'You Are Here'. Exploring Social and Technical Environment of the Organization and Finding Your Position in the Field.

Paola Mauri

Senior consultant in System Management ICMCI Certified Management Consultant
Star s.r.l. – Via Piave 22060 Cabiate- Italy
paola.mauri@alice.it

Abstract. The methodological framework of my practitioner activity has been enriched with the requirement of the new standard ISO 9001:2015 that focuses on 'Understanding the organization and its context', 'Understanding the needs and expectations of interested parties' and 'Planning actions to address risks and opportunities'. These new topics of the management model allowed me to increase and enlarge the exploration of the organizational environment and, in particular, to reflect on the role of organizational mapping. The described experiences deal with these new topics and with their consequences for my social and ethnographic approach. The first experience, which was previously presented, is the follow-up of the project in a co-operative organization that provides care services. The paper presents the positive results reached in IT system development with a socio-technical approach. The second experience is a collection of several cases that have a common background in terms of company identity, commitment and results. The lessons learned through the described experiences are presented, paying attention to the relationship between practitioner and his/her customer with reference to the topics of an ethnographic approach. Some questions are posed for transferring the methodological framework to less experienced practitioners.

Keywords: Conceptual Modeling, Process Analysis, Socio-technical perspective, Ethnographic Approach, Mapping

1   Introduction

My practitioner activities deal with the development of Management Systems, in compliance with the requirements of ISO (International Standard Organization) Standard on Management systems, in particular ISO 9001 [1] "Quality Management Systems. Requirements" and ISO 14001 "Environmental Management Systems. Requirements with guidance for use." [2]. These Management Systems strongly interact with IT systems that support data and information management. Hence, in my pro-

jects, I have to merge and integrate the requirements of several 'systems', where social behavior, technics, data, processes ought to be understood and finalized.

The main topics of my methodological toolkits, presented in [3] are based on the requirements of the ISO standard, in particular, as described in [4], the Process Analysis. In the organizations I try to apply these topics with a Socio-technical approach and with project phases that I define in the terms of Orienteering, Modeling and Mapping.

In this paper I describe my experiences, recently enriched with the new concerns related to context analysis and risk management that I have broadly applied in my activities. In particular the role of Mapping is proposed as support for this analysis.

Two experiences and the lesson learned are presented. The first experience updates and describes the final results of a Socio-technical approach in a co-operative organization that provides care services for young people in need, for people suffering from physical and mental disabilities and for elderly people. [5]

The second experience is a cluster of projects that share several common points: the commitment (implementation of context analysis and risk management) and the organization features, in terms of size, ownership and management approach.

Presenting arguments in terms of methodological topics and their application, I propose, as future work, some rules for transferring my approach to young practitioners, in term of attitudes, knowledge and training methods, for instance through simulation, role playing or practical experiences such as stage, coaching or training on the job.

2   Methodological topics. Toolkits and rules for their exploitation

In [3] I presented the main topics of my methodological framework, focusing on Process Analysis, Socio-technical Design and Ethnographic Approach.

More generally, the Process Analysis could be considered part of the requirements of the management models that define the goals and the commitment of my practitioner activities and hence influence my **Conceptual Modeling.**

Through my experience I progressively realized the key role of Social Behavior to reach the goals of my projects. For this reason I consider the **Socio-technical Perspective**, presented by E. Mumford in [6], as an important guideline of my practice. For instance, the technical requirements of the ISO standards could be effectively transferred into the organizations through a social approach.

The third topic is based on the **Ethnographic Approach** proposed by [7] that has increasingly become a useful guide for reflecting on my 'position in the filed', i.e. on myself in relationship with the organizations.

In the following, with reference to these topics, some novel points are presented related, in particular, to Conceptual Modeling and to Ethnographic Approach.

2.1 Conceptual Modeling

The criteria that drive my practitioner activities are based on the management model proposed by ISO (International Standard Organization) and by their requirements, in particular the process approach. New versions of quality and of environmental management standards were issued in 2015. The common approach of these standards is based on new requirements focused on Context Analysis, Interested Parties and Risk Management.

