Beyond Activities: Business Process Models from a Knowledge Management Perspective

Pavel Kraus[1], Gil Regev[2,3]

[1]AHT intermediation GmbH, Churerstrasse 35, 8808 Pfäffikon, Switzerland
Swiss Knowledge Management Forum, skmf.net
pavel.kraus@aht.ch
[2]Ecole Polytechnique Fédérale de Lausanne (EPFL), School of Computer and Communication Sciences, 1015 Lausanne, Switzerland
gil.regev@epfl.ch
[3]Itecor, Av. Paul Cérésole 24, cp 568, 1800 Vevey 1, Switzerland
g.regev@itecor.com

Abstract. When conducting workshops with business people, there is a significant risk to become bogged down in the details of the underlying business process rather than seeing the big picture of the value provided by the process to its stakeholders. In this paper, we describe combination of methods that we use in workshops with business people to entice them to be more creative when thinking about new products and services. These techniques range from top-down value modeling to bottom-up business process modeling. We bring together knowledge and information management in order to understand what information the stakeholders need that provides value to them.

1 Introduction

Business process modeling often boils down to describing activities and their relationships. This is good when explaining the way the work is done now. When trying to innovate it is less useful [7]. Innovation primarily requires reflection about the new not yet realized options without distractions by too many details.

Today's pressures arising from digital transformation forces companies to radically challenge what has been done up to the very present. The first step however, is to realize what type of business model they had up-to-now meaning their value proposition and value chain, their customer types, right timing, geography and the type of profit generation.

For many companies it is difficult to think outside their own industry logic. Today's environment has a strong influence on the mindset of the leaders and they are locked into one type of thinking [2, 3]. In our experience, when asked to describe their work, it is quite natural for people to list the activities they perform and forget about the value they deliver to their stakeholders. This list of activities neatly corresponds to a simple business process model. To think of the value provided by these activities (by the business process), they need to abstract from their daily work, which is hard.

What is needed is a set of methods that help business leaders to break out of their existing thought patterns and embrace a view on a bigger whole. As the time for such strategic workshops is always limited, one has to neatly orchestrate and choreograph the flow of the workshop. The facilitation challenge is to deal with the attention span of the workshop participants and therefore to use the right mixture of techniques that support the knowledge flow and document only so much as is needed to take-up the red threat in the next workshops.

2 The approach

During two projects aimed at improving a Real Estate Development Company (REDC) or redefining business services at a Global Med Tech Company (MDTC), we have applied two series of workshops each with a different focus.

The goal of the REDC project, done in 2014, was to embed best practices and new creative solutions into real estate product development and thus surpass competition through innovation. It consisted of three times two consecutive workshops about three weeks apart. There were eight participants from REDC: the department head, site heads and team members.

In these workshops we created a big picture of the service delivery at each site by compiling various processes in terms of their past and future success factors, frequently encountered problems, applied techniques and in-between results to reach each project milestone. In the subsequent workshops we built on the previous results and refined them.

The goal of the MDTC project was to critically reflect upon current value chain processes and related digital transformation options. The idea was to subsequently change these processes by identify ways to introduce disruptive innovations. The project consisted of four consecutive workshops and was done in 2017. There were six participants: the department head, a customer representative and team members.

The first workshop helped to identify the company's role and business model in the setting of its industry. This goal has been reached by identifying the stakeholders, their specific goals and the overall business value chain. By placing the company into the value chain using a simplified business process modeling notation the current existing positioning has been visualized and thus clarified. The method we used was based on SEAM, as described in [7] and helped to speed up the reflection process by hiding the activities comprising the business process and focusing on the service provided by the company's value chain to its stakeholders. Figure 1 shows the generic initial model that was used to train the workshop facilitator. In this diagram, the whole business process is viewed as a black box in the hexagon shape called "Treatment" (without showing the activities).

In the second workshop the current setting was expanded to encompass the whole ecosystem. This was done through various techniques and methods. In one case, over 50 business models have been considered, twelve chosen and six discussed in detail. This approach helped the business leaders to think outside the box and to reconsider the usually not reflected assumptions of their own business.

In the third and fourth workshop, particular services or products have been designed and brought into the value chain. Their fitting into the ecosystem was challenged against the background of good understanding of the business process and business models. These workshop series in both projects were built on each other, creating and reusing some parts again and again (clever recycling).

Both project approaches, specifically the workshop designs and applied facilitation techniques (process, orchestration and choreography) ensured to speedily work out and clarify the success factors and reflect on the possible current and future activities of the company. Thus, it enabled the workshop participants to see the big picture and thus move away from their old activity based business process thinking, unleash creative thought processes and fire their imagination to envisioning different options.

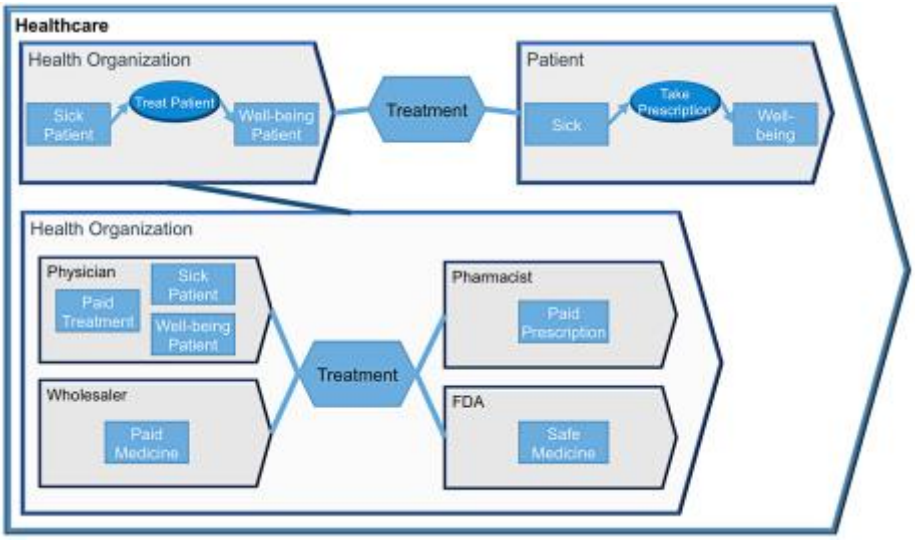

Figure 1: SEAM Service Diagram hiding the business process details (from [7])

3 Time sensitivity of knowledge and information transfer processes

In any human collaboration, face-to-face or virtual, one is engaged in a flow of tasks that form the communication process. These tasks have to do with knowledge or information and mostly with both simultaneously.

The orchestration and choreography of these tasks and the corresponding techniques with both domains (knowledge and information) will define if one is successful or not and will create value for the stakeholders.

Orchestration and choreography means to engage with the group so that the commitment stays high even though the mood might go up and down. To know when the focus needs to be changed, when to prevent distraction or apply a specific technique or illustration. Or when the process has reached a critical point that needs a

stop over: to allow the group to struggle if necessary in order to reach the breakthrough. Although there are countless workshop techniques, they have been hardly looked at under the knowledge management perspective.

The distinction between knowledge and information is key to the right choice of workshop techniques. This distinction is based on the definition that knowledge resides only in the human mind and is inseparably linked to people [6, 9]. As soon as knowledge is captured in any way, it is explicit and therefore becomes information.

Knowledge has a half-life. As humans we forget and this half-life can be as short as only a few minutes. From empirical experience in workshop facilitation we know that an idea can get lost within five minutes and if not captured, it cannot be recalled anymore.

This places a key focus on the interplay between speaking and capturing within various time spans. The longer one speaks without visible capturing, the higher is the risk to lose the thoughts, break their flow and thus risk losing the ideas. The quality of the collaboration depends on the right mix of speaking and capturing, and on bringing the captured information again into the attention of the speakers to build on it at a later stage The orchestration and mastering of individual techniques dealing with knowledge or information is therefore key.

Although these are known and somewhat trivial basic facts, one has to look into these granular details in order to formulate strategies on how to improve this interplay.

Knowledge and information are constantly transformed into each other as depicted in Figure 2. During workshop facilitation, knowledge is developed during conversations (process 1) and becomes information when captured (process 2); this recorded information (on cards, slides or audio) is then placed into a new context (process 3) and used to build up knowledge later on in the workshop (process 4). Often, these four processes occur simultaneously during collaborative work [1].

Business process models appear in the information layer (bottom part of Figure 2). The knowledge of the participants has been made explicit into cards, post-it notes and sketches. A formal business process is created by process 3.

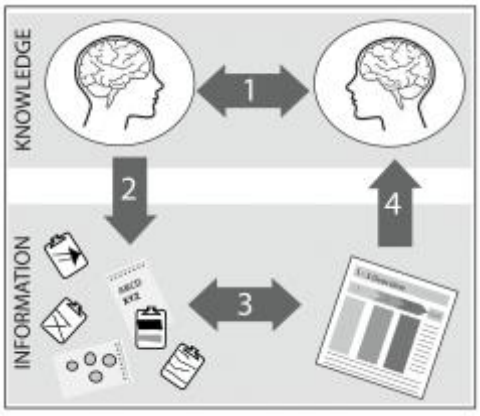

Figure 2: Knowledge - Information Transfer Processes (from [1])

In our projects we have chosen the techniques and tools in the right mix to support all four knowledge information transfer processes. In addition, they had to be chosen and applied under consideration of their dependency and sensitivity on time aspects.

Time is needed for thinking, speaking and writing. But one can much more think than speak and much more speak than write. Another issue is that all of these three activities tend to foster, but also to hinder each other. For example, speaking can disturb or prevent somebody else's thinking process. This shows how the time sensitive management of knowledge and information processes is critical.

In order to apply these learnings in similar situations one has to become sensitive to the time aspects and observe and manage the various processes sequentially or simultaneously. This requires proficiency in keeping these processes in balance respective to their real time contribution to the success during the workshop. Unfortunately, in most cases Process 1 (just talking) is too dominant, leading to documentation gaps and thus to losses of the resources invested into the workshop.

4 Orchestration of knowledge and information interplay

The workshop choreography aims to mix the various techniques in order to grasp emerging ideas and to encourage the participants so develop them further. The orchestration of this mix is time dependent. In face-to-face meetings, when there is possibility to communicate non-verbally and to ask back and clarify the points made, the documentation can be on the light side. This is true for short discussions or meetings.

During the face-to-face phase in the workshop, the information notation can be done quickly and superficially, with the main emphasis being on process 1, i.e. the direct knowledge exchange. Process 2, 3, and 4 are used just enough to support knowledge flow among all participants. In this way, for example the benefits of a service were modeled and roughly sketched on cards. The cards were used to trigger new creative ideas.

In a longer workshop - half day or longer - knowledge capturing and especially the quality of captured information tends to become more and more important (Process 2). This was done e.g. by taking the cards depicting the service flow and rearranging them in a new way. The information on the cards was also clarified and possibly improved in this step.

After rearranging the cards in a new context, the workshop moved on, bringing new aspects as for example value modeling into focus. The longer the collaboration and communication period, the more emphasis was there on the documentation. All workshops were audiotaped. Between the workshops process three had the highest priority. Time was spent for transcribing, editing of the information, visualizing and reflecting upon the results as well as modeling. The goal was to produce high quality business process information so that in the next workshop the process four (learning) would work just fine and people would be able to prepare, onboard and get into the subject matter as quickly as possible (next workshop inception).

To be successful in such workshops one has to find a way to enable people to think freely and creatively in a first step, to capture their knowledge visibly to others in the

second and to use this information to further increase and enrich common knowledge in the third step. State-of-the-art workshop designs orchestrate these steps well and enable the participants to go beyond what they have imagined.

5 Time aspect in managing knowledge and information

There is often a specific discrepancy in experience when aiming to creatively handle knowledge and information. There is experience of comfort when handling real time knowledge during the face-to-face workshops. However, this comfort often misleads the participants to use poor and inadequate techniques in the knowledge intensive moments [5]. One thinks that one will remember the insights later on. Therefore one does not pay attention to carefully developing the thinking, reflecting or associating. Furthermore, the subsequent capturing of the insights is done poorly. As a result, there is frustration for not being able to remember and rebuild knowledge from this poor-quality information quickly enough at a later point in time [9].

This discrepancy between the remembered comfort (in dealing with knowledge) on one hand and the frustration (in dealing with information) on the other often leads to the false conclusion that IT modeling or other IT tools would help to solve this problem. In reality only the stringent application of the right mix of techniques at the right time can help to solve this dilemma and to create value for the stakeholders.

The graph in Figure 3 shows examples of adequate techniques for specific knowledge - information ratios and time spans:

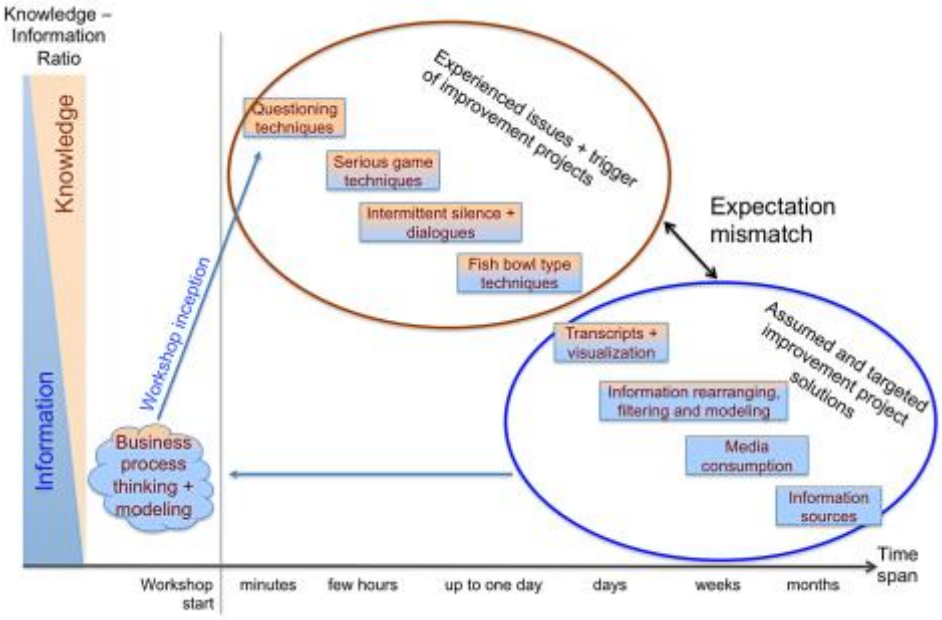

Figure 3: Adequate techniques for specific knowledge-information ratios and time spans

Both of our projects helped us to reiterate a fatal fallacy known in knowledge management. In the past, people mistakenly identified the cure of the issues in the knowledge intensive area (top-left) with the tools and technology typically used to deal with information in a longer time span (bottom-right).

Seeking the remedy for frustrations caused by poorly dealing with knowledge in the first place in tools with a heavy emphasis on information management is a classical fallacy of knowledge management in the 90's. Still today, often the hope prevails that tools like wikis, DMS, search engines or collaboration suites etc. will bring the expected benefits [5].

The cause of these frustrations, however, lies in the mismanagement of short time knowledge exchange of up to one day. Here tools and techniques, mainly in the area of face-to-face facilitation, value based process modeling and rich knowledge capturing bring the expected value, if applied stringently and systematically.

Note that before the workshop begins (bottom-left), the participants usually have what we have termed "business process thinking." They know, often tacitly, the activities they do. The workshop facilitator's role is to draw them to the top-left where their knowledge of the business model will begin to be challenged (workshop inception). After the workshop an improved business process model can be drawn.

6 Lessons learned and conclusions

Practical experience gained during the series of workshops showed that the importance of orchestration and choreography in the usage of the various tools and techniques has been underestimated, especially their critical time dependency in supporting the innovation and creativity processes. We realized how sensitive and time dependent the interplay between knowledge work and the information capturing is.

One needs to apply the right techniques for the right time span and pay attention to the granularity of the applied techniques and tools. The longer the working phases are, the more the weight shifts from knowledge to information. While within short time frames we deal with a ratio of 90% knowledge and 10% information this ratio changes in favor of information when we prolong the working phase into days, weeks or months.

During the workshops when the knowledge was still present, the transfer of knowledge and learnings from one section of the workshop to the next was easier and techniques for reflection and re-evaluating of the captured information were needed [4]. Often people sketch ideas or parts of business process on cards in silence and thus enrich their thinking while creating high quality information. After three to seven minutes silence the discussion starts again. Questioning techniques for instant support of creating new thoughts, serious game type cards, context related triggers are other examples for useful techniques for a 3 - 15 minutes time frame.

For intermediate support between 15 and 60 minutes «fish bowl» type arrangements were helpful. This means applying simple rules when and how to speak and contribute to the discussion. The advantage of this technique is to improve

participants' reflections and associations by consciously providing time for it. This triggers new ideas and thus supports innovation.

Between the workshop's sections one needs more time to rearrange the captured information and enrich it through audio transcripts and subsequent reflection. The goal of the workshop inception was to become productive as quickly as possible again, either with the same or with new participants.

Business process depictions (detailed or big picture) are indispensable for starting to develop innovative ideas.

Value modeling and business process modeling techniques helped to develop knowledge in a better quality and richness than through classical facilitation. To evoke this richness, we aimed at codifying knowledge to information just enough not to break the flow of new ideas and creativity, but to be able to capture and visualize it after the workshop. The outcome of the MDTC workshops was a set of simplified business process models, each representing the implementation of a business model selection listed in [3].

Shifting the view from just activities to the final outcome (e.g. satisfied customer) and providing the context as a big picture provided an alternative approach to service innovation. The role of digitalization played a key role in this modeling, as well as the introduction of a new intermediary service. As shown in Figure 4 the company now offers a new service it did not provide before, which is only possible through a new way of communicating with the customer through an app. In this way the company captures additional value and strengthens the relationship with the customer.

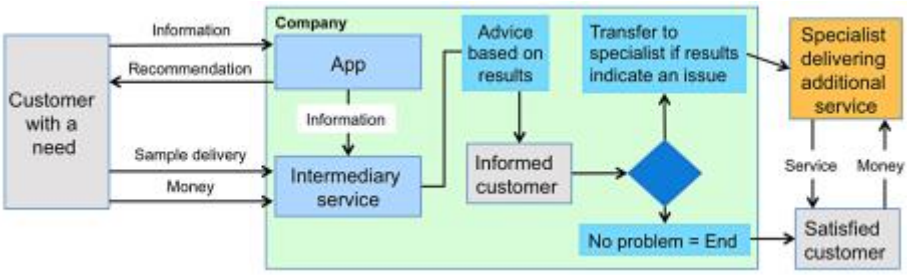

Figure 4: Service process flow for new digitalized services

A by-product of these projects has been also found highly valuable. It revealed the reason why so many improvement projects, be it in knowledge management or business process reengineering, have failed and are still failing. The reason can be found in the mismatch of expectations. People are looking for remedy of issues caused through inadequately dealing with knowledge through technological solutions that are in reality aimed at dealing with information. The thorough understanding of this mismatch is of utmost importance when designing business processes that lead to innovation and breakthroughs.

7 References

1. Bertschy H., Kraus P., Managing Complexity in Pharmaceutical Research. In Systemics, Viable Solutions for Complex Challenges - Ninck et al., CreateSpace Independent Publishing Platform, Seattle. 2014
2. Christensen, C.M., The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail, Harvard Business Review Press, 2016
3. Gassmann, O., Frankenberger, K., Csik, M., The Business Model Navigator: 55 Models That Will Revolutionise Your Business, Pearson Education Ltd, 2014
4. Jungmeister, A., Innovation and Reflexivity in the Research Process, Cambridge Scholars Publishing, 2016
5. Kraus, P., Wie Wissensmanagement-Projekte nachhaltig scheitern. Auf dem Weg zu einer Erfolgslogik. In WISSENSMANAGEMENT beflügelt: Wie Sie einen unbegrenzten Rohstoff aktivieren. Beier H. et al., Akademische Verlagsgesellschaft AKA, Berlin. pp. 185-212., 2015
6. Probst, G., Wissen managen: Wie Unternehmen ihre wertvollste Ressource optimal nutzen, Gabler Verlag, 2013
7. Regev, G., Hayard, O., Wegmann, A., What Have We Unlearned Since the Early Days of the Process Movement? BPMDS'16 Working Conference on Business Process Modeling, Development, and Support, Ljubljana, Slovenia, June 13-14, LNBIP 248, 2016
8. Rock, D., Your Brain at Work: Strategies for Overcoming Distraction, Regaining Focus, and Working Smarter All Day Long, Harper Business, 2009
9. von Krogh, G., Care in Knowledge Creation, California Management Review, Vol. 40 No. 3, pp. 133-153, Spring 1998