

Knowledge Restaurants at the End of the Paradigm

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There is a theory which states that if ever anyone discovers exactly what the Universe is for and why it is here, it will instantly disappear and be replaced by something more bizarrely inexplicable.

There is another theory which states that this has already happened.

Douglas Adams: The Restaurant at the End of the Universe

Abstract

The e-era is obsolete. It is time for a step forward, to the f-era. In this new era the Kuhnian conception of paradigm should be replaced by the new f-paradigm; the e-knowledge-sharing¹ should be replaced by f-knowledge-sharing². In all these «f» stands for «free». In many languages the need for knowledge is expressed by the words of thirst or hunger. This gave us the idea to use metaphors of restaurants to the different types of f-knowledge-sharing; we distinguish four types: the 'buffet'-type, the 'à la carte'-type, the 'recommended by the chef'-type, and the 'coffee-room'-type knowledge sharing.

Introduction

Today we have a number of epithets describing our era, business and society. We talk about knowledge era, information society, electronic business, collaborative commerce, etc. The dominant one-letter prefix is «e» indicating the electronic -era, -society, -business, etc. In this paper we suggest starting to use the next letter in the alphabet to emphasize that we think that the e-era is obsolete; a new era, a post-e-era is on the doorstep: the f-era. Of course, this is only a convenient ex-post explanation: what we originally wanted to emphasize is the notion of freedom. Still, the previous explanation is correct as we think that the freedom dominantly characterizes the post-e-era. In this paper we focus on knowledge sharing in the f-era, for distinction we call it f-knowledge-sharing. We introduce four metaphors to describe the four major types of knowledge sharing that we have indentified. Some of them will be easy to recognize as we see them every day, others are rare today but, having this framework, we will easily recognize them once we see them.

¹ The «e» here applies to the knowledge sharing, not to knowledge only, so it is not about sharing the e-knowledge but the e-kind of knowledge sharing.

² Similarly to the previous we do not talk about the sharing of f-knowledge but about new ways of knowledge sharing which we indicate with «f».

To properly distinguish the four types knowledge sharing, as we will call them the four knowledge restaurants, first we will revisit the topic of paradigms; of course, we will use the opportunity to flash a preliminary picture of our f-paradigm. To introduce the four knowledge restaurants we also need to talk about the types of knowledge. As we worked, this happened in the other order, we first described the four knowledge restaurants and then we realized that we have to define a new type of knowledge, but this line of discussion is easier to follow.

The end of the paradigm

Before Kuhn (1996) developed the meta-paradigm of paradigmatic sciences³ it was supposed that knowledge is cumulative; i.e. that all new knowledge is based on the old knowledge – this we may call the pyramid conception of knowledge. Kuhn has shown that this is only true for certain periods in the life of a scientific discipline; this period Kuhn calls the normal science. In the present section we will revisit the Kuhnian conception of paradigms to identify three points where we suggest revising the original conception to establish the f-paradigm.

According to Kuhn the scientific disciplines, as they one by one (starting with mathematics, astronomy, physics) separated from philosophy, first were in pre-paradigmatic state. In this period each scientist had to build her/his results “from the basics”, using only philosophy as foundation. When a discipline becomes mature a paradigm forms around it – until then we can speak of an immature discipline. The paradigm determines what can – and must! – be taken for granted, it allows some devices/methods and forbids others, and establishes which problems are relevant for solving. It does not only determine the valid answers but the valid questions as well. It can be said that a paradigm determines how the scientist sees the world of her/his discipline; thus we use the metaphor of glasses through which one sees the world. Usually there is only one paradigm in a discipline, rarely two. The reign of a paradigm is the normal science; this is the period between two scientific revolutions. The normal science is the time of puzzle-solving; the existing knowledge is further polished by filling the holes in it. Nothing radical happens (Kuhn, 1996: 52):

“Normal science... is a highly cumulative enterprise, eminently successful in its aim, the steady extension of the scope and precision of scientific knowledge. In all these respects it fits with great precision the most usual image of scientific work. Yet one standard product of the scientific enterprise is missing. Normal science does not aim at novelties of fact and theory and, when successful, finds none.”

During normal science radical hypotheses cannot emerge, as nothing radically new can be deduced from the old knowledge; moreover, such hypothesis usually contradicts at least a part of the old knowledge. When a new conception appears which questions the foundations of the paradigm we witness a scientific revolution. As in any revolution, it is not sure that the new idea will win, but there is a fight. This period resembles the pre-paradigmatic science to some extent, inasmuch as scientists often once more go back to build their ideas from the basics. To emphasize this phenomenon we divorce R and D in R&D: the research is related to paradigmatic change while the development is related to the normal period.

As it was said previously, Kuhn assigned paradigms to disciplines. Lakatos (1978) argued that the typical descriptive units of examination should not be single theories (as basis of

³ *The conception of paradigms can be generalized to the non-scientific disciplines but Kuhn's original work addressed the science only.*

disciplines) but rather scientific research programmes. In the last couple of decades we have witnessed that in cognitive sciences – as in many other areas as well, e.g. in virtually all fields of management – the mono-disciplinary problems have disappeared. We started to use three new terms:

1. Multi-disciplinary problems are supposed to be examined in their entirety from the point of view of all disciplines involved.
2. Inter-disciplinary problems mean that the problem is considered to be in an empty zone between disciplines, not covered by any of them.
3. The most recent terminology mentions trans-disciplinary problems, meaning that they are tackled using tools of various disciplines but they are not examined in their entirety from the viewpoint of all these disciplines. Each discipline (or rather tools, methods, models, etc. of each discipline) is used only when it is necessary.

The three terms can be connected in the process of scientific problem solving: We find a problem or, more often, a problem domain, not covered by any discipline, i.e. an inter-disciplinary problem (domain). A multidisciplinary team or, albeit rarely, a researcher with multi-disciplinary knowledge background attempts to solve it; and they do it in a trans-disciplinary process of (scientific) problem solving. As a result of the emergence of such problems, researchers, and problem solving processes, a shift in the nature of paradigms is emerging. For the first time in the history of science, we witness emerging paradigms not around disciplines but around problem domains; such as the problem domain of cognitive sciences. This is the first pillar of the f-paradigm.

While he rejected the pyramid conception of knowledge, emphasizing that the growth of knowledge also involves deconstruction and sometimes even change of the place of building, Kuhn still maintained the building-metaphor throughout his book. This was reasonable until the mental constructions, and thus the theories and the paradigms based on them, outlived people. Nowadays the mental constructions are ephemeral in comparison with the human lifetime. Furthermore, as the breakthroughs, the radical hypotheses are always related to paradigmatic changes, we can expect researchers change their paradigms frequently – and this is really what we can see in the world of research. When we look at knowledge today, scientific or otherwise, we do not see at all. Buildings are made of solid components, such as brick and concrete, and this corresponds to well-structured definitions which were building blocks of scientific theories for long time. Today we do not have strict definitions. Not only because the advance in research is too fast so that there is no time to get to proper definitions but it seems to be actually impossible to e.g. construct a strict definition of knowledge without presupposing the concept of knowledge. The examples are countless in all human fields. This is why Capra (1991: 364-365) chooses to give up not only the foundations but also the conception of foundations: he replaces the building metaphor with the web metaphor. In our interpretation this would be a web of metaphors and symbols. It not easy to be left without any foundations whatsoever; as Einstein (quoted by Capra, 1989: 68) said when realized that we cannot rely on such fundamental principles as space and time:

“It was as if the ground had been pulled out from under one, with no firm foundation to be seen anywhere, upon which one could have built.”

We can only admire Einstein’s enormous intellectual courage to go on with his ideas without any foundation. However, similarly as an average student of mathematics is expected today to do swimmingly deductions that made Euclid one of the greatest mathematical minds ever, we

expect researchers today to accept as their normal condition that there are no solid foundations whatsoever, that they can only work with floating webs of less-than-concrete metaphors and symbols. Furthermore, this floating web of metaphors and symbols does not stand still, it keeps changing, and even if it seems to be still, its meaning keeps changing. Thus the researcher is expected to change the interpretation and her/his glasses all the time. This is the second pillar of the f-paradigm.

The last point we want to discuss about paradigms is how new knowledge of this is accepted. Popper (1959) refuted the idea of positive verification and proposed the negative verification (falsification) instead. This was, in turn, refuted by Kuhn (op. cit: 157-158), who argued that new knowledge and new paradigm are accepted if they are convincing and if they promise better results:

“... less on past achievement than on future promise.”

Therefore, Feyerabend (1993) declared that anything goes! So is there no verification at all? We accept Polányi’s (1966) argument of mutual control and thus the interpersonal verification. The academic world is actually built on interpersonal verification; this is what we do on a PhD viva or when reviewing conference/journal papers. It does not matter if we attempt to verify or falsify hypotheses – what matters is whether the gatekeepers of the discipline (Csíkszentmihályi, 1997) let in the new knowledge or not. The principle of interpersonal verification is the third pillar of f-paradigm.

The previous description indicates the need for a new meta-paradigm. Until it is born we will use the *f-paradigm*, which name indicates freedom, openness and thus the ability to change. The f-paradigm is the framework in which we want to establish our four knowledge restaurants. As the different restaurants are places for sharing different types of knowledge, we need to introduce the four knowledge types first.

Four types of knowledge

When describing the act of knowing Polányi (1962: 55-65) realized that e.g. when hammering a nail we are differently aware of the hammer and of the nail. What is in the focus of our act, he called “focal awareness” in this case we have focal awareness of driving in the nail; of everything else, such as the feeling in our palm, of the hammer, etc. in this case, we have “subsidiary awareness”. Polányi (1966: 11) uses a metaphor from anatomy to describe the structure of the two types of awareness:

“... we are aware of the proximal term of an act of tacit knowing in the appearance of its distal term; we are aware of that from which we are attending to another thing, in the appearance of that thing.”

These terms come very near to the front-of-mind and back-of-mind attention. (Davenport-Beck, 2001) While reading, the meaning of the text is in the focus and there is a subsidiary awareness of the letters, grammatical rules, etc. In terms of knowledge we can speak of focal knowledge and subsidiary knowledge respectively; this is the first dimension of our knowledge typology.

Ryle (1949), examining the nature of knowledge, asserted that not all knowledge can be described as a set of facts and propositions. We may know how to do things, which we cannot

necessarily formulate as a list of propositions. The knowledge of facts and propositions Ryle calls “*knowing that*” and the knowledge of how to do things “*knowing how*”. Anderson (1983) arrived at the same categories of knowledge as Ryle but coined different names for them; he speaks of *declarative* or *descriptive knowledge*, to emphasize that we store this kind of knowledge in form that can be verbalized; and of *procedural knowledge* to draw attention that this kind of knowledge manifests itself in the procedures we perform. The essence of distinction between ‘know-that’ and ‘know-how’ is the falsification of the intellectualist legend (Ryle, *ibid*: 22ff), according to which an act can only be considered intelligent if and only if the person is thinking what (s)he is doing while doing it and so observes rules or applies criteria. Borrowing an example from Ryle (*ibid*: 30) this would mean that:

“The chef must recite his recipes to himself before he can cook according to them.”

If you have ever seen a chef you will know that this is not the case.

If we dig deeper, we can find further knowledge categories that are still not covered. For one, if we do know how to perform a certain operation and detect and correct the mistakes and also to improve the process, it is not necessary that we would have also been capable of creating this ‘know-how’. So there seems to be a deeper understanding, which is necessary to create a novum, although, we can polish an existing process without it. To adopt a similar term to ‘know-that’ and ‘know-how’ this missing knowledge category could be named ‘*know-why*’; this is the knowledge of the problem solver. Gurteen (1998: 5) also uses the chef as an example: if there is an ingredient missing from your cake, knowing why that ingredient was part of the recipe might help you finding a substitution:

“In fact, know-why is often more important than know-how as it allows you to be creative – to fall back on principles – to re-invent your know-how and to invent new know-how.”

We have originally constructed our knowledge types at this point. The first dimension was the focal-subsidary distinction and in the other dimension we had *facts*, *skills*, and *intuition*. The subsidiary knowledge of a fact is the measurement (i.e. the rules of measuring) and the focal part is the event. The subsidiary part of skills is the set of rules and the focal part is the act. The subsidiary part of the intuition is the set of logical rules, the explanation – always posterior. The focal skill correspond to ‘know-how’, the focal intuition to ‘know-why’, and all types of subsidiary knowledge are ‘know-that’. For a while we attempted to describe the focal facts as ‘know-that’ as well, as this knowledge type is described as facts and propositions. This was a mistake. If we experience an event, we will know more about it than what we can put into words. For proper distinction we must consider the phenomenology of the events and include the qualia (see e.g. Jackson, 1982; Chalmers, 2003) into the focal facts; for distinction we can add another knowledge type to Ryle’s model, we call it ‘*know-it*’. This model seemed appropriate until we wanted to examine the knowledge of decision takers.

Examining what leaders and managers do today in relation to knowledge work we have observed that it is also important to find where the existing knowledge can be utilized. Drucker (2002) came to similar conclusion and recognized as important to answer the question “What is the task?”. This is the knowledge of what is worth dealing with; it can be added to the previous knowledge model as the *knowledge of problems*; or, in the terminology of Ryle’s model, the ‘*know-what*’. (Table 1) The subsidiary part of the knowledge of problems we call «depicting», meaning, that when we know what is worth dealing with we can describe it in certain manner but this is usually not a well-structured formal description,

rather a vague picture not unlike a caricature. The focal part of the knowledge of problems the «outset», i.e. the understanding of the problem as it can be seen at the start. In the case of ill-structured problems the problem will look very differently near the end of the problem solving but the picture which we start with is important as it affects how we approach the problem.

Table 1: Types of knowledge

	facts	skills	intuition	problems
focal	event	act	hunch	outset
subsidiary	measuring	rules	explanation	depicting

In the following section these types of knowledge will be offered as outputs in the different forms of knowledge sharing (actually the skills do not appear explicitly in the output but they usually play role in producing the output). These are what we get in the knowledge restaurants.

The knowledge restaurants

In many languages the need for knowledge is expressed by the words of thirst or hunger. This gave us the idea to use metaphors of restaurants to the different ways of knowledge sharing. We characterize all the four ways of knowledge sharing introduced here with the letter “f” which refers to freedom; it will appear in the role of intermediation. The description can be followed on Figure 1.





	input: news (facts)	buyer: operations	place: news/ portal	normal paradigm
	process: construction	seller: construction		
	output: design (facts)	agent: f-instructor		
	input: design + novum	buyer: construction	place: development -space	
	process: development	seller: development		
	output: innovation (facts)	agent: f-broker		
	input: problem (outset)	buyer: development	place: research-space	paradigmatic revolution
	process: research	seller: creative laboratory		
	output: novum (intuition)	agent: f-guru		
	input: gossip	buyer: creative laboratory	place: coffee-room	
	process: grasping the essence	seller: leader/manager		
	output: problem (outset)	agent: f-coach		

Figure 1: The buffet, the waiter, the chef and the coffee-room.

In a 'buffet' you can choose from the food on the table. This corresponds to portals offering pieces of knowledge of facts; here we call them news portals. This kind of knowledge sharing usually happens between the construction and the operations (here this means the main process of an organization), on the input side we find facts, they go through the process of construction and output is a design (facts arranged according along a pattern to improve the main process). The agent of this is called the *f-instructor* to emphasize the importance of being free when surfing.

In an 'à la cart' restaurant you may order from the waiter from the menu or you can choose from the specialities of the day. On the input side we find the design from the previous level and the novum from the next level, they go through the process of development in a collaboration of the construction and the development, and the output is an innovation (facts arranged in new patterns, indicating new processes and/or new products). Therefore the place where this happens we call the development space. This type of knowledge sharing is the source of competitive advantages in the sense of Ridderstråle and Nordström (2002), who claimed that the source of competitive advantage is not the competition. The source of success in competition is in being different from the others. The agent in an à la cart restaurant is the waiter, which role here is fulfilled by the knowledge broker – again, it is an *f-broker*.

These two restaurants, i.e. the knowledge sharing facilitated by the *f-instructor* and the *f-broker* belong to the domain of normal paradigm, as it was described in the first section. Nothing radical happens; the existing knowledge is polished further. On the contrary, the next two levels belong to the domain of paradigmatic changes, to revolutions. The 'recommended by the chef' restaurant and the 'coffee room' are the places for the radical ideas. The players here change their glasses through which they see the world all the time.

There are very expensive restaurants where you will get specialities 'recommended by the chef'. This involves several things: you will always have fresh food but there is no wide choice; there is only the raw material what the chef bought today; you will also be affected by the mood of the chef – what (s)he wants to cook today is what you can get. But somehow the restaurant, the chef, the food, the drink, and even your mood and personality form a great harmony and you shall enjoy your meal. This is what happens on the third level of knowledge sharing. The input is the problem from the next level, which goes through an un-describable creative process of research, and the output is a novum. Something, which did not exist before; a new idea that can form the basis for a forthcoming development on the previous level. In the restaurant only the chef can make recommendations. In the research space only the guru, in this case the *f-guru* can be the agent.

It must be noted that we draw a sharp distinction between research and development. The research we consider to be the creative process 'recommended by the chef' producing a novum; while the development is an innovation based on this novum and on the existing design. A breakthrough innovation is based on a breakthrough novum (Hammer, 2004: 1):

“Breakthrough innovations in operations – not just steady improvement – can destroy competitors and shake up industries. Such advances don't have to be as rare as they are.”

The fourth level of knowledge sharing happens between the decision taker, i.e. a leader or a manager, and the creatives; it happens in the coffee room and often they are not even talking about it. Or, at least, this is what an outsider can hear. This is a very deep sort of collaboration

which assigns the direction of the future research. Only an experienced coach can facilitate a process of such complexity, and this coach must be free – (s)he is the *f-coach*. This type of knowledge sharing is very important for the full picture and as an input source for the previous stage but here it is only mentioned, not investigated.

Conclusions

The conceptual framework that was presented above originated in two of the described restaurants: the idea was conceived in several ‘coffee rooms’ and it was elaborated in a ‘recommended by the chef’-type restaurant. The research phase is now being followed by development; it is happening in an ‘à la cart’ knowledge restaurant. The four types of the knowledge restaurant, the places for f-knowledge-sharing, and the conception of the f-paradigm could only work out in the f-paradigm itself. As the motto concludes saying that according to some it already happened – we argue that the f-paradigm is already here, we all already work in f-paradigm, although not everyone has noticed this yet.

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