These topics-Context Analysis, Interested Parties, Process Analysis and Risk Management deeply influence my practice.

In the new projects, I have to deal with more functional areas, taking into account an enlarged set of interested parties. For instance for the management of financial risks and of business continuity, I have to interview the Finance Manager and the IT Manager, usually not directly involved in my project commitment. Furthermore the integration with environment systems increased the cooperation with my colleagues and with the functional areas involved in these issues.

For these reasons, the project phases, that I described in [4] and [5] for the process analysis, based on 'Getting people together', 'Process Modeling and Mapping', requires an increased attention to the 'Mapping' activity.

In the past I exploited Mapping only for process description. Presently I am more attentive to the different ways the companies describe their environments. In fact, companies use maps for organizational structures, processes flows, data and document relationships, site layouts, equipment wiring, hardware network, software architecture, and so on.

I think that a good Mapping, in particular through organizational charts, could be key tools for an Ethnographic Approach as well, because maps could help in finding your position in the field.

2.2 Socio-technical Perspective

The Social approach [6] is an attitude of companies and practitioners. As pointed out in [3], for constructing a project group the practitioner has to understand the social structure of the organizations and their social behavior and these characteristics could influence the social attitude of the organizations.

For instance the type of ownership - private, family based, public, corporate, cooperative- could influence the decision process and the management choices. In small companies, with few decision makers, the social relationships are often direct and shared in a hierarchical way. In corporate companies the relations are complex and often impersonal, in cooperative structures the social approach could be a value.

Even the type of product/service could influence the social attitude of people in the companies. For instance, to perform care services, skills in social relations are strongly required.

The social attitude of the practitioner could be influenced by his/her systemic background, open mindset, attention to several fields of thought. Often practitioners with a high level of technical specialization are less oriented to a social approach.

2.3   Ethnographic Approach

Considering a practitioner as an ethnographer [7], I would describe some topics related to my contextual inquiry and the definition of my position in the field, where the field could be any type of economic organization (a company, an enterprise, a public owned group, etc.).

In fact I am introduced in the field through an economic contract, which offers consultancy services. My consultant services, in general, have the commitment to measure compliance to standards, by means of audits or to develop a management system and to support its implementation. The first relationship in the organization is with the function that expresses needs and shares its commitment with me. I won't describe, in this paper, the commercial activity that conducts to the order: It is complex, involves specific skills and requires diverse contextual inquiries as well.

I could develop my contextual inquiry through interviews and observation, which often are simultaneously exploited. Led by the expected result, I am introduced in the organization by the person/function who defines the commitment and the project. Because my objective is the implementation of management systems, nearly always I have to deal with several functions and with their processes (e.g. sales, purchasing, operations, and human resources) and with ownership and/or top management.

For the practitioner the first challenge is to understand his/her position in the organization structure in order to plan the process of contextual inquiry.

At the beginning, I didn't know the field and I found some help for my exploration in the organizational charts, which are a kind of Mapping, useful to identify 'the villages'. In figure 1 and figure 2 different organizations are compared. The first chart is typical of small/medium sized companies where the hierarchical line is fixed from ownership to employees. For instance the chain of responsibilities from top management to operations manager and to-workers is clearly defined.

