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Background and Related Work

Introduction

To develop the best possible product for the market, it is essential to investigate existing solutions. Therefore, this section presents a state-of-the-art review, including an analysis of five products that either offer similar functionality or provide user experience comparable to what we aim to achieve with our product. Finally, these products are compared to identify their strengths and weaknesses in relation to our solution in a comparative analysis.

Concepts

Bloem is designed as a private space that supports brief mental breaks during the day. A dedicated environment for restoration rather than productivity. Unlike conventional office settings, it prioritizes mental recovery, giving users a moment to step away from constant demands. In today's fast-paced, efficiency-driven routines, even short pauses can make a real difference, reducing stress and mental fatigue.

Research shows that short, structured breaks during work help relieve cognitive load and restore mental energy. A recent meta-analysis found that regular micro-breaks significantly lower fatigue and boost energy, even in high-pressure, productivity-focused workdays **[1]**.

Key aspects include:

- The user experience
- Privacy and personal space
- Sensory stimulation

By combining light, sound, airflow and an enhanced sense of personal privacy, the dome creates an immersive micro-environment that supports short-term restoration and enhances well-being in busy, demanding settings.

Products

In this section, we describe products that are comparable to our solution but are already available on the market.

Figure 1 shows the Framery Pod, a workspace and meeting pod designed for office buildings and universities. Instead of traditional meeting rooms, some workplaces use smaller, sound-insulated pods for focused group work. The Framery Pod includes features as sound insulation (up to 30 dB), adjustable lighting, ventilation, and USB/power outlets. Framery provides a flexible space where group work can be optimized in a controlled, sound-insulated environment, offering separation from the surrounding office area **[2]**.

Figure 1: Framery Four **[3]**

Figure 2 shows the Breehealth pod. It is a high-tech relaxation capsule designed for rest and mental recovery. The design is large and visually dominant, making it a clear focal point in the space. The user sits in a zero-gravity massage chair inside the capsule, creating a supported resting position. Unlike more open designs, the pod is non-transparent, ensuring a high level of privacy as users are fully enclosed and shielded from their surroundings. This enhances the sense of separation from the external environment. The pod includes features such as guided meditation programs, an integrated audio system, light therapy, and sound reduction, all supporting both physical relaxation and mental well-being **[4]**.

Figure 2: Breehealth **[5]**

Figure 3 shows a Relax-Space-Wellness-Pod. It is a chair designed for mental wellness breaks, offering a semi-private experience that allows users to step away from a busy workday. The pod includes features such as guided breathing exercises and heated seating, which help users relax and feel refreshed **[6]**. However, in our opinion, the design may appear somewhat out of character in a typical office environment. Therefore, careful consideration should be given to its placement within the building to ensure it integrates well with the surrounding space. It is also important to note that the pod is not fully private, which should also be taken into consideration when choosing its location.

Figure 3: Relax-Space-Wellness-Pod **[7]**

Figure 4 shows the Inhere meditation pod. Here, we see an example of a more private space that

users can enter. Overall, it is very simple, with no integrated technology, featuring a clean and minimalist architectural design **[8]**. However, since there is no solid material between the wooden panels, the space is not truly private or soundproof. The capsule feels aesthetically integrated into the room and may create a “room within a room” effect, but it does not provide a complete sense of isolation or the full experience of being alone and able to recharge during the workday.

Figure 4: Inhere Pod **[9]**

Figure 5 shows the Iris Pod. This is the closest example to the product we aim to create. It is a private space where the user is alone inside an enclosed capsule. The pod includes technology such as dimmed lighting, guided meditation, and ventilation **[10]**. The capsule is not fully soundproof and instead provides noise isolation through headphones. This is an area where we aim to differentiate ourselves from the existing product.

Figure 5: Iris Pod **[11]**

To compare the existing products on the market, we have listed them in table 1 below. It is a combined comparison of the products in terms of price, use cases, acoustics, and technological features. This provides a good overview of the products that are already available on the market.

Table 1: Comparison of products

Product	**Cost (€)**	**Purpose**	**Acoustic Performance**	**Smartness**
Framery Four	19 900	Supports focused work and small-group collaboration	Approx. 30 dB sound reduction	Lighting control, ventilation, and power outlets
BreeHealth	20 000-25 000	Workplace relaxation and well-being	Not specified	Zero-gravity massage chair, guided meditation, audio system, light therapy, and sound reduction

Product	Cost (€)	Purpose	Acoustic Performance	Smartness
RelaxSpace	29 000	Mindfulness, meditation, and recovery	Not specified	Personalized sessions with visuals, guided breathing, scents, and heated seating
Inhere	8 900	Well-being space	Minimal sound reduction (~0 dB)	No integrated technology
Iris	19 800	Meditation-focused pod	Noise-isolating headphones	Calming light, meditation, airflow, and tablet interface

All products are positioned within the higher price range. However, when considering their respective use cases, purposes, and levels of sound insulation, they are designed to address different needs. Therefore, it is essential to carefully evaluate which features and characteristics are most relevant for Bloem.

Projects

Unfortunately, there are no direct research projects examining how a relaxation pod might affect people's mental health, as it is a rather unique product and such solutions have not been on the market for very long. Furthermore, these products aim to incorporate existing stress reduction techniques. However, there are studies that examine how soundproof or acoustic pods, meditation and short breaks promote mental health. Some of these studies are mentioned below, and their findings are briefly explained. Taken together, they paint a picture of how a relaxation pod can be beneficial in work environments.

The available studies provide consistent evidence that both the physical design of work environments and targeted recovery have a significant impact on employees' well-being and performance. Acoustic interventions, in particular, appear to play a central role in this regard. For example, the study by Radun, Jokinen, and Kärki (2025) shows that the introduction of soundproofed retreat areas in a real-world office environment with 58 employees led to a significant increase in satisfaction with the acoustic environment as well as the general work atmosphere **[12]**. The high acceptance of these so-called soundproof pods underlies their practical relevance for modern office concepts, particularly in open-plan work environments where noise pollution is often perceived as disruptive. In addition, a parametric study on semi-enclosed meeting pods provides nuanced insights into the underlying acoustic mechanisms. The results show that, in particular, the combination of sound-absorbing materials and strategically placed reflective surfaces improves speech intelligibility within the pods while simultaneously reducing sound transmission to the outside **[13]**. These findings illustrate that it is not only the presence of such retreat spaces that is crucial, but also their specific material and design specifications. Furthermore to optimize the physical work environment, behavioral interventions also demonstrate positive effects. A comprehensive meta-analysis by Goyal et al. (2014) demonstrates that meditation programs including mindfulness based approaches lead to significant reductions in stress and anxiety, as well as improvements in general well-being, both in the short and long term **[14]**. These findings suggest that even short, structured relaxation breaks during the workday can serve as a relevant complement to spatial interventions. Findings on the effects of micro-breaks during work also point in a similar direction. Cho (2022) shows that short, self initiated interruptions such as stretching exercises, small snacks, or social interactions help maintain energy levels and boost work performance **[15]**. These breaks are particularly effective when they are

chosen situationally and independently by employees, which highlights the importance of autonomy in the work context. In summary, it can be stated that both acoustically optimized quiet spaces and short regenerative interventions represent complementary strategies for improving the quality of the work environment. While structural measures such as soundproof pods primarily help reduce external stressors, practices like meditation and micro-breaks primarily address individual stress management. The combination of both approaches therefore appears particularly promising for designing health-promoting workplaces.

Comparative Analysis

Based on the products above, it is evident that existