: they are all research universities in the humanities, social sciences, and applied and pure sciences; they all have a university archives employing more than one archivist and charged with the responsibility for overseeing its respective university's overall records management; and their archivists responsible for records management are all professionals who each holds a graduate degree in archival science. These characteristics supported the hypothesis that the "archival environment" across the three universities is similar to the point that the same policy might apply to all three universities. In one university, the records creator selected by the archives as a test-bed was a governance unit (hereinafter creator 1); in another, it was the director of a large academic department (hereinafter creator 2); and in the third, it was an operational office (hereinafter creator 3).

Creator 1 had an unstructured e-mail directory with ad hoc-created folders. The researchers undertook the task of applying to it the university's functional classification linked to a retention and disposition schedule. The cross-walk between the original directory structure and the new system was smooth and the process was fairly quick. Although the number of folders was reduced by about two thirds, the records creator and the other intended users seemed to find easy the use of the new system, also with respect to the records disposition component. As to recordkeeping, the practice of the office is to print all e-mails and save them

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[4] Orlikowski, "The Duality of Technology," 406.

as paper records, but there is some interest in the idea of converting folders or individual e-mails to text files or to PDF. The TEAM decided that the researchers should develop a model e-mail management policy that recommends the adoption of the same directory of records, allowing each university unit to customize it—according to specific rules—for its particular environment. It was suggested that the policy contain two separate guidelines, one for individuals and one for the business unit, the latter taking more of a business form so that users can easily zero in on the information they need.

Creator 2 does not place his messages into a predetermined folder structure; instead, he relies on keyword searching to retrieve e-mails that he needs to examine or reference. Although he has encountered no problems with keyword searching, one consequence of relying on this strategy is that he rarely deletes any messages other than spam or junk mail. Although he said that he is open to the idea of classifying e-mails and placing them into a folder structure to ensure easier access and better long-term management, he lacks the time to accomplish this feat.

When we suggested that his office staff have more control of his e-mail and how it is managed, he did not oppose the notion but made it clear that his staff would not be e-mail gatekeepers. In other words, he prefers to maintain a "hands on" approach for responding to and dealing with administrative e-mails, but he would be willing to give the responsibilities of managing "appropriate" messages to his staff. As a possible solution, it was proposed that he forward his messages to a designated member of his office staff, who would appropriately file and manage them. To some extent, this process already occurs, as he forwards or CCs messages to his staff that he deems important enough to be retained. However, this is not a viable option because of the concerns that forwarded messages pose with respect to their authenticity and preservation.

It was decided to prepare e-mail guidelines that do not focus solely on this individual's own management of his messages but that also are usable by his office staff. Thus, we made the different categories of messages (i.e., executive, routine and ephemeral/personal) as explicit as possible, providing detailed information about their retention periods. If followed, these guidelines should improve the efficiency of e-mail management within the office by increasing the consistency of how e-mails are composed and sorted. To ensure that Creator 2 and his staff understand the different types of e-mails and their related retention periods, a short "cheat sheet" was developed. After receiving the guidelines, Creator 2 and his staff became unavailable for feedback or follow-up meetings. To revive their interest we developed a "what if" scenario document regarding the management of e-mail. The purpose of this document is to explain the consequences of poor e-mail management and convince any organization or specific departments reading it that the acts of creating, storing and preserving e-mails cannot and should not be overlooked or taken lightly. To date we have received no reaction. The university archives is exploring the possibility of using another academic department as a test-bed, but we have not received expressions of interest as yet. Clearly, academic freedom is extending well beyond the classroom and scholarly environment, regardless of the fact that the records created by academics, especially those who occupy administrative positions, are defined as university records in Canada.

Creator 3 actively participated in the research during the data collection period, but afterwards began to have problems in scheduling research meetings. The test-bed researchers stopped being collaborative or reliable and, after a while, we learned that they had purchased a non-DoD-compliant shared directory document management application because it would be user-friendly and "was cheap." When we offered to help them with configuration and implementation using all of the data we had collected, they responded that they were interested, but we were unsuccessful in making an appointment during the ensuing few months and, consequently, decided that this test-bed is a dead end. Thus, the university archives is currently arranging to work with another operational unit. It appears that, like academic units, operational units are quite independent, believe that they have unique needs that cannot be properly taken care of by a university-wide e-mail policy or guideline, and are suspicious of any offer to help in implementing solutions that they think they have already figured out.

The conclusion of this threefold case study seems to be that a university-wide e-mail policy would be welcomed only by governance offices. However, given the kind of choices that, if let alone, academic and operational departments are willing to make, it is quite urgent that universities develop such a policy and make of it a strict requirement to follow it, not without, however, a reasonable period of training, as will be discussed in the conclusion.

In another example, three cities administrations are trying to get a firm control on their digital records. They also share several key characteristics: they are large cities in the same geographical area (thus, they have the same juridical-administrative context); they have established archives; and the records managers/archivists are all graduates of archival programs. However, the degree of development of these city administrations, with respect to the creation, use and keeping of digital records, is quite different and so is the archival environment, because of the relationship between creators, users and archives.

In one test-bed there is a strong integration between records management and archival functions and the professionals in charge of both share the same educational background and tend to work together. As a consequence, they also tend to involve in their work IT personnel and administrators and expert consultants, so the archival environment is broader than we envisioned at the outset. This test-bed is at the same time eager to work with us and be involved at the highest level in the research development, providing more input and critical analysis of proposed solutions than the other two test-beds. This is also a test-bed that, having already developed an ERMS (still in the prototyping phase), thinks in terms of its integration with a records preservation system capable of ingesting not only the city records but also the private archives of individuals and organizations that are acquired by the city. Its archival environment has a holistic approach to the relationship among structure, human agents and technology and is open to modifications in all three areas; thus, the research group is going to do a walk-through of the city procedures with the InterPARES 2 Chain of Preservation model.

In the second test-bed, although the city administration has a relationship of trust with the archives, it is neither ready yet for an ERMS, nor for a city-wide policy for born digital records. The responsibility for records maintenance is divided between the departments and their staff, which take care of the paper records, and the Information Technology department, which maintains the servers on which the digital records reside. Employees do not rely on or use any formal maintenance strategies to maintain their records. As such, the records are kept in various locations and, although the original documents are typically created electronically, employees print nearly all their records. When the digital document is no longer being amended, the digital copy of the document is placed in a folder on the city's local area network (LAN). This digital "copy" is considered by most staff primarily as a "backup" and thus not subject to the retention and disposal rules that are applied to paper records. Digital documents are generally kept for an indefinite period of time and are only rarely deleted or cleaned up.

The city does not have a corporate records management policy that applies to all departments. To preserve the active or semi-active records, the IT Division has implemented Symantec Enterprise Vault (SEV). The archivist hopes to start an action plan aimed at the development of a city-wide electronic records policy from the bottom up; that is, by using as test-bed the large amount of legacy files that has accumulated over the years outside the LAN but whose relationship to paper records has as yet to be explored. As the archives "provides services to ensure proper management and control of all civic records," it is expected that the archivist will have the authority and the capacity to ensure proper creation, use and maintenance of active and semi-active digital records; thus, at this time, he very much represents the entire archival environment of the city in our research. Clearly, there is a disjunction here among administrative structure, records/archives agents and technology and the research group must aim to build up relationships and foster some form of integration.

In the third test-bed the archives has, for all intents and purposes, no interaction with the city. It receives city records if and when they are sent by the city. The city records manager believes that all city records are permanently active, although records that are not continually used are sent to a records center. The city has acquired an Enterprise Content Management System and wishes to migrate the records it holds in its many servers to the new system. However, it needs procedures for the identification and appraisal of the records and for their migration. The archival environment is constituted of the records manager, the IT professional and the city business analyst. The academic researchers' proposal to involve the archivist in the development of the procedures, especially as it regards appraisal, has been received less than enthusiastically, but the city managers and the archival environment are very eager to participate in the research and trust our guidance implicitly. This means that there is a less than equal relationship between the academic researchers and the professional researchers and this situation needs to be corrected. Also, it is important to foster the development of a relationship of trust and ongoing interaction between the archival environment and the archivist and ensure that the technology will be implemented in such a way that the administrative structure will support collaboration.

Clearly these three test-beds not only need different policies, but must select different routes to achieve their purposes, not only in terms of implementation, but also in terms of research methodology and of the way in which all members of the research group work together and develop both structure and technology.

Discussion and Conclusion

When developing or using digital technologies, archival environments are conditioned, not only by the institutional properties of their organizations, but also by the structural properties of records and archives management, the purpose for which the technologies are used. Through their development and use of technologies, these environments act upon both types of properties, either reinforcing or transforming them.

