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The Working Lifeworld of Situated Subjects and the World System of Software Maintenance: Destabilizing a Distinction

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The Working Lifeworld of Situated Subjects and the World System of Software Maintenance: Destabilizing a Distinction

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Abstract
This is a theory of the ways post-sale software maintenance processes relate with local contexts of software usage. The larger topic addressed by the theory is the relationship between situated subjects life world and social theories and the possibility to definite "situations" in contemporary analyses of global phenomena. The narrower topic concerns the covariance of local usage practices with software maintenance processes within and across public sector organizations. The theory builds upon fieldwork conducted since 2006 in a number of Italian public sector organizations. Three different approaches to software maintenance with their relation with local software usage practices have been devised: in house providing, contract work and internal maintenance. In this position paper I will present some evidence only from the case of the in-house providing model.

Keywords: software maintenance, social theories, situated subjects

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Introduction

This is a theory of the ways post-sale software maintenance processes relate with local contexts of software usage. The larger topic addressed by the theory is the relationship between situated subjects life world and social theories and the possibility to definite 'situations' in contemporary analyses of global phenomena. The narrower topic concerns the covariance of local usage practices with software maintenance processes within and across public sector organizations. The theory builds upon fieldwork conducted since 2006 in a number of Italian public sector organizations. Three different approaches to software maintenance with their relation with local software usage practices have been devised: in house providing, contract work and internal maintenance. In this position paper I will present some evidence only from the case of the in-house providing model.

Life world and system

The first condition for a theory of the relation between organizational software and workplace(s) concerns the idea that social sciences theories are built by social science scholars just as and reflexively how they situate their fieldwork practices. The second condition for theorizing about 'situatedness' in contemporary information society or digital economy is to accept a topology of movement that recognizes that human action takes place not in situations but between situations (Serres, 1982a).

"Words, objects and identities take their meaning through their circulation in diffuse time-space" [...]. "Tracing cultural formations becomes a mobile activity". With these sentences George Marcus tells us that just as this mode of research - that he calls 'multi-sited ethnography' - "investigates and ethnographically constructs the lifeworlds of variously situated subjects, it also ethnographically constructs aspects of the system itself through the associations and connections it suggests among sites" (Marcus 1995, p.96). The ethnographic self-constituting system theory derived from the scholarly effort of tracing the trajectories of cultural meanings across and within multiple sites destabilizes the traditional phenomenological distinction between lifeworld and system (Habermars, 1984). A theory on this relation is neither just on questions of resistance and accomodation by situated subjects ("on local skermishes" or "choreographies" of work at screen) nor on the ways the generic institutional contexts influences the individual, group and organizations. Rather, my theory is on 'topological' questions about the shape of maintenance process itself and about the various positioning of subjects within this process: proximity, distance, concentration.

Post-sale software maintenance and software use

My research is a theory of how software maintenance processes as they are variably managed by Italian public sector organizations relate with observable local practices of software use. The field of research has been constructed by tracing the circulation within and across different public sector Italian organizations of a large scale globally supplied standard software package: the SAP system. In this sense, the proposed theory is also a comparative theory: it is comparative-historical. The relationship between the ways "formally organized spheres of action" shape software maintenance

processes and the life world of observable local practices of software use is the unit of analysis of a comparative theory. Local practices of software use are supposed to covary with the variations of maintenance processes within the same case (public sector organizations) diachronically and within different public sector organizations synchronically. The different actors (consultants, formal organization members with their different hierarchical roles) have been interviewed. Observations of local work at screen with SAP have been performed where in the different contexts the software is used as an interface to input data and as a service for extracting data in the form of reports. The three different cases of the case study demonstrate different paradigms of software maintenance and their relation with local software usage practices: in house providing, contract work and staff service. In this position paper I only present some details of the in-house providing model.