The second figure is an example of the complexity of big companies, where different sites could have different organizations and even different notations to describe the role: manager, leader, responsible, focal point, coordinator, and so on. The relationships amongst the sites and among sites and staff structures could not be not clearly defined and hierarchical versus functional responsibilities could be difficult to manage.
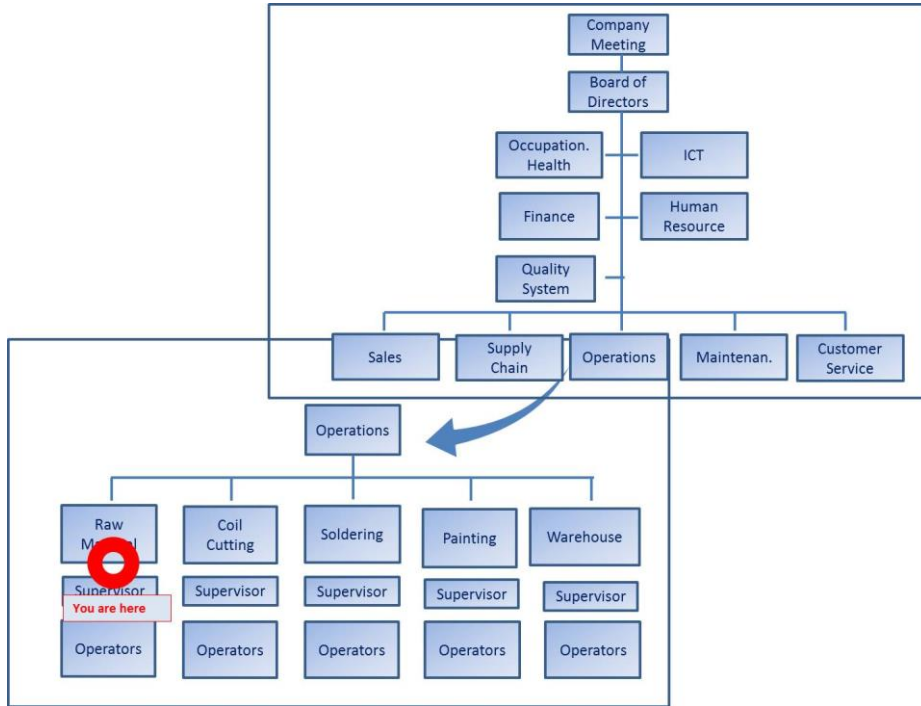
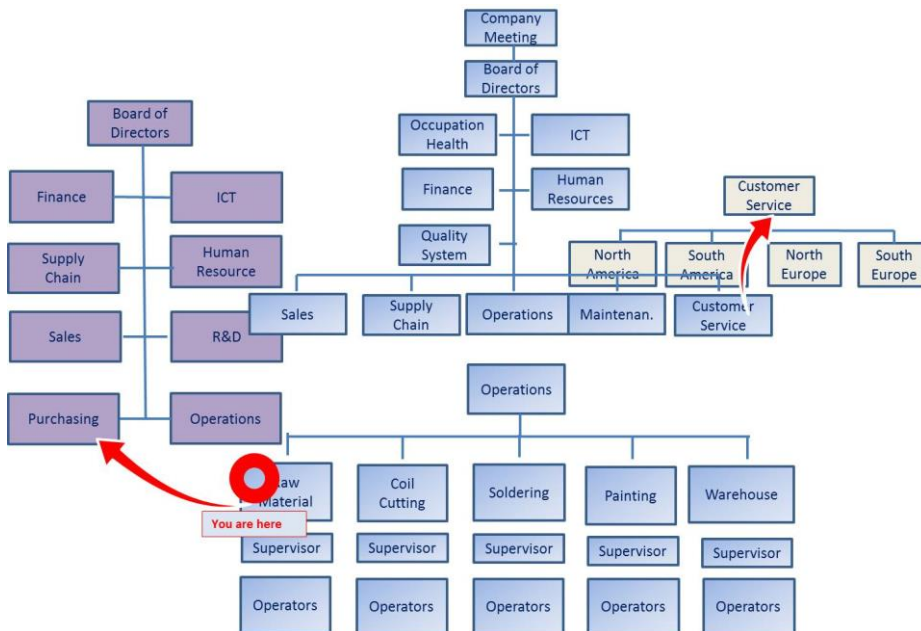**Fig. 1.** Organizational Chart of a medium sized company

Fig. 2. Organizational Chart of a big company

Furthermore key questions are How, Who and When to interview and to observe. They are shortly described in the following.

- **How.** The approach could be 'one-to-one', 'one to many', 'many-to many'. For instance the interview during an audit is one-to-one activity, a training session is one-to-many, and a project meeting is many-to-many. Many-to-many allows to simultaneously evaluate the responses and to screen them. The practitioner could observe activities, technologies, behavior and relationships, even digging into the personal relationships and into family histories.
- **Who.** The role of people in the organization could produce different responses that have to be compared and matched.
- **When.** At the beginning of the project, in different phases the results of contextual inquiries could be different. During the project, the position in the field could change. For instance in a long lasting project the role could change during the project, moving from an observer role to a participant one.

