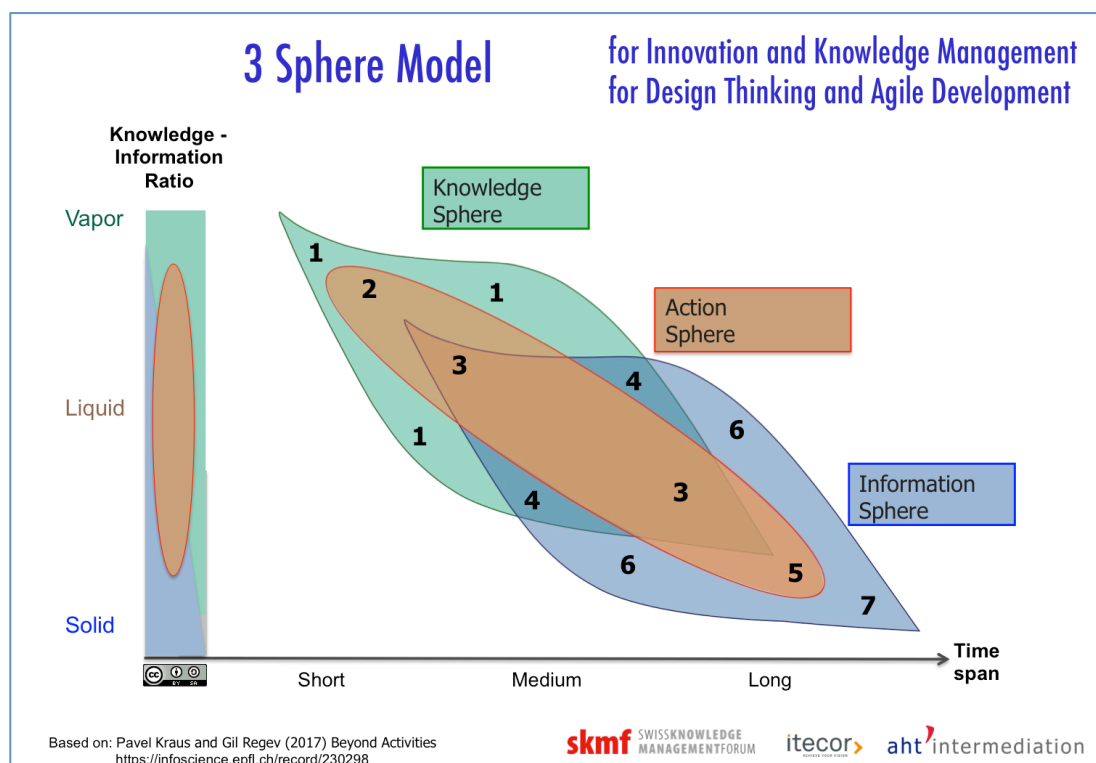**The 3 Sphere Model - Description and Practical Application
in Knowledge Management (KM)**

This model is most useful in the initial phase of a knowledge management project. It helps to set the scene for KM project goals and selection of ideas, techniques and tools.

Developed by Dr. Pavel Kraus (AHT) and Dr. Gil Regev (EPFL) and continuously improved by the SKMF community, the original 3 Sphere Model shows the relationship between time, knowledge, information, and action. In its new 2021 version it also shows if the contribution of the various techniques and technologies to success and value generation is active or passive.

Often we are overwhelmed by the staccato of knowledge management techniques and methods that all claim to help an organization to become more innovative, agile or customer orientated. As many of these methods are just rebranded existing old ones, the 3 Sphere Model helps to position these methods.

Thus, this model facilitates rapid clarification of terms, identification of knowledge management issues, and it helps to pinpoint the relevant techniques and tools to address these. The model situates these techniques, and tools and shows where they can bring the greatest benefits. Combined, this understanding can enhance and accelerate knowledge management projects and prevent their failures.

3 Sphere Model for Innovation and Knowledge Management for Design Thinking and Agile Development

Based on: Pavel Kraus and Gil Regev (2017) Beyond Activities
https://infoscience.epfl.ch/record/230298

Underlying Assumptions and Definitions

Knowledge is created through an individual process of changing cognitive structures and enables actions. Knowledge in the narrower sense is always bound to people. (D-A-CH Wissensmanagement Glossar, 2020 Edition). Consequently, the 3 Sphere Model defines the term "knowledge" as what people know in their heads at a given moment.

Information is defined as data in context. The existence of information is not necessarily linked to an observer, while in the case of knowledge, the information requires a cognitive observer (Wikipedia). Accordingly, the term "information" in the context of the 3 Sphere Model refers mainly to documented knowledge, information in context, or captured

knowledge expression (e.g. conversation). In this light, so-called "explicit knowledge" is considered as information.

The 3 Sphere Model has two axes. The first axis portrays the transition between knowledge and information. The top extreme represents 100% knowledge, i.e. no recording or note-taking has been done. The bottom extreme describes a situation where only information exists and knowledge has been forgotten. This transition has been depicted in terms of three: vapor, liquid, and solid, drawing on a scientific metaphor.

The second axis (in the original model) represents the timespan in which knowledge and information exist and implies a corresponding use of techniques and tools for dealing with that knowledge and information.

The 3 Sphere Model consists of three spheres spanning knowledge, action, and information. Their intersections form seven distinct areas with varying properties:

1. **Intuition, hunch feeling, first thoughts – not yet very clear ideas**
   (M. Polanyi definition of tacit knowledge – 1960s – pre-thought – you know more than you can tell – you feel there is something there, but you cannot tell it. Plato's Meno paradox – e.g. if a scientist can explain what the problem is, there is not a problem anymore. Tacitly, you know there is a problem, but you cannot as yet express it.

2. **When ideas become clearer, they can be formulated through speech and expressed and communicated to others**.
   Action is possible, but not obliged. Action either changes the state of something or prevents the thing from changing. Area 2 can be just talking, without necessarily acting, but talk is also an action. Link to Concrete Experience-Reflection Observation-Abstraction Conceptualization-Active Experimentation, Kolb's Experiential Learning Cycle. (Plan-Do-Check-Act turned 90 degrees counterclockwise)

3. **Co-existence of knowledge and information**.
   Knowledge gets noted down, recorded, or captured in some way (written, audio, video). Area 3 is the interplay of knowledge, action, and information. Most commonly experienced in workshops or meetings.

4. **Knowledge and information are available, but there is a lack of understanding / education / maturity. Therefore no action possible**.
   Look for additional answers in Polanyi / Theory U – O. Scharmer. Waiting zone – no action needed, necessary, desired, etc. Knowledge is there, but it is not actionable yet – D. Ausubel (see below)

5. **Artificial intelligence** – action is taken by machines / algorithms / animals and carried out. Action is possible without direct involvement of people's knowledge.

6. **Stored information**.
   No knowledge is present in the minds of the people involved anymore. However, information is available and ready to be reinterpreted and transformed back into knowledge again. Information is accessible through search, annotation, structure, tagging, etc.

7. **Stored information not readily accessible** – so called "data grave".
   Can be also a manifestation of information overload. (Eppler & Mengis, 2003)

Mapping of Selected Techniques and Methods

After applying the 3 Sphere Model in consulting and teaching for some years now, we realized that the utility of the model could be improved by loosely mapping selected techniques and methods along the three spheres. The mapping is not exact; it is intended to be indicative, i.e. showing the relative position.
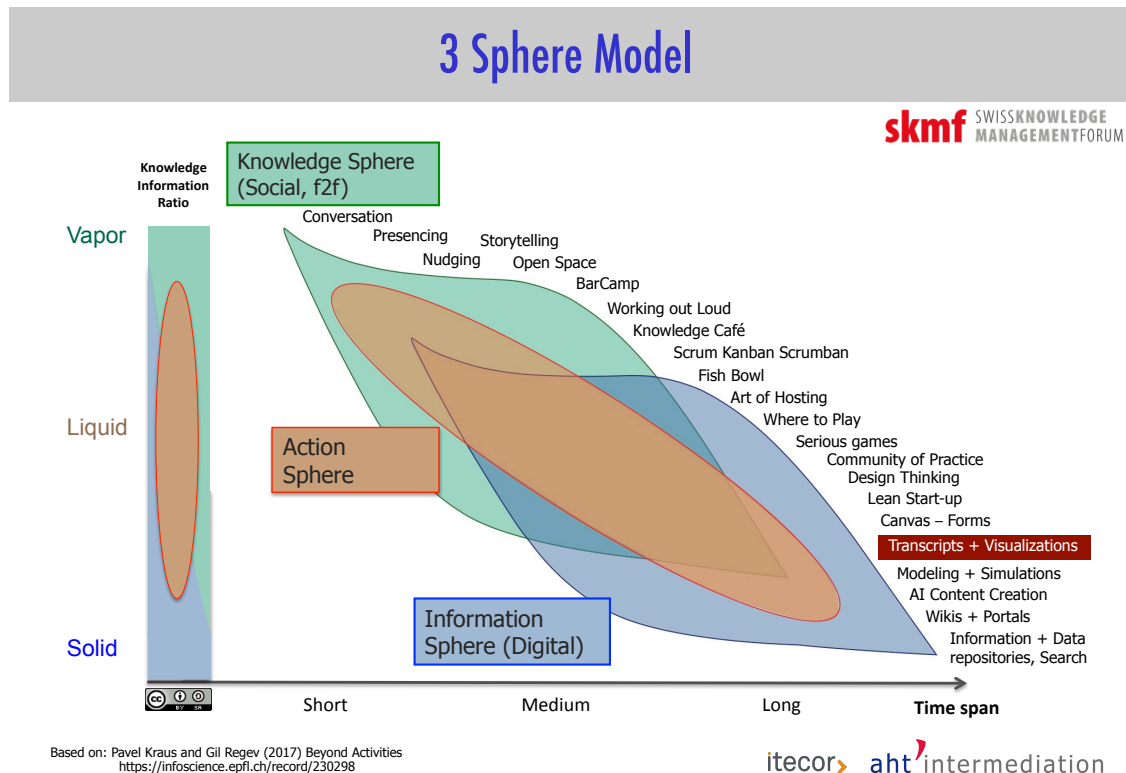
Starting at the upper left portion of the model: Fully within the knowledge sphere, techniques used in dialogues and discussions (i.e. conversation, presencing, nudging, etc.) are mentioned, given their suitability to elicit and uncover the intuition, feelings, and hunches associated with the "vaporous" state. Following the metaphor, as knowledge and information become more "liquid", the variety of facilitation techniques used in workshops and meetings (e.g. knowledge café, fish bowl, serious games, etc.) have been identified as mechanisms to meaningfully concretize material.

The stage at which effort is deployed in the way of transcribing and/or visualizing audio or video records to receive information that can be processed further represents a critical step. This step is critical, because in many organizations too little effort is done to document knowledge well. The investment into high quality information is not done.

This would mean to professionally edit, visualize and make the information understandable to a broad audience. Instead low quality information is stored and shared in collaboration repositories or communication channels. This leads to the bottom right portion of the model, which portrays heavy applications, like repositories, which effectively represent a "data grave".

This mapping of techniques along the spheres enables fast clarifications. It shows the mix between knowledge and information that these techniques employ and at the same time in which time span these techniques are most effective. It helps for identifying areas in which improvements in knowledge management of a company are sought and which techniques would be most suitably applied.

Example: Onboarding new team members
At the outset of an onboarding process, typically, individuals receive documents but they have no clue about how to consume them and make sense of the material. This process maps to Area 4 and moving into Area 3. Readiness to see and understand (Geoffrey Vickers). Jean Piaget, David Ausubel – only when you have pre-structures in your brain, i.e. context, can you understand what you are looking at.

A video describing this version of the model has been published by Edwin Morris's «Because You Need To Know» services on April 10, 2020:
https://www.youtube.com/watch?v=cFd2Qpb_cj0

Exposing a classical knowledge management fallacy
While working with the 3 Sphere Model, we realized that it could be used to expose a logical trap that many people trip into when thinking about knowledge management tools. Unprofessional workshop facilitation and undisciplined meeting management often lead to unsatisfactory outcomes due to poor knowledge capturing. After a period of time, people cannot even remember the reasoning, argumentation, or basis offered for decisions taken. Common wisdom suggests that some technological (IT) tools would alleviate these issues. This is a classical fallacy.

In reality, what are needed are the systematic, state-of-the-art methods of the knowledge-intensive upper portion of the model. This is because the deficiencies that have been created in this upper area cannot be remedied by the techniques and tools listed in the bottom right, i.e. IT tools for search or information storage.
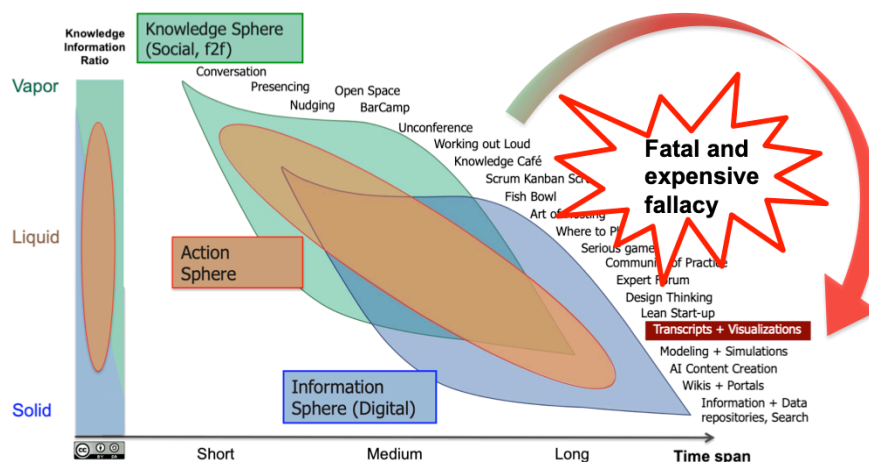
March 2021 update of the model
After working with the 3 Sphere Model for a few years, we heard some criticism. First the spheres go from top left to bottom right. Most business graphs go exactly opposite. The best quadrant is top right.
Second criticism point was that the added value and contribution to success of knowledge management techniques is nowhere visible in the model. The fact that various knowledge management techniques are most useful at a particular time span is not really very exciting as such.

New axes relating to added value and organizational success
During the roundtable of SKMF on February 24, 2021 an improved definition of knowledge management was discussed. Increase of profitability for companies or positive outcomes for non-profit organization were central result of KM in this discussion:

Knowledge management contributes to increased profitability and/or productivity by building organizational insight and capability within the context of culture, processes and tools (SKMF, Feb 2021)

In order to integrate these thoughts into the 3 Sphere Model, the bottom axes were redefined as «Contribution to success» or even «Contribution to success and added value». This change made it possible to introduce the two attributes of either active or passive contributions to business success into the model. It also allowed to roughly mapping the various information and knowledge management techniques as before.
In this way, the spheres were positioned from the bottom left to the top right, i.e., toward the active contribution to success.
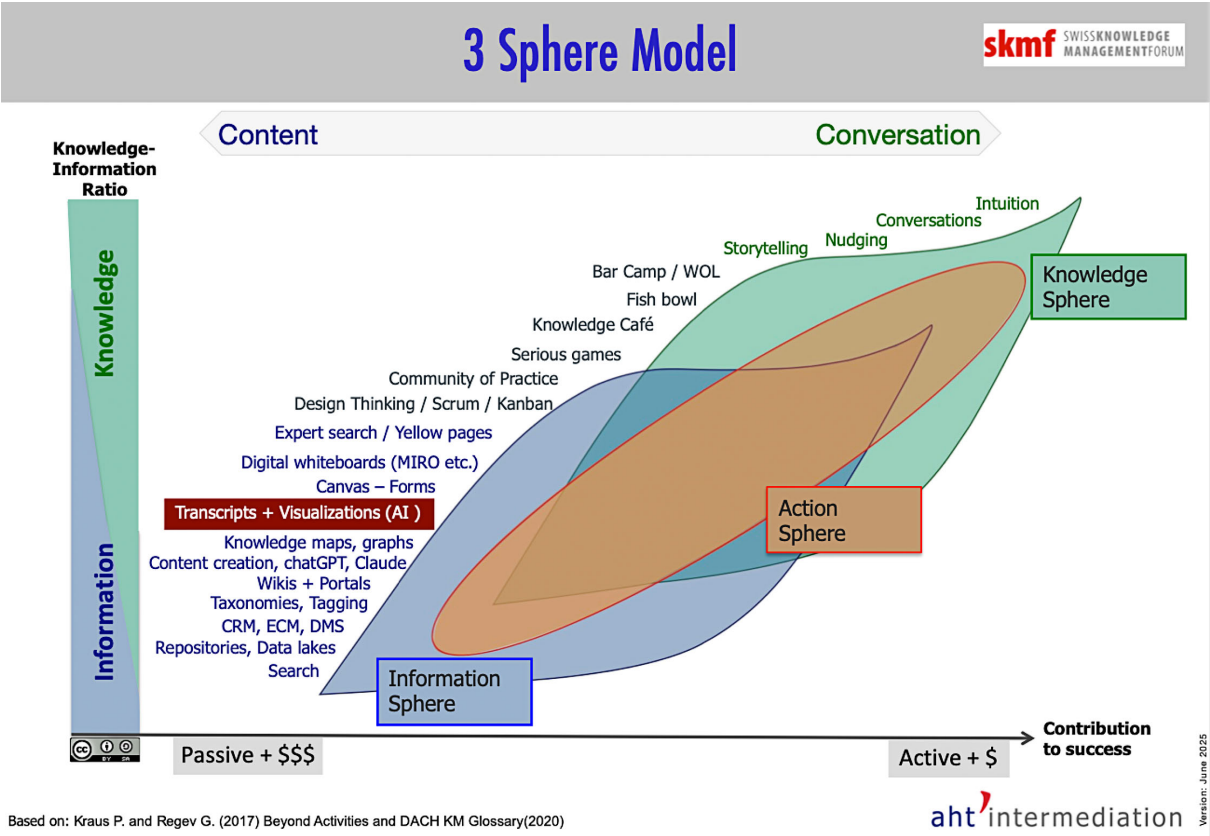
This new version of the 3 Sphere model allows a continuing discussion about the usefulness of various KM techniques and approaches. The type and selection of the techniques can be now aligned better with the type of industries or organizations.
Depending on current discussions about new techniques, technologies or interests, the model is updated to add or replace items along the spheres.

Content	Link
BPMDS-Paper	https://www.aht.ch/wp-content/uploads/2025/07/170613_bpmds-paper_beyond-activities_kraus-regev.pdf
EPFL publications	https://infoscience.epfl.ch/record/230298
LinkedIn SKMF member's group	https://www.linkedin.com/groups/4143903
SKMF resources	https://www.skmf.net/en/resources/

Version history	Date	Author(s)
Version 1	December 2017	Pavel Kraus, Gil Regev
Version 2	January 2018	Pavel Kraus
Version 3	October 2019	Joyce Miller
Version 4	March 2021	Pavel Kraus
Version 4.1	January 2022	Pavel Kraus
Version 4.2	June 2025	Pavel Kraus