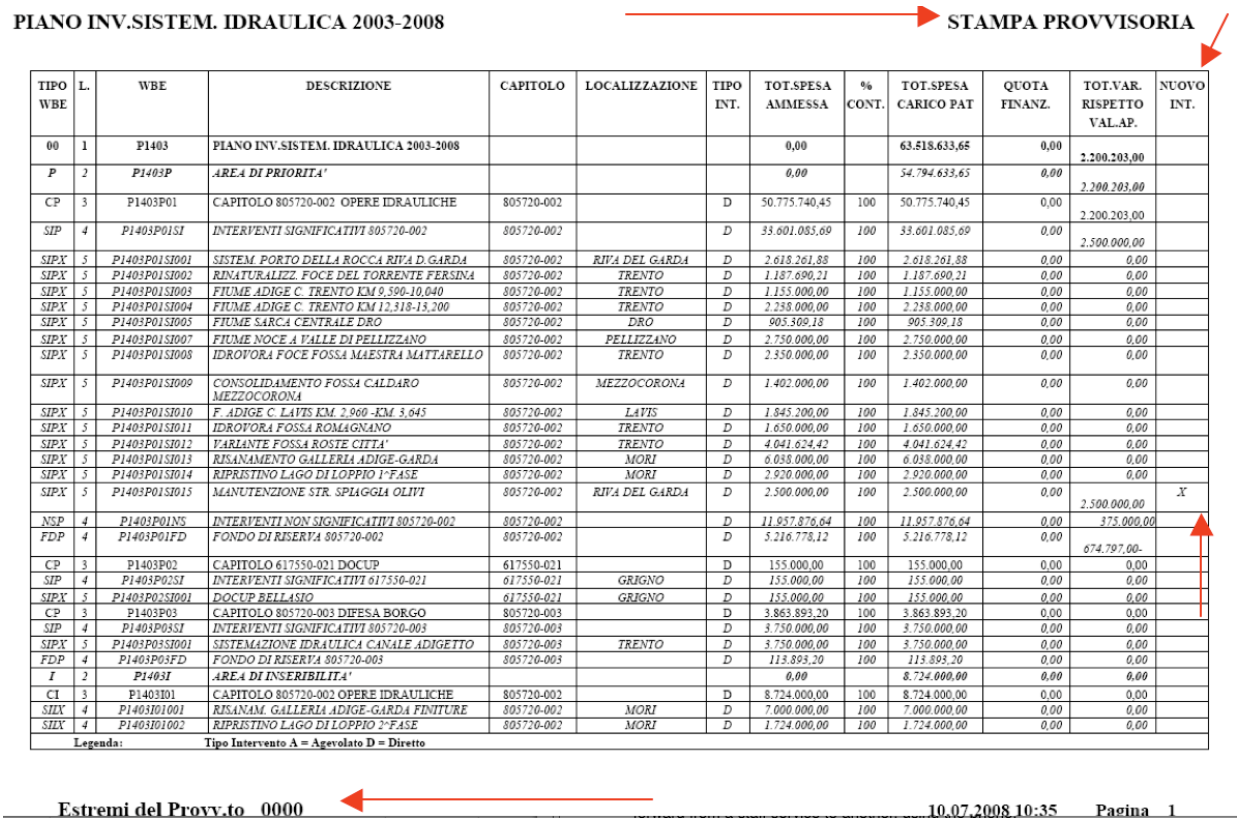
In house providing

In the Trento Autonomous Province the organizational software maintenance processes are managed through the model of "in-house providing". Software maintenance requirements are not addressed by any internal staff service. A software company fully controlled by the Province addresses them all: Informatica Trentina Spa. A team of ten people (including delivering and programming roles) that is located at Informatica Trentina provides SAP maintenance services to the Province staff services. In case an ordinary maintenance is needed, the client organization (the Province) communicates to Informatica Trentina through a 'ticket' (a formally recorded interaction). In order to gather and periodically update maintenance requirements, each client organization staff service (programming, budget and other horizontal staff services) appoints a "key user". A key user does not directly represent lower level operative services. Staff service key users (a single person for each staff service) present ordinary maintenance requirements (and evolutionary maintenance requirements as well) to the development team directly and without any additional check by other staff services. To its turn, Informatica Trentina outsources development of new code for evolutionary maintenance to an external consulting company (Deloitte).

Each staff service key user can require the system to perform the controls that address their area of interest (e.g. programming or budget). The result is a system that constraints in multiple ways the operative services data input practices. If an operator does not fulfil all the requirements of the data input procedure as it is inscribed in the system, the system does not save the input and all the current work risks to be lost. As a consequence of this, operative services use a number of parallel systems (mainly excel files) in order to try-out modifications, save them safely and share them with colleagues before including them in the software. An interviewee has described the current situation in the following way:

> "We modified the objective...instead of a tool representing the operative services, with a consequent responsibility on operative services to update it...we have a tool that completely forces the data implementation...with the consequence that it is the system that drives...The idea was to make the operative services more responsible, leaving the monitoring and control activities to the staff services...but this has been lost..."

In the current situation, staff service "monitoring and control activities" on operative services takes place only when data are finally uploaded into the SAP system.