By focusing on human agents and on the consequences of their appropriation actions, we confirm the great importance of archival knowledge. To make it possible that the principles of archival science are reaffirmed and, by being produced and reproduced over time in the same way in any use and/or instantiation of digital records technology, become part of the institutional properties of an organization, it is crucial for archivists, creators and users to be "knowledgeable and reflexive."[5]

As AST researchers have proven, developing, learning and teaching how to use the structural features of an application or a system is important, but even more important is learning the spirit behind those features. Users who are not acquainted with archival principles and methodologies may—intentionally or unintentionally—appropriate, for example, a function-based classification system "unfaithfully" (e.g., by naming files according to subjects) more easily than records professionals. The "members' degree of knowledge and experience with the structures embedded in the technology"[6] is actually one of the factors influencing how a group appropriates a given technology. Nevertheless, traditional tools are usually quite 'structured' and this should be enough to ensure that, to a certain extent, groups use, adapt and reproduce the system consistently and 'faithfully.' On the contrary, with digital tools, like e-mail applications and ERMSs, which are mostly developed by IT experts outside the organizations that will use them and often without consulting archival professionals, unfaithful appropriations are likely to happen more frequently. In cases where the features and spirit of an e-mail directory and retention schedule or of an ERMS do

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[5] Ibid.
[6] Gerardine DeSanctis and Marshall S. Poole (1994), "Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory," *Organization Science* 5(2): 130.

not reflect correctly archival theory and methodology, users that are "knowledgeable and reflexive" may try to adapt the system features to their understanding of records/archives.

The degree of "interpretive flexibility"[7] of any technology is another variable that should be considered when evaluating how groups appropriate available structures. Should the structural features of the system be inflexible or should users perceive the system as a 'black box,' then rigid and routinized views of, and interactions with, such technology will develop. However, if the system additionally is unsatisfactory, an extreme possibility may occur: its rejection. An "avoidance behaviour" or "sabotage"[8] is expected particularly when users are records professionals.

With reference to the spirit of a technology, it often happens that the training for users of applications and systems "emphasizes details of use rather than general philosophy."[9] Consequently, even an application or system that correctly embeds some of the structural properties of archival science may easily be appropriated unfaithfully. One of the findings of AST research is that the moment of the launch of a new system is very critical for its success, as in the beginning the interpretive flexibility of the system is higher and its spirit more vulnerable. The time factor is therefore another variable to be taken into consideration when studying how technology is appropriated as well as how organizational change occurs, and we must be very careful in respecting these variables in our case studies.

In addition, we realized that we must pay more attention to knowledge management literature. The truly new insight offered by such literature is that the organizational knowledge that constitutes "core competency" is more than *know-what* (i.e., explicit knowledge that may be shared by several users). A core competency requires the more elusive *know-how*, which is "the particular ability to put know-what into practice."[10] Fostering this more complex form of organizational capital should be the focus of our case studies. However, decision makers in at least two of the mentioned test-beds may favour the explicit knowledge that is incorporated in organizational artifacts like processes, structures, documents and technologies, at the expense of contradictory tacit knowledge, for the reason that the former is viewed as more legitimized by virtue of being recorded. Such a position is actually often taken, despite the fact that the institutionalization of knowledge may result in a rigidity and inflexibility that would hinder, rather than improve, an organization's performance.

Partially as a consequence of this kind of managerial decision, it has been common to design systems primarily focused on the codified, explicit organizational knowledge. Management reporting systems, decision support systems and ERMSs, are all focused on the identification, collection and dissemination of this knowledge type. It has become evident through the action research conducted so far that the outcome of our efforts will be successful only if we are able, on the one hand, to make the creators and users understand the spirit of what we recommend and, on the other hand, if the research group is able to incorporate into it the outlook and way of working of those whom it intends to serve.

Author Biographies

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[7] Orlikowski, "The Duality of Technology," 408.

[8] Ibid.

[9] A. R. Dennis and M. J. Garfield (2003), "The Adoption and Use of GSS in Project Teams: Toward More Participative Processes and Outcomes," *MIS Quarterly* 27(2): 304.

[10] John Seely Brown and Paul Duguid (1998), "Organizing Knowledge," *California Management Review* 40(3): 91.