3 First Experience. The role of Process Analysis and of Socio-technical design

In paper [5], I described two experiences with a Socio-technical approach. Both reached the commitment: in the first experience the accreditation for the public owned company and in the second experience an effective re-organization.

But, while the first experience did not improve the social approach and it finished when the commitment was reached, the second experience was more interesting and I describe the further development below.

3.1 Characteristics of the organization

The context is a co-operative organization that provides care services for young people in need, for people suffering from physical and mental disabilities and for elderly people. The co-operative has a broad distribution and rootedness in the local territory, with relationships with several interested parties: care receivers, families, communities and public structures. The co-operative is managed by a board of directors. The activities are widespread on several territorial areas and hence the working places are distributed on the territory. The employees are also "associates" of the co-operative and the organization shares social values with the employees.

As a practitioner, I understood the complexity of this structure during a previous project for the development of the quality management system, in compliance with ISO 9001 standard. In that project a key result was the new organization chart, essential for developing the management system.

A weak point of the systems was the functional area that manages the supporting processes, such as financial and purchasing processes. The manager retired and the area suffered a lack of defined responsibilities. In particular the management of data

and information was ineffective: the co-operative had a previous negative experience with the implementation of an information system that was not tailored to the internal processes. Most information were recorded on paper and copied in several spreadsheets.

3.2   Projects and Methodological topics

In the year 2015, I received the commitment of the board of directors to update the organizational structure of supporting processes, such as financial, purchasing and human resources and to re-engineer the processes, including processes for information management.

The project group was composed of the director and of all the employee of the functional area and myself. The project has been conceived with a Socio-technical approach and based on the Process Analysis: the meeting has been held with the participation of the director and all the employees.

In this experience I acted as a facilitator. I attended the meetings, tracking the discussion and the proposals and suggesting possible solutions. The meetings developed (step by step) through an initial brainstorming on all the activities, listed and sketched on a board, without a predefined model. The discussion was worthwhile in fixing the critical points and in discovering the cross functional activities. As described in [5] the main result of the orienteering has been "Getting people together", also trying to understand the feelings and relationships amongst employees.

The project has been developed with the aim to share the practices: the changes discussed during the meetings have been applied and tested during the everyday activities. The process mapping facilitates the definition of a new functional organization and the understanding of information requirements. For instance the data structure and the recording of job time were transferred onto spreadsheet templates, used by employees to record their hours and to define the communication rules amongst the functional areas. The continuous monitoring allows testing and verifying the effectiveness of the analysis results.

In 2016 the co-operative company started the project for the new Information System, designed for tracking working activities of care givers. Because the care activities are performed on several sites (homes, schools, elderly people residences, etc.), the working time will be recorded by means of smartphones (not on swipe-cards) that substitutes the filling in a form by hand. The chosen software application has been developed for these types of organizations and processes and IT engineers are aware of problems and requirements of this type of organization.

Even if I was not directly involved in the 'technical side' of the project, the organization reached positive results because the process analysis was useful to elicit the software requirements. The new IT system started at the beginning of 2017.

In 2016 the same approach was exploited for the implementation of the requirements of the new standard ISO Standard, in particular the Context Analysis and the Risk Assessment. I coordinated workshops to share ideas and to transfer them in the organization. Presently, with a cascade approach, the internal managers are holding workshops with employees to discuss and to define specific risk assessment.

3.3   Results and lesson learned

The co-operative managers share these conclusions on the project results with me.

- The 'social' approach, starting from re-engineering of processes and responsibilities was useful for a first elicitation of requirements. My role was useful in giving them the right tools and knowledge.
- These tools drove them to choose the IT Company and in developing the new application with a significant involvement of all the employees.
- In the present phase the effort is to exploit the IT tools to manage the change of the people's behavior, for instance in recording their presence with a smartphone.