PIANO INV.SISTEM. IDRAULICA 2003-2008 — STAMPA PROVVISORIA

TIPO WBE	L.	WBE	DESCRIZIONE	CAPITOLO	LOCALIZZAZIONE	TIPO INT.	TOT.SPESA AMMESSA	% CONT.	TOT.SPESA CARICO PAT	QUOTA FINANZ.	TOT.VAR. RISPETTO VAL.AP.	NUOVO INT.
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P	2	P1403P	AREA DI PRIORITA'				0,00		54.794.633,65	0,00	2.200.203,00	
CP	3	P1403P01	CAPITOLO 805720-002 OPERE IDRAULICHE	805720-002		D	50.775.740,45	100	50.775.740,45	0,00	2.200.203,00	
SIP	4	P1403P01SI	INTERVENTI SIGNIFICATIVI 805720-002	805720-002		D	33.601.085,69	100	33.601.085,69	0,00	2.500.000,00	
SIPX	5	P1403P01SI001	SISTEM. PORTO DELLA ROCCA RIVA D.GARDA	805720-002	RIVA DEL GARDA	D	2.618.261,88	100	2.618.261,88	0,00	0,00	
SIPX	5	P1403P01SI002	RINATURALIZZ. FOCE DEL TORRENTE FERSINA	805720-002	TRENTO	D	1.187.690,21	100	1.187.690,21	0,00	0,00	
SIPX	5	P1403P01SI003	FIUME ADIGE C. TRENTO KM 9,590-10,040	805720-002	TRENTO	D	1.155.000,00	100	1.155.000,00	0,00	0,00	
SIPX	5	P1403P01SI004	FIUME ADIGE C. TRENTO KM 12,318-13,200	805720-002	TRENTO	D	2.238.000,00	100	2.238.000,00	0,00	0,00	
SIPX	5	P1403P01SI005	FIUME SARCA CENTRALE DRO	805720-002	DRO	D	905.309,18	100	905.309,18	0,00	0,00	
SIPX	5	P1403P01SI007	FIUME NOCE A VALLE DI PELLIZZANO	805720-002	PELLIZZANO	D	2.750.000,00	100	2.750.000,00	0,00	0,00	
SIPX	5	P1403P01SI008	IDROVORA FOCE FOSSA MAESTRA MATTARELLO	805720-002	TRENTO	D	2.350.000,00	100	2.350.000,00	0,00	0,00	
SIPX	5	P1403P01SI009	CONSOLIDAMENTO FOSSA CALDARO MEZZOCORONA	805720-002	MEZZOCORONA	D	1.402.000,00	100	1.402.000,00	0,00	0,00	
SIPX	5	P1403P01SI010	F. ADIGE C. LAVIS KM. 2,960 -KM. 3,645	805720-002	LAVIS	D	1.845.200,00	100	1.845.200,00	0,00	0,00	
SIPX	5	P1403P01SI011	IDROVORA FOSSA ROMAGNANO	805720-002	TRENTO	D	1.650.000,00	100	1.650.000,00	0,00	0,00	
SIPX	5	P1403P01SI012	VARIANTE FOSSA ROSTE CITTA'	805720-002	TRENTO	D	4.041.624,42	100	4.041.624,42	0,00	0,00	
SIPX	5	P1403P01SI013	RISANAMENTO GALLERIA ADIGE-GARDA	805720-002	MORI	D	6.038.000,00	100	6.038.000,00	0,00	0,00	
SIPX	5	P1403P01SI014	RIPRISTINO LAGO DI LOPPIO 1°FASE	805720-002	MORI	D	2.920.000,00	100	2.920.000,00	0,00	0,00	
SIPX	5	P1403P01SI015	MANUTENZIONE STR. SPIAGGIA OLIVI	805720-002	RIVA DEL GARDA	D	2.500.000,00	100	2.500.000,00	0,00	2.500.000,00	X
NSP	4	P1403P01NS	INTERVENTI NON SIGNIFICATIVI 805720-002	805720-002		D	11.957.876,64	100	11.957.876,64	0,00	375.000,00	
FDP	4	P1403P01FD	FONDO DI RISERVA 805720-002	805720-002		D	5.216.778,12	100	5.216.778,12	0,00	674.797,00-	
CP	3	P1403P02	CAPITOLO 617550-021 DOCUP	617550-021		D	155.000,00	100	155.000,00	0,00	0,00	
SIP	4	P1403P02SI	INTERVENTI SIGNIFICATIVI 617550-021	617550-021	GRIGNO	D	155.000,00	100	155.000,00	0,00	0,00	
SIPX	5	P1403P02SI001	DOCUP BELLASIO	617550-021	GRIGNO	D	155.000,00	100	155.000,00	0,00	0,00	
CP	3	P1403P03	CAPITOLO 805720-003 DIFESA BORGO	805720-003		D	3.863.893,20	100	3.863.893,20	0,00	0,00	
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SIPX	5	P1403P03SI001	SISTEMAZIONE IDRAULICA CANALE ADIGETTO	805720-003	TRENTO	D	3.750.000,00	100	3.750.000,00	0,00	0,00	
FDP	4	P1403P03FD	FONDO DI RISERVA 805720-003	805720-003		D	113.893,20	100	113.893,20	0,00	0,00	
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CI	3	P1403I01	CAPITOLO 805720-002 OPERE IDRAULICHE	805720-002		D	8.724.000,00	100	8.724.000,00	0,00	0,00	
SIIX	4	P1403I01001	RISANAM. GALLERIA ADIGE-GARDA FINITURE	805720-002	MORI	D	7.000.000,00	100	7.000.000,00	0,00	0,00	
SIIX	4	P1403I01002	RIPRISTINO LAGO DI LOPPIO 2°FASE	805720-002	MORI	D	1.724.000,00	100	1.724.000,00	0,00	0,00	

Legenda: Tipo Intervento A = Agevolato D = Diretto

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Fig. 1 - SAP generated pdf report

Higher-level staff services receive a portable document format (PDF) report where they can see who is uploading data and modifications are given a visual relevance by an "X" mark. There is no possibility for staff service to see the data through the system before they receive the report. Informal examinations (one of the two monitoring actions required by the procedure - the other is the final "formal examination") of the Investment Plan by the Programming and Budget Staff Services (the two staff services that are in charge of the monitoring of the Investments Plans) are made as they receive the PDF file through e-mail by the operative service that produced the report.

Prior to the introduction of the SAP system in the Trento Province, major modifications of the Investment Plan where communicated to Staff Services with a summary record of the accounting modifications at a chapter level made with Excel. The new system notwithstanding, Budget service still requires that Operative Services send them the excel file of the summary record in addition to the SAP generated report.

Furthermore, in the observation of operative services software use sessions in the Trento Province that SAP planning and budget modules revealed not being fully integrated. The Project System (PS) module does not perform 30% controls and does not perform cross-controls with the COP module - the budget module). In order to have the investment planning data and the accounting data aligned, staff service have to manually match the data.

Discussion of the relation between the in-house providing model and local practices of software use

Software maintenance process in the Trento Province involves only few Staff Services key users in formal interactions with a development team that seats outside the Province formal organization.

The “in-house providing” software maintenance model inscribes on the organizational software mainly staff service requirements. The module used by a staff service does not fully execute controls (is not integrated with - does not give “blocking messages”) on data coming from other corresponding staff services but only on data coming from operative services. In this configuration, the system represents an additional control on operative services operations. Despite the exposed theory of the advantage of a “unique database”, controls are best performed by Staff Services using a variety legacy applications (e.g. word or excel) and then - only then - on the organizational software. Despite the exposed theory of “best practices” embedded in the organizational software, the “in-house providing model” strongly reinforces a ‘technology supply’ model where technology has to be adapted by a remote supplier to the local organizational processes. In the specific case, any additional business processes redesign effort has been carried on by the client organization. The absence of an initial overall organizational processes redesign reduces in particular the operative service value on the adoption of the organizational software: the organizational software becomes for them an additional application to be used in parallel with legacy applications. Furthermore, the logics of technology supply is limited to the interactions between staff services key users and “in-house” maintenance providers. In the absence of a third competent internal staff service being in control of the maintenance process - negotiating maintenance requirements from an informatics point of view -, operative services do not perceive informatics as a staff service but as a means to impose budget and programming upper level service logics on their own operative activitiesHigher-level staff services receive a portable document format (PDF) report where they can see who is uploading data and modifications are given a visual relevance by an “X” mark. There is no possibility for staff service to see the data through the system before they receive the report. Informal examinations (one of the two monitoring actions required by the procedure - the other is the final “formal examination”) of the Investment Plan by the Programming and Budget Staff Services (the two staff services that are in charge of the monitoring of the Investments Plans) are made as they receive the PDF file through e-mail by the operative service that produced the report.

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