



Human-Centered Online Collaboration with Kamune

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Kamune is Different

Kamune is a web-based collaboration system that takes a fresh approach to the fundamental problems of collaboration. It is designed from the bottom-up to be *human-centered*. There are many tools that allow users to share information, there are even other tools that allow users to work interactively and in real-time. Kamune of course does these things as well. However, breaking from the pack, Kamune is a complete platform for managing the *social interactions* so critical to successful group work. Kamune is designed to optimize the relationships between the collaborators, so that they can get to know each other, get in sync and get work done in a way that is easy, natural and even fun. Here we outline some of the human-centered features of Kamune that make it mesh with the way real people work, think and interact.

Place-based Context

The essential environmental feature of the Kamune collaborative system is a virtual workspace that uses the notion of place as the unit of organization. Kamune's workspace consists of a collection of virtual rooms. Each room is focused on a particular project or group. Users visit a room to meet with other people in that group, upload or update files relevant to the group, and keep other room members updated on the status of their collaborative work. If a project or group needs to break out into smaller groups, new sub-rooms can be easily created and nested in the main group room. The inherent hierarchical organization mirrors the structure of most organizations or task groups, allowing them to easily reflect their existing structure in Kamune.

Kamune's place-based organization provides several benefits as a collaborative space. First, the distinct place identities allow for easy mnemonic cues for recalling what places contain particular information. Assigning a distinct room for a particular purpose gives that purpose its own persistent context. If there are documents associated with a project, for example, they can all reside within that project room. All users involved with that project can easily retrieve the documents of interest without relying on local storage, searching through email, or requesting retransmission of the documents from the originator. The progress of the project can be recorded, monitored, and relayed all from this single room. Furthermore, the room provides an easy means of organizing project participants and keeping each other updated on status. Project-related discussion can occur within this room with easy reference to project-related materials available conveniently within the room. The project room thus

becomes a common nexus for all materials, information, and people related to the project. All of this remains easily accessible to participants whenever they wish, and from wherever they may be physically located.

Monotasking Over Multitasking

A natural outcome of Kamune's one-room, one-purpose approach is that workflows emphasize "monotasking" over "multitasking." A growing body of research has revealed that multitasking (that is, switching frequently between multiple tasks, or trying to simultaneously pursue several workflows) hurts performance and efficiency. Task switching comes with a "switch cost"—time needed to reinstate context for the new task, re-orient, and re-engage. Furthermore, the work produced while engaged is often of lower quality because not enough mental resources are dedicated to the task at hand to develop good task flow. Thus, work is done in a more cursory manner with cognitive resources partially allocated to other tasks competing for attention.

Kamune combats multitasking by keeping users in one context at a time. Workflows on Kamune have users choose a project to work on, go to that project's room, and work with the project-related materials in that room. When a user is in a particular Kamune room, the logbook, notes, objects, and files immediately available to the user are only those relevant to the current project. Because other projects or tasks are, by design, not exposed to the user, the user can more easily remain focused solely on the task at hand. Once the user completes the goal for progress on the current project, the logbook in the project room is updated, and the user can then move on to the next room and its relevant purpose. Thus, users are always free to move and change contexts (rooms) at will, but their attention is purposefully kept narrow and limited to whatever context they choose. This design promotes two complementary ideas: make everything the user needs readily available, and hide anything the user does not.

Interruption Reduction

While multitasking might be thought of as unnecessary self-imposed distraction, interruptions are distractions from the outside. Interruptions create significant breaks in workflow, which produce the same sorts of "switch costs" caused by multitasking. The productivity penalty of interruption can be astonishing. A 2005 study at the University of California at Irvine found that workers stayed engaged in a task for an average of 11 minutes before being interrupted. After the interruption, it took workers an average of 25 minutes before returning to the original task. Knowledge-management research firm Basex, Inc.

estimates that interruptions cost the U.S. economy alone at least \$650 billion dollars each year.

Kamune helps reduce interruption by providing a minimally distracting environment for getting work done. First, because the materials and communications in a room are only those related to the current project, users can reduce their dependence on highly distracting applications like email and instant messaging software to stay connected to a project. These applications serve useful purposes, but they also generate a great deal of “noise” users must filter while remaining on task. Second, Kamune allows users to tailor their availability to minimize disruption. Users can change permission settings on rooms they control to easily keep room membership pertinent to the project or subproject at hand, rather than open to all in their organization. Furthermore, Kamune specifically highlights only those others present in the room at the same time as the user. This means that, unlike instant messaging, users do not feel like they have to attend to all contacts online at that moment—only those relevant to the current context. Kamune makes it easy for users to know when their teammates are available for interaction, and when they need to be given space to work.

Eliminating Information Overload with Perishability

Kamune not only helps trim away unnecessary distractions, it helps trim away unnecessary clutter as well. Information overload is the bane of the modern worker. Between emails, instant messages, news feeds, phone calls, text messages, alerts, and alarms, the modern worker is inundated with information vying for attention and processing from every corner. We have already discussed how Kamune helps focus the user on that which is relevant now, and shields the user from that which is not. But once the information is processed, where does it go? With storage cheap and plentiful, modern inboxes are being continuously filled with ever more data that is never discarded—our email accounts turn into massive warehouses of outdated, unorganized, unnecessary information.

The Kamune approach holds that simpler is better. Our perspective is rooted in research from decision science which shows that too many choices and too much data lead to decision paralysis. Wading through oceans of emails, reconstructing threads of conversations, wastes time and frustrates progress. Instead, Kamune adopts a “use it or digest it” approach to information. When information becomes stale, it either needs to be discarded, or its kernel summarized and digested. Thus, only the essence, the pertinent outcome, remains. The raw data can always be archived off the system, but information that remains on Kamune should always be vital and “active.” Thus, information, objects, and even places on Kamune are designed to be perishable—likely to expire if not actively used. An example of this approach is our communication tool

“Bubbles.” Bubbles are short, simple messages that arrive with an expiration date. Their lifespan lies somewhere between email—which these days can be “immortal”—and instant messages, whose lifespan is usually momentary. Bubbles survive for about 10 days. They are purposely designed not to “live” long because a bubble’s utility is extinguished once it is acted on. Bubbles carry small amounts of information, directives for further action, or links to Kamune places or objects that should be acted on by the recipient. Bubbles carry references to “work” rather than embodying the work themselves, as often is the case with email. Once the purpose is served, the bubble is not needed. Unfortunately, the vast majority of email contains this same sort of small bits of disposable information, but is retained indefinitely. Bubbles are perfect for small units of information or direction for action that ought to be acted on in the fairly near-term (within a few days), but not necessarily immediately (as is more appropriate for instant messaging). Thus, bubbles provide a mode of communication that does not otherwise exist—messaging with medium-term perishability.

Social Programming: Cohesion And Awareness

While good workflows and increased task focus are central to Kamune’s design, the core of Kamune’s mission is connecting people. Research in group dynamics has demonstrated that in order for a team to work well together, the group must have good team cohesion and high awareness of each others’ work status. Achieving cohesion and awareness is a tough goal for any team—its difficulty becomes extreme for teams that are distributed across far-flung physical locations. Distance and time difference not only make logistical coordination difficult, but also exacerbate difficulties in growing trust, confidence, and respect among teammates. When teammates are not well-known to each other, behaviors become difficult to predict, intentions difficult to ascertain, and the state of the project unclear. Work quality and morale suffer in such an environment.

Kamune is built to bring teams together easily. First, the Kamune experience is designed to allow team members to follow the status of others quickly and easily. Features like room announcements, logbooks, and bubbles allow users to quickly ascertain project and co-worker status. Pervasive integration with email allows users to keep current with team members who are still transitioning to the Kamune system and rely on email for collaboration. Innovative user online status and presence indicators let users when colleagues sign-in, where they are, and what they are working on. Personal, project, or team progress is kept salient, current, and clear. Teammates who know each other well and know where each other stands perform better. We are constantly leveraging findings from organizational psychology and group dynamics research to develop new social programming to help keep teams tight-knit and well-informed.

Serendipity And Presence

Co-located teams bond because they reap the benefits of close proximity. Working near others means that face-to-face interactions occur frequently and spontaneously. Serendipitous encounters in the hallway or an impromptu lunch strengthen social ties and serve as fertile ground for new, unexpected ideas. Furthermore, classic work in social psychology has demonstrated that the mere presence of others fundamentally alters the way people behave—often serving to keep them engaged, focused, and on track. People seem to rise to the occasion and achieve their potentials best when there is an audience.

The realities of modern business make physical co-location for many teams impossible. Even being in the next building can feel like being a world away. While nothing can replace the impact of face-to-face meetings, Kamune goes a long way to reproducing many of those benefits through tools and cues that help encourage spontaneous discussion and the feeling of presence. Ubiquitous chat means there is always an opportunity to talk with anyone who is available, or whoever happens to cross your path. When co-workers feel like they know each other, and have easy access to each other for a quick chat, work improvements can be caught early and discussed frankly and openly. Changes become minor tweaks and “course corrections” rather than major overhauls addressed too late.

Kamune also helps make users feel like they are near each other by providing many cues for “presence.” Users see when others enter and leave their room, they see when others are talking, they can express their feelings with “emote”-style chatting, and send discrete private “whispers.” One click tells users where their colleagues are on the system, and what they are working on. None of these elements of personal presence can be captured by email, and nothing this rich or multi-faceted currently exists in instant messaging.

Conclusion:

It Works For Us, Let It Work For You!

Collaborating on Kamune connects people in a way that no other online tool can match. Kamune is designed with particular attention to basic research in social and behavioral science, providing an experience that optimizes workflow, team dynamics, and social interaction. At Navaraga Corporation, we ourselves use Kamune daily to do our work and love it. Our organization is itself a globally distributed team, with members in Seattle, Portland, Hyderabad, and Tokyo—so we are our own primary test-bed! We can be confident that Kamune will help your

team get connected because we see the benefits ourselves. And, because we depend on Kamune to work for us, you can be sure that our system will only become better and more powerful as the Kamune world continues to evolve and grow.



Mark Gilzenrat is the Experience Architect for Kamune at Navaraga Corporation. Mark came to Navaraga from Princeton University where he was Lecturer and Post-Doctoral Fellow in the Department of Psychology and Center For Brain, Mind and Behavior. Mark received his Ph.D. in Psychology and Neuroscience at Princeton where his work focused on brain mechanisms for attentional engagement and disengagement. He is the author of several noted papers and book chapters on the regulation of attention. Today he uses his background in behavioral science to produce human-centered solutions in online collaboration.