From the methodological point of view, the following could be the conclusions:

- The Socio-technical approach, as described in figure 3, could be conceived as a two ways path where the social side and technical side continuously and reciprocally influence each other. Furthermore the social approach could become more and more intrinsic in the organization.
- From the Ethnographic point of view my position in the organization has been improved and clarified. I have good knowledge of the field because of my activity in the design of the organizational structure and I participated in several choices of the group. Furthermore I have contact with all the members of the board.
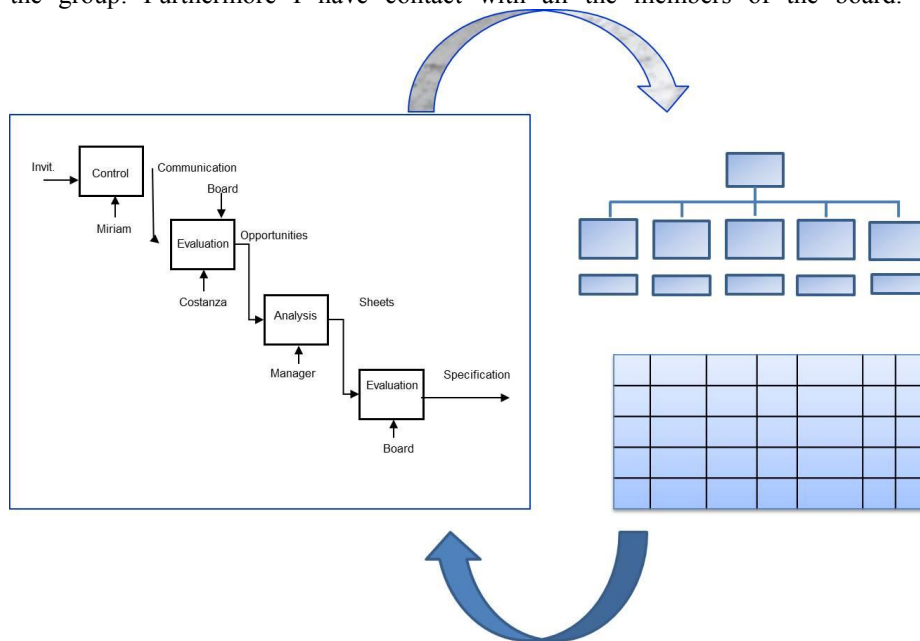

Fig. 3. Socio-technical loop

4   A Set of Experiences on Context Analysis and Risk Management in small sized and large sized companies

I describe a set of experiences, performed in 2016 and 2017, that have a common commitment related to the implementation of new ISO Standards on Management System and different contextual features: small sized and large sized organizations.

4.1   Small/medium sized organizations

The first set of experiences has been developed in small sized organizations (from 25 to 70 employees), mechanical manufactures, with only a company site. Their customers could be big companies that operate in strategic markets (such as automotive, air space) and that often have very strong contractual requirements. This issue is a continuous challenge for the companies because the small dimension could be a weakness for resource allocation but strength for flexibility and adaptability.

The ownership is on a familiar basis or on a few numbers of partners, often the owners are the managers, i.e. the management could be directly assigned to the partners or to the family members. For these organizations Figure 1 could be a reference pattern.

In these companies the IT technology is often a weak point. The information system implementation is outsourced and managers and employees are only end-users.

4.2   Large sized organizations

The second set of experiences has been developed in large sized companies with a corporate structure. In these organizations ownership and management are separate: shareholders are 'far' and without a specific identity.

The corporate structure is often based on several business units with different markets, with several customers and with a broad country distribution. Figure 2 could be an example of their organizational charts.

For these reasons the relationships could be very complex and constrained by functional, hierarchical, and site-specific requirements.

IT technology always refers to a (or many) functional area and the IT systems are structured and complex as well.

4.3   Project and Methodological topics

The new requirements of ISO Management Standards significantly influenced my activities.

The topics related to context analysis and risk management lead to a shared vision of the organization and enlarged the boundaries and the scope of my projects. For instance, for implementing the risk management I had to interview/observe/participate

with all the functional area of the organizations and so I could encompass the social environment in a more efficient way.

In **small sized organizations** the project commitment was always shared with the company owners /managers that I often met during the project and that could be my direct interface and the project leaders.

