

**DOCTORAL THESIS**

**THROUGH THE LOOKING GLASS:  
UNDERSTANDING A COMPLEX  
RELATIONSHIP BETWEEN KNOWLEDGE AND  
ACTION**

**By**

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## **Preface**

This thesis is the most tangible result of a process that began a long time ago when I decided to embark upon the adventure of studying a PhD. Now, looking back, I can say that this process, the result of which is this thesis, has been much broader and richer than can be expressed explicitly in this dissertation.

The drafting of this thesis has gone beyond acquiring knowledge on the research subject: that is to say, learning more about a field of knowledge and the possibility of contributing to this field, however modestly, is a worthy objective in itself. However, the results have exceeded these initial objectives.

Throughout these years, working on this thesis has helped me to acquire knowledge on this profession to which I have chosen to belong: the academic world. Knowing its customs, its processes of socialisation, its modes for speaking and convincing, knowing how to write and communicate etc., are key aspects that have gone hand in hand in developing this study. And going even further, not only have these aspects gradually allowed me to discover this world, they have enabled me to begin to form part of it.

However, this process has gone beyond acquired knowledge and professional development. In fact it has led to my own personal development. This thesis, in spite of being documented in black and white, encapsulates a great measure of commitment, motivation and willpower. It entails reasoning, judgment and criticism at the same time as conception and creativity. It has taught me to develop a special sensitivity and

a capacity for listening to the phenomena that take place all around us, but which often go unnoticed. It has implied taking risks and struggling to rise above challenges. In short, it is a process that has transformed me, not only professionally but also personally.

However, this whole process and its result would not have been possible without the help and contributions of the many people who have accompanied me on this journey. To begin with, and above all, I would like to emphasise the role played by Alfons Sauquet, my thesis director. He has been a constant source of inspiration and has offered me new analysis perspectives that have enriched the results of this research. I thank him especially for his encouragement and optimism which was contagious throughout, for the interesting discussions we have had, and above all, for his respectfulness and *savoir-faire*. For that great generosity, thank you.

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I would also like to thank my parents for all their encouragement: especially at the beginning of this project when they encouraged me to embark on the PhD Programme. Their example and the values they have instilled in me have given me the conviction that through hard work and effort whatever goals we set ourselves can be accomplished. Thank you.

Finally I would like to acknowledge two people who have given me their support throughout this long process. Both have been the most demanding judges of this thesis. Thanks to them this work takes on meaning. I dedicate this work to Carlos, who has given me the strength to bring this work to completion; and to my daughter Claudia, who gives me the vitality to continue looking towards the future.

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# **Chapter 1**

## **INTRODUCTION**

### **1.1. KNOWLEDGE AND ACTION**

The focus of this study is the complex relationship between knowledge and action. It is true that studies on knowledge and action are not new but recent interest from the management field in knowledge issues has flourished amid interest in creating, sharing and using knowledge in organisational settings. However, organisations are not concerned with managing knowledge per se, but with the knowledge that gives them a competitive advantage. In other words, they are interested in the knowledge that enables action.

Knowledge and action constitute a complex relationship. On the one hand, many scholars have defended the rationalist approach by which knowledge is a precedent to action. Therefore, there is a knowledge-doing gap as first, knowledge should be obtained or possessed in order to be applied. It is a causal and linear relationship in which knowledge precedes action. On the other hand, alternative approaches have led us to think that knowledge and action are mutually constituted and one cannot be approached without the other.

The debate on knowledge and action has gone beyond the academic field and it has further consequences on the actual organisations because, depending on the theoretical

perspective, their knowledge management implementations completely differ. Whereas some implementations will be based on capturing, storing, distributing and applying knowledge, practice-based approaches will focus on implementations which foster the community and other social aspects of practice.

The debate in terms of arguments in favour or against one and other trend continues to be a source of discussion both in theoretical and practical ways. In our understanding, the first approach establishes a clear boundary between knowledge and action, though previous works have doubted that such a clear distinction exists. On the other hand, practice-based studies have focused too much on practice or action, disregarding the role of knowledge. In this way, knowledge is one strand of another phenomenon which is the object of analysis: *knowing*. Hence, knowledge is overshadowed by the study of knowing as a whole. Subsequently, this approach does not help to shed a great deal of light on the relationship between knowledge and action, which remains quite blurred.

Taking these two standpoints into account, this thesis constitutes an attempt to find a new way of looking at such a complex relationship. Based on practice, we aim to look at the relationship between knowledge and action through the looking glass. In this endeavour, this thesis presents an empirical work constituted by a multi-case study of two organisations: a local job placement company and an international consultancy company.

This chapter underscores the most relevant characteristics of this research. First, the research problem is framed considering the main theoretical contributions and subsequently, the research objectives are stated. Then, the research design and the methodological aspects are presented giving way to the significant aspects of the study. The inquiry process followed by the researcher is then introduced. Finally, the chapter concludes with an outline of the thesis structure, with a brief summary of the central chapters which comprise the bulk of the dissertation.

## 1.2. FRAMING THE RESEARCH PROBLEM

### 1.2.1. Knowledge and Management: The Lack of a Unified Framework

Studies on knowledge are not new in the academic scenario. In fact, the first knowledge references are found in Greek philosophy and its intellectual roots are so diverse that they cover an array of disciplines, such as economics, sociology, philosophy and psychology. However, during the past decade, there has been a real breakthrough with regard to the concept of knowledge, or, to be more precise, with regard to the relationship between knowledge and management.

There are many causes for this situation, but we can highlight two significant aspects which have fostered this interest. On the one hand, the organisational learning theory, which occupied an important place in management science during the eighties and nineties, has left an important “sediment” and has prepared academia and practitioners to weigh up knowledge issues in the context of organisations. On the other hand, the advent of new technologies and the increase in services in the economy, especially the so-called knowledge-intensive services, have accelerated the arrival of a new era. Abandoning the previous “industrial paradigm”, the knowledge era emerges, bringing with it societal and economic changes. Drucker (1992: 95-96) summarises the essence of this knowledge society with the following:

“In this society, knowledge is *the* primary resource for individuals and for the economy overall. Land, labour, and capital – the economist’s traditional factor of production – do not disappear, but they become secondary... Knowledge society is also a society of organisations: the purpose and function of every organisation, business and non-business alike, is the integration of specialised knowledge into a common task.” (1992: 95-96)

This was not really a new idea. Other authors had stated this previously (e.g. Bell, 1973, 1979) but Drucker – echoing those ideas with a visionary twist – presented a holistic change that would affect the overall organisation, the business environment and competition, educational institutions, the type of work, the labour market and, in general, society as a whole. It was a new society, a new era in which knowledge played the leading role.

As a result, another concept of organisation started to take shape. Many authors tried to give a name to this new concept of company: intelligent enterprise (Quinn, 1992), knowledge-intensive firm (Starbuck, 1992), cognitive enterprise (Argyris and Schon, 1978), know-how organisation (Sveiby-Lloyd, 1987), knowledge-creating company (Nonaka and Takeuchi, 1995) or knowledge machine (Gupta and Govindarajan, 2000).

Henceforth, knowledge and management were interwoven in a theoretical and practical discourse not exempt from controversy and lacking a unified framework.

In the theoretical scenario, several authors have also endeavoured to identify different trends in the study of knowledge-based perspectives in organisations. Tsoukas (1996) offers us a distinction between those authors who study knowledge with a taxonomic perspective and others who understand the nature of organisational knowledge “as though” the organisation were an individual. The former tries to classify and study the different types of knowledge, paying special attention to its characteristics. The latter establish analogies between human and organisational cognition and address issues such as organisational memory, the brain and the organisational mind (e.g. Weick and Roberts, 1993; Sandelands and Stablein, 1987).

Taking into account the different issues covered by authors in the field, another classification of trends can be considered. Table 1 summarises a classification of approaches based on issues addressed. The authors presented are not an exhaustive list but a representation of the ones who might be classified under the different

perspectives. Another aspect is that many authors tackle more than one type of issues, and, therefore, their work may be framed in more than one perspective.

Approach	Scope	Issues Addressed	Some Authors
<b>Societal</b>	Society Organisations Economy Institutions	<ul style="list-style-type: none"> <li>• Presentation of a paradigm breakthrough</li> <li>• Legitimise knowledge as the critical resource or as a corporate asset</li> <li>• Stressing, above all, its contribution to competitiveness</li> <li>• Nature of work has changed</li> </ul>	Drucker, 1988, 1992; 1993; Webber, 1993; Quinn, 1992; Handy, 1997 Handy, 1990; Harrigan and Dalmia, 1991; Pinchot and Pinchot, 1994, 1996
<b>Knowledge-centred</b>	Management Individual Organisations	<ul style="list-style-type: none"> <li>• Definition of knowledge</li> <li>• Knowledge types and characteristics</li> <li>• Knowledge creation</li> <li>• Learning and Innovation</li> </ul>	e.g. Jensen and Meckling, 1995; Collins, 1993; Nonaka and Takeuchi, 1995; Dorothy-Leonard Barton, 1995; Zack, 1999; Lam, 2000
<b>Procedural</b>	Management Organisations	<ul style="list-style-type: none"> <li>• How knowledge should be managed (e.g. process design, information systems, alliances etc.)</li> <li>• Capturing knowledge</li> </ul>	e.g. Myers, 1996; Zack, 1999; Allee, 1997; O'Dell and Grayson, 1988; Pfeffer and Sutton, 2000; Gupta and Govindarajam, 2000; Davenport and Prusak, 1998; Probst et al., 2000; Pucik, 1988; Badaracco, 1991; Quinn, 1999; March, 1997; Earl, 1994; Greengard, 1998; Wilson, 1996
<b>Organisational</b>	Management Organisations	<ul style="list-style-type: none"> <li>• Structures and systems that may affect organisational knowledge:</li> </ul>	Jensen and Meckling, 1992
		<ul style="list-style-type: none"> <li>• Changes in the organisational structure</li> </ul>	Lam, 2000; Probst, 2000; Bahrami, 1992; Pinchot and Pinchot, 1994; Nonaka and Takeuchi, 1995
		<ul style="list-style-type: none"> <li>• Changes in management styles</li> </ul>	Davenport and Prusak, 1998
		<ul style="list-style-type: none"> <li>• Human Resources Issues</li> </ul>	Bahrami, 1992; Pinchot and Pinchot, 1994; Zack, 1999; Pucik, 1988; Tampoe, 1993

Table 1 - Different Perspectives in the Study of Knowledge Management

In sum, four different perspectives can be distinguished (Bou, 2001). The first of these so-called societal approaches includes authors who view knowledge issues as a transformation phenomenon affecting society as a whole. The knowledge-centred

perspective groups all those authors who are especially interested in the meaning of the concept of knowledge, its properties and types. Another group of authors, drawing on others' definition of knowledge, focuses on how knowledge may be managed within the company. They belong to the procedural/operational perspective. Finally, the organisational perspective addresses aspects related to the different systems within the company that should change or may be affected by organisational knowledge (see Table 1).

Independently of the classification followed and the differences among authors, one prevailing feature of the knowledge management field has been that authors have focused mainly on the study of "knowledge". They assumed the existence of different types of knowledge and their aim is to be able to manage that "knowledge" so that it can be used by the organisation when required.

One of the main contributions of this trend is that they have legitimatised the existence of more than one single type of knowledge. Although there is no single way to classify knowledge and authors differ in their classifications (see Table 2), there is a general consensus about the existence of explicit and tacit knowledge, a concept that was first coined by Polanyi<sup>1</sup> (1966). This is an important step forward. Previously, traditional Western scientific theory had adopted the idea of knowledge as "proven truth", discarding other forms of knowledge. Nowadays, however, another type of knowledge has been identified and its importance recognised; it is knowledge that is implicit, which is more difficult to communicate and share, and which groups skills and abilities based on human action and experience. This is tacit knowledge which, once a neglected concept, has now become the key element in competitive advantage for organisations (e.g. Spender, 1996).

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<sup>1</sup> In fact, although Polanyi has been considered the creator of the term "tacit knowledge", he actually refers to tacit "knowing" which implies the existence of theoretical or explicit knowledge and practical knowledge. It is a dimension. Nevertheless, tacit knowledge as experienced-practical knowledge cannot be expressed by its characteristics. This aspect will be covered in depth in forthcoming sections.



Year	Author	Criteria	Categorisations
	Aristotle		<i>Theoria</i> or theory; <i>Phronesis</i> or practical; <i>Techné</i> or "Poetical" knowledge
1938	Chester Barnard		Scientific Behavioural
1945	Hayek	Context-related	General / Scientific / theory Specific / practical
1948	Polanyi	Epistemological	Tacit Objective
1991	Badaracco	Mobility	Migratory Embedded
1992	Jensen and Meckling	Cost  Content	Specific General  Idiosyncratic Scientific Assembled
1992	Leonard-Barton	Content	Values and norms Managerial systems Employee knowledge and skills Physical, technical systems
1993	Collins (Blacker, 95; Lam, 2000)	Epistemological and Ontological dimension	Embedded Embodied Embrained Encoded (Encultured)
1994	Earl	Certainty, structuredness and validation	Accepted / Scientific Workable / Judgement Potential / Experience
1995	Nonaka and Takeuchi	Type of conversion	Sympathetic Conceptual Operational Systemic
1996	Spender	Types of tacit knowledge	Objectified Conscious Automatic Collective
1997	Allee	Content	Technical Abstract and Theoretical Professional
1999	Zack	Epistemological  Content  Scope and context influence	Tacit; Explicit  Declarative; Procedural; Causal  General;/ Specific
2000	De Long and Fahey		Human Knowledge Social Knowledge Specific

Table 2 – Types of Knowledge

Addressing these knowledge type differences, the prevailing trend in knowledge management has focused on “knowledge”, its types and how to capture knowledge within the firm in order to manage it as another asset.

In contrast to this trend, in the current scenario we can distinguish another group of authors who depart from the focus on “knowledge” towards a “knowing” approach where practice is their main object of study (e.g. Lave and Wenger, 1991; Blackler, 1995; Cook and Brown, 1999; Orlikowski, 2002; Brown and Duguid, 2000a; Newell et al., 2002).

The study of knowing, and therefore action and practice, corresponds to the idea of addressing knowledge issues integrated in the current business practices and leads away from considering knowledge issues separately from the daily performance of practitioners. This practice-based approach will be the main focus in the next section.

### **1.2.2. Knowledge and Action: A Practice-based Approach**

Action and knowledge have been addressed in the literature from two different points of views: actions as a result of applying knowledge or actions inherent in the concept of “knowing”.

As examples of the first approach, we can find many authors who consider knowledge as an enabler and identify many different actions once knowledge is applied: problem-solving (Probst et al., 2000), innovation of products – goods or services – and systems (Nonaka and Takeuchi, 1995; Cook and Seely Brown, 1999), decision making or paradigm breakthrough (Davenport and Prusak, 1998), reliable performance (Weick and Roberts, 1993) or productive change (Cook and Seely Brown, 1999). The idea of knowledge enabling action does not seem to raise controversy as they share the implicit assumption that first we possess “knowledge” and then we apply it in action.

However, over the last decade, scholars have shifted toward framing theoretical approaches focused on sustaining practical initiatives, emphasising *knowing* over knowledge per se (e.g. Blackler, 1995; Brown and Duguid, 2000a; Cook and Brown, 1999; Lave and Wenger, 1991; Newell, Robertson, Scarbrough and Swan, 2002; Orlikowski, 2002).

This approach differs from the prevailing trend in the study of knowledge in many aspects. First, instead of focusing on “knowledge” it concentrates on the central consideration of action – practice – and focuses on the coexistence of learning and action and the context in which this takes place. More importantly, context is not a landscape or a container, but a “territory” to travel through. It is a constituent element and dynamic (Tyre and von Hippel, 1997). Besides, as practice becomes the focal point of attention, the boundaries between learning and knowing become less relevant. Hence, learning is not just described as the result of a cognitive process but as a phenomenon that derives basic properties from its context. In other words, learning is situated (Lave and Wenger, 1991).

Second, they do not share the idea of a clear boundary between knowledge and action or doing, and they lead us to understand knowledge and practice as reciprocally constitutive (Orlikowski, 2002: 250). For them, the belief that individuals think first and then act is not sound. They support this idea drawing on previous contributions. For instance, Gilbert Ryle (1949) discarded the Cartesian approach stating that in order to perform a sensible action we do not have to think first and then act.

*“ ...‘thinking what I am doing’ does not connote ‘both thinking what to do and doing it’. When I do something intelligently, i.e. thinking what I’m doing, I am doing one thing and not two. My performance has a special procedure or manner, not special antecedents.”(p. 32)*

A good tennis player will not tell us how he is going to play in the next match, what steps and strokes he is going to make. However, this does not prevent him from giving

an excellent performance. Can we then state that his actions are not sensible? Indeed, the tennis player is thinking and knowing when he is on the tennis court, running and hitting the ball, in short, when he is acting.

In the same vein of thought, Polanyi (1958), whose main theory is focused on knowing and not knowledge, claimed that in many situations individuals tend to search for rules, in the naïve belief that these will help them understand what conducts their actions. However, he pours cold water on the idea that any real understanding will be gained through such an exercise:

*"... the aim of a skilful performance is achieved by the observance of a set of rules which are not known as such to the person following them.... Rules of art can be useful, but they do not determine the practice of an art; they are maxims, which can serve as a guide to an art only if they can be integrated into the practical knowledge of the art. They cannot replace this knowledge." (1958: 49-50)*

In this statement, Polanyi makes two aspects clear. On one hand, he states the difficulty of identifying these rules, given that the actor may not know exactly how he performs an act. On the other hand, Polanyi considers that although we can state some rules in relation to an action, they constitute nothing more than a guide, a point of reference or a framework, but are different from the practical knowledge actually involved in acting, performing or practising an art. This set of rules is not enough for a skilful performance. Hence, stated rules do not imply heedful or artful action.

Based on these ideas, practice-based theorising includes such approaches as reflective practitioner (Schon, 1983), situated activity and learning (Lave, 1993; Lave and Wenger, 1991); activity theory (Engeström, 1987; Blackler, 1995) and sense-making (Weick, 1995, 2001) amongst others.

Schon (1983) defends the idea that not only does the professional reflect on action, but he also reflects in action while he is performing or acting. Knowing-in-action is linked

to the ability to be aware of what is happening and being able to find the best solution in order to achieve our purpose or goal. Knowing and acting occur at the same time as a consequence of our interaction with a real unique situation. Depending on our ability to interact with the situation, on how aware we are of what is happening and how we respond to it, our performance may or may not be excellent, and our action may or may not be considered sensible.

Based on her anthropological studies, Jean Lave (1993) defends a perspective based on situated activity, stressing the role of contextual issues and claiming that situated activity is closely linked to changes in knowledge and action: in other words, learning. According to Lave, learning is therefore ubiquitous in practice, and she blames the traditional cognitive trend for making a distinction between doing and learning and having destined little attention to studying practice. Lave and Wenger (1991) framed their theory of situated learning and legitimate peripheral participation in line with these ideas.

Other groups of authors, under the umbrella of activity theory (Engeström, 1987), also focus attention on knowing and make the activity or practice their object of study. Blackler (1995) illustrates this idea saying “Rather than studying knowledge as something individuals or organisations supposedly have, activity theory studies knowing as something that they do and analyses the dynamics of the systems through which knowledge is accomplished”. (1995: 1023)

Leading away from a rational perspective, Weick (1979, 1995, 2001) prioritises the role of action. Indeed, the mutually constituted character of knowledge, action and social reality is central to the concept of enactive sense-making. Weick’s practitioner is a *bricoleur* who is ready to improvise and interpret.

So, there is a shift from theories based only on “knowledge” and their taxonomy to theories mainly focused on “knowing” and the study of practice. However, this

practice-based approach pays little or no attention to different types of knowledge or their combination in practice as they are not appreciated as action antecedents.

In an attempt to bridge this gap, Cook and Brown (1999) are two authors who have defended the interplay between knowledge and knowing addressing it as a “Generative Dance”. In the following section the strengths and shortcomings of this model are analysed in depth.

### 1.2.3. Bridging the Gap of Epistemologies

In 1999 there was an important attempt to converge the two main opposing perspectives which prevailed in the knowledge management scenario. Cook and Brown (1999), making a distinction between the “epistemology of possession” and the “epistemology of practice”, defended the interplay between knowledge and knowing in coining the term “Generative Dance”. According to these authors, the former focuses on working with the four categories of knowledge, analysing their properties and characteristics. In contrast, the epistemology of practice is concerned with human action, it is concerned with knowing. The interplay between knowledge, knowing and doing is the origin of the so-called "Generative Dance" (See Figure 1).

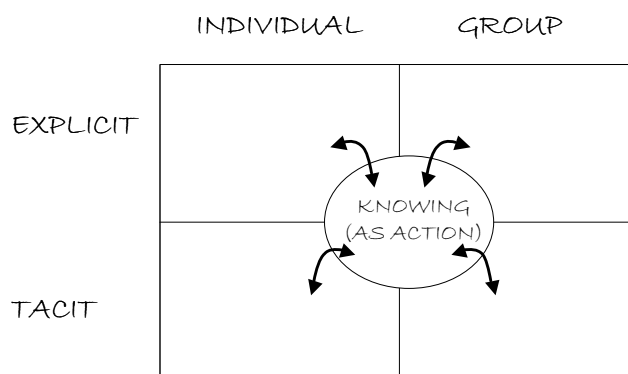


Figure 1 - Cook and Brown's Model (1999)

Cook and Brown (1999), retaining a distinction between types of knowledge, argue that the four types of knowledge are independent and conceptually distinct, though

complementary, as each of these play different roles when individuals act. This consideration leads away from the belief that the dynamics of knowledge in action comprises an array of subsequent knowledge conversions (Nonaka and Takeuchi, 1995; Baumard, 1996; Crossan et al., 1999). This knowledge is something we possess and use in action.

On the other hand, Cook and Brown stress the fact that “knowing” is something different. It is not something we possess but something we do. It is part of action, in their words, “the epistemological dimension of action itself. By “knowing”, we do not mean something that is used in action or something necessary for action, but rather something that is part of action” (1999: 387). In knowing, the different types of knowledge that the individual previously possessed play a role. As a result of this interplay between knowledge and knowing, new knowledge and new ways of knowing, and therefore acting, are created regardless of the type of knowledge involved. These authors coined the term “Generative Dance” to refer to this interplay, which is the source of innovation.

Since publication in 1999, Cook and Brown’s ideas have been cited in many other publications. Their work has been a key reference in order to highlight the importance of “knowing” and the gap existing between knowledge and knowing (e.g. Merali, 2000; Marshall and Brady, 2001; Okhuysen and Eisenhardt, 2002; McNulty, 2002; Marshall and Rollinson, 2004) or to stress the existence of two different schools of thought: one based on knowledge and sustaining the belief that tacit knowledge can be made explicit and the other based on “knowing” which defends the idea that tacit knowledge cannot be made explicit (e.g. Shin et al., 2001; Tsoukas and Vladimirou, 2001; Thomas et al., 2001; Orlikowski, 2002). It has also been a reference for those who were immersed in the discussion of knowledge typologies, their ideas about collective tacit knowledge having been especially relevant (e.g. Castillo, 2002; Tsoukas and Vladimirou, 2001). Others have been more attracted by the idea of “dynamic affordance” (e.g. Bechky, 2003; McNulty, 2002).

Despite all these contributions, some authors have raised questions in relation to their ideas, and one of their main criticisms has been related to the use of the term “tacit”. Cook and Brown make a distinction between tacit and explicit knowledge. However, other authors (e.g. Orlikowski, 2002), drawing on Polanyi’s ideas, defend the idea that this separation does not exist and maintain that tacit is a form of “knowing” instead of knowledge.

Cook and Brown’s theory is a good framework in which to study the interplay between knowledge and knowing or, in other words, between knowledge and action. However, taking this theory as a standpoint, some questions remain unanswered. How are these types of knowledge articulated in practice? Do all types of knowledge influence a certain practice in the same way? How does the bi-directional arrow (the so-called “Generative Dance”) between knowledge and action actually work? Moreover, although Cook and Brown’s theory has been taken as a reference among scholars, there is a lack of data from the empirical field to sustain or expand on the model (for exceptions, King and Ranft, 2001).

On one hand, Cook and Brown highlight the fact that different types of knowledge are combined when we are acting but no more explanation is given about how this combination takes place. The matrix presented in the model (see Figure 1) assumes that each type of knowledge influences practice in the same way and that they have the same importance independently of the idiosyncrasy of the practice. Contingency aspects related to practice and other variables, such as the organisational structure (Lam, 2000), may exert influence on the combination of different types of knowledge in practice.

On the other hand, Cook and Brown defend the idea that while acting, the actor is “knowing”, which explains the bi-directional arrow, but how? What are the knowledge dynamics? How is learning therefore articulated?



### **1.3. RESEARCH PROBLEMS**

In the light of the aforementioned theories, this research project relies on some basic assumptions. First, the study of knowledge cannot be isolated from practice. In practice, there is interplay between “knowing” and knowledge. Taking practice as our standpoint offers new opportunities not only for a theoretical approach but also for the implementation of knowledge initiatives in the organisation.

Second, while acting and knowing, some changes take place in knowledge and actions. This means that knowledge is created at the same time that learning and unlearning take place. Knowledge creation, acting and learning are simultaneous in practice. This fact increases the complexity of the study.

Third, in accordance with the above, some theorists and scholars have highlighted the fact that practice is situated, collective and, therefore, contextually influenced. These properties have an influence on the study of practice and therefore on knowing and knowledge.

Finally, on considering that knowledge and “knowing” are interwoven, the use of Cook and Brown’s model offers us a two-fold opportunity. On one hand, it is a good framework in which to study aspects related to different types of knowledge and, on the other hand, it offers us the opportunity to study action and how different types of knowledge are articulated in practice.

Drawing on Cook and Brown’s model we use a combination of knowledge in practice. We refer to “bundles of knowledge” to the combination of different types of knowledge. Our assumption is that the bundle of knowledge used in practice is not static and its composition may vary due to different variables such as the idiosyncrasy of the practice and/or the organisational structure. This means that depending on the

practice and the organisational form, this bundle can be formed differently and the “Generative Dance” may also be different.

These ideas frame the current research project whose aim is to explore the relationship between knowledge and action. Specifically, drawing on the study of practice as a reference, the challenge of this research project is to shed light on the following issues and questions:

- The relationship between practice and knowledge is still a source of debate – how do we engage in action and its relation with knowledge as we proceed?
- The current “knowing” discourse has fused/embraced knowledge matters and practice in such a way that it does not allow us to explore the different expressions of knowledge linked to practice. “Knowing” comprises so many aspects that this prevents us from studying particular aspects of it. Subsequently, little or no attention has been devoted to knowledge, which has prevented researchers from studying the interaction between different knowledge types and action. What is the role of different types of knowledge in organisations? How are they articulated in practice and what are the key knowledge dynamics in action? Are there key aspects that may help to reconcile both approaches in theoretical and practical ways?
- Understanding the relationship between knowledge and action, the research aims to examine different organisational aspects that may exert an influence on it. For instance, previous works have defended that the organisational structure either hinders or fosters specific types of knowledge within the company (e.g. Lam, 2000).

Pursuing these objectives, this research entails the study of different practitioners performing two different practices in organisations with different structures, which will allow us to understand the relationship between knowledge and action and study whether organisational structure characteristics may have an influence on the articulation of knowledge in practice. The main research phases and methods are explained in the following section.

## **1.4. RESEARCH DESIGN AND METHODS**

### **1.4.1. Research Strategy**

This multiple case study examines knowledge and practice in two different companies. The research design was developed to shed light on the relationship between knowledge and action and the role played by different types of knowledge.

Taking our objectives into account and the fact that the aim of our research is to understand the knowing phenomena, this study is exploratory and framed in qualitative terms. Specifically, we used an interpretative case study from a constructivist perspective.

Case studies seem an appropriate research strategy to follow when the empirical research “investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 1981 in Yin 2003: 13). Indeed, the research took place with real groups of practitioners in their actual professional environments.

On the other hand, the fact of being an instrumental case study is coherent with the study objectives as it aims to provide insight into an issue. Therefore, the case is of secondary interest and it plays a supportive role because it allows us to understand something else (Stake, 1998).

Our research project is focused on inquiring into how we engage in knowing-in-action and how different types of knowledge are articulated in practice taking into account the idiosyncrasy of practice and the different organisational structures. Hence, it constitutes a multiple and instrumental case study because we do not aim to study one organisation in particular but to explore and understand the research topic. The case will play a supportive rather than a principal role.

The research involved a sequence of steps. They encompass: a literary review; interviews with experts; an overall plan for the design of the research; a pilot study; the final selection of the sample; and data collection, analysis and validation.

Although the phases involved in conducting research are usually explained sequentially, we stress that this is an interactive process. This means that data is not first collected and then analysed. On the contrary, data is collected and analysed at the same time. It is therefore cyclical research (Spradley, 1980). In the same way, the outcomes and results of the research were validated during the study not only by the members of the companies under study but also by the academic community with papers being presented at international congresses and academic workshops (See Appendix 1).

## **1.4.2. Overview of the Information Needed**

For the purpose of this research, data from four different areas was required. Table 3 summarises the different sources of evidence<sup>2</sup> used to obtain data from each area.

Data on each of the two organisations was collected through the analysis of written documentation (e.g. administrative documents and previous studies on one of the companies) and archival records (e.g. organisational charts). Interviews with

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<sup>2</sup> These sources of evidence are based on Yin's (2003) definitions and classification.

practitioners and direct observation were also employed, especially for gathering data on organisational culture.

Areas of Information	D	A.R.	P.A.	D.O.	P.O.	I
a. Background information on organisation						
a.1 History and structure	+	++				+
a.2 Culture	+	+		++		+
b. Understanding practice	+	+	+	++		+
c. Role played by different types of knowledge in practice						
c.1 Articulation of explicit documentation		+	+	+	++	+
c.2 Articulation of other expressions of knowledge				++		+
d. Comparing practice of Experts and Novices				++	+	+
<b>LEGEND:</b> Documentation (D); Archival Records (A.R.); Physical Artefacts (P.A.); Direct Observation (D.O.); Participant Observation (P.O.); Interviews (I). ++ Relevant Method						

Table 3 – Areas of Information and Sources

In order to understand practice, direct observation was especially relevant. We followed the practitioners in their daily routine and relevant events in their practice (e.g. working meetings). At the same time, data from informal events and informal conversations with members was also gathered. Administrative documents, archival records on their processes (e.g. process manuals, flowcharts, procedures) and physical artefacts (e.g. printouts of the finished work) were also useful in understanding the elementary information about practice. Finally, interviews with practitioners helped us to go further and understand aspects previously seen in the observation phase.

Data on how different types of knowledge are articulated in practice was collected in different ways. Studying the role of explicit knowledge, participant observation was relevant as the researcher played the role of consultant in the formalisation and documentation of current working processes. Archival records (e.g. procedure),

physical artefacts (e.g. the flowchart as the final output of the documenting process), direct observation and interviews were also employed to gather data on explicit types of knowledge. On the other hand, in order to study how other expressions of knowledge were articulated in practice, direct observation and interviews with practitioners were especially relevant.

Finally, information on experts and novices was collected through individual interviews as well as observation of the daily routine of both groups, which included team meetings.

In general, all the meetings were taped and most of the routine observed. Furthermore, data from direct observation was also collected through field notes and photographs (only in one of the companies in the study). All interviews were also taped.

Participants in the study were guaranteed confidentiality. In fact, at the beginning of the study a short meeting was held with each of them in order to explain the objectives of the study, to a certain extent. Participants were also assured that the recorded material as well as taped meeting would not be publicised, except for academic and research purposes, and that fictitious names would be used. Both researcher and participant signed a document which stated the terms of the collaboration (see Appendix 2).

### **1.4.3. Plan and Methods of Data Collection**

The data collection methods included the following steps:

- Literature Review and First Research Proposal
- Pilot Study
- Selection of Study Sites and Units
- Project Kick-off

- Document and Archival Records Analysis
- Researcher's Journal
- Observation
- Photographs
- Interviews with Practitioners

Each of the above-mentioned steps will be discussed separately in the following sections. Although the Literature Review and the First Research Proposal do not constitute any data collection method, they should be mentioned as they encompass the first stages of the study and influence the data collection process.

#### ***1.4.3.1. Literature Review and First Research Proposal***

The literature review has been a rich and ongoing process of intellectual research. As previously mentioned, the cyclical style of this research has affected the literature review as it has been an ongoing process of the study from beginning to end, playing different roles at different stages.

Initially, it allowed the field of study and research questions to be framed and also gave rise to the first research proposal which was presented and defended in an official examination (DEA) in October 2002. On passing this academic assessment, the tribunal confirmed that the research proposal – including the research methodology – was sufficiently sound for the field analysis to begin.

During the course of the study and while data was being gathered and analysed, literature helped me to understand empirical aspects which had been given little attention in previous phases and to redefine and refine my intellectual framework, paying special attention to the ongoing contributions in the field. Furthermore, recent publications, congresses and teaching on the topic also provided opportunities for this intellectual enhancement.

As previously mentioned the main research areas of interest were: knowledge types, knowing, practice and action. Literature review was mainly performed through systematic research in databases both at ESADE and at Copenhagen Business School. Valuable advice from scholars and experts was also crucial in this phase.

#### ***1.4.3.2. Pilot Study and Pilot Group Observation***

Before focussing on the empirical field, a pilot study was run in December 2002. This pilot research was conducted in order to accomplish a series of objectives: to analyse to what extent the research problem could be studied, as there was a lack of empirical research into the topic; to test the quality of data which could be gathered and to assess the collection methods.

In order to facilitate this stage we looked for an easily-accessible company that had developed a quality system over the last few years. This fact has subsequent consequences. On the one hand, the researcher already knew the company and all of the data was accessible. On the other hand, having a quality system based on current standard systems meant that most of its processes were documented and it offered the opportunity to test the way the working processes had been designed and documented.

At this stage the main aim was to understand the actual practice carried out by practitioners and to understand to what extent process documentation reflected the actual practice. The data collection method involved participant observation in which the researcher played the role of a consultant who helped to document the process, and interviews in which participants were informed that the aim was to study the documenting process.

This phase was important as it provided us with relevant data which had been overlooked in previous phases and helped us to redefine and complete the research proposal and objectives. Data analysis also provided evidence of the need to study



deviant situations which would facilitate the emergence of different expressions of knowledge, and also the fact that practitioners differ in how they carry out their tasks, depending on their level of expertise. As a consequence, studying experts and novices proved to be a new aspect of the research.

### 1.4.3.3. Study Sites and Units

Once the pilot study had been conducted, decisions about study sites and units were taken. First, due to the fact that the company where the pilot study was conducted was so rewarding and interesting in terms of results, it was included in the companies to be studied. It was also decided to follow the structure of an embedded multiple case study (Yin, 2003). Figure 2 explains this design.

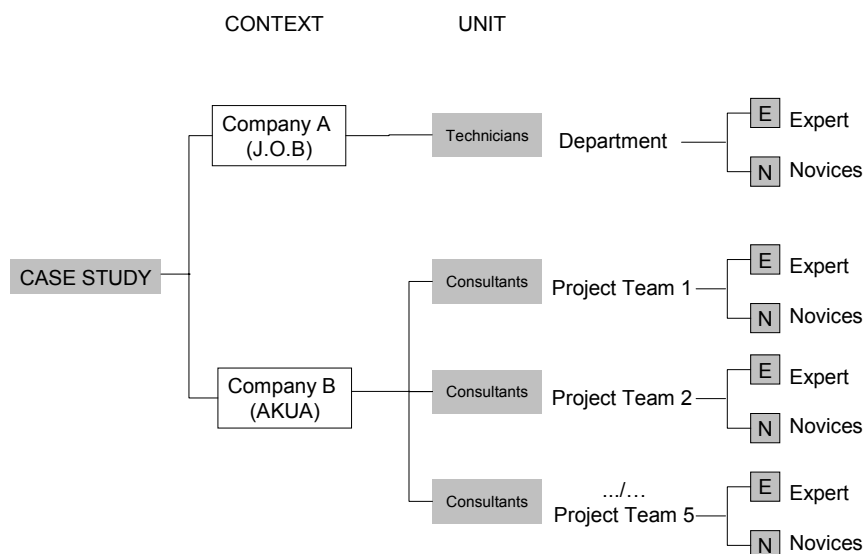


Figure 2 - An Embedded Multiple Case Study Design

Second, it was decided to choose two companies with different contexts. Company A (J.O.B.) was a local job placement organisation and Company B (AKUA) was a global management consultancy firm. These two companies were selected because their organisational structures differ. One is a simple structure with similarities to a J-form

company and the other is a professional bureaucracy (Mintzberg, 1979). Moreover, they provide different types of services. In accordance with their nature, the first company provides a mass service whilst the other provides professional services (e.g. Schmenner, 1986). Therefore, it is a multi-case study where the contexts of the two cases differ. The reasons for choosing these differences are two-fold. First, if under these different circumstances we can still arrive at common conclusions, this will imply the possibility of a certain generalisation (Yin, 2003). Second, to a certain extent we will have the opportunity of studying whether organisational structure and the nature of the service may exert an influence on the research questions.

After a negotiation period with the companies and after the approval of both executive teams, the project started with a “kick-off” meeting which will be explained in further detail in the next section. Individuals were selected taking into account that they should be practitioners and that they should be expert or novices. The requisite of the study was to be able to observe and analyse how these practitioners actually work and, therefore, we focused on the work units used by each company. In the first company, practitioners worked grouped in departments whilst the second company worked on projects. That is why in Company A (J.O.B.) the unit is a department and in Company B (AKUA) the analysis units are five different consulting projects (see Figure 2).

The criterion to differentiate practitioners according to their level of expertise was adopted by the same companies. In J.O.B. the expert practitioners were those who had been working in the company longer. Moreover, they had better performance levels. In AKUA expertise was linked to the hierarchical position of the consultant. The higher they were on the hierarchical ladder, the more expert they were considered to be.

The research involved studying 13 practitioners from J.O.B. and 22 consultants from AKUA.

#### ***1.4.3.4. Project Kick-off***

Once an agreement had been reached with the executive team, a kick-off meeting was held. At this meeting, the research team and the internal member of staff in charge of the study met the practitioners participating in the study.

The purpose of the meeting was to present the most important information concerning the project, to introduce the researcher to all of the participants and to dispel any possible concerns or worries that they might have. In particular, several aspects were tackled during the meeting: project objectives; data gathering; project phases and confidentiality.

The aspects related to data gathering were especially important. As such, the role of the researcher – what was going to be done and precisely when the researcher was going to be present – was explained to the practitioners.

After the kick-off a brief interview with each of the participants was held. The objective was to resolve any queries, test their willingness to participate in the project and obtain information about their tasks or about the current project they were running. Despite the fact that they had been chosen by the company in view of our research requirements, nobody was unwilling to participate in the project, although some of the participants were quite anxious at the beginning. Obtaining an awareness of these feelings was especially important in order to prepare the observation phase.

#### ***1.4.3.5. Document and Archival Records Analysis***

From the beginning of the study and prior to contacting the practitioners, we were provided with documents and archival records which helped us to understand the type of company we were studying and the service(s) provided. At this stage some

archival records, such as organisational charts, process manuals, company values statement, training records and career development programmes, were especially useful.

During the course of the project, especially during the observation phase, practitioners allowed me to have access to or obtain copies of other archival records (e.g. service records, indicators, etc.) and documents which were used and output of their work (e.g. business proposals, project deliveries, and so on). The study of these written artefacts was crucial in understanding practice as they embodied their performance or were tools for developing actual practice. Table 4 summarises some of the most important documents and archival records resorted to by the practitioners.

	<b>J.O.B.</b>	<b>AKUA</b>
<b>Documents</b>	Internal Records (e.g. job offers) Service Agenda	Business Proposals Internal Records Progress Reports (deliveries) Methodological Presentations
<b>Archival Records</b>	Service Records (e.g. number of clients ) Indicators Organisational Charts Process Manual and flowcharts	Internal Processes Manual Corporate Value Statement Competencies Report Internal Training Programme

Table 4 - Documents and Archival Records

In the interview phase some of these written artefacts were used as mediated tools in order to facilitate the reliving of some moments of their practice which were inaccessible to the researcher. A mediated tool is a medium of reflection-after-action. It is a tool used to facilitate the reliving of a past experience. For instance, AKUA restricted our presence in client presentations. In order to overcome this limitation we used the business proposal itself to induce the practitioner to relive the actual moment in which that business proposal was presented to the clients. In a certain way, it is quite similar to a “virtual world” (Schon, 1983) but in this case the practitioner reflects after action.

#### ***1.4.3.6. Researcher's Journal***

As the research project developed, we tried to gather as much information as possible by writing field notes, feelings and ideas (see Appendix 3). This was especially important during the periods which were spent in the companies. This method was very useful for gathering data which could not have been collected in other ways. For instance, many of the notes referred to the way practitioners express themselves, body language, where they sit during a meeting and so on. It was also useful to write down intuitions or ideas which were helpful in forthcoming steps. Finally, this data was also useful to recall situations with the practitioners which facilitated data analysis.

#### ***1.4.3.7. Observation***

One important characteristic of this study is that we shadowed experts and novices during their daily work. The object of analysis was not special problem-solving situations or business crises. We focused on studying the actual practice of practitioners –shadowing. Hence, it was especially relevant for the study to have access to direct observation of practice and it was crucial to be able to “follow the actors” (Latour, 1987, cited by Gherardi, 2000: 219). Indeed, practitioners are not always conscious of what they really do and their explanation of their practice may be quite different to the actual reality. However, the consultancy firm, Company B, gave us limited access to meetings and encounters with clients. These are typical situations of practice and quite characteristic of the consultants’ practice. We tried to solve this situation making the practitioners remember specific meetings with their clients. As previously mentioned, in order to facilitate the reliving of these meetings we resorted to using mediated tools used during the original events.

This phase was especially fruitful and we were able to gather a large amount of data. However, the experience was slightly different in both companies. For instance, due to

prior professional experience, the researcher already knew J.O.B. and its employees. As a consequence, access, entry and first encounters were relatively easy. We were quite familiar with its operations and the 'noise' that could be introduced in observing their practice was relatively low: they easily got used to the researcher's physical presence.



Photograph 1 – A researcher shadowing a practitioner

The observation phase in J.O.B. took place in May 2003. During that month we observed their daily routine. We shadowed practitioners when they were preparing their daily work, interviewing the candidates, introducing data and selecting candidates (see Photograph 1). We also attended group meetings to select candidates, share results and organise work. At the same time, we also paid attention to informal conversations. All this data was gathered in taped recordings, field notes (Researcher's Journal) and photographs.

Due to the fact that the department's daily routine was nearly always the same and the tasks were repeated following a formalised process, the observation phase was carried out in one month. In their scenario, diversity was attributed to the existence of different candidates and different job offers. These aspects related to the nature of their job also facilitated the observation phase, what to observe and how it should be carried out.

On the contrary, the observation phase in AKUA was much more complex and took longer. It started in February 2004 and finished in June 2004. During these months the work of five different teams from five consultancy projects was observed. Due to the

fact that the scope of each project varies and that a practitioner may have overlapping projects, the observation phase was much more complex.

Equally, the duration of a project may last months, and due to company and research time restrictions it was impossible to be present every single moment of the project. As a consequence, we established a “collaborative observation phase” in which the practitioners took on the role of identifying the most important milestones of a project where the researcher’s physical presence would be productive. These key moments comprised initial project meetings, team meetings, supervision sessions, progress meetings and critical or “emergency” situations. As stated earlier, the company restricted our access to client meetings and photographs were not allowed. We tried to overcome these limitations with the use of mediated tools and data was gathered through tape recordings and field notes.

Moreover, the types of projects were different and they did not follow the same courses of action. Depending on the problem to be solved, the clients and the accepted proposal, tasks varied considerably.

The observation phase in AKUA became even more complex due to the fact that it was performed in three different settings: the company headquarters, a local office and at a client’s home. Therefore, diversity in the nature of the tasks, clients, teams and settings made observation a challenge.

Another drawback in comparison with J.O.B. was that the researcher was also either unfamiliar with the company or with the practitioners. At the same time, consultants, who were somewhat reluctant to participate, were also quite anxious about being observed. Taking these last considerations into account, the first encounters were devoted to familiarising ourselves with the context and gaining the practitioners’ trust. Finally, these objectives were accomplished and we shared interesting informal conversations with the practitioners which were very relevant to the study, especially those held after team meetings, lunches or in the smoking areas.

#### ***1.4.3.8. Photographs***

Photo-research methods were deployed here as a means of photographic recording, in this case photographing work activities and tools. In Buchanan's (2001) terms, we resorted to photo-documentation as a way to supplement other kinds of data. This way, photography helped us to capture data that had gone undisclosed in the interviews or which was more difficult to capture through direct observation (e.g. who sits next to whom, etc.).

Moreover, photographs helped us to recall actual situations with practitioners later on. They were crucial in complementing the data obtained through direct observation and in preparing subsequent interviews.

However, due to the fact that we needed company permission, we could only use photographs in the first company, as the second company was unwilling to accept the idea.

#### ***1.4.3.9. Interviews with Practitioners***

During the course of the research, twenty-six interviews were conducted with practitioners. Each of these were taped and transcribed for subsequent codification and on average lasted over an hour and a half.

Given that interviews were conducted after the observation phase, the first objective was to clarify some previously observed and documented aspects in order to obtain a better understanding of their practice. Moreover, the interview aimed to gather more relevant data for the study. Pursuing this last objective, an interview guide was designed after running the first interviews, which were rather exploratory (see Appendix 4).



The interview did not follow a closed structure, but was more like a conversation with the practitioners. It is relevant to mention that at this stage of the project, and after having accompanied the practitioners during many hours of work, they felt quite confident to speak openly. This fact was an advantage in terms of gathering accurate and sincere data from participants. This latter aspect was reinforced by the fact that, once again, they were reminded of the confidential terms under which the study was being carried out.

#### **1.4.4. Plan and Methods for Analysing Data**

Taking into account that the study was exploratory, there was an evolution in analysing the data. From very general and broad analysis and a long list of preliminary codes, we finished with a shorter and definitive list of codes.

To proceed with the analysis we focused on the key themes of the study: understanding their practice, the company and the communalities along with differences between the formalised documentation and the reality among practitioners, especially between experts and novices. After a general reading and analysis of the initial empirical data the first list of preliminary codes was drawn up (see Appendix 5). Through subsequent discussions and analysis of the data with my supervisor we reduced the list to the final Preliminary Codes (See Table 5).

Main Theme	Sub-themes	Categories
1. Organization	1.1 Norms, rules and procedure	
	1.2 Tools	
	1.3 Lay-out	
	1.4 Division of labor	
2. Individual	2.1 Motivation	
	2.2 Previous Knowledge	
3. Activity	3.1 Objective	3.1.1 Gathering Information
		3.1.2 Creating a Relationship (trust)
		3.1.3 Others
	3.2 Mode	3.2.1 Canonical 3.2.2 Noncanonical
4. Knowledge Forms	4.1 Individual Explicit	
	4.2 Individual Tacit	
	4.3 Collective Explicit	
	4.4 Collective Tacit	
5. Knowledge Content	5.1 Object (what)	
	5.2 Process (how-to)	
	5.3 Context	
6. Knowledge Dynamics	6.1 Mode	6.1.1 Formal
		6.1.2 Informal
		6.1.3 Incidental
	6.2 Type (how)	6.2.1 Observation and Imitation
		6.2.2 Try & error
		6.2.3 Interaction – knowledge sharing
	6.3 Learning Situation	6.3.1 Daily routine
		6.3.2 Reflection (after action)
		6.3.3 Deviant situation
6.3.4 Formal Training session		
6.3.5 Life Experience		

*Table 5 - Preliminary Codes*

Initial empirical data was coded and analysed based on the preliminary codes list (see Appendix 6) but finally, the preliminary list evolved into the final list which was more suitable for the study. Table 6 shows a sample of the definitive list of codes (the complete list can be found in Appendix 7).

Main Theme	Sub-themes	Categories
1. Organization	1.1 Organization Structure 1.2 Division of labor 1.3 Hierarchy	
2. Individual	2.1 Motivation 2.2 Previous Knowledge/ Experience 2.3 Personality	
3. Practice	3.1 Purpose 3.2 Mode  3.3 Tasks Characteristics	3.2.1 Canonical 3.2.2 Noncanonical  3.3.1 Diversity 3.3.2 Discrecionalidad/ Judgement 3.3.3 Customization/ Coproduction 3.3.4 Time exerts pressure 3.3.5 Improvisation 3.3.6 Completeness 3.3.7 First / without reference
4. Knowledge	4.1 Ontological Dimension  4.2 Epistemological Dimension  4.3 Content	4.1.1 Individual 4.1.2 Collective 4.1.2.1 Group 4.1.2.2 Distributed  4.2.1 Explicit 4.2.2 Practical / Tacit  4.3.1 Declarative (k-what) 4.3.1.1 General K 4.3.1.2 Specific K 4.3.1.3 Customer company K 4.3.1.4 Project K 4.3.1.5 Methodology / concepts 4.3.1.6 Industrial K  4.3.2 K-how: Procedural (process) 4.3.3 Contextual /systemic/ cultural 4.3.4 K-where (sources) 4.3.5 K-who
5. Learning	5.1 Type (how)	5.1.1 Observation (and Imitation) 5.1.2 Try & error 5.1.3 Interaction – knowledge sharing 5.1.3.1 Colleagues 5.1.3.2 Superiors 5.1.3.3 Customers 5.1.4 Intuition / feeling 5.1.5 Others' experience 5.1.6 By analogy (previous cases) 5.1.7 Moral Judgement 5.1.8 Reading Information / documentation

Table 6 - Sample of Definitive Codes

Data was codified manually (Appendix 8 shows an example of a codified interview) and then codified in a word document in order to facilitate the subsequent analysis (see Appendix 9 and Appendix 10).

Triangulation was used in the analysis phase. Not only did data come from different sources, but more than one researcher also analysed the data.

Once the data had been collected and analysed, two validation workshops with the practitioners were held. One was composed of practitioners who participated in the study and the other of non-participants. The objectives of these meetings were to present the preliminary findings and to check these results with the practitioners.

### **1.4.5. Rationale for Method Selection**

The selection of an appropriate research strategy is a crucial aspect. Denzin and Lincoln (1994:14) consider that "a strategy of inquiry comprises a bundle of skill, assumptions, and practices that researchers employ as they move from their paradigm to the empirical world". This is not a trivial matter and it will affect the use of different data collection methods.

Taking into account that our aim is the understanding of "knowing-in-action" and that, although there are some theoretical works about the theme in the literature, there is a lack of empirical work on it, this research is mainly exploratory and focuses on discovery. By contrast, aspects such as confirmation, measurement and hypothesis testing are far removed from our aims. Subsequently, the use of qualitative methods seems to be suitable for the research purposes. As Denzin and Lincoln (1998:4) remark: "this means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of meanings people bring to them".

Qualitative research is multi-method in focus and, therefore, the idea of the researcher as *bricoleur* (e.g. Denzin and Lincoln, 1998; Lévi-Strauss, 1966) appealed to us in the sense that it offered us the flexibility to use different methods in order to obtain an in-

depth understanding of the phenomena, and to remain open to new discoveries that could arise during the course of the research.

#### **1.4.6. Validity and Reliability**

Within a constructivist paradigm, the meanings of validity and reliability differ from the traditionally accepted meanings. Furthermore, the typical positivist criteria of internal and external validity, reliability, and objectivity are replaced by terms such as credibility, transferability, dependability, and confirmability (Lincoln and Guba, 1985).

Considering these aspects, we went through the study accurately presenting the empirical data and documenting as much as possible. In the same way, the inquiry process is stated throughout the study in order to explain the evolution and report the changes in the research focus and design. This inquiry process is dealt with in depth in the next section.

In order to reinforce that the research entails an in-depth understanding of the research issue, multiple sources of evidence and methods have been used. However, even when multiple methods for data gathering were used, objective reality can never be captured. However, triangulation, or the combination of multiple methods, empirical and researcher's data, is an alternative to validation (Denzin, 1989; Flick, 1992) which "adds rigour, breadth and depth to any investigation" (Denzin, 1989: 4). Moreover, the fact that it is a multi-case study, enhances these aspects.

Although we cannot fully account for systematic bias when collecting data, we tried to reduce its effect, especially the bias which stems from individual interviews. Subsequently, in the interview phase we used as much observational data as possible. Taking into account the interview guidelines and the data from shadowing the individual, this means that we could develop questions related to real, experienced

working situations. Moreover, during these interviews collected data was clarified and previous understandings verified.

Following the analysis two validations workshops were run as previously mentioned. The first of these was addressed to participants of the study and our objective was to present the preliminary findings and results in order to validate them. The other was addressed to non-participants of the research. In this case, besides presenting the preliminary findings and results, our objective was two-fold. On the one hand we wanted to assess whether the results of the study were extensive to the overall participating organisation. On the other hand, some practical recommendations based on the research study were presented. Both groups agreed with the findings and results, and the non-participants considered that the research findings should be taken into account in forthcoming executive committees in order to reflect upon and introduce amendments in their managerial systems.

## **1.5. SIGNIFICANCE OF THE RESEARCH**

The significance of this research can be determined on several levels ranging from its theoretical contributions to the applicability of its findings to different fields. In sum, we could mention five relevant contributions.

- **Understanding the Relationship Between Knowledge and Action**

First, the research provides interesting insights into the relationship of knowledge and action. Until now, and in spite of previous and opposing contributions, in the business and academic world the idea has prevailed that knowledge is applied by the individual, in such a manner that there is a linear and consecutive relationship: first in gaining knowledge and then in applying it.

However, in spite of this majority-held opinion that has influenced the way in which

both organisations as well as educational programmes have been structured, some voices have spoken out to offer new perspectives.

Nevertheless, the scenario is still controversial and there is a lack of empirical work studying practice and knowledge. This research contributes to the understanding of the relationship of both terms: knowledge and action, through extensive and substantial empirical research. The methodology employed has allowed us to present this research study as quite innovative and its results offer new insights into the study of the problem.

- **Bridging Approaches**

Second, most of the studies on “knowing” have overlooked knowledge-related matters. In some cases, these studies have been quite blurred as they deal with “knowing” as an overall object of analysis without examining the different components which play a role in the “knowing” experience.

Starting with practice, this research endeavours to bring together the study of action, and as a result the study of “knowing”, without neglecting to actually examine the role or dynamics of the different types of knowledge in practice. In this way, the study of practice does not confront the study of knowledge and its different types.

- **Empirical Studies about Contextual Influences**

Third, this work covers a need for research which has been expressed by several authors (e.g. Edelman et al., 2004): the need for more empirical studies into contextual influences on the construction of organisational knowledge. Indeed, this research does not consider context as a mere container but as an active protagonist. Its results in relation to this aspect support this role and the influence of contextual aspects on knowledge issues and action.

- **Looking for Empirical Evidence of Accepted Theoretical Models**

In the knowledge management scenario there is a certain lack of empirical work based on generally accepted theories or well sustained models in theoretical terms. This research tests some theoretical assumptions and models. The research is especially relevant in this sense as it looks for empirical evidence to support Cook and Brown's model and Lam's contribution given that their contributions have been widely referred to by various authors.

Similarly, this research work has allowed us to disprove certain theoretical theses given that they have not been supported by the empirical data and that as a result, without having reason to reject the theoretical model completely, this allows greater analysis of their limitations in addition to their reinterpretation.

- **Practical Implications on Managerial and Educational Issues**

Although the primary objective of this thesis was to understand the complex relationship between knowledge and action, its results have practical implications in different fields, especially in the fields of management and education.

For many years both fields have prioritised explicit knowledge over other expressions of knowledge and this has had further consequences. For instance, within organisations, a discourse is being led that champions managing knowledge but without knowing exactly what knowledge to manage: in other words, how to identify the key knowledge in the action. Human resources policies are based mainly on promoting certain knowledge over another, and for that reason the evaluation and development policies pivot on the assumption that "the more explicit knowledge the worker possesses, the better". Company operations based their systems on formalised and standardised processes with the belief that in practice, these practitioners will apply the standard procedure.

This research offers a new perspective to these managerial topics. If the relationship between knowledge and action is better understood, this will lead to it being better



promoted; efforts will then be able to be directed toward managing that key knowledge – whatever type this may be – and to promote this throughout the entire organisation (strategy, operations, human resources policies etc.). In short, until now there has been a certain degree of uniformity in terms of considering what knowledge is key in action and the relationship between both terms: knowledge is precedent to action. This research contributes towards presenting a dynamic and much more flexible scenario given that it breaks with this uniformity and hegemony of explicit knowledge over other forms of knowledge and of the need for this to be a precedent.

As a result of the previously mentioned, the educational system which prepares these professionals is affected. The existing models in universities and business schools have prioritised a professional who gathers as much theoretical knowledge as possible (explicit-individual knowledge) with the aim of the individual being able to apply this knowledge in practice. If the organisational scenario does not reflect this situation and requires other types of knowledge, the educational/training programmes would have to change, as much in "content" as in methodological aspects in order to adapt them to this reality.

## **1.6. THE INQUIRY PROCESS**

As a work of research, this thesis presents several empirical aspects (research questions and objectives), approach (methodology), data, its subsequent analysis and conclusions. However, this thesis does not solely present contents, but rather a complete process: a process of reflection embarked upon by the researcher and on which she has been accompanied by the reality under study, enriched by various contributions from other researchers and colleagues.

This process is of great value because it is in itself a learning process not only on aspects related to research matters but also a learning process on how to carry out research and the role of the researcher.

Although the structure of the thesis is formally presented as a linear process, the reality is that as a process of reflection it is much more complex given that as certain evidence has come to light, this has made the researcher reconsider previously accepted aspects of the research. This way, after "conversing" with the empirical data, with "preliminary" findings and results and with other researchers, this research has been reconfigured and redesigned. It has been a live process and a reflection-in-action.

This section endeavours to offer a brief sample of this process. Given its personal and intimate character, a narrative style has been used.

January, 2001. I walk into my thesis director's office with a copy of the book, "The Knowledge-Creating Company" by Nonaka and Takeuchi, tucked under my arm. "What did you think of it?" he asked me. "Great, I loved it." After patiently listening to my praises on the spiral of knowledge, the importance of tacit knowledge etc., etc., I could see that he was now faintly though enigmatically smiling. When I left his office I was still "a bit irked" over what that smile could have meant but I soon stopped thinking about it to concentrate on the fresh pile of articles that I had to wade my way through.

A month later I went back to the same office. "Now I really don't know what to think", I said to my thesis director. "Let's see, can tacit knowledge or can it not be 'converted'?" Sitting around a low circular table we began a discussion on the possibility of converting different types of knowledge, of the meaning of tacit knowledge and of the possibility of making it explicit. It was an exhilarating winter afternoon in which, apart from coming away more confused than when I went in, my great heroes Nonaka and Takeuchi no longer seemed so great. "Thinking about it", I said to my director, "I don't like Nonaka and Takeuchi's book that much any more". Once again, I saw that smile.

December, 2002. The challenge of revealing knowledge. That was the first

challenge. After a thorough bibliographical analysis, all those authors who defended that thesis had been set on one side and on the other, all those who declared that this was impossible. And so, especially inspired by the work of Polanyi, I set out to explore the relationship between the representation of the process and real practice. To what extent does explicit documentation reflect practice?

As the research advanced and we began to obtain the first empirical results, I was becoming increasingly fascinated by practice and the different types of knowledge. In fact, the practitioners that I had observed had not been "applying" knowledge. It was something more complex.

This is how "practice" gains more importance in the research. The work of Cook and Brown was especially inspiring and offered me a new viewpoint. It was at this point that a change in direction took place. We redesigned the project and began to talk of the relationship between different types of knowledge and action, of "knowing" and bundles of knowledge. It was the spring of 2003.

December, 2003. Following preliminary findings for the field work in the first organisation, we decided that the theoretical model that was being used as a reference had certain limitations. In spite of this, maintaining the theoretical framework and with the analysis of the first case already carried out, we started the study in the second organisation. At this stage, along with the types of knowledge, other aspects were added to the analysis related to the organisational structure, the characteristic of the type of work or practice and the individual dimension of the practitioner as such.

After redesigning, they were worked on in parallel. On the one hand the empirical work was carried out in the second organisation and on the other hand the data from the first case was reread, adding these new elements of analysis (completed in June 2004).

After the preliminary findings for the second case, a new subject emerged that enhanced the research. During the previous phases we had compared the different types of knowledge among experts and novices with the aim of seeing how they evolved through time and to make it easier to identify practical knowledge. However, as the research progressed and due to the results that were obtained, we decided that exploring the subject of expertise offered numerous opportunities since it was closely related to the subjects being dealt with. It was an opportunity that we could not fail to take advantage of.

With the aim of facilitating the reading of this process, which may run the risk of turning into a narrative, the following section presents the formal structure of this thesis which, in spite of its formality, to a certain extent reflects this inquiry process.

## **1.7. STRUCTURE OF THE THESIS**

This thesis begins with an introduction which outlines the theoretical base underpinning the research process. During this process, four research papers have been produced<sup>3</sup> which have been adapted to take the form of chapters in order to achieve integration. The sequence of Chapters 2 to 5 covers the set of research problems as a whole, outlined in this introduction, though each of these deals with a specific topic. However, although they share overlapping aspects, they have been approached from different angles, which allows for a certain degree of re-reading.

Each chapter encompasses the literature background on which it is based, the empirical research, the initial findings and preliminary conclusions. The sequence of chapters faithfully reflects the progression of the inquiry and research process through time. The

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<sup>3</sup> All of these papers have been presented at international conferences. The first and the fourth have already been published and the other two are at different stages of the publication process. See footnote in Chapters 2 to 5 for further details.

thesis finishes with a concluding chapter which presents its main contributions and limitations, and the avenues it opens up for further research.

### **Chapter 1. *Introduction***

This chapter presents the research problems examined in the thesis, a brief description of the theoretical base and the research design and methodology. It is the guideline of the dissertation.

### **Chapter 2. *Of Maps and Territories: The Challenge of Revealing Knowledge***

This chapter explores the relationship between the process and the actual practice. It inquires to what extent explicit documentation reflects practice, and, inversely, to what extent practice is affected by this explicit documentation. Pursuing this objective, the paper presents an empirical study carried out in a public service employment company which is implementing a quality system through the formalisation and codification of their processes.

It argues that even when the practitioners follow an exhaustive and comprehensive process to document practice, its essence cannot be captured. However, flowcharts and explicit process documentation appear to be very useful tools in fostering knowledge-sharing, the creation of collective knowledge and facilitating the integration of newcomers within a group or community. Inversely, practice was affected by this explicit knowledge in different ways. It was especially relevant in the case of newcomers as they resorted to explicit documentation as the guidelines which conduct action.

### **Chapter 3. *Exploring the Dynamics of Knowledge in Action: Comparing Bundles of Knowledge in Job Placement Practice***

Based on previous findings (Chapter 2), this chapter focuses on identifying the combinations of knowledge or bundles of knowledge in job placement practice. The results show evidence that practitioners resort to a host of different expressions of knowledge when acting. Therefore, the prevailing role of explicit knowledge and the need for being a precedent in order to be applied is called into question.

The empirical work also reveals that the bundle of knowledge is not static. It evolves over time and at the same time the prevailing type of knowledge varies depending on the practitioner's level of expertise. Therefore, the results underscore the fact that the relationship between knowledge and action is more dynamic and that both interplay simultaneously. As a further consequence, inspired as we have been by Cook and Brown's model, these findings make us reconsider their model and adumbrate another field of analysis related to "knowing", knowledge and practice: the study of expertise.

#### **Chapter 4. *"Knowing" in the Consulting Practice: Exploring Knowledge, People, Context and Tools in Action***

Drawing on the study of knowing as a reference, this chapter explores how practitioners in an international consultancy firm perform their practice, 'knowing' and 'acting' simultaneously. In this attempt, elements which have a main role when "knowing-in-practice" are identified. It argues that types of knowledge, activities, individuals and context are interwoven at the moment of "knowing-in-practice". However, this relationship is not static.

The empirical work in a multinational consultancy company shows that formal company categorisations (senior/junior), rather than corresponding to differential stocks of formal knowledge, describe different practices as they are constituted through different combinations of knowledge types and orders of relevance.

In addition, it shows that the practice of consultancy and the knowledge developed is shaped heavily by the Human Resources strategy, to the extent that unrecognised

dimensions such as social knowledge become more central than field expertise. As this process is internally unrecognised, formal knowledge management and tools presumably helpful in developing such field expertise are, for the most part, invaluable to practitioners. In addition, progress in the Multinational firm seems to be related to the ability to develop such social knowledge. These findings open up a reflection on the theory of expertise which comprises aspects closely related to knowledge types, knowing, practice and learning.

### **Chapter 5. *Understanding Expertise***

Expertise is a fully developed category within a branch of cognitivism (Sauquet, 2004). Within that tradition, it consists of the acquisition of an external body of knowledge through a variety of cognitive devices. Although this approach was strongly challenged through a situated approach (Lave, 1988) it is still alive in practice as organisations differentiate between experts and novices, seniors and juniors.

Our research shows that formal company categorisations (senior/junior) describe different practices rather than correspond to differential stocks of formal knowledge. This means that even when experts and novices apparently seem to be doing the same job, their actions are different as they are constituted through different combinations of knowledge types and orders of relevance. Our results seem to point toward the fact that the essence of expertise resides in the expert's ability to reframe. He is able to reconstruct practice, whether by reframing his tasks or the overarching context.

### **Chapter 6. *Conclusions***

The concluding chapter points out the main limitations of the research, presents its main contributions and identifies possible topics for further research.





## Chapter 2

# OF MAPS AND TERRITORIES: The Challenge of Revealing Knowledge\*

### 2.1. INTRODUCTION

Since Frederick Winslow Taylor (1911) developed classical scientific management theory, standardisation and explicit documentation to control and reflect how work was done have become the cornerstones of subsequent management theories and practices. Although lately there has been an attempt to get away from some of these classical scientific management principles, its legacy is still present in the contemporary organisation.

Quality Management theory has not been an exception and the legacy of this classical theory has also influenced quality practices to a certain extent. Continuous efforts to make explicit and formalised business processes are basic requirements in the implementation of quality systems such as the EFQM Excellence Model or the new ISO 9001:2000, in Business Process Management (BPM) or in reengineering projects. Process manuals, flowcharts, blueprints and procedures have been commonly

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\* This chapter is an extended version of the published article: Bou E. and Sauquet A. (2004): Reflecting on quality practices through knowledge management theory: Uncovering grey zones and possibilities of process manuals, flowcharts and procedures. *Knowledge Management Research and Practice Journal*, 2(1), pp. 35-47. Two preliminary versions of this paper were presented at the OKLC 2003 Conference in Barcelona and at the QMOD 2003 Conference in Paris.

employed by these quality-oriented organisations as a way to organise and control their work. As Tenner and DeToro (1997: 135) state: *“The flowchart is one of the seven basic quality tools: it transcends language and nationality and is universally understood and appreciated”*.

These tools are the output of documenting processes, which imply making explicit how a given practice/action should be carried out within the framework of a business process. They provide a symbolic representation of all the activities and play a key role in understanding, communicating, analyzing and improving the process (e.g. Melan, 1993; Hunt, 1996). Managers have also resorted to these tools as a way of reducing the need for highly skilled workers with the assumption that if workers follow the instructions they will be able to do a good job even if they do not have a lot of experience (Alvesson and Kärreman, 2001). Consequently, managers exert pressure to ensure that everyone follows the procedure, respecting the rules and avoiding what are more commonly known as “deviations” or “non-conformities”.

However, although the majority of practitioners translate the way the organisation operates into explicit documentation, some indications suggest that these documents do not reflect how the work is in actual fact done (Nelson and Winter, 1982; Suchman, 1987, 1995; Symon et al., 1996). Recent contributions from knowledge management theory have revived these concerns and have put forward serious doubts as to the current role and use of these tools for management purposes.

In this chapter, we examine these issues taking into account the knowledge management contribution. According to this, these problems stem from the theory of the existence of explicit and practical knowledge and the indissolubility of explicit and tacit knowledge. Explicit knowledge is abstract and easily codified into a document. However, process documentation aims to capture practice and this objective is not exempt of difficulties. Thus, we question the extent to which practice can be made explicit, and inversely, to what extent process documentation influences practice.

The possibility of explicating practice and the actual role of the subsequent explicit documentation are quite controversial issues. On the one hand, some authors claim that it is possible to turn practical knowledge into explicit statements (e.g. Nonaka and Takeuchi, 1995; Allee, 1997; Gupta and Govindarajam, 2000; Boisot, 1995; Davenport and Prusak, 1998; Crossan et al., 1999; Probst et al., 2000). On the other hand, other authors make strong claims against that possibility (e.g. Tsoukas, 1996, 2002; Gourlay, 2002; Cook and Brown, 1999; Wenger, 1998; Brown and Duguid, 2000a, 2000b) and additionally some authors have stressed the hostility between the current process approach and the actual practice (Brown and Duguid, 2000a, 2000b) raising some doubts concerning the possibility that this focus may overlook the increasing demand for knowledge in contemporary organisations.

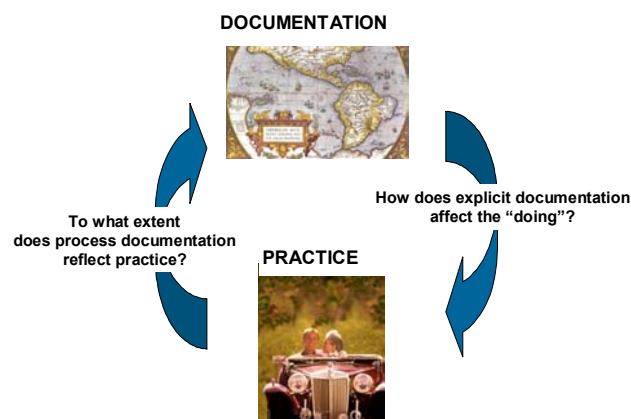


Figure 3 – Maps and Territories

Taking these discrepancies into account, this chapter aims to shed light on these issues. First we will analyse the different contributions in favour and against the possibility of explicating practice in rules, documents and procedures. Then, we will present an empirical study based on an instrumental case study of a public service company involved in formalising its processes as a requirement in implementing a quality system based on the ISO 9001:2000. It is participatory research in which we accompany practitioners in the formalisation process and in performing their practices. Through this empirical study we will inquire to what extent the actual practice is captured in

those process representations and, inversely, to what extent practice is influenced by explicit documentation (see Figure 3).

## **2.2. THE POSSIBILITY OF EXPLICITING PRACTICE: THE CHALLENGE OF REVEALING KNOWLEDGE**

The possibility of expliciting practice has been and still is a controversial issue that has been the central focus of theoretical papers, dissertations and practical models within the knowledge management field. Although most of these discrepancies are of a theoretical nature, they do, nonetheless, have great impact on the practical domain. Indeed, some practical initiatives to manage knowledge have been based on capturing knowledge in these enacted blueprints or templates for action (Alvesson and Kärreman, 2001) or other types of documentation. However, its implications go far beyond just the knowledge management field. Quality Management is one of those fields that can take advantage of this reflection.

According to quality and process management theory, practitioners employ different tools such as blueprints and flowcharts with the aim of these gathering sufficient and key aspects of practice. It is supposed that employees will follow the procedure in order to perform their tasks. These tools are the output of documenting processes. In general terms, we are facing a situation where practitioner's and process knowledge is translated into explicit documentation. After that, this knowledge will then be circulated. Indeed, the crux of the matter is the challenge involved in making explicit how a given practice/action should be carried out within the framework of a business process.

Although the practice of translating the way the organisation operates into explicit documentation is widespread, many authors have stated that these documents do not reflect how work is really done and they have raised doubts as to their influence on

practitioners' work. Reviewing these contributions emerging from different fields such as philosophy and knowledge management is an essential step in understanding the scope and origins of the problem.

Quality and general management theories have shared the belief that if managerial and operational practices are formalised, practitioners will follow the rules and predetermined instructions affecting their performance. However, in 1949 Ryle defended the idea that rules or procedures do not steer human actions. He stressed the fact that people do not think of a set of rules or procedures and then act, but in practice thinking and acting happen at the same time. He also argued that intelligent performance is often the result of this: but criteria, rules, maxims, imperatives or regulative propositions remain unformulated. Therefore, the inexistence of these maxims does not prevent action from happening.

In this vein, Polanyi (1958) claimed that in many situations individuals tend to search for rules, in the naïve belief that these will help them understand what drives their actions. However, he pours cold water on the idea that any real understanding is to be gained through such an exercise:

*"... the aim of a skilful performance is achieved by the observance of a set of rules which are not known as such to the person following them... Rules of art can be useful, but they do not determine the practice of an art; they are maxims, which can serve as a guide to an art only if they can be integrated into the practical knowledge of the art. They cannot replace this knowledge." (1958: pp. 49-50)*

In this statement, Polanyi makes two aspects clear. On the one hand, he states the difficulty of identifying these rules given that the individual may not know exactly how he performs an act. On the other hand, Polanyi considers that although we can state some rules in relation to an action, they constitute nothing more than a guide, a point of reference or a framework but are different from the practical knowledge

actually involved in acting, performing or practicing an art. This set of rules is not enough for a skilful performance. Hence, stated rules do not imply heedful or artful action. Practical knowledge<sup>4</sup> is much more relevant here. These arguments are based on Polanyi's theory of tacit knowing. According to Polanyi, there is an ineffable domain which prevents us from making explicit everything that involves action because of the existence of two kinds of awareness: focal and subsidiary. This type of knowing, which groups together both practical and theoretical knowledge, constitutes what he calls "tacit knowing". As a consequence of this, Polanyi defends the idea that we cannot make a practice explicit because all of the relevant elements cannot be brought together.

Other authors have explicitly tackled the issue of processes and routines (Nelson and Winter, 1982; Suchman, 1987, 1994; Symon et al., 1996) questioning the role of their subsequent formalised documentation:

*"Engineering blueprints, and symbolic design records more generally, do not contain an exhaustive account of the methods involved in the actual exercise of a productive capacity. As a matter of fact, blueprints often are quite gross descriptions of what to do,..., much less provide "how to do it" instructions at the job level. As a matter of logical principle, it seems clear that a symbolic record could not provide an exhaustive account of the methods required for its own interpretation; rather, the use of such records presumes the availability of intelligent interpreters drawing on knowledge not contained in the records themselves."* (Nelson and Winter, 1982: p. 62)

These few lines may illustrate some of our concerns. On the one hand, we assume that in practice we need something more than this "what-to-do" knowledge. On the other hand, having access to this documentation does not guarantee understanding because an interpretation is needed. This implies that process documentation is not so "universally understood" (Tenner and DeToro, 1997) as some authors defend. An

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<sup>4</sup> This practical knowledge is what William James (1955) referred to as "knowledge of acquaintance" and Ryle (1949) described as "know-how".

interpretation is needed and therefore, understanding involves adding reflection and judgement.

In line with these ideas, Brown and Duguid, in their first work on communities of practice (1991), identify two different types of practice: canonical and non-canonical. The former groups together all the formal descriptions of work (e.g. procedures, manuals, job descriptions). The latter refers to the actual practices carried out by the organisation's members. Their discourse on communities of practice is strongly supported by their analysis of a gap between formalised procedures and actual practice.

In subsequent works, Brown and Duguid (2000a, 2000b) look at the differences and tensions between the organisational processes and practice. Their research explores the ways individuals apply formulated rules and procedures to their specific work. They suspect that the focus on process may overlook the increasing demand for knowledge in contemporary organisations, for a number of reasons.

First, they claim that linear processes or charts do not encompass all that goes on within organisations because there are areas in the firm where making sense, interpreting and understanding are crucial and clear inputs and outputs are difficult to identify.

Secondly, these facts highlight tensions between the process demands and practice needs. These tensions are usually caused by conflicts of "meaning" between organisation's "thinkers" (who make and impose the rules of the game), and the people who do the work.

Thirdly, in order to bridge the existing gap between process and practice, practitioners make use of collaboration and improvisation.

Finally, defending the idea of limitations of the process in order to comprise the practice, Brown and Duguid lead us to focus our attention not only on the process but also on the practice because “in the end it is the practices of the people who work in the organisation that brings process to life and indeed, life to process” (2000: 96). In fact, drawing on Orr’s famous case study of Xerox technicians, Brown and Duguid conclude that “their success is in good part a triumph of practice over the limits of process” (2000a: 99).

After this analysis, we find that the roots of these problems stem from the theory of the existence of explicit and practical knowledge. Explicit knowledge is abstract and easily codified into a document. However, process documentation aims to capture practice and this objective is not exempt of difficulties. To what extent can practical knowledge be made explicit? To what extent does process documentation influence practice?

In the current knowledge management literature, authors resort to two main trends to respond to the first question. On the one hand, Nonaka and Takeuchi (1995) state that in order to turn practical knowledge (or, as they put it, tacit knowledge) into explicit knowledge, a considerable effort should be made through a phase of externalisation. For Nonaka and Takeuchi, externalisation is the cornerstone of knowledge creation because it creates new, explicit concepts from tacit knowledge. This is possible through the sequential use of metaphor, analogies and models. Externalisation occurs when concept creation processes take place.

For instance, in their book “The knowledge-creating company”, they cover the development of an automatic home bread-making machine. Nonaka and Takeuchi defend the idea that the practice of bread kneading was articulated and turned into explicit knowledge through externalisation. In the beginning, “no one could explain why” making bread as good as the head baker’s was so difficult. After the externalisation process, the engineers managed to materialise the concept and they made it explicit in a manual.



Therefore, Nonaka and Takeuchi and their defenders (e.g. Allee, 1997; Davenport and Prusak, 1998; Boisot, 1995; Crossan et al., 1999; Gupta and Govindarajam, 2000) agree on the possibility of expliciting practice. They defend the idea of knowledge transformation and some even stress the fact that only when knowledge is explicit is there a competitive advantage for the company (Myers, 1996). Adopting these ideas, some authors, conducting studies on ISO 9000 standards, have defended the idea that ISO documentation extracts tacit knowledge from people in order to produce codified knowledge (e.g. Bénézech, et al., 2001).

On the other hand, Tsoukas (2002) criticises Nonaka and Takeuchi's idea of externalisation, arguing that they did not understand Polanyi's concept of tacitness. He claims that Nonaka and Takeuchi failed to notice the idea of ineffability of tacit knowing and that they simplified the concept as "knowledge-not-yet-articulated". Opposing these ideas, Tsoukas argues that this practical knowledge cannot be "captured" or "translated" but only displayed and manifested in action. New knowledge arises through social interaction. This idea is part of a trend that considers that expliciting practice is impossible (e.g. Tsoukas, 1996, 2002; Gourlay, 2002; Cook and Brown, 1999; Wenger, 1998; Brown and Duguid, 2000a, 2000b).

Taking these discrepancies into account, we aim to shed light on this issue through analysing a case study, which embodies the dilemma of expliciting practice. To what extent is the actual practice captured in those process representations so commonly used in business practices? Are such representations mere fallacies or do they provide practice with a valuable guide?

## 2.3. THE CASE STUDY: DOCUMENTING THE “JOB PLACEMENT PROCESS” AND ITS COMPARISON WITH PRACTICE

The object of our case study is a public employment service company. This company provides various services related with helping people to find a job and at the same time helping local companies to select the most suitable candidates.

In 2002 the executive team decided that they should implement the new ISO 9001:2000, a quality management model which implies, among other aspects, the standardisation and documentation of their processes. We accompanied them throughout this process, trying to answer the following questions: how is a business practice documented? What are the real benefits for the organisation? And to what extent were the practical aspects gathered and codified in the final formal outputs?

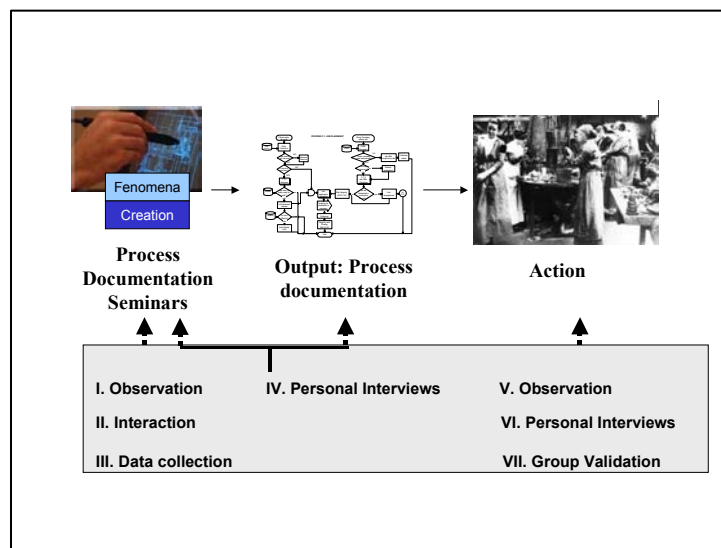


Figure 4 - Stages of the Research

In this endeavour, we divided the study into two main stages (see Figure 4). First, we accompanied the practitioners during the documentation process, and then we observed their actual practice. In the first stage of our research, we adopted a participant observation approach, participating in the process ourselves. As a result,

the researcher is not merely an anonymous observer but plays the role of the consultant who provides the group with the standard methodology in order to formalise the business processes. Four workshops to formalise the process and sub-processes were conducted, recorded, transcribed and analysed. Moreover, we analysed the company's existing documentation and conducted personal interviews with some of the participants involved in the documentation process. In the second stage, we observed the daily work of the practitioners. After observation, personal interviews were conducted to document information on their practice. Data was collected in the form of tape recordings, researcher's journal, analysis of company documentation and photographs.

### **2.3.1. The Setting: The "Job Placement" process and practitioners**

The "Job Placement" process starts when an individual comes to the company to find a job. Then he (or she<sup>5</sup>) is interviewed by specialised "technicians". These "technicians", as they are called within the company, are psychologists or sociologists whose main tasks comprise discovering the candidate's professional and personal profile including his motivations and expectations with a view to identifying employment opportunities. Then they counsel the applicant in order to adjust his requirements to meet the reality of the job market. Afterwards, the applicant's data is entered into the database and he will be considered for forthcoming offers. If the technician considers the individual sufficiently autonomous, he is offered a complementary service (called 'Open Room'<sup>6</sup>), which provides him with the resources and counselling to be able to look for a job on his own (see Figure 5).

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<sup>5</sup> The masculine form will be used throughout to subsume the feminine form.

<sup>6</sup> This service is called "Aula Oberta" –AO– which stands for "Open Room" and indeed it has their own location and facilities. It consists of a room where there are computers, telephones, fax, magazines, newspapers and other resources to help the job-seeker find a job by himself. Besides these facilities, a technician is in charge of counselling individuals in order to help and support them in this job-search process.

Meanwhile, companies looking for employees phone the company and present job offers. Then the selection process begins. Each specialist who has interviewed job-search candidates tries to find the best candidate for the job from among the group of people interviewed with the objective of having one of his proposed candidates accepted in the end. After this selection, each technician “sells” his candidates to another colleague in the department whose main task is going to the company and “selling” each of the candidates. According to the policy and strategy of this company, the final objective is to help unemployed candidates to find a stable job as quickly as possible.

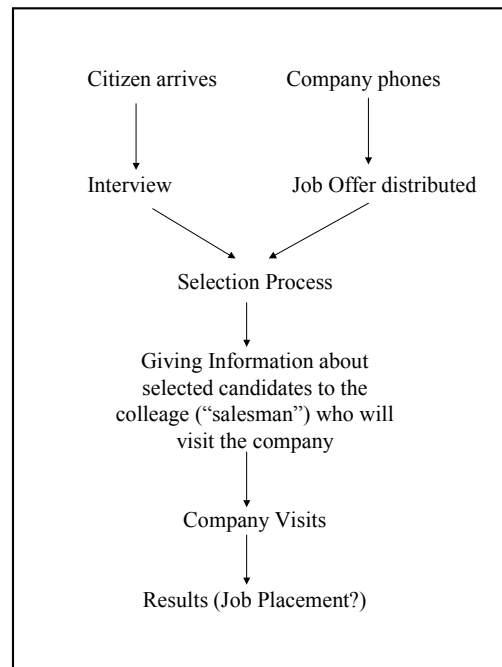


Figure 5 - Job Placement Process Overview

### 2.3.2. First Stage: Constructing the Flowchart – An effort to codify practice

In the first stage of the study, we turned our attention to the process employed by practitioners in order to codify their job placement practice. We participated in this codification process playing a consulting role during the workshops that were conducted and interviewing members of the group.

It is important to highlight that the same practitioners who participated in the process were those who depicted the process flowchart. Each unit that performed any activity in the process was represented by one or two members and the group was formed by old-timers and newcomers. The participation of practitioners is an important aspect given that some authors have criticised how far removed processes are from their actual practice due to the fact that these have been imposed from above by process designers (e.g. Davenport, 1995; Brown and Duguid, 2000a, 2000b). This is not the case. The same practitioners are also in charge of designing, improving, documenting and explicating their own practice.

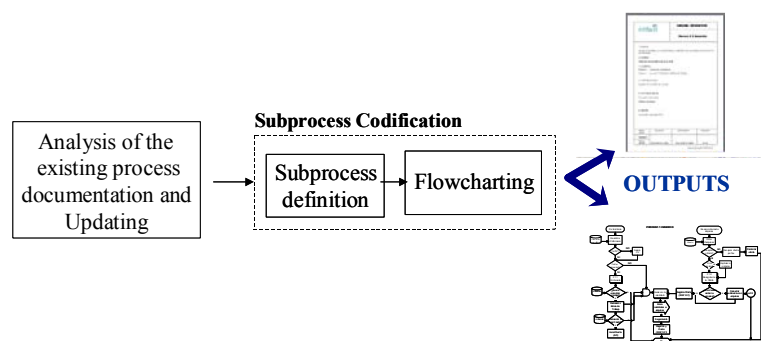


Figure 6 - Steps carried out by the practitioners

During the workshops, the practitioners went through the following steps (see Figure 6). First, they analysed the existing documentation on the process in order to understand to what extent the previous documentation reflected the actual practice. It is important to stress that the previous documentation had been prepared some years prior to our research and by another team of practitioners. After analysis, they updated the documentation (process flowchart) according to the actual *modus operandi*. Afterwards, they identified the sub-process or activities that should be formalised or codified, therefore, producing new flowcharts. A standard methodology was used in developing the new flowcharts. The desired and expected outputs of these codification workshops were the profile and flowchart for each of the processes that had been depicted. These are the most important for the practitioners.

After the participant observation and the subsequent analysis of the workshops, we conducted interviews with three of the members who had taken part in the workshops. The objectives of these interviews were on the one hand to understand what had happened during the codification process and to validate our findings in the analysis. On the other hand, we wanted to look at how these documents had influenced their actual practice. This is one of the reasons why the interviews were conducted two months after the workshops had been held.

### ***2.3.2.1. Vignette 1: Interacting with previous process documentation***

*“At first sight it was the same as we were already doing... In the end you realise it tells you a lot more. It’s much more complex”.*

Before depicting processes and sub-processes, the practitioners started to analyse the previous process documentation. In theory, these flowcharts should have been clear enough so that everybody could understand their meaning by just reading the documentation. In fact, this was not an easy task for the entire group. The existing flowchart did not mean much to the newcomers. They could read the charts, and identify the different activities, which, at first sight, were no different to the ones already being followed.

Viewing the old process flowchart was the trigger that posed many questions concerning activities, content, meaning and sequence. Moreover, the practitioners realised then that the flowchart was much more complicated than it apparently seemed. This is an important fact because as many authors have claimed, the representations are not knowledge as such (e.g. Clancey, 1992) and interpretation and sense-making is required. All those symbols and flowcharts lacked meaning for this group of newcomers and prior to any discussion about possible changes, getting an understanding of the charts was crucial.

*“Let’s see, now. In principle when you take a look at it, when you see any process like this, well... I mean, let’s see. The process that I saw corresponded a little to what you knew you were doing. Then, when you go deeper, you see that there are, however, a lot of subtle differences, right? (...) First you’ve got to know how to read it, (...) Once you’ve got the language worked out then it’s much more useful. For me, this means, I suppose...Well, I don’t really know. I mean, based on previous knowledge, I think this graph is much less effective than it could be. By that I mean, like I say, you don’t know how to read it. Then, thinking about it, you see that it’s really complex, ...”*

Old-timers played a crucial role in bringing about this understanding. After reaching a common understanding through a collective effort, they were ready to identify differences between the actual practice and the old flowchart.

### **2.3.2.2. Vignette 2: Expliciting practice through a flowchart**

Through an array of workshops, the practitioners were able to formalise and depict their processes. In order to develop these flowcharts they followed a process mapping methodology (Galloway, 1994). Table 7 summarises the main steps of the methodology.

- 
- Defining the process (Process Profile):
    - Mission of the process
    - Output
    - Clients and requirements
    - End and beginning
    - Key inputs
  - Identifying activities through brainstorming
  - Making a distinction between activities:
    - That always happen
    - That sometimes happen
  - Building the flowchart
  - Deploying or Cascading the process into sub-processes (increasing the level of detail)
- 

Table 7 – Mapping Methodology

However, although they followed the methodological steps, during the formalisation process they went far beyond the methodology.

For instance, before starting to depict practice, the group unintentionally came around to defining concepts. Most of these discussed concepts were used daily in their practice. However, although everybody used the same words, the meaning was not always the same for all of them. The following excerpt illustrates this situation. In this case the technicians are trying to formalise what they do when they are interviewing unemployed candidates. The consultant has just asked about the main goal of the interview with the unemployed candidate.

*Technician 1: We have to determine the person's occupational profile.*

*Technician 2: What do you mean when you talk about 'occupational profile'? Their abilities?*

*Technician 1: Well, to see what their abilities are, what they want to work as, what know-how they have for that job so we can then go on and see if they match any job offers. And I think the objective here is something along the lines of "I want to be a welder, and my job experience is this..."*

*Technician 2: Simply because that's what they like doing, what motivates them or what they're interested in doing?*

*Technician 1: No, not just because they say they like doing something, because they could quite easily come out with something outlandish... (...)*

*Technician 3: I see it in three parts: one part is the objective, what she's got; after her objective comes what she'd like; and then there are components such as availability, schedule, etc. And all the rest of it basically, I see it like...*



**Technician 4:** *And also her appearance, how she talks...*

**Technician 1:** *The occupational profile, her availability and whatever personal characteristics that we can extract.*

**Technician 2:** *But it's very ambiguous, very general...Like Technician 3 says, there are three very clearly differentiated aspects: one objective focuses on what they've done and who they are, and the other one is what they want, their interests, motivations, values and so forth, as compared to more circumstantial aspects, for instance, whether they have a car or not.*

**Technician 3:** *I was referring to that, because in the past what they'd say went along the lines of "I want to work as an operator" and that was that. That's all they'd tell you. I mean, you have to go into detail and look closely at what that profile means. What kind of jobs etc., and there are three components: their profile, their expectations and personal aspects.*

**Technician 2:** *The thing is, though, I still consider the profile as a very global aspect. Even though there might be three aspects, I still see them as being very broad, I don't think of them as operational. Let's take a closer look at the profile. What do you understand by the term profile?*

The discussion of concepts followed a similar pattern. A referee asked for a definition about how or what they did in practice. In this case the consultant, who plays the role of referee, asks about the mission of the unemployed candidate's interview. Based on his own experience, one of the participants tried to explain this and suddenly a concept discussion had emerged. The technician tried to define the concept. Then the referee, or another member, looked for a contradiction or an objection, making the practitioner redefine it, taking into account the last considered aspect. Sometimes, other colleagues

added more comments to the definition or explanation, as though they were involved in a collective task.

In the previous example, it was another colleague who asked about the meaning of “professional profile”, which someone else had used. After answering the question, other members went on defining it in greater detail. During the course of the conversation, the referee or another colleague may add other counterarguments based on the company’s background (in the case of the referee or an old-timer) or based on own experience (in the case of another colleague).

Following this unconscious pattern, the group continued to define the concept until they reached a point of consensus. At that moment, the referee introduced another question and the process was repeated.

In the following excerpt, the consultant is inquiring about the mission of a service. The pattern is quite similar: a question is asked, there is a first answer and another question arises. The answers can bring about several contradictions. The chain of questions, answers and counterarguments ends when the group reaches a consensus. The referee is usually the person who identifies the formal consensus and asks for the formal agreement of the group.

*Technician 1: I’ve already had a word with Ana about that, and I think it’s where they provide resources... including materials and personnel.*

*Consultant: When you say that they provide the personnel resources, what does that make you think of?*

*Technician 1: Somebody who’s there to help orient clients –*

*Consultant: To orient them in terms of what?*

**Technician 1:** *With their job-search. (...) I don't know, I suppose to tailor the job-search to meet their needs.*

**Consultant:** *OK, right. Especially, and if I'm wrong on this please correct me, as they come to you and your job is to advise them on the job-search process, about the entire process, whether it's related to CVs or sending applications or what happens after the interview, and so on, right?*

**Technician 1:** *Yes, ...*

**Technician 2:** *I'd agree with her. The mission of the Open Room (AO), and her own mission as a technician, is to orient in terms of the techniques as well as the job-search channels to be used...and more than perhaps just techniques and tools. In the end, you have to teach people how to use Word or how to use the Internet. And that's fine, but it shouldn't be the basis of your work, though it should be useful to them so they can go on and do a better job-search. Don't you think?*

**Technician 3:** *In any case, there's a bit of a contradiction regarding the criteria we've been talking about because those who come to the AO – not in every case although definitely the vast majority of cases – already know how to use these tools. I mean, they come to us and we orient them...but we don't teach them as such...and there's a bit of ... (...)*

**Technician 2:** *Ok, it might be a good idea to start by mentioning the criteria.*

*(The discussion goes on.)*

**Consultant:** *Getting back to the subject...what you've said about the mission – and correct me if I'm wrong here – is that it's about facilitating the candidate's job-search. It's up to them to do the search, but we make the search easier, through making resources available such as customised advice and counselling, for instance. Would we*

*be something like this? (He gets up and moves across to the blackboard). What's the point of this service? Let's say, to facilitate the job-search, right? To facilitate means that we don't actually do the looking, but that we make the task easier, we give job applicants a hand to find work – and here now we're saying that it's up to the candidate: with us, for example, giving them the resources that they need along with personalised job-search counselling.*

At the end of the process, the final definitions might not be the “most appropriate” in a technical or theoretical sense but that was not a relevant aspect for the group. They were looking for final definitions that made sense in their practical context and which everybody shared. In the following example, the group reflects on the meaning of “family-run business”. Although the consultant presented the formal definition, they did not use it. They adapted the term to their own context.

**Consultant:** *You mentioned, for example, that it could be a family-run business or something like that... (The technicians agree, nodding their heads)...I suppose you talked about the number of workers as well, – more or less – right? And some family businesses have a lot of workers. Freixenet is a family business and has a large workforce. (...)*

**Technician 1:** *Yes, but we should clarify what we understand by family-run, because if Freixenet is a family-run business...then the vast majority of companies would be as well.*

**Consultant:** *Family-run in principle means that in terms of ownership, the company is in the hands of the family.*

**Technician 2:** *No, that's not what it means for us. We see it as a company with about a workforce of four.*

**Technician 1:** *Exactly*

*Technician 3: There could be non-family workers as well, but there would be few of them. It's more a question of family involvement.*

*Technician 1: And you know that it's a very close-knit community and that they'll probably choose the person they're going to select based on personal characteristics more than on what he or she actually knows. I mean, other candidates might be more suitable for the job in terms of experience or qualifications, but they might also have a strong personality, or something like that, and that could knock them out of the running. Those are some of the aspects to be taken into consideration.*

During the course of the session, metaphors, war stories from the past and an outstanding number of practical examples were employed. Metaphors were mainly used to transmit and communicate situations. Somehow, the participants resorted to using metaphor to help the whole group “visualise” a current scenario or even a situation from the past, bringing together many aspects that were often difficult to explain in themselves. As a practitioner commented during the interview: “*metaphor captures an image perfectly, it's like a photograph*”.

*“Of course, it's all about motivation. In theory they're sitting an exam...they feel like... you're...well, that...he comes wearing his best suit, but when it comes down to doing the job, things get done differently in practice.”*

In this excerpt, the technician compares the interview to an “exam”, noting down difficulties that the technicians have in identifying the extent to which job applicants are telling the truth, as they come to the interview wearing their “best suit”. This means that people looking for a job try to make a good impression on the technicians though, in reality, these impressions may not be true.

Stories from the past were explained mainly to avoid previous errors or to compare the past with current practices. The person who made use of this tool most of all was the most veteran technician and he did so in order to pass on his knowledge to the

newcomers, along with the company history, and, at the same time, he did this for legitimating purposes. As he said: *“I suppose for me, its a need to see all the work that’s been done and that it made a lot of sense for us to carry on doing it.”* This idea had also been reinforced earlier when he was asked about his role during the codification process.

*“And a sensation that, in a certain respect, I was right in saying “I know what I’m talking about here and, as a result, I can give my opinion on whatever was being done”, with ease, having fun..., I wouldn’t say having a good time exactly, but enjoying those sessions.”*

Although the mapping methodology considers that the practitioners can easily explain what and how they perform their activities, we witnessed the difficulties that these practitioners had in trying to describe their daily actions. Pauses, faltering speech and statements that they were unable to fully express this in words were common to all of the sessions. The way they partially resolved this situation was by sharing personal experiences and even by reproducing actual dialogues they had had with their clients (job applicants and companies) in their daily client encounters. Apparently, these courses of action allowed them to transport practice. They contextualised the daily situations as though they were part of a simulation exercise so that, by the end, the group was ready to make an abstract conclusion of how they worked. The following excerpt, where one of the technicians was trying to explain how he counselled a client during the job-search process, illustrates this difficulty and the use of conceptualised examples reproduced in great detail (underlined text) in order to overcome the difficulty:

(Referee): *To counsel them about what?*

(Technician): *About the job-search process. Some people, for instance, don’t know how to look through a newspaper. They start looking and the only thing they really do is turn the pages. And they say to me: “The thing is, I don’t see anything”. So you sit down with them and start telling them: “Ok, you have to look, you have to focus on what you want to find”. And then, you start reading*

*through the job ads one by one and you explain to them the kind of structure that an ad should follow. You have to explain to them: “Look, this is a company in this area that’s looking for a person to clean”, or whatever. But perhaps that job has a lot of different names and the person doesn’t know them all, right? And for instance, reading through the paper with them, allows you to explain that both names mean the same and: “You can work here as well as there”. It’s a bit like that. Afterwards it’s a question of practice and in the end people are able to pick out one or two job ads that they wouldn’t have been able to recognise otherwise. That’s an example of newspapers but, for instance, some people come for a job interview and they say: “Well, yesterday they asked me how much money I’d like to earn”, for instance. So, then I tell them: “Well, you should always say the annual net amount and be flexible to negotiate. Ok? Don’t mention an exact amount because everything should be negotiated”. It’s a bit like that. I don’t know... I suppose it’s a bit like matching up the job search to market needs.*

Intuition was also present when they had difficulties explaining practice with words. For instance, they used statements such as: “you see it”; “you can’t guess it”; “you read between the lines” or “I don’t know how, but you just know”. Moreover, even when they had data as indicators, the newcomers did not rely on them or at least they did not use them. They relied more on their perceptions coming from practice.

Although they considered the general criteria in order to go on cascading the process in further detail, the practitioners came to the conclusion that in some cases they could not specify the procedure in greater detail, for a variety of reasons. In the first place, it was impossible to detail the procedure fully because each situation was different. For instance, during the interview or during the hiring company’s phone call, they might come across many different types of people and face different situations. The process should be flexible enough to let them give an answer to their clients’ requirements and they decided not to detail the activities any further. As they said, “it would be non-operational and impossible to try to depict all the possible real situations”.

Secondly, they also agreed that in practice they did more things than those depicted in the process flowchart (see Figure 7) but they stated the impossibility of explaining this in words. For instance, when they were conducting an interview, apart from gathering information and counselling, they managed to discover if the job applicant was fully understanding them or not; to keep them interested in the dialogue; to discover to what extent that person was really interested in finding a job, and so on. However, it was impossible for them to describe how these aspects were accomplished.

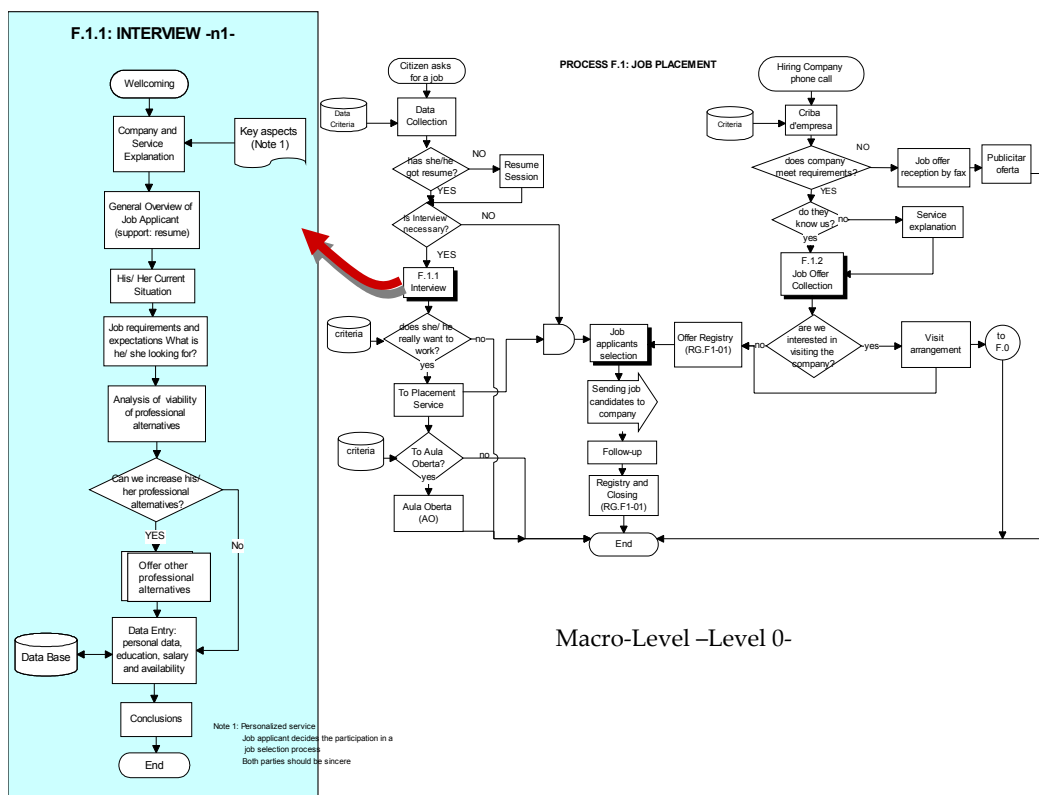


Figure 7 - Cascading Sub-processes: "Interview" Flowchart

In general, the practitioners who had participated in the codification process shared the idea that the flowcharts were useful but not enough to carry out their practice. The following excerpt from an interview with one of the practitioners illustrates this idea:

*Researcher:* And to what extent do you think these diagrams reflect what you are really doing?



**Practitioner 1:** Well, it's a simplification, it's not about what we do, it's a simplification that, as I say, is useful as well as operational. It's true that at times you can ...how should I put it... if you have doubts...well, it's a bit like the Constitution, I mean, it's like having four basics that you use as a guide, right? And from there, well, the laws are put together one day at a time based on the Constitution. In other words, we set about forming the legal system, which is what really serves society, right? I don't know if I've made myself clear.

This idea was reinforced when we inquired about the role of the flowchart when a newcomer joins the company. The question was raised in order to discover whether or not having all this written documentation made available to them would enable a new colleague to do the job. These were some of the practitioners' ideas related to this issue:

**Researcher:** Do you think that if, for example, a new colleague joined the department, and this person was going to carry out interviews, and we said, for instance: "Fine, we've got this process and here there's an activity, which is the interview, and these are the details of what we do during an interview." Would that person be able to carry out the interview?

**Practitioner 1:** No.

**Researcher:** No?

**Practitioner 1:** No. They'd need the more qualitative part. And by this I mean they'd need... This is what I needed, you know, the more technical part on criteria and stuff like that, and then they'd also need to listen in on some sessions, in my opinion. That's really important. Without the two things, there's no...

**Researcher:** Why?...I mean, what is it that you get from that part, from listening in on interviews, that isn't reflected in the diagram?

**Practitioner 1:** The chaos.

**Researcher:** The chaos?

**Practitioner 1:** No, well yes...I mean, obviously, let's see... the day-to-day stuff, the situations. I mean everybody's different and sometimes if you adapt to a structured process, you get nothing out of it, you know what I mean? The interview doesn't give

*the results you were hoping for and you don't get any information, you don't know how to tackle it, right? I mean, well, like I say, they're like two tools: one is the technical part or the structured part and the other is the ability to be able to adapt, captivate the interviewee a little, the other part is more qualitative, more about knowing the person. There's two parts to it.*

(On the same issue this is practitioner 2's opinion:)

**Practitioner 2:** *No, it's just as necessary to have it diagrammed as it is to have the practice.*

**Researcher:** *Couldn't everything that you get from practice be included here?*

**Practitioner 2:** *In my opinion, there are some things that are more subjective, things that you can't put down on paper.*

**Researcher:** *For example?*

**Practitioner 2:** *Well, for starters, like getting the attention of that person, getting them motivated, drawing information out of them, getting them to stick to the point: (...) Well, I think I manage to carry out the interview without losing anybody's attention in the process, even if I am entering data into the computer. I don't think you can reflect that in a handbook or a manual.*

According to the practitioners, the conclusion was the same: flowcharts reflected practice but they were not practice as such. Something more was needed to carry it out.

### **2.3.2.3. The Role of the Flowchart: Then, what is it for?**

Despite these shortcomings, they agreed that defining the major steps had helped them to know what they were looking for in each client encounter and, on the whole, newcomers were happy with the sessions because now they knew what they had to do. They considered that listening to their colleagues had helped them to know how and what to ask in order to get the required information. As one of the practitioners said during the interview:

**Researcher:** *The fact is that here we are talking about our objective of trying to diagram process, but what did you think about it in general? What's your opinion on it?*

**Practitioner 1:** *Well, I like it because what it helps you with is sorting out your ideas and making yourself more explicit, I suppose... Things that you say or do but aren't really aware that you're doing them. Just by sorting them out, specifying them, this can help you become more aware of what it is you do every day and put things in order. That's one side of it. The other side is that it lets you share and streamline criteria. That's a good thing as well, because if you don't do that, things could get put off and you usually see that this has to be sorted out and specified later on anyway.*

**Researcher:** (...) *What have you learnt from this?*

**Practitioner 1:** *What have I learnt? I learned something very important in the sessions: sharing our work. This is something that I think should always be done, but we don't do it because we often don't have the time. And things like this are a useful excuse to get all of us to do it, and besides it let's us see different points of view and different ways of doing things, right? And in my opinion that's the most important thing of all, I mean it's like knowing how to behave or act during the interviews that your colleagues are leading, because by sitting in on their interview you can learn a lot, can't you? And that's what this was all about I suppose – on the one hand. And on the other hand, it's also really helped me to reach a consensus on criteria, otherwise... well, if you don't... of course, what I remember most of all was the conversation we had about the Open Room, everybody had their own criterion, and they were all more or less the same, but I think there should be a common policy there, don't you think? Because that's an important issue for (...), right? To somehow justify it, right? And well, ...*

**Researcher:** *And do you think you now give better interviews than you used to?*

**Practitioner 1:** *Yes.*

**Researcher:** *Why is that? I mean, you now have the part on interviews for example, which we didn't have before. Do you think that this will influence you now, and enable you to conduct better interviews??*

***Practitioner 1:** Yes. But, I suppose I also see it in terms of personal training. I mean...because one day I was sitting in on interviews and the next day I was thrown in at the deep end. Doing interviews is often a question of common sense or based on previous training you might have, perhaps from previously working as an interviewer elsewhere. The thing is, this common sense sometimes needs a bit of propping up with methodology or some sort of criteria. That has to be learned and I don't think that's what we were doing here.*

In the above excerpt, the practitioner explains that the fact of compiling and having access to the explicit information about practice had helped him to carry out his practice better than before. Practice and performance had been affected somehow.

According to one old-timer, the codification process was especially useful for the newcomers. Indeed, some of the newcomers had previously asked the old-timers if there was any written material.

***Researcher:** Has this helped you when it comes down to working?*

***Practitioner 2:** If you're referring to the material as it is now, I think it's being here that's helped us most of all. What's really helped is getting hands-on experience day after day and seeing each of the processes that we've all worked on together to get down on paper. In that sense, I think so. And besides, it was at a time when there were a lot of very green colleagues among us, people who'd just joined us. They hadn't really gotten to grips with the processes yet; I think it's been a great way of getting familiar with the entire system in a very short time. Why? Because we were being asked to make an extra effort in learning about the whole process and getting it down on paper. It was one of the questions asked, "Isn't this written down anywhere?" or "And now what should I do?" or "If that person had come from Social Services, what should I do?" I remember Xavier asking for it in writing. (...) That helped us, it helped them as well, to intervene and be able to do it.*

**Researcher:** *And after reaching these results, in the day to day, does it have an impact or do you take a look at it from time to time or...what will it be used for?*

**Practitioner 2:** *Not yet, no. I mean, we're not going to look at the process. I don't know it that's because we still have it fresh in our minds or because we've become complacent...I mean "here it is, we know how it should be done". If we need to go over something at some point, we have all the information right there. But if you're asking me "do you use it, do you ever take a look at it?", I think the answer has to be no.*

**Researcher:** *But, for example, are there still doubts? People used to ask "Peter, what should I do with this?...And if this comes up?" Does that still happen?*

**Practitioner 2:** *No. I'd say there are still a few doubts in specific cases, in practical cases: specific doubts that we might come up against and say something like "And now I don't know what to do!" But I think there aren't that many doubts in terms of the process, in terms of what normally has to be done. Instead, there could be very specific cases, like for example (...) when we ask "What do we do in these cases?" Cases where we're calling people up and then there's no response from the companies. Well, we'll deal with that when it happens. But these are one-off cases that we're perhaps seeing now as part of all this. These are not process doubts, they're dealing with specific situations about how to resolve a specific issue.*

In the above excerpt taken from the interview with one of the old-timers, we should stress two aspects. On the one hand, the codification process, or in other words, the fact that many newcomers participated in it, helped them a lot. For instance, while observing the codification process, we realised that prior to this session one of the newcomers had only been following the job offer form (standardised template) when he was gathering information on the job offer, which contained only technical data on the company and job requirements (see excerpt below). During the construction of the flowchart, other practitioners stressed the importance of understanding the organisational culture and other crucial subjective impressions of the company that were not explicitly formulated in the standard records. The newcomer had been unaware of these aspects until that moment. Afterwards, he knew that the meaning

and scope of that activity – collecting information on the job offer – was broader and that he should ask more questions in order to inquire about other aspects of importance in subsequent selection processes. However, the questions that were to be used in inquiring into these aspects remained unformulated.

*Consultant:* You also deal with job offers, don't you? (Yes, yes). And you do too, don't you?

*Newcomer:* Yes, yes. Well, I took my first one the other day. And no, no. I mean I basically run through it quite fast, following what's written down on the form...and that's about all. But that's alright, isn't it? I mean to get an idea about what else I can ask... (laughter).

On the other hand, the above excerpt from an interview with an old-timer turns our attention to the fact that after constructing these diagrams and procedures, practitioners do not resort to them in order to see how the process flows. They already know the answer to this. The only questions posed are related to specific doubts regarding definite practice situations.

### **2.3.3. Second Stage: Observing the Actual Practice of “Job Placement”**

After having studied how the practitioners had codified their practice and having inquired about the role of these explicit elements in practice, we decided to observe practice in order to study and test some ideas the practitioners had mentioned during the interviews.

Although the technicians share common tools and flowcharts where all the activities and their sequence are described (see photographs 2 and 3), data analysis has revealed that the actual practice does not always follow the same procedure. In this section we

analyse a sub-process of the Job Placement process – The Interview with the Job Applicant – studying the gap between the formalised procedure and actual practice.



Photograph 2 - The communication panel with all corporate information, flowcharts and procedures of the process.



Photograph 3 - Detail of the communication panel.

In the analysis of the interview, practitioners do not only gather information on the interviewee and carry out the activities identified in the flowchart. Their course of action is different to the formalised one. This gap can be explained from several perspectives.

One of the reasons is that the company is committed to providing a personalised service though practitioners have no information on the interviewee in advance. Therefore, the practitioner should be ready to improvise. This complex and uncertain aspect of the practice could be enough to explain why interviews vary. However, it is not the only cause.

Our findings seem to point to the fact that their practice involves many other aspects than the ones considered by the formalised process. Table 8 summarises the main findings.

<b>Formalised Process</b>	<b>Activities</b>	<b>Practitioners</b>
1. Welcome 2. Service Explanation	Gaining trust and credibility	Identifying the job applicant as the expert  Turning the monitor allowing the interviewee to see what is being written  Constantly maintaining a listening attitude  Personalising the system  Using first names
3. Knowing the candidate  4. General job situation  5. Client's job expectations	Gathering Information	Aware of interviewee's reaction / what goes "unsaid"  Asking only for the key variables he considers relevant  Asking about detailed job tasks  Concerned about "detecting" lies
	Maintaining interviewee's attention and assuring understanding	Adapts discourse  Avoids silence  Uses attention-holding words  Makes abstract aspects tangible  Maintains eye contact
6. Judging possibilities and if possible increasing job opportunities	Judging professional profile and giving response	Capturing incoherent aspects
7. Stating the conclusions following the interview	Looking for the interviewee's commitment	Develop "a test" which proves his commitment.

Table 8 – Interviewing Job Applicants

Explicit and standard procedures are used in practice; especially by the newcomers who follow the formalised process as a way to perform their practice. However, even when practitioners resort to explicit and standard procedures, they rely on their feelings, hunches and intuitions. They have to be ready to "read" the "unsaid", to perceive feelings. They resort to this type of knowledge because their practice entails aspects that are not contemplated in the explicit documentation. Their practice is much more complex. Besides gathering data, filling in the forms and trying to maintain



accuracy and technical aspects, the practitioner should be ready to get a “picture”, visualise the interviewee and remember him – the person and his background. He should gain his trust and get his commitment.

## **2.4. DISCUSSION**

This empirical data allows us to analyse how practice is documented, its usefulness and difficulties and to what extent the formal documentation of the process gathers the actual practice. In this section, we present some of the analysis of this empirical work.

### **2.4.1. The Documentation Process: Is it “just” about depicting activities?**

In the course of the documentation process, all the goals and objectives according to the process management theory were met. The practitioners followed the methodology and analysed the different characteristics of the “Job Placement” process. They identified its different activities, their flow and interfaces. The final output was the process profile and a graphic representation where outputs and activities were related, departments identified and a process hierarchy structure established. Up to this point we are seeing nothing different to the traditional operations management approach (e.g. Hunt, 1996).

However, although they follow the methodological steps, the field data shows evidence that during the formalisation process the practitioners employed several other tools that were not predetermined by the methodology. Far from disturbing the development of the methodology, the new elements enriched the standard methodology. The following table summarises these findings.

<i>Mapping Methodology</i>	<i>What Else Happened</i>
<ul style="list-style-type: none"> <li>• Defining the process (Process Profile):               <ul style="list-style-type: none"> <li>○ Mission of the process</li> <li>○ Output</li> <li>○ Clients and requirements</li> <li>○ Beginning and end</li> <li>○ Key inputs</li> </ul> </li> <li>• Identifying activities</li> <li>• Making a distinction between activities:               <ul style="list-style-type: none"> <li>○ That always happen</li> <li>○ That sometimes happen</li> </ul> </li> <li>• Building the flowchart</li> <li>• Deploying / Cascading the process into sub-processes (increasing the level of detail)</li> </ul>	<ul style="list-style-type: none"> <li>• Productive Dialogue: arguments, counterarguments and consensus</li> <li>• Metaphors and war stories</li> <li>• Explaining how work was done:               <ul style="list-style-type: none"> <li>○ Contextualisation</li> <li>○ Reproduction of actual dialogues</li> </ul> </li> <li>• Decision not to go on detailing based on:               <ul style="list-style-type: none"> <li>○ Complexity and uncertainty</li> <li>○ Unawareness</li> <li>○ Situated practice</li> <li>○ Inexpressible dimension</li> </ul> </li> </ul>

Table 9 – Mapping Methodology Versus What Else Happened

Before starting to diagram their practices, the group had to understand the knowledge embodied in the previous flowchart. This fact supports the findings of some authors who have claimed that representations are not knowledge per se (e.g. Clancey, 1992) and that an interpretation is needed. Therefore, explicit documentation is not such an objective as some scholars have defended.

During the process of expliciting and depicting their practice, the practitioners were immersed in a productive group dynamic. Through conversation, a dialogue was established among the colleagues participating in the “Job Placement” process and this in turn lead to the drafting of the flowcharts<sup>7</sup>.

<sup>7</sup> In reference to such conversations, Bamberger and Schon’s paper “Learning as Reflective Conversations with Materials” (1991) is especially interesting.

The dialogue sustained the three main requirements for being productive (Bohm, 1990). First, the participants were considered as “colleagues” even though the head of department was also taking part in the session. Second, a referee, whose role was played by the consultant, conducted the dialogue. And, finally, they somehow succeeded in suspending their beliefs in the sense that they communicated their ideas freely, without the need to determine who was “right”.

In the case study we show evidence that the group unintentionally came to defining concepts which were used daily by the practitioners. The fact was that although everybody used the same words, the meaning was not the same for all of them. This supports the fact that common sense meaning of words involves, among other aspects, explicit, implicit knowledge and tacit knowing connotations (Bonet et al., 2002).

The discussion of concepts followed a similar pattern: a question was asked, there was an initial answer and another question or counterargument arose from this. The pattern of question, answer and counterarguments ended as soon as the group reached a consensus. The referee was usually the one who identified the formal consensus and asked for the formal agreement of the group. Throughout this entire process, some aspects of the Socratic Method can be identified. In general it constituted a sense-making phase in which the practitioners assigned meaning and where learning and unlearning played a key role without being the explicit objective of the session. The final definitions might not be the “most appropriate” in a technical or theoretical sense, but that was not relevant for the group. They looked for final definitions that made sense in their practical context and ones which everybody shared.

By the end of the workshops the goals had been achieved: the processes had been documented. The expected outputs – the process profile and the flowchart – had been developed. However, the documenting session accomplished many other unexpected goals. According to the practitioners involved in the process documentation, one of its main contributions was to enable them to share practical knowledge. Hence, we are facing a knowledge-sharing situation where a common understanding of practice was

developed through shared meanings that were the result of concept discussions with others.

This knowledge-sharing situation led the group to identify tensions within the process and to reflect on their actual practice. The results of this were a better understanding of their practice, a re-conceptualisation, a new *modus operandi*, the use of new tools (new questions to make the assessment were employed and changes in some templates were considered) and a new flowchart. Therefore, we are not facing a passive situation where knowledge is dumped and codified. This is a dynamic process where knowledge is shared and created, affecting the actions of practitioners. This makes sense, given the practitioners' claim of considering these sessions as learning situations.

Although all of the practitioners had a common goal – helping unemployed people to get a job – their daily work was quite specialised. Some of them were more focused on interviews; others were focused on managing relationships with the employers or on giving personal counselling to the unemployed during this process. However, the actual practice and the achievement of the common goal required many different types of knowledge. This reinforces the idea that practice is heterogeneous and collective, requiring co-ordination, which provokes tensions between the different practitioners and the need for a common understanding, a common meaning of the practice. In these terms, the empirical case study reflects a situation where knowledge is “moving” across boundaries. Drawing on knowledge boundary literature, Jantsch (1980) and Carlile (2002) offer us three different approaches to how boundaries can be tackled.

The practitioners already had the same vocabulary. They used the same words, terms and concepts (syntactic approach). However, using the same words does not imply sharing the same meanings and interpretations (semantic approach). In this case we could identify a tension between concepts and meanings. The need to share meanings was crucial in understanding their practice.

This situation is quite similar to Nonaka and Takeuchi (1995) when they stress the importance of having mutual understanding and definition of concepts. During the documenting process, they drew on this concept discussion although they were unaware of it. It emerged from a need. However, the practitioners did not stop at this stage. They created new collective knowledge. We stress the collective aspect because this knowledge was a result of a common activity and it was shared by the various specialists and functions, considering the effects on their own tasks and implied learning. As a result of this, the flowchart and the process documentation turn out to be boundary objects which tackle with a pragmatic knowledge boundary (Carlile, 2002) where knowledge is represented, and it enables knowledge creation, knowledge sharing and learning.

Finally, the documenting process also had further implications for the development of the community of practice. We mentioned previously the fact that the number of newcomers in the community had increased lately. This process was extremely useful for their integration into the group because not only did they listen and learn from the old-timers but they also participated actively in the redesigning and re-conceptualisation of the practice. The flowchart and the documentation had been constructed as a joint effort. This participation was crucial for two reasons. On the one hand, the newcomers considered it a way of becoming integrated into the community, which is linked to Lave and Wenger's (1991) concept of "legitimate peripheral participation". On the other hand, this participation was needed in order to understand and give meaning to the final documentation and flowchart. Indeed, the fact that not everybody could participate in all of the sessions was an often aired objection to the employed methodology. This fact led to other consequences, which will be addressed in the next section.

### 2.4.2. To what extent does process documentation reflect practice?

This question lacks a straightforward answer. The reason is two-fold. On the one hand, it depends on an array of factors such as the methodology employed or the level of uncertainty implied in the practice. For instance, the gap between process and practice will be broader or narrower depending on the characteristics of the methodology that is used to document practice. On the other hand, even if we ignored these contingent variables, there would be aspects of practice that cannot be made explicit. There will always be a gap.

Turning to methodological aspects, we can identify some aspects that affect the gap between practice and its representation. One key aspect is participation. Practitioners should participate actively in the process definition and representation. Active participation of all the participants in the process does not only obey knowledge dispersion reasons (e.g. Nelson, 1991). Indeed, practice is collective and the representation embeds a shared meaning and understanding in addition to many implicit assumptions. The only way to get this understanding and the real meaning behind the documentation is by participating in the process.

According to the examples that Brown and Duguid studied, some companies employ specialised process designers who structure and depict practitioner's work. Other approaches are more participative and in order to design the flowchart, personal interviews with the practitioners are conducted (e.g. Jacka and Keller, 2002). However, both approaches have a major shortcoming. The first of these approaches lacks input from practitioners and the second details their input, but individually. A good documentation process requires the participation of all of the practitioners collectively: it requires a setting where ideas, meanings and knowledge-sharing is facilitated. Along the same lines, some initiatives have used "process mapping teams" in documenting their processes (e.g. Hunt, 1996).

Complexity and uncertainty could not be reflected in the documentation. In this case the object of the practice was the unemployed person or the company manager and they both participated in the delivery of the service (co-production), influencing and affecting the final results and the practice. The level of uncertainty of these client encounters cannot be predicted. The situation we are facing in this case is quite similar to Orr's famous case study of Xerox technicians (1990). Orr's example presents a situation where machines were assumed to be stable and predictable. Complexity and individual peculiarities were not considered and that gave rise to tensions between standard processes and practice.

This aspect is especially interesting in practices that involve a high rate of interaction with machines (as in Orr's case) or with clients and other external parties (as in our case). Based on the theory of service classification (Lovelock, 1983 and Schmenner, 1986) the direct recipient of this service is the job-seeker and the employer. Moreover, being focussed on the specific and particular situation of the job-seeker and the company implies that the service characteristics are highly customised and the extent to which client contact personnel exercise judgment in meeting individual client needs is also high. Taking these characteristics into consideration, predetermined courses of action along with standard procedures and detailed instructions are not suitable for these practitioners if they want to respond to complex clients and maintain flexibility in an uncertain environment. For these reasons, many relevant aspects were not codified (e.g. all the questions that were used in practice in order to perform their tasks) because it would have been impossible to predict all the possible situations in practice<sup>8</sup>.

At this stage, supposing that the practice that is to be represented lacks such complexity and that all the methodology requirements have been met, can the process documentation reflect the practice faithfully? No. Independently of the methodology and the level of complexity and uncertainty, practitioners cannot make their actual practice explicit.

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<sup>8</sup> The practitioners also noted that even if they could predict all the possible situations, depicting all of them would not be operational because it would imply a large number of graphics.

Firstly, practitioners found many difficulties in explaining in words what they really did in practice because they were sometimes unaware of their own actions, which supports Polanyi's point of view, and because their actions depended on particular situations that occurred in practice, which reinforces Lave's idea of situated action. That is why they employ examples and dialogue reproduction of client encounters in order to overcome these difficulties. As Lave defends, the abstract way of thinking and abstract knowledge are not part of how practitioners naturally "see" reality.

Moreover, practitioners agreed that there were several aspects of their practice that they could not express in words. Some knowledge was ineffable. As one of the practitioners pointed out: *"our daily work is richer, more complex. It's impossible to detail everything without losing the "art" of practice"*. The same practitioners recognised that *"the flowchart isn't practice"* but, instead, it is a representation; an abstraction of practice and that if they just followed a diagram, the result would be very poor. In fact, in the observation phase, we identified many other aspects that entail practice.

Taking these shortcomings into account, to what extent is this process documentation useful for the company? The practitioners considered that these diagrams helped them to visualise the process and to share a common pattern. They considered it as a roadmap (*"It helps you stay on track"*) and used it to identify problems and tensions. Moreover, one of the most revealing results was the consideration of these flowcharts as a tool for learning and reflection. Participating in their design helped the practitioners to formulate questions related to their practice, to answer them and to get a better understanding of practice. It was also considered a valuable tool for identifying problems and tensions and for focussing attention on problematic areas that may otherwise be overlooked in daily practice.

On the other hand, in practice the role played by the flowchart and process documentation varies and it is especially relevant in the case of newcomers as their



knowledge of the system is mainly provided by the explicit information provided by the company (e.g. flowchart, rules, etc.).

## **2.5. CONCLUSIONS AND FURTHER IMPLICATIONS**

In the light of theoretical discrepancies, we started this paper by highlighting some questions concerning different types of knowledge, their connections and the possibility of explicating practice. After this initial stage of this research, data proves the difficulty of explicating practice. We have seen that knowledge concerning the processes, which was gathered in the documentation, was useful for the company but other types of unformulated knowledge were needed in practice. Data shows evidence that practitioners do not follow rules and that practice involves not only explicit knowledge (e.g. process documentation) but also practical knowledge. This practical knowledge is crucial in the practitioner's performance and is the source of better results.

The following sections sum up the main conclusions.

### **2.5.1. From Practice to Representation: The impossibility of making actual practice explicit**

Explicating practice has been an aspiration and a focus for organisations. The use of written documentation, standards and methodologies is common in organisations and managers and executive teams have faith in them. Despite their common use, there has been a lack of research into the extent to which this documentation reflects practice. Needless to say, both theorists and practitioners will agree that these documents do not gather the whole practice, but it is assumed that the key aspects of practice are

collected and represented, enabling the company to carry out its practice and operations.

In this scenario, the knowledge management field has contributed to this issue and takes a fresh look at some of the concerns that have arisen. On the one hand, some authors claim that it is possible to turn practical knowledge into explicit statements (e.g. Nonaka and Takeuchi, 1995; Allee, 1997; Gupta and Govindarajam, 2000; Boisot, 1995; Davenport and Prusak, 1998; Crossan et al., 1999; Probst et al., 2000).

On the other hand, other authors make strong claims against such a possibility (e.g. Tsoukas, 1996, 2002; Gourlay, 2002; Cook and Brown, 1999; Wenger, 1998; Brown and Duguid, 2000a, 2000b) and additionally some authors have stressed the hostility between the current process approach and the actual practice (Brown and Duguid, 2000a, 2000b) raising some doubt concerning the possibility that this focus may be overlooking the increasing demand for knowledge in contemporary organisations.

Taking these discrepancies into account, we found evidence in the case study that practice cannot be made explicit. The flowchart and process documentation can gather some aspects of practice but not all of them and, what is more interesting, cannot gather the most important aspects. Throughout the study, we have shown evidence that practice comprises more aspects than those reflected in the documentation. Practitioners resort to other types of knowledge to successfully perform their practice. Explicit documentation is not enough to act upon.

Throughout the study, three main causes have been observed. Firstly, practice comprises ineffable knowledge which cannot be made explicit. As in Nonaka and Takeuchi's case, our practitioners go through a complex process in order to make their practice explicit, which includes concept definition, metaphor and analogy. However, our findings show that practitioners fail to explain their practice in words. On the one hand, it is impossible for them to pinpoint all the relevant aspects. Many of these aspects are unknown to the practitioner and only some are identified in the

observation phase. On other occasions, practitioners cannot explain in words what they actually do. They resort to intuition, feelings and unstructured resources.

Secondly, practice is complex in the sense that there are many variables that cannot be controlled which give rise to a myriad of different situations. For instance, job placement practitioners cannot determine all the different unemployment situations in advance. They cannot foresee all the job applicants' or employers' reactions. In this context, trying to foresee and formalise the different courses of action is useless. The abstract guideline and the standard process are a reference but the actual practice implies many more aspects. Moreover, even if all the different situations could be foreseen in advance, the number of possibilities would be so large that handling so much information would not be operative.

Finally, practice cannot be made explicit because it comprises a combination of different expressions of knowledge. Practitioners do not use a single type of knowledge but many different types at the same time. Some knowledge can be made explicit, but other knowledge cannot. As we have seen in the analysis, practitioners resort to process documentation but also to the ability to win other people's trust, to the ability to play different roles, to intuition and so on. This type of experience-based knowledge is ineffable and in this case, what we have seen is that it is impossible to capture this ineffable knowledge.

Moreover, contrary to the technical rationality defended by positivism, practitioners do not follow rules in order to act. Our practitioners do not apply knowledge when acting. They face situations and resort to using a myriad of different expressions of knowledge to succeed. That is why we can distinguish when practitioners are following predetermined actions, (canonical practice) and when they are not following formal schemes (non-canonical practice).

Despite these shortcomings, the study highlights their possible role in the creation and sharing of knowledge and organisational learning in a different way to the one that has

been considered until now. For instance, these tools are boundary objects that embed collective tacit knowledge, having meaning only in the community in which they have been designed. In other words, the study might be suggesting – rather than entering into the debate between tacit and explicit knowledge – that both are closely interrelated, pointing to fruitful areas of interaction between them.

Finally, defending the idea of limitations in the process of gathering together all areas of practice, we focus our attention on “practice” because in the end it is practice that brings the process to life. Practice is the terrain to be crossed and process documentation is the map: the representation.

### **2.5.2. Representations of Practice Need to be Interpreted**

*“The flowchart is one of the seven basic quality tools: it transcends language and nationality and is universally understood and appreciated”.*

Tenner and DeToro (1997: 135)

This statement is an example of a well-spread belief: explicit documentation is “objective” and easy to understand. However, our findings do not seem to point in the same direction. During the formalisation workshops, the practitioners created new collective knowledge. Indeed, the flowcharts and process documentation are the outputs of a collective reflection process in which consensus is reached.

We stress the collective aspect because this knowledge was the result of a group activity and it was shared by the different specialists and functions, considering the effects on their own tasks and implied learning. Consequently, the flowchart and the process documentation turn out to be boundary objects that tackle, with pragmatic knowledge, the boundary (Carlile, 2002) where knowledge is represented and they have to be interpreted in order to be understood. That is why practitioner participation in the codification process is crucial and why outsiders will have severe difficulties in

understanding the knowledge embodied in those graphic representations, even if they do understand the symbols and the language.

### **2.5.3. From Representation to Practice: How explicit documentation affects the actual practice**

Taking these shortcomings into account, are they still useful? Of course they are. As Schon remarks (1983: 260) “incompleteness of description is no impediment to reflection”. These tools do not comprise the actual practice, instead they help. Practitioners considered that these diagrams helped them to visualise the process and to share a common pattern. They considered it a roadmap for identifying problems and tensions. Moreover, one of the most revealing results was the consideration of these flowcharts as a tool for learning and reflection and the process of codification as a knowledge-sharing situation. The formalisation process accomplished many unexpected goals and knowledge was shared and created, affecting the actions of practitioners.

On the other hand, in practice, the role played by the flowchart and process documentation varies among practitioners. It is especially relevant in the case of the newcomers whose knowledge of the system is mainly provided by the explicit information on the company (e.g. flowchart, rules, etc.). For these practitioners, the explicit documentation is the guideline that allows the newcomers to understand and behave within the system. In the event of tensions or doubts, they rely on the formal documentation.

As a consequence, representation does not only reflect practice but also produces it (e.g. Derrida, 1971).

Finally, these results may be a trigger to start reconsidering present managerial practices. Currently, explicit and abstract knowledge play an outstanding role in both the theoretical and practical fields. Concepts, models, manuals and documentation are considered key elements in order to carry out work. Practitioners should follow them as a way of guaranteeing successful performance. According to our results, although all of these explicit artefacts and abstract knowledge play a role in practice, other types of knowledge should also be considered. Conceding attention to other expressions of knowledge would mean reconsidering important managerial practices such as leadership and managerial style, the hiring and training of employees and operations management, among others. Reflecting on this will be well worth the effort.

## Chapter 3

# EXPLORING THE DYNAMICS OF KNOWLEDGE IN ACTION: Comparing Bundles of Knowledge in Job Placement Practice\*

### 3.1. INTRODUCTION

Recently, the current business scenario and the academic field have placed a great deal of attention on the study and management of knowledge in organisations. Throughout the last decade, scholars have been occupied with framing theoretical approaches which sustain practical initiatives. In other words, inquiring into “knowing” (e.g. Lave and Wenger, 1991; Blackler, 1995; Cook and Brown, 1999; Orlikowski, 2002; Brown and Duguid, 2000a; Newell et al., 2002). This approach involves the study of action, and therefore, practice and it implies considering its collective dimension, the coexistence of learning and action and the context in which this takes place. Its main focus is work practice and by contrast, knowledge and its types are given little or no attention. Learning is not just described as the result of a cognitive process but as a phenomenon which derives basic properties from its context. In other words, learning is situated

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\* This chapter is an extended version of Bou E., Sauquet A. and Bonet E. (2004): *Exploring the Dynamics of Knowledge in Practice: Comparing Bundles of Knowledge of Experts and Novices*. Conference Proceedings of the OKLC 2004 Conference (CD-ROM), Innsbruck, Austria.

(Lave and Wenger, 1991). The practical field has also echoed these theories and some approaches of knowledge management are based on a social approach, promoting the organisation's communities of practice and paying special attention to organisational culture (Alvesson et al., 2001).

Drawing on the study of knowing and practice as a reference, we consider that the fact of disregarding knowledge and its types has prevented researchers from studying the interaction between different knowledge types and knowing. How we know in practice or, what is the same, which knowledge dynamics in action are key aspects that may help to reconcile both approaches in theoretical and practical ways.

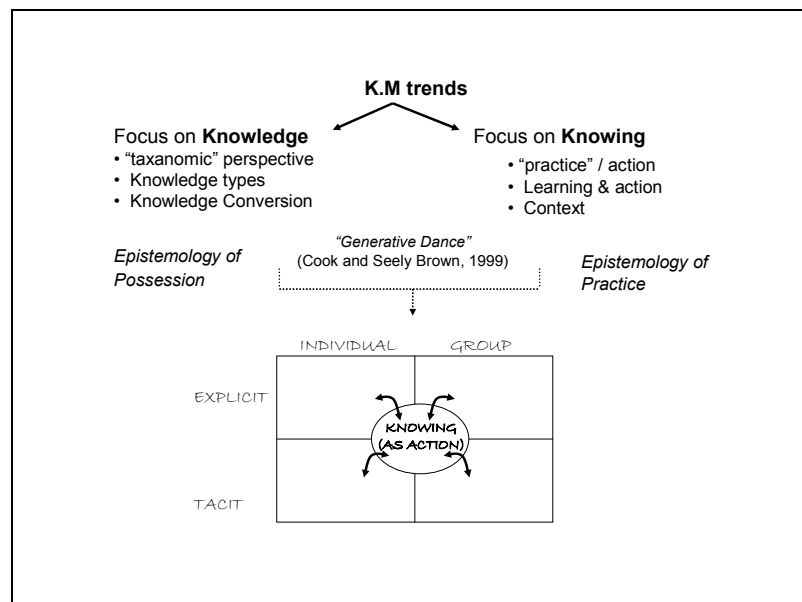


Figure 8 – Bridging Knowledge Management Trends

In 1999 there was an important attempt to overcome this shortcoming. Cook and Brown (1999) making a distinction between the "epistemology of possession" and the "epistemology of practice" defended the interplay between knowledge and knowing coining the term "Generative Dance". According to these authors, the epistemology of possession is focused on working with the four categories of knowledge, analysing their properties and characteristics. In contrast, the epistemology of practice is concerned with human action, with knowing. The interplay between knowledge and knowing and doing is the origin of the so-called "Generative Dance" (see Figure 8).



Cook and Brown's theory is a good framework to study the interplay between knowledge and knowing or, what is the same, between knowledge and action. However, taking this theory as a standpoint some questions remain unanswered: How do these types of knowledge articulate in practice? Do all types of knowledge influence a certain practice in the same way? How does the bi-directional arrow between knowledge and action actually work?

Cook and Brown highlight the fact that different types of knowledge are combined when we are acting, but no more explanation is given about how this combination takes place. The matrix presented in the model (see Figure 8) assumes that every type of knowledge influences practice in the same way and that they have the same importance independently of the idiosyncrasy of the practice. Contingency aspects related to practice and other variables such as the organisational structure (Lam, 2000) may exert influence on the combination of different types of knowledge in practice.

In one sense, Cook and Brown defend that while acting, the actor is "getting to know" which explains the bi-directional arrow, but how? How does the knowledge bundle evolve? How is learning therefore articulated?

Taking all of these aspects into account, we believe that a deep reflection on how we know in practice can help shed light on many current aspects that are as yet unsolved. On the one hand, if we are able to clarify what happens when practitioners are acting, we will be able to discover if it is a question of learning first and then applying, or whether the kernel is the knowing aspect and the practice. On the other hand, it will help to clarify whether or not knowledge needs to be transformed – if possible – in order to be ready to use in action. This would lead to conclusions which may help scholars shed light on current discussions about knowledge transformation. Finally, this inquiry would affect the conception of knowledge management in organisations. Many current knowledge management approaches focus their efforts on trying to capture, store and therefore apply that knowledge, but little attention has been given to

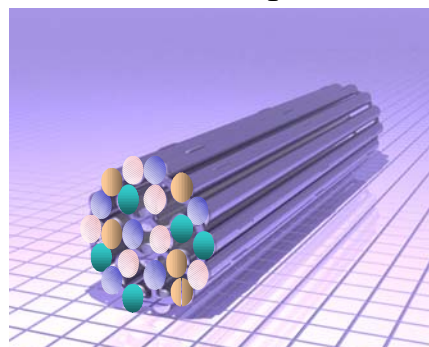
the question of how practitioners perform their daily practice. If this issue were clarified it would help managers design appropriate systems and better learning policies.

The main objective of this chapter is exploring the relationship between knowledge and action. Therefore, we pay especial attention to identify the different types of knowledge related to practice and the knowledge dynamics in action. In order to further explore this issue we study the practice of job placement in an employment service company, sustained by the belief that in practice the combination of different expressions of knowledge constitutes a “bundle of knowledge”.

### 3.2. BUNDLES OF KNOWLEDGE

Drawing on Cook and Brown’s model, we consider that in practice the combination of different types of knowledge constitutes a “bundle of knowledge” (see Figure 9). We know its ingredients but we do not know its different forms, combinations or shapes. Another metaphor would be a palette of primary colours (different types of knowledge), which are combined to paint a picture (the action). Different pictures may have different combinations of colours and shades.

#### **Bundles of knowledge in Practice**



**Colours reflect different knowledge types**

Figure 9 - Bundles of Knowledge in Practice

Taking Cook and Brown's (1999) concept of "Generative Dance" as a reference, this paper explores the concept of "bundles of knowledge" linked to job placement practice and knowledge dynamics. We will explore how these bundles of knowledge are articulated in action, the different roles or influences of different expressions of knowledge in practice and how acting varies the existing stock of knowledge, therefore resulting in a learning situation.

In order to answer these questions, this study includes a comparison of the practice of experts and novices in order to analyse their bundles of knowledge and identify, if this is the case, similarities and differences. The reason for comparing experts and novices is that it is a good way to approach the problem as it will help us to study the generative dance or the interplay between knowledge and knowing which entails a learning situation.

Needless to say that comparing experts and novices is to approach the problem by proxy. Indeed, the best way to investigate into this issue would have been to carry out a longitudinal analysis with some individuals. However, due to the temporal characteristics of the study, and being aware of its limitations, we think that comparing experts and novices will give us the opportunity to study this issue (see Figure 10).

Correspondingly, it has been considered a relevant topic for many years and one that has been approached from a purely cognitive perspective. Studies on experts and novices are not new in the literature and this is especially relevant in organisational learning studies. For instance, Lave and Wenger's (1991) idea of "legitimate peripheral participation" is about the relationships between newcomer and old-timers and how apprentices become legitimated within a working group. The relationships between both, newcomers and old-timers, have also played a crucial role in the study of communities of practice (e.g. Wenger, 1998), knowledge sharing in workgroups (e.g. Levine and Moreland, 1999; Gruenfeld et al., 1999) or in the analysis of behaviour in novel or unfamiliar settings (e.g. Fuhrer, 1993). Laufer and Glick (1998) analyse the differences in cognition and activity between expert and novice in the practice of tele-

selling. Made evident in this case was the fact that individual motivation plays a crucial role in the way expert and novice perform their tasks. However, not much has been said about the “knowing” experience of experts and novices in practice.

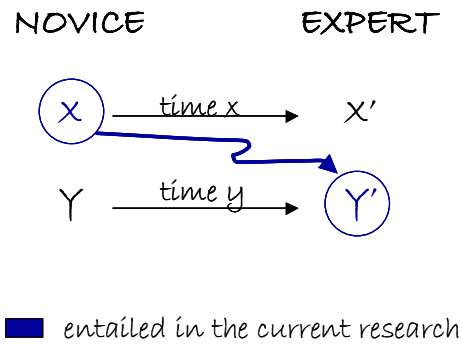


Figure 10 - Terms of Comparison

Another reason to study and compare the practice of experts and novices is the fact that we assume that it allows us to identify tacit expressions of knowledge more easily, as these are strongly linked to experience. Under this assumption, identifying and analysing these tacit expressions are supposed to be a crucial aspect in understanding how they influence practice and the role they play in the composition of bundle of knowledge.

### 3.3. THE CASE STUDY

#### 3.3.1. The Setting of Job Placement and Study Design

The object of our study is J.O.B.<sup>9</sup> a public employment service company. This company delivers different services to job-seekers in order to help them find a job and at the same time to help local companies find the best candidates.

<sup>9</sup>J.O.B. is a pseudonym of the participating organisation.

All their services are provided free and according to their social commitment they include programmes for people with disabilities, minorities, immigrants, older workers, young people and women. Taking into account the characteristics of the city –manufacturing area – and of its population, most of the job offers are targeted at blue-collar workers. Some distinctive features of the service are that no temporary jobs are offered and that the job offers differ from the typical public service which is characterised by offering an impersonalised service and where the job placement service is merely based on matching data on job offers and candidates. Their aim is to offer an integrated and customised service to unemployed job-seekers as well as to local companies. Figure 11 summarises the main steps of the “Job Placement” process<sup>10</sup>.

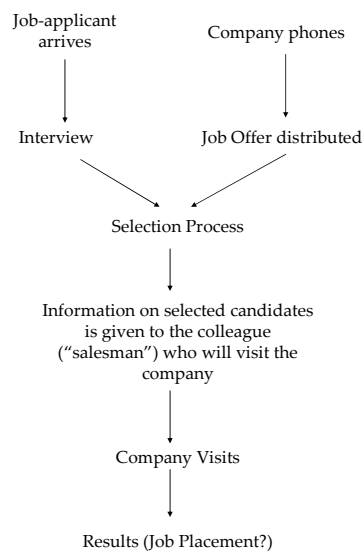


Figure 11 - Job Placement Process Overview

In this case study the collection method includes documentation analysis, direct observation and in-depth interviews. Direct observation is based on data from department meetings and the daily work of practitioners. During this phase we accompanied an old-timer and a newcomer in their daily routine, including eight interviews with unemployment individuals. After observation, in-depth interviews

<sup>10</sup> Due to the fact that J.O.B. is the same company as the one presented in Chapter 2, redundant information has been excluded.

with eleven practitioners were conducted in order to explore their practice. Data was collected through tape recordings, researcher's journal, analysis of company documentation and tools and photographs. *Table 10* offers a summary of the collection methods that were employed.

Data Collection Methods	Company A (J.O.B.)
- Documentation	✓
- Direct Observations	<ul style="list-style-type: none"> <li>• 4 meetings</li> <li>• 32 recorded hours of daily work</li> <li>• 13 people</li> <li>• Field notes</li> <li>• Photographs</li> </ul>
- In-depth interviews	11

Table 10 - Data Collection Methods

### 3.3.2. A Vignette from the Field

In this section, we shall present a vignette of work in the field, describing in some detail a sub-process of the Job Placement practice performed by both the expert and novice. This vignette is meant to provide understanding on the subsequent discussion as to how we know in action and the comparison between expert and novice.

The situation described is typical of any workday in which job applicants are selected for a job offer and comes from direct observation. According to the general process of job placement (see Figure 11) this part of the process is done once the job-seeker has been interviewed by the practitioner and a job offer arrives. Then, the practitioners have to look for the best candidates and present them to the person – the salesman – who will go to the company with the selected candidates.

The vignette is purely descriptive and in italics. A commentary section is presented at the end in order to facilitate understanding. This commentary section includes

comments and explanations given by the practitioners themselves when they were interviewed after the observation stage. This will prepare the path for the presentation of the subsequent analysis and conclusions.

### **3.3.1.1. Vignette - Job Applicant Selection**

1      13:15 Back in the office after the interviews, the office is full of noise and movement. It is a hive of activity. The practitioners have several papers on their desks and they are busy making phone calls. They are selecting candidates.

*The expert looks at the photocopies of the open job offers on her table. She picks one out.*

5      There are some handwritten notes on the photocopies. These are details of the job offer that she asked for from the “salesman” who is in charge of receiving most job offers and visiting the company in order to “sell” the candidates. The company is looking for female phone-operators. She looks at her list of female candidates. Half of the list is typed and half of it is handwritten. She goes through the list looking for possible candidates for the job offer.

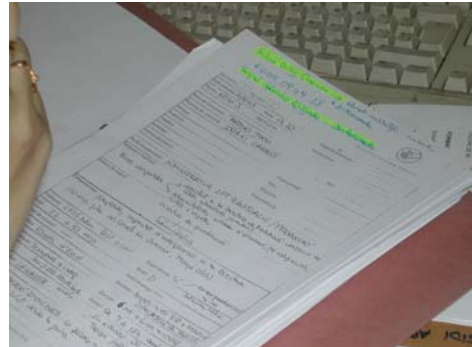
10     Apparently, she has found one possible candidate. She writes down the name at the top of her photocopy of the job offer, looks for the candidate’s record in the database and reads the “Observations” field which is the open field with unstructured information on the candidate. She looks up the phone number and phones the candidate. She explains the job offer to her, making some references to information the candidate gave her during the interview. She explains the type of job, the working environment of the company and finally she asks the candidate whether she is interested in the job.

17     The candidate is *interested* in the offer. The expert hangs up the phone and writes the candidate’s name at the top of the offer with a bright marker. She also enters this information into the database so that she can follow up the different events and meetings with the job-seeker. She takes another look through her handwritten list of unemployed women. She finds another possible

candidate for the job. Writing her name at the top of the job offer she starts the process again....



Photograph 4: The expert selecting candidates, phoning them and preparing the selling using the records and database.



Photograph 5: The photocopy of the job offer. Candidates who agreed to apply for the job are marked in bright colours.

13:30 *Salesman: Ok, can we start with the selling?*

*The practitioners stop for a moment and nod their heads. The salesman says:*

*Salesman: Ok, let's start with Company 1's offer. Who has candidates?*

25

*Technician 1: I do.*

*Technician 2: Me too.*

*Expert: And me.*

*Salesman: How many do you have?*

*Technician 1: I've got one.*

*Salesman: And you?*

*Expert: I have three.*

*Salesman: And you?*

*Technician 2: I have another two.*

*Salesman: Ok, who starts?*

*Technician 1: Me....*



36 While technician 1 presents his candidates, the expert informs the technician from the AO service that the selling is starting and asks him to look for the files on the three candidates. The expert looks over the files and discusses the candidates with the AO technician. The AO technician, who has taken a stool and sits next to her, adds the last details that he has on the candidates.

*Salesman:* OK, who's next?

*Expert:* We are. This is a candidate we already proposed for the offer from Company XX. Anna P. G.

*Salesman:* Her surname?

45 *Expert:* G.

*Salesman:* OK [the salesman looks for the file with the previous selling information he had for this candidate from the previous offer.]

*Expert:* When you hear me I'm sure you will already have heard us talk about her... She's 43, married, has two grown-up children. I'm telling you this quickly because it's not of interest but just so that you know... This woman was referred to us by Mr. M., the counsellor, and she has a certificate showing her to be 56% disabled, due to two slipped discs, for which she had an operation, and that this prevents her from continuing to work as a cleaner, which is what she was doing before. Her family situation is fairly precarious at the moment because her husband is in an association of taxi drivers and they have a coach... They bought it and are still paying for the coach. Her husband only receives a minimum of services now and they're finding it very difficult to meet the expenses that they have. She's therefore in great need.

57 Despite her situation I see this lady as a great fighter. She said to me "I've been working since I was 12 and I've never been afraid of getting my hands dirty. But now the situation has gotten out of hand." And, I don't know, she's finding it difficult to get back on her feet again.

*I can see she's come to AO of her own accord, because she really wants to work. She shows a lot of interest. For example, she has shown an interest in the Internet, which Vanessa [Vanessa is the practitioner in charge of the AO service] has been explaining to her, and from what Vanessa said she has done quite well. Although she said that at home she'd already tried it... but even so, the course went very well, and she learnt very quickly.*

66 *So, what has happened to her? Because of the slipped disc she can't do handling tasks either. What happened was that when we presented her to company XX she obviously had to be sitting down and moving around and of course, in the company they told her that they can't give her a stool, because if they gave her one they'd have to give everybody one.*

70 *She doesn't have experience in this area but I think she has good communication skills: for speaking and getting on with people on the phone. She has her own skills which will help her to get on. Right...*

*She has always been active, right. She's accepted anything we've offered her, even with a miserable salary, because the truth is we've presented her for jobs with wages of 70,000 pesetas [approx. €420] and she accepted and now she's looking for a part-time job because she knew they wouldn't accept her otherwise.*

**Salesman:** *Why is she looking for part-time?*

**Expert:** *Because, of course, it's not that she gets tired but she can't do very long days.*

**Salesman:** *OK, that's it.*

80 **Expert:** *Listen. Before coming here she was in a mental health centre because of depression. The first time she came...Then A [A is other practitioner]*

*contacted the mental health centre to see which psychologist and doctor were looking after her. She contacted them and the doctor recommended that she should look for work and that she was perfectly well. Just so that you know.*

85            **Salesman:** *You don't want me to put that down, do you? [She refers to the written report on the candidate that the salesman gives the company during the interview, to introduce the candidates.]*

**Expert:** *No, no. Don't put anything down. It's just so that you know.*

*Afterwards, the expert continues with another candidate. However, after proposing her candidates to the salesman she remarks:*

90            **Expert:** *Well, I don't think that either Anna or Mary will leave them in the lurch because they really need the work...*

*The expert goes back to her own research for other job offers. She searches through the database and stops when something interesting comes up. Now it is the turn of another practitioner who will propose his candidates to the salesman. While the technician is proposing his candidates, the salesman types a written report for the company explaining the key aspects of the candidate. This report and the CV of each candidate will be given to the company in the company visit.*

**Salesman:** *Ok, who's next?*

**Novice:** *Me. S. P., Elise.*

**Salesman:** *Repeat the name please.*

100           **Novice:** *Elise S. P. [the salesman types in the name.] She is 34 years old. This girl has been with us for some time, right? She's been in different stages. She has great difficulty in finding work. She has a 52% disability.*

**Salesman:** *Does it show?*

**Novice:** Yes, and moreover it's really obvious, OK? It's a physical disability: she has very bad sclerosis, if I remember rightly.

**Salesman:** ...

**Novice:** An arched spine. And she's rather short: she's got rickets. She's very short, almost like a dwarf, well, very short, it's true. She's like very thin, well no, well, she's 52% disabled.

110 **Salesman:** But is it because of that disease that she's also so short?

**Novice:** No. I don't know. I don't think she has any disease in particular... So, of course, she has to find work of this type, as a telephonist. She's looking in the administrative field. She's very willing. She's training. She works very hard. She really has a very strong fighting spirit. Life has closed a lot of doors for her but she plucks up her courage and keeps going...

She's been coming to AO for some time. She's persevering. The truth is I didn't see her in an administrative position because she had a very low educational level. She was studying English but, of course, learning English in a language school... She had very few expectations of finding a job, right? Very few, really. But, well, she's really very interested. She really wants the job.

She hasn't worked for some time. She doesn't have any experience in the sector because she'd previously been working in textile companies.

**Salesman:** Right.

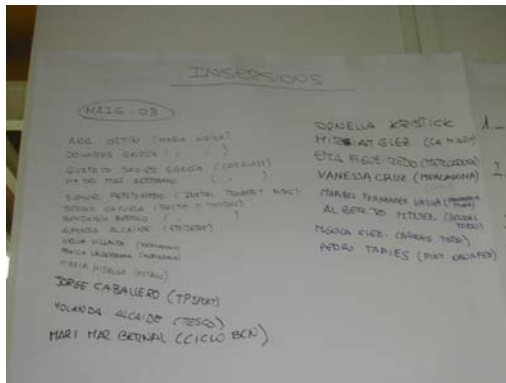
125 **Novice:** Right? Look, she's a very bright girl, as I told you, she's very willing. She gets involved in everything, very active, she is constantly training and she is bright, she has a lot of personality, that is, I think that if she has to sell a product and she's given certain criteria, that she can do it well, right?

135 She had a small problem with our manager a few years ago. Apparently she was very sad, had a bad experience, and she came here to look for work... and well, she's got a strong personality and she'll be able to... right? And she hasn't got a complex or anything.

**Salesman: Mobility?**

135 **Novice:** *She has a specially adapted car. Let's see if we can place her because the poor thing... it's been some time and we haven't managed to place her.*

**Salesman:** *OK.*



Photograph 6 - Monthly Job Placements Wall Poster with the name of the candidate and company.



Photograph 7 - Section of the Wall Poster where Offer Forms are hung.

9.00 am the following day...

140 *The “salesman” has just arrived. A newcomer asks him about the results of a specific job offer. “It’s decided,” he says, “they chose E’s<sup>11</sup> (candidate)”. The other practitioner asks about what happened with his own candidate. Everybody has stopped working to listen to the salesman. He explains the details of the meeting and explains that after having interviewed E’s candidate, the manager of the company was so happy with him that he did not want to interview anyone else. “Ah, that’s the reason. Otherwise he would have chosen mine.” The newcomer jokes but he seems a bit disappointed. On the contrary E seems really happy and tells her colleague from the AO service the good news... The name of the candidate and the employer company are written on a note on the wall with the list of all the job placements achieved during the month (see Photograph 6).*

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<sup>11</sup> “E.” stands for “Expert”.



### 3.3.1.2. Commentary

When a company is looking for an employee, the information about the post is collected in the “Job Offer Form” (see Photograph 7). Then it is photocopied and distributed among the technicians who start the candidate search, selecting from among the best applicants for the job. Afterwards, they pass on the relevant information on each candidate to the salesman who writes up a report. This report will be very useful when the salesman visits the company and presents each candidate. At the end of the meeting, these reports and the candidates’ curricula vitae will be given to the firm and the job placement process continues.

In the first part of the vignette, our expert was proposing her candidates to the salesman (lines 36-91). For the expert, proposing candidates is not an individual activity, but rather a group task. As seen in lines 36-40, she searches for more information and details by asking other technicians. These technicians are the ones who provide the candidates with support services (AO service<sup>12</sup>) while they are looking for a job and see them on a regular basis. Using both her and their information, it is possible to tell a story full of details.

*Researcher: But, for example, you talk a lot with Vanessa, or Vanessa talks a lot with you? Is that right? [Vanessa is the practitioner in charge of the AO service.]*

*Expert: I share a lot with her and she shares candidates who come to the Aula Oberta with me.*

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<sup>12</sup> AO is a complementary service called “Aula Oberta” which stands for “Open Room” and has its own location and facilities. It consists of a room where there are computers, telephones, fax, magazines, newspapers and other resources to help the job-seeker to find a job by himself. Besides these facilities, a technician is in charge of counselling individuals in order to help and support them in this searching process.

*Researcher: And why doesn't she share with X? ... I've never seen Vanessa discussing a candidate with X or with M, ... [X and M are newcomers.]*

*Expert: All right. Firstly it's the situation, because... I don't know... because she sits next to me, and because I look for her opinion and she looks for mine too. I think it's reciprocal. I get up to say: "Listen, I'm going to call this candidate, what do you think?" I want her feedback because she sees them as well and knows them. "I've short listed him as well!" That way there's a better exchange between us, she helps me and it helps her too, well, I do it like that. She doesn't do it as much with X and with M, that much I know for sure.*

*(...) But the thing is we often do shared sales. That is, I'm selling her, and she's next to me also selling that person, [see Photograph 8] adding some information. I say to her: "Vanessa, come on, let's sell..." It's an exchange of information that comes out one way in writing, but when spoken comes out a different way, I suppose you put feeling into it, for better or worse, but you're expressing things in words.*

In order to give the required information to the salesman, the expert designs a story taking into account what she remembers from the interview (relying on the information from the database) and the input of others technicians. This previous "preparation" is crucial because, afterwards, the expert starts telling the story and she will not read or look at any of the documents or information about the candidate.

The salesman listens to her very carefully only interrupting when he wants to make further inquiries about something (e.g. lines 77, 85). Quotes from job-seekers' add depth to the story (e.g. lines 57-59). According to the expert, the use of anecdotes and quotes from the candidate (e.g. lines 62-65; 67-69) and the storytelling help the salesman to "remember" and feel confident about a candidate that he has not seen before. For the expert, that is the key:

*"I sometimes personalise quite a bit. I mean I get inside the skin of that person... that job-seeker, I sell a lot of them, and I try to give more so that S ["S" is the "salesman"*

who goes to the company to present the candidates.] ...*What do I do? First the good side: I talk to him about the person and Vanessa already knows all about it; you can tell me later about handicaps. Well, handicaps, that's the negative part, and I want you to know about that too, but "you do know how good this candidate is".*

*I mean, I don't want you to go to the interview saying that... No, you must be sure that you're selling this candidate. So I'm telling you, I always leave it for the end as an extra detail, but the important part is all the rest.*

*I want that person to be accepted and for them to get a job. Well, I suppose that (...), even S, when I sell someone to him, I explain specific situations from the interview to him, on some occasions details that I can recall and others that I've jotted down: "Ornela (...) is (...) the language", she is a suitable candidate and she deserves it because she worked hard for it. But well, she was a great girl.*

*So, well, I explained all of this to him...the anecdotes. Even in that sale it was also another technician, who said: "S remembered specific things that you had explained to him", as they helped him to remember that candidate (...) This means that it was reinforced. In fact, he told me: "In particular, your explaining about that man was very useful, as it helped me remember him".*

At the end of the vignette, the novice is also proposing one of his candidates to the salesman (lines 98-134). The novice is more worried about giving objective and technical data and he gives the information mainly reading from the database. As he says: *"we don't hide information from S, but you do have to be skilful when it comes to presenting certain things. I can't say that "he's dubious", I can say it at the end with synonyms, (...) because, otherwise, you know that it conditions them."* Despite this comment, in order to find a job the novice sometime hides bad information that could be a handicap for the candidate. For instance, in the situation in the vignette he did not explicitly explain the candidate's real situation. In the written report it is stated that this is a problematic woman who causes trouble. He tackled this issue (lines 130-133)



but he was not clear enough. These aspects may be explained by the same novice who defines this stage of the process in the following way: *“It’s a game. I mean selling is a game of power, of convincing (...)”*. According to him, he should convince the salesman that his candidate is a good candidate for the job offer.



Photograph 8 - Selling the candidate: the expert, the technician in charge of the AO service and the saleswoman.



Photograph 9 - A novice giving the information to the saleswoman who is typing the written report on the candidate for the company at the same time.

His way of proposing candidates to the salesman is individual. He does not collaborate with anyone else (see Photograph 9). He is unaware of the key information the salesman is looking for and the information is not presented in the best way. As a consequence the salesman interrupts the novice quite often (e.g. lines 103, 106, 110, and 134). There can be two reasons. Either he does not understand what the novice is saying or he lacks key information.

Being aware that he should convince the salesman, he explicitly states that his candidate is good, but without giving sound reasons for this judgement (lines 125-127) and he even appeals to the salesman’s emotions in order to make him pity the candidate (lines 135-136).

Both the expert and the novice agree that the selection and the subsequent presentation of the candidate to the salesman are crucial for successful job placement in the company. Indeed, results are the best way to identify experts according to the

workgroup. As one of the novices says, “E [the expert] is the one who places the most because he is able to gain trust” (referring to the salesman’s trust). This last aspect will be a key to success. And as previously mentioned, according to the novice: “It’s a game. I mean selling is a game of power, of convincing (...)”.

Everyone in the group recognises that E, our expert, is much more successful than the others. Taking into account that each practitioner is in charge of placing his own job applicant (the ones who have been interviewed by him), there is somehow a rivalry or competition among them (lines 140-150). So, why is the expert so successful? And what are the main differences between the old-timer and the newcomer? The comparison and analysis of expert’s and novice’s practice will be tackled in the next section.

### **3.4. THE CASE STUDY ANALYSIS**

Although the technicians share common tools and flowcharts where all the activities and their sequence are described, the data analysis has made us realise that the actual practice does not always follow the same procedure. In this section we analyse differences and similarities between expert’s and novice’s practice and also between the standardised procedure. As previously done in the case study data, the job placement practice has been divided into three main stages: interviewing the candidate; creating the candidate’s record and finally; proposing and selling the candidate.

#### **3.4.1. Interviewing the Job-seeker**

The first stage of the Job Placement process is interviewing the job-seeker. After having presenting the field data, we can state the existence of a gap between the formalised procedure and the actual practice.



Photograph 10 - Job-seekers waiting for the interview.

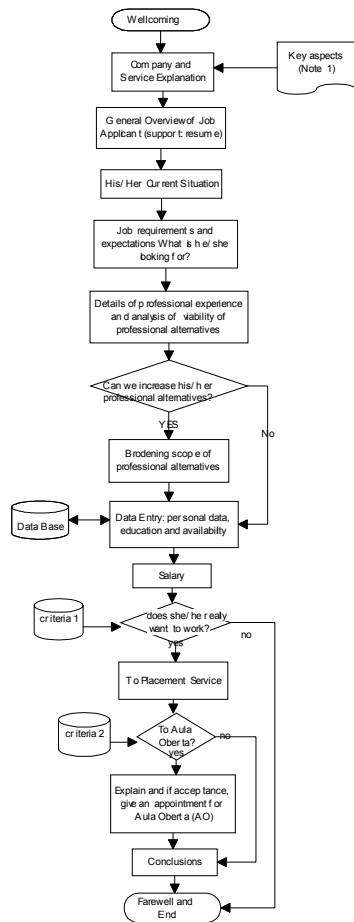


Photograph 11 - A practitioner interviewing a job-seeker.

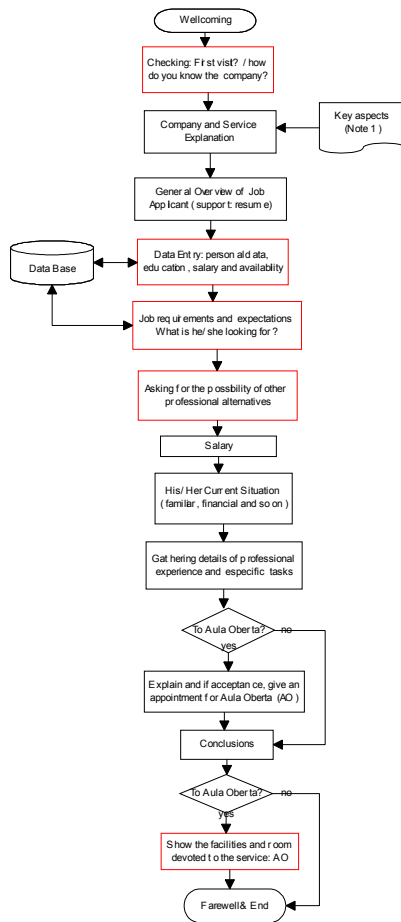
This gap has several reasons. One of the reasons is that the company is committed to delivering a personalised service and that is why, from the very beginning of the interview the technicians address applicants by name and make an effort to use it on a regular basis to gain their confidence. However, practitioners have no information on the interviewee in advance. Therefore, the practitioner should be ready to improvise. This complex and uncertain aspect of practice could be enough to explain why interviews vary.

However it is not the only cause. Whether the interview is done by an old-timer or by a newcomer is an important aspect to consider in order to understand practice. Figure 12 summarises the main observable differences between the practice of the expert and the novice during the process of interviewing a candidate. Activities carried out by the practitioners but not formalised are depicted in red rectangles and activities that are not always done appear in dotted lines.

THE STANDARD



EXPERT



NOVICE

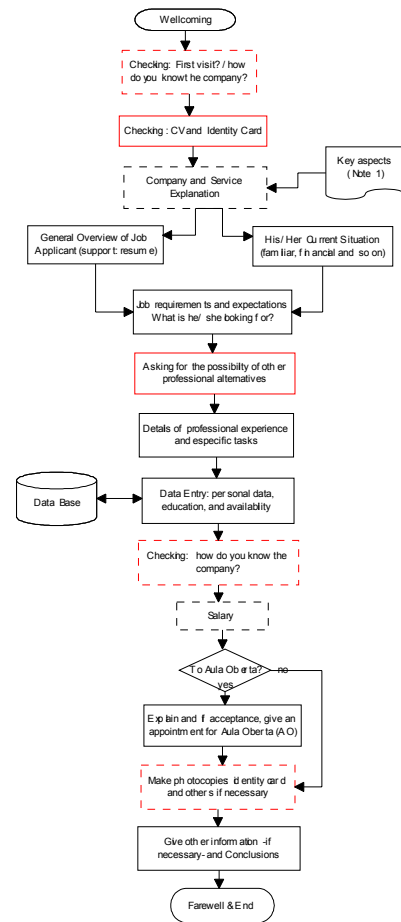


Figure 12 - Comparing Process Steps

Comparing the three schemes we can identify several differences but what are the reasons for these variances? Why does the expert always check if it is the applicant's first visit and the novice only sometimes does this? Why do they ask this question if it is not formalised in the standard procedure? Why does the novice ask for their identity card and make a photocopy? Why does the expert make reference to the people who run the services as part of the general speech on the company? Why does the expert decide sometimes to change the order? Why does the expert pause in order to read the CV? Why does he read out the data and turn the computer monitor so that the interviewee can see what he is writing? Why does the novice start off with the first professional experience whereas the expert starts with the latest? Is there any

explanation? Why does the expert consider the minimum salary important data whereas the novice may leave this field blank? There are many unanswered questions which are worth analysing.

As previously mentioned, both expert and novice check to see if it is the first time the applicant has visited the company or if he has come previously, although the frequency and objective of this is different. The expert asks this question at the very beginning in order to find out whether or not the applicant has visited the company before. If it is the case that he had come to the company a long time ago, the expert devotes some time explaining to him how the service has improved. His underlying objective is to identify and change previous bad impressions and to generate trust. By contrast, the objective of the novice is different. According to him, this question is asked in order to avoid repeating information: if the applicant has previously come to the company, this data may already be in the database. So, whereas the former is worried about winning the applicant's trust and creating a relationship, the latter focuses on gathering information and avoids wasting time. It is relevant to stress the fact that the standard procedure does not include this aspect, being non-canonical. The novice does it because he has observed the old-timers asking this question.

Asking for and making a photocopy of the job applicant's identity card is not in the procedure. Nevertheless, the novice does it because he observed that some technicians did the same thing when he started in the job. According to him this documentation is required in order to have evidence that the person came to the company and in order to correct possible mistakes. For him, this is a requirement of the procedure. However, according to the expert the reason for making a copy of the identity card is completely different. For him, some technicians do it in order to better remember the candidate. Remembering the candidates is important and some people resort to the photograph on the identity card in order to help them remember.

When the expert explains the company and the service, apart from giving information and using the same speech, he is also concerned with trying to personalise the service

and make it more tangible for the candidate. He puts himself in the applicant's shoes and believes that using first names when he is talking about the different steps and services makes the other person see that there is someone behind what is being explained. He tries to transmit confidence.

Sometimes, the expert changes the order and starts by reading the curriculum and then goes on to explain about the company and the service. There are several reasons for doing this. First, it depends on the context, on the individual being interviewed. Second, sometimes the expert tries to avoid monotony and standardisation. This internal motivation makes him introduce variations to the process in order to avoid routinised behaviour.

Reading the CV is important in order to get a general idea of the candidate. However, the expert does not dwell on this because he pays attention only to crucial information (latest experience and type of job) which is going to be useful in structuring the interview. He is not interested in other details. Moreover, before reading the CV, he tells the applicant that he is going to stop to read their CV. He does this because he is aware that he is going to be quiet for several moments, and that the applicant is going to be waiting for him to continue. He wants to minimise uncomfortable situations. This course of action is not followed by the novice.

While the interview is being conducted, the practitioners had to enter the data into the database. In this situation, the novice is worried that the applicant may see something that he shouldn't while he is writing because not only objective data is collected - impressions are also written down. By contrast, the expert does not worry about this. He even encourages it. In this case, the novice's main objective is gathering data and information. The database is the tool that helps him gather this information in order to remind him of details at a later date. That is why he prefers the candidate being unable to see the screen. By contrast, the expert takes advantage of the tool and tries to gain the candidate's trust and to detect aspects that may concern him. As he said: "*I don't hide myself*". He focuses on creating a sincere relationship.

Repeating the information aloud while the fields are entered into the database is apparently a common habit shared by expert and novice alike. The novice resorts to his academic knowledge and sees it as a technique. For the expert, speaking aloud is more than a technique. He avoids an uncomfortable situation – for him and for the other person. Moreover, he uses it in order to finish getting all of the information needed and to avoid possible mistakes, as it allows the candidate to see what he is writing. Its use has nothing to do with theory: instead, it is incidental. At some point, and by accident, during his daily routine while he was interacting with an applicant he found himself talking out loud and afterwards, he could see that this worked.

Entering general data into the database should be done once we have gathered all of the candidate's previous professional experience. The novice follows this course of action because, as he says: *"We agreed with it (...) we thought it was much better to leave this information till the end as it is very "cold" and structured. (...) It is in the procedure (...)"*. By contrast, the expert enters this data first. According to him, he changes the order because this information appears in the database first. Somehow, it is the database which sets the order. Moreover, the expert thinks that there is not much difference.

Asking about the minimum salary is a mandatory field in the database. The expert, after proposing new job alternatives and taking into account posts with similar competencies, always asks about it. For the expert, this information is relevant in order not to waste time in the event of receiving an offer with a lower salary. So, he always waits until the candidate mentions an approximate salary. In comparison, the novice may leave it blank if the candidate does not know what to respond. For him it is not as important.

Gathering details of previous professional experience and the specific tasks of the jobs is a common task but expert and novice do not follow the same course of action. For instance, as previously mentioned, the novice starts with the first experience while the expert starts with the latest. Is there a reason for this? According to the expert recent professional experience is much more important than earlier experience. Thanks to his

experience and interacting with the practitioners who are in touch with the companies, the expert realised that the latest experience is more relevant than earlier experience. The most recent job experience is what has the most impact in terms of determining the candidate's profile.

Taking these findings and the field data into account, interviewing a candidate involves much more than gathering information. When practitioners are interviewing, apart from gathering the applicant's details, they gain trust and credibility, maintain the interviewee's attention and assure that he understands what is being said. They judge the applicant's opportunities in finding a job and respond to his demands, and finally they aim to get the commitment of the applicant. According to the field data and the previous analysis of the differences, these goals are achieved in different ways by the expert and the novice. These are highlighted in Table 11.

In general, the main difference between expert and novice during the interview is the fact that the latter prioritises the procedure, what has been written and what he has been told to do regarding the form. He fills in the form trying to maintain accuracy and technical aspects. In contrast, the former is more concerned with the interviewee's background and in understanding it.

Whereas the old-timer tries to gain the interviewee's trust through emotions and personal aspects, the newcomer is more interested in "doing the job in forty-five minutes", employing technical know-how. The old-timer relies on his feelings, hunches and intuitions. On the contrary, apart from these feelings, the newcomer feels more sure of himself when he can use questions in order to verify or confirm these feelings. The expert is concerned with "getting a picture", visualising the interviewee and remembering him – the person and his background – while the novice is more concerned with remembering the data and the information.



Activities	Expert	Novice
Gaining trust and credibility	Identifying the job applicant as the expert	Showing curiosity / showing his knowledge about other person's reality
	Turning the monitor allowing the interviewee to see what is being written	(Trying to avoid interviewee from seeing sensitive information) <sup>13</sup>
	Constantly maintaining a listening attitude	Chatting at the beginning
	Personalising the system	
	Showing installations	
	Using first names <sup>14</sup>	
Gathering Information	More interested in understanding the interviewee and his background than in the formal scheme	Following a scheme and filling in the form
	Aware of interviewee's reaction / what goes "unsaid"	Noting down as much as possible
	Visualising interviewee	Concerned about "detecting" lies
	Asking only for the key variables he considers relevant	
Maintaining interviewee's attention and assuring understanding	Asking about the detailed job tasks	
	Adapts discourse	Use of more technical words / same discourse
	Avoids silence	Avoids silences when these are spotted
	Uses attention-holding words	
	Makes abstract aspects tangible	
Judging professional profile and giving response	Maintains eye contact	
	Nothing predetermined done during the course of interview	Used of standard questions
		Predetermined "right" answer
	Capturing incoherent aspects	
Looking for the interviewee's commitment	He either "sees" it or doesn't	Sometimes "a test to pass"
	He reaffirms it later on (in forthcoming client encounters)	

Table 11 - Interviewing Job Applicants

Both expert and novice have the common scheme in mind but the expert innovates according to his experience from having interviewed a lot of people. These innovations are not always conscious: he suddenly realises that something works.

<sup>13</sup> In fact, the novice does not attempt to gain trust with this behaviour but to prevent the interviewee from seeing what he is writing.

<sup>14</sup> Aspects written in the middle of the two columns are common to both.

In contrast with the newcomer, the expert omits certain questions or information explicitly formalised and routinised from the past. This is due to the fact that experts can discern between relevant and trivial information. The expert spends time understanding the person but he does not spend time asking some professional-technical questions if he knows that it is not going to be useful in selecting and selling the candidate. The other reason for not asking is when he knows the answer in advance. As an expert said, *“This is something I’ve seen on many CVs. I assume it just by looking at the person, his CV and his age”*.

### **3.4.2. Creating the Candidate’s Record**

The database is a crucial tool for practitioners. It is the place where all the information is stored. Although the database is mainly formed by structured information, the most relevant information for the selection is collected in an open field at the end of the database called “Observations”. In this field, the technician’s comments are collected following a similar structure: the name of the interviewee; his age; family status; current working situation; and the urgency to find a job. Then the different work experience is included and at the end of the report key and qualitative information about the person is added. Much of this data is the practitioner’s impressions or hunches about the interviewee and the interview, but they play a crucial role in the selection process as they will help the practitioner to remember the candidate and the interview.



Photograph 12 - A technician completing the interview information in the database.



Photograph 13 - A candidate's record.

As previously mentioned, transferring these impressions to the database is a difficult task for practitioners and in order to overcome this difficulty they resort to clichés or expressions which can reflect their feelings concerning the candidate (e.g. “good man”, “he is a candidate and good candidate”, “simple girl”, “very simple girl”). However, although most of the practitioners use the same clichés, their meaning differs from one practitioner to another. The following excerpt illustrates this aspect:

***Researcher:** And when you put down “smart appearance”, what do you mean by “smart appearance”?*

***Novice:** Smart appearance, here means that... In my opinion, smart is when a person's dressed normally, not scruffy, but just dressed nice. For Ms. N [another practitioner], smart means a person who has a “very nice appearance”. Let me explain, having a very nice appearance is when somebody is not only dressed normally, but when they're really dressed up or when they're quite good looking. In my opinion, being smartly dressed is when a person is presentable.*

***Researcher:** For example, if Ms. N had seen Mr. Flerr [a job-seeker interviewed by the practitioner] would she also have put down smart appearance?*

***Novice:** No, I don't think so, because I remember that coming up one day... I know that a lot of my “smart appearance” references don't correspond with Ms. N's version of smart appearance, and that's a fact.*

“Remembering” the candidate is important and that is why writing a good report is crucial. The report helps the practitioner to remember the interview and the better it is done the easier the selection process will be. Both experts and novices use clichés and expressions – although these sometimes differ in meaning – and that is why only the person who has actually interviewed the candidate and written the report can fully understand its meaning. Therefore, the written report is not so objective. In order to fully understand it the practitioner’s explanation is needed.

One difference between the novice and the expert is the length and the quantity of data collected. The novice writes down as much as possible (during and after the interview) and he is also mindful of his use of expressions in order not to lead to misunderstanding in the event of another practitioner reading one of his reports. The expert, on the contrary, places more emphasis on the data that evokes the person, his background and the interview. The former is more focused on information. The latter is more focused on “getting the picture” and “visualising”.

### **3.4.3. Selecting Job Applicants**

As we pointed out in the vignette, in the final stage of the job placement process, differences from the old-timer and the newcomer start from the very beginning. One of the main differences is that for the expert, proposing candidates is a collective as opposed to an individual activity. He searches for more information and details by asking other technicians.

Using his and their information he is able to tell a story full of details. “Telling the candidate’s story” is the way the expert gives data, wins the salesman’s trust and helps him to remember. The experts create a story. The use of anecdotes and quotations from the candidate and the storytelling helps the salesman to “remember” and feel confident about a candidate that he has not seen before. For the expert, that is crucial.

Activities	Expert	Novice
Giving Information to the salesman	Gets data from the database (“Observations” field): database as a support  Discerns the information he wants the salesman to know but does not want him to write down  Discerns the crucial information the salesman needs	Gets data from the database (“Observations” field): reading from the database  Does not discern
	Gives a lot of information not written there	Gives a lot of information related with his work experience
	Adds comments or sentences said literally by the candidates	Uses expressions in order to facilitate the salesman’s understanding
	He is the one who decides when he has finished	The salesman keeps time
Convincing the salesman how good his candidate is	Adds comments or sentences said literally by the candidates  Adds other technician’s comments about the candidate  Uses plenty of details to reinforce positive aspects but also explains shortcomings	Says explicitly how good the candidate is  Tries to use how much he needs a job as an argument (appealing to salesman’s feelings)  Does not exactly tell the shortcomings or negative aspects (disguising)
Helping the salesman to “remember”	Adds comments or sentences said literally by the candidates, anecdotes and so on...	(Unaware of this)

Table 12- Selecting and Proposing Candidates

On the contrary, the novice is more concerned with giving objective and technical data and he takes the information mainly from the database. His way of proposing candidates to the salesman is individual. He does not collaborate with anyone else. He knows that he should convince the salesman but he is unaware that one of the key aspects is “helping the salesman to remember” the candidate. By contrast, he explicitly says how good or how needy his candidate is in order to appeal to the salesman’s emotions and feelings. Table 12 summarises these findings.

### 3.5 DISCUSSION

According to the data obtained in the observation phase and its subsequent analysis, we can conclude two main aspects. On the one hand, many aspects that entail the practice are not formally identified. Practice is much more complex than that reflected in the corporate flowcharts and procedures. These are simplifications and it is extremely doubtful as to whether they can gather the essence of practice (Bou and Sauquet, 2004). And on the other hand, although experts and novices share the same explicit schemes there are significant differences between them. Whereas the novice is concerned with accuracy and objectivity, about following the procedure and the rules, the expert is focused on more sensitive and personal aspects as well as understanding the situation. The expert departs from the formalised scheme.

Data seems to point to similar analysis performed in the past (e.g. Brown and Duguid, 1991) in which practice was typified as canonical and non-canonical depending on whether the practitioners follow the predetermined procedures or not. The canonical practice groups refer to all the formal descriptions of work (e.g. procedures, manuals, job descriptions). The non-canonical practice groups refer to the actual practices of the organisation's members. Brown and Duguid's discourse on communities of practice is strongly supported by their analysis of a gap between formalised procedures and actual practice. In line with these ideas, the novice is more focused on canonical practice, while the expert is more focused on non-canonical practice. As a consequence the novice's knowledge of the system is mainly provided by the explicit information of the company (e.g. flowchart, rules etc.). On the contrary, the expert creates this system. He has internalised it and it is much more complex than the formalised system considered by the novice.

The concept of activity is also different. The novice spends more time filling in forms, obtaining and analysing data, and it seems that he resorts to objectivity to support his decisions. In turn, the expert acts as though he is creating a story and he produces it in such a way that he is able to convince and make others "visualise" the candidate and

his situation. Ultimately, on the expert's part, there is a clear emphasis on being able to produce a coherent plot (Bruner, 1996).

Therefore, the novice is more focused on canonical practice, while the expert is more focused on non-canonical practice. As a consequence the role played by the flowchart and process documentation varies between experts and novices. The novice resorts to explicit information from the company (e.g. flowchart, rules etc.) in order to know and work within the system. On the contrary, the expert reframes his job within the system. He does so by stressing that the focus of his job is "*selling his candidate*". The target of his persuasion scheme is the potential company employer.

Taking into account these findings, we can speculate on whether there are any cognitive reasons to explain these differences. Based on the theoretical framework mentioned in the introduction, in the following sections we aim to explore whether those differences between experts and novices have a relationship with different types of knowledge; whether we can identify the relevant types of knowledge of the job placement practice, or what is the same, the bundle of knowledge.

### **3.5.1. Knowledge Types Linked to Practice: Identifying the "Bundle of Knowledge"**

Drawing on the fact that a "bundle of knowledge" is a combination of different expressions of knowledge used in practice, how is the bundle of knowledge used in job placement practice constituted<sup>15</sup>?

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<sup>15</sup> Due to the fact that there are different knowledge typologies, we will use Cook and Brown's classification. They classify types of knowledge based on tacit/explicit epistemological and individual/collective ontological criteria. This type of categorisation is not new. Collins (1993) had already presented a classification of types of knowledge based on epistemological and ontological dimensions and as a result he refers to embedded (tacit-collective), embodied (tacit-individual), embrained (explicit-individual) or encoded (explicit-collective) knowledge. This categorisation has also been used by other authors (e.g. Blacker, 95; Lam, 2000).

Flowcharts and process procedure, CVs, different forms (e.g. “the Job Offer Form”) are all part of the documentation used by all of the practitioners. They are used in practice because: *“It’s the general framework. They [the flowcharts] help you to realise what your aim is”*. There are also written and implicit rules (e.g. organisational quality policy and transparency). Storytelling is also crucial for practice. The practitioners share their experiences through stories from past or current situations. These are useful for learning about the companies and the marketplace, as well as discovering and identifying key variables for the selection process and for the interview. Taking into account Cook and Brown’s model, storytelling, norms, rules and documentation are all expressions of explicit collective knowledge.

Having individual explicit knowledge is also important. For instance, many concepts used by practitioners are strongly linked with their university degree. For instance some practitioners often use sociology terms and concepts which are different from the ones used by other practitioners who belong to the field of psychology.

Personal skills are also important and they vary from person to person. For instance the expert’s skills employed in this practice are: empathy; a strong listening capacity; self-confidence; reading what goes unsaid; and a strong emotional capacity that is extremely useful when he wants to gain someone’s trust. In contrast, the novice is less skilful in these aspects. This type of knowledge is what is termed as the individual tacit knowledge and it is rooted in “doing” experiences.

Knowledge of the whole system and the identification of different contexts are also important and used in practice. For instance, realising that a corporate information meeting is not the same as a working meeting or workshop, even when the audience may be the same, is crucial. The expected behaviour in one or in another is different. In the same vein, understanding managerial messages goes further than understanding words. They have to be interpreted. For instance, the general manager states that: *“my door is always open”*. However, there is a “proper” unofficial way in which to approach him: you should know how to open that door. Equally important are the different roles



played by the practitioners in the interview. Not only do they gather information by they are also therapists, listeners, problem-solvers, advisers, detectives and at the same time they can raise unemployed people’s hopes. Realising these different contexts and their implications are vital.

All these aspects related to the context and genre of practice may be considered as tacit collective knowledge. In general, this knowledge entails the interpretative codes (Tsoukas and Chia, 2002) which underlie organisational practices. These are key for working within this setting and, in Weick’s terms, for sense-making.

Subsequently, we can say that different expressions of knowledge are used at the same time in the job placement practice. Figure 13 summarises the composition of the bundle of knowledge.

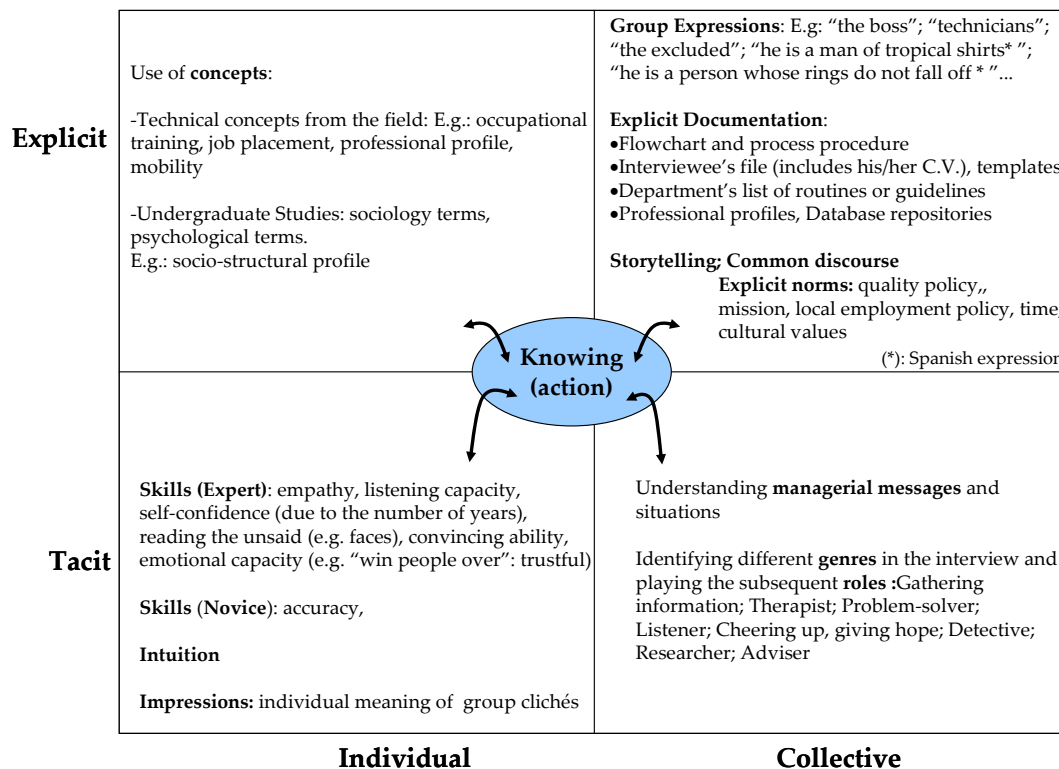


Figure 13 - Composition of the bundle of knowledge of the job placement practice

We have identified the different expressions of knowledge used in practice. However, if we pay attention to Cook and Brown's "Generative Dance" model (see Figure 8) we realise that the arrows are bi-directional. This means that in practice we use knowledge, but simultaneously practice creates new knowledge. That is why practice is referred to as "knowing", stressing the inherent dynamic relationship and coexistence of both aspects.

In order to explore this bi-directional relationship, during the study we asked practitioners about the origin of some of their practices. There was some evidence that practice had been in a knowing situation where learning had taken place.

For instance, practice had created individual and tacit knowledge. Our expert's skills come from being in the same position in the company for four years. When she started she was insecure and unable to convince anyone. It is practice and daily activity that have made her a confident and convincing person, constituting a learning experience. The expert also uses many tips which come from doing, from practice. For instance, as we have previously mentioned, she realised that interviewees often lost interest. She became aware of this as she could see them looking at the ceiling, slouching in their chair and so on. Then, she suddenly started reading out loud and she discovered that the interviewee was answering her and correcting her when she had made an error while collecting the data. After that experience, she always read their data aloud.

Practice has also been the origin of some collective and explicit knowledge. For instance, the database fields were changed to take into account relevant aspects identified in the actual interviews. Practitioners also changed their shared explanation of the service. They realised that when they explained one of the rules of the service there were several misunderstandings. The rule was that the duration of the service was six months and after that, if the job-seeker had not found work or was interested in changing jobs, he should come back and ask for the service again. Judging by applicant's faces and expressions, the experts realised that something was wrong. Then, they discovered that some people were getting the wrong idea: "In six months

I'm not going to find a job". So another sentence was added to the general explanation in order to avoid misunderstanding: ("We know that you are going to find a job before the six months is up, but..."). The practitioners identified with this experience and now all of them have included this clarifying sentence in their explanation.

Having identifying the bundle of knowledge and its relationship with practice, the next section will go deeper into the analysis of this inherent learning.

### **3.5.2. The Dynamics of Knowledge: Comparing Bundles**

In the course of this study we have been able to identify the bundle of knowledge used in practice, which is constituted by different types of knowledge. However, the analysis shows evidence that expert's and novice's bundles of knowledge are not exactly the same. The role and importance of the different expressions of knowledge vary among them. For instance, the expert's practice is mainly based on individual tacit knowledge (e.g. personal skills) whereas the novice uses more explicit knowledge. Tacit knowledge is rooted in doing, in practice. The novice tries to replace a lack of experience-based knowledge with explicit knowledge of the system, the procedure, and technical abstract knowledge (Figure 14).

This makes us think of two considerations. On the one hand the fact that the importance and use of different types of knowledge which constitutes the bundle of knowledge is not the same. Different types of knowledge exert different influence on action. Subsequently, Cook and Brown's model has certain limitations as it fails to identify this dynamic character of the different types of knowledge.

On the other hand, we can focus on the fact that the bundle of knowledge evolves which reinforces the idea of "Generative Dance". Therefore, the results show evidence of the existence of learning which is simultaneous to action. This fact makes us

consider the simultaneity between doing, knowing and learning and therefore, leads us to consider knowing as part of action.

Finally, we can speculate on the way the expert's bundle of knowledge has evolved. Why do tacit individual aspects prevail over others? One of the reasons may be the idiosyncrasy of this practice. The practice of job placement in this company involves uncertainty and a high level of complexity. This fact makes it rather difficult to rely on explicit artefacts to carry out practice. This specific practice, job placement, involves more persuasion than the use of technical objective reasoning. It involves being aware of context and taking the best course of action accordingly. It is much more than following procedures, guidelines or rules. It is based on practice.

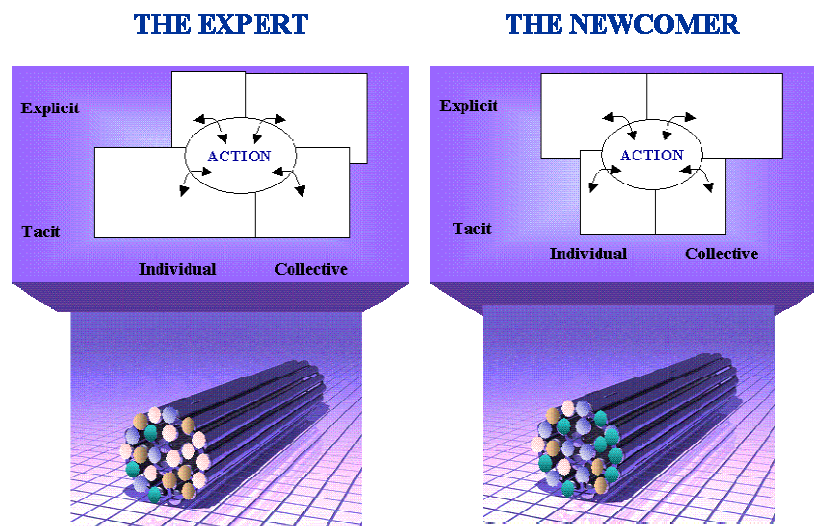


Figure 14 - Different Bundles of Knowledge in Practice

### 3.6. CONCLUSIONS AND FURTHER RESEARCH

In the light of the different trends in the study of knowledge, we started this paper by highlighting some questions concerning different types of knowledge and their relationship with action. After this stage of the research, data shows evidence that indeed, in practice we use a bundle of knowledge which is constituted by different expressions of knowledge. However, the articulation of this bundle is not stable. It

varies between experts and novices and the idiosyncratic characteristics of the nature of practice seem to have a certain influence on the prevailing knowledge. Hence, the combination of knowledge is dynamic. These aspects lead us to consider further consequences.

First, Cook and Brown's model has been a good framework to identify the different types of knowledge but, at the same time, one of its shortcomings is that it is rather static. According to our provisional findings, Cook and Brown's model needs to be developed to acknowledge diversity.

On the other hand we have come to the conclusion that Cook and Brown's model fails to identify the role or predominance of certain knowledge expressions in comparison with others. In this case, we show evidence that for the same practice different practitioners rely on different types of knowledge. As previously mentioned, individual tacit knowledge plays a prevailing role in the expert's bundle of knowledge. By contrast, the novice resorts to explicit knowledge – individual and collective – to carry out practice. These findings offer us the opportunity to reflect on the transition from novice to experts and the concept of expertise.

Second, how does a practitioner turn into an expert? What are the main differences between expert and novices? How can we define expertise? After having identified the existence of different bundles of knowledge between expert and novice, all these questions arise in terms of an interesting field which requires further attention and inquiry and in which knowledge types, knowing, practice and learning are interwoven.

In the light of the provisional findings of the case study analysis, although apparently expert and novice perform the same practice, both, however, are not performing the same action. First, they define their practice in different ways and second, whilst the novice focuses on filling out forms, getting data and objective information and remembering all this data, the expert is much more interested in getting to know the candidate, creating a story and convincing others of how good his candidate is. He

relies on hunches and impressions and tries to gain the trust of the candidate and the salesman.

Drawing on Schutz (1962) and his phenomenological approach, we could state that although the act – what is seen – is the same, the action is different<sup>16</sup>. Schutz states that when we are studying human action, we should consider certain elements which are not observable, such as the purpose and the mental project. Hence, the study of human action should not be constrained to its observable element – the act. It will imply the study of the motives and intentions that are subjective and inherent to each actor. Therefore, action is affected on the one hand by our stock of knowledge, which gathers both practical and theoretical knowledge, and, on the other hand, by the motives of the actor and his scale of relevance or purpose-at-hand.

In our case, taking into account the bundles of knowledge comparison, we could state that the knowledge-at-hand of expert and novice is not the same but at the same time their scale of relevance is different. We cannot state to what extent they are different but one thing which was evidence in the analysis is that the novice focuses on canonical practice. He was much more concerned with following the rules and procedures of the organisation. On the contrary, the expert is more focused on non-canonical practice. As a consequence, the two observable acts apparently seem to be the same, but they are two different actions with different knowledge bundles but at the same time with a different scale of relevance.

The study of this issue may shed light on certain aspects of the knowledge management field, especially those aspects which have a relationship with the theory of expertise and knowledge in practice.

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<sup>16</sup> One of Schutz's outstanding theories is his study of action. Differing from his predecessors, Schutz defends that an action is not observable because it involves motives and purposes which are inherent and these aspects are not observable by the senses. According to Schutz the action consists of three elements. The purpose, which is inferred and therefore cannot be observed. It is constituted by all the reasons for which the actor performs the action. It implies a desire to change reality. The mental project is also inferred. It is the mental process that the actor is going to follow in order to change reality from state A to state B. Finally, the act, which is observable and consists of the execution of the mental project.

Finally, after the first results of our research, exploring in greater depth the dynamics of knowledge and knowing in practice is worthy of note. The scope of the study has not allowed us to consider some organisational aspects that may have an influence on it. For instance, Lam (2000) highlights how different types of organisational structures affect knowledge creation and Engeström's model (1987) stresses how rules, new objects, the community, division of labour and different tools exert continuous pressure on practitioners affecting the actual practice and its performance. Reflecting on this will be well worth the effort.