The relationship with managers and employees strictly depended on the owner(s) relationships and on the assigned responsibilities. In some case my practitioner activity was developed only with the owner in other moments I met managers and employees but it was difficult to define a structured project team. This approach was conceived as a 'waste of time'.

In **large sized organizations** the first interface was always the manager of the Quality (Environmental) System Area, who committed the project. To define 'how and who to interview' I ought to have an idea of the organizational structure. This is a pre-condition to find out the right interfaces for the project development. The key condition, for empowering managers and employees, is always subordinated by the involvement of the top management. In this way my initial observer role could move to a shared and participated approach.

To exemplify these activities, I describe possible interactions with the Information System Area.

In small sized organizations, only in one experience an IT manager was present. In this case I and my colleagues could develop an integrated management system (Quality, Environment, Occupational Health and Safety) with the full support of the IT function, transferring the management system requirement in the information system. For instance the risk analysis was linked to the manufacturing process flow and evaluated for the risk on product quality, environmental pollution and employee safety. In this case the system architecture was effective and shared with the IT manager.

In the other small companies, on the contrary, I was not involved in the IT system development because the 'IT area' hadn't enough knowledge on process and management system to positively support the project development.

In large sized organizations the IT systems could have different owners. For instance, in operation sites, ERP applications are transferred as a 'close' system from the corporate IT Area to the local managers and employees. In these conditions the practitioner still remains an observer.

In other experiences the risk management has been discussed with the IT area at least for the issues related to business continuity.

4.4   Results and lesson learned

The main results of the described experiences are summarized below:

- Besides the goal of my commitment, i.e. the certification, the implementation of the new requirements allowed me to reach a higher level vision of the whole organ-

ization. For instance the risk management has been deployed in several functional areas, enlarging the scope of my projects.

- The interaction with IT, even if is still weak and with a low level of integration, showed some improvement steps. In small sized companies where a good IT background (competences and tools) was available, new and effective systems could be implemented quickly and easily. In large companies risks related to business continuity were evaluated with IT managers.

From the methodological point of view, these could be some lesson learned:

- Dimension, ownership and management structure of the companies deeply influences the Social approach and the Ethnographic relationship. The decision chain is (seems) short in small/medium sized compared to corporate companies. The social approach could be constrained by the direct relationship of practitioner with 'decision maker' and by the difficulties in the involvement of managers and employees.
- The position in small/medium sized organizations seems easier to define but I have to consider several issues: family values and personal relationships in the family, including whistleblowing, gossip and family history. The practitioner could be involved even in private and personal events. The mapping of the organizations could be only a formality when the role of personal relationships is dominant.
- Finding the position in large companies could be a challenge, because of the complexity of the organizations. A good mapping of the organization is a helpful support.

5   Conclusions. The position of a practitioner in the field

In the following I present some key topics of these experiences.

- **The reason I am introduced in the field.** All the experiences have the same project goal, described in a contract between the organization and me, for the implementation of the new requirements of ISO Standard, in particular 'Context Analysis' and 'Risk Management'. These topics expanded the scope of my activities, and required the refinement of mapping tools, in particular of organizational chart and process mapping.
- **The characteristics of the field.** The projects have been developed in organizations with different features, in term of dimension, ownership and management.

Even with the same project goal and conceptual models, the features of the organizations influenced my position in the field and the effectiveness of a social approach that is always a focal point of my practice.

- In the cooperative organization, where social values are still present, my position was observer/ participant and the proposal of a socio-technical approach was effective. I designed the process and organization chart with the manager and shared with them and with employees the projects also for developing a new IT system.

- In small sized organizations, defining my position through mapping tools is apparently easy but could be ineffective because personal relationships are dominant and a social approach (many-to-many) is economically unsustainable. My relationship with ownership could become very close, but rarely I am allowed to participate with the whole organization.
- In large sized organizations, mapping tools the organizational structures is a necessary condition to understand the environment. This is the first step to move my position from a pure observer to observer/participant and to develop a social approach, in any case influenced by top management involvement.

6   Outlook

The methodological toolkits, described in the paper, have been applied and validated in several of my practitioner experiences.

But how to transfer these methodological tools to my colleagues, in particular to the less experienced, to allow them to be 'good ethnographers skilled in a socio-technical approach'?

I propose some possible guidelines that I am trying to define and to follow in coaching activities with my young colleagues. A tentative list is described in the following.

In terms of knowledge, the practitioners have to know organizational modeling and system approaches. If technicalities are strongly required (as for IT engineers) they have to be integrated with knowledge of organization management (business scenarios, process management, organizational models and so on).

The competences could be influenced by soft skills and personal attitudes that could be defined in term of personal profiles. For instance a specific expertise in software tools, in equipment, in metrics, could contrast the ability to observe the environment and to catch its features or to read, to understand and to modify the maps. Skills to adapt to the environment as well as methods for managing and planning projects could have a role in socio-technical design.

The way to transfer knowledge and skills requires further research.

If you are dealing with students the methodological tools could be transferred as contents of lessons, gamification, simulation, practical stages.

For practitioners, some of the soft skills could be checked in the job hiring process and perfected through coaching and training on the job.

7   References

1. ISO 9001:2015 "Quality Management Systems. Requirements."
2. ISO 14001:2015 "Environmental Management Systems. Requirements with guidance for use."
3. Paola Mauri. The Process Analysis as a Frame to Merge Social and Technical Issues in the Design of Information and Management System. S.Kowalski, P.Bednar, I.Bieder (Eds.) CAiSE 2015 Workshop STPIS 2015 CEUR Vol-1374, pp.100-105

4. Paola Mauri. Process Analysis and Collective Behavior in Organizations. A Practitioner Experience. Y.T. Demey and H. Panetto (Eds.): OTM 2013 Workshops, LNCS 8186, pp. 124-133, 2013. Springer-Verlag Berlin Heidelberg 2013

5. Paola Mauri. Applying Social and Technical Topics in the Design of Management and Information Systems. CAiSE 2016 Workshop STPIS 2016

6. Enid Mumford. The story of socio-technical design: reflections on its successes, failures and potential. Info Systems Journal (2006) 16, 317-342 Blackwell publishing Ltd

7. Gil Regev, Laura Regev, Yasmina Naim, Julie Lang, Alain Wegman. Teaching an Ethnographic Approach to Requirements Elicitation in an Enterprise Architecture Course. S.Kowalski, P.Bednar, I.Bieder (Eds.) CAiSE 2015 Workshop STPIS 2015 CEUR Vol-1374, pp.5-19

8. T.C. Powell, D.Lovallo, and C.R. Fox. Behavioral Strategy. Strategic Management Journal 32: 1369-1386 John Wiley & Sons (2011)

9. Quy Nguyen Huy .How Middle Managers Group-Focus Emotions and Social Identities Influence Strategy Implementation. Strategic Management Journal 32: 1387-1410 John Wiley & Sons (2011)

10. James J. Chrisman, Jess H. Chua, Allison W. Pearson, Tim Barnett. Family Involvement, Family Influence, and Family-Centered Non-Economic Goals in Small Firms, ET&P March 2012 , 267-293

11. C. Moore, J.R. Detert, L.K. Trevino, V.L.Backer, D.M. Mayer. Why Employees Do Bad Things: Moral Disengagement and Unethical Organizational Behavior. Personel Psychology, 2013, 65, 1-48 John Wiley & Sons (2012)

12. Ilia Bieder. Towards a Non-workflow Theory of Business Processes M. La Rosa and P. Soffer (Eds.): BPM 2012 Workshops, LNBIP 132, pp. 1-2, 2013. Springer-Verlag Berlin Heidelberg 2013

13. K.D. Swenson. Position: BPMN Is Incompatible with ACM. M. La Rosa and P. Soffer (Eds.): BPM 2012 Workshops, LNBIP 132, pp.55-58, 2013. Springer-Verlag Berlin Heidelberg 2013

14. Paul E. Spector and Laurenz L. Meier. Methodologies for the study of organizational behavior processes: how to find your keys in the dark. Journal of Organizational Behavior, 35, 1109-1119 John Wiley & Sons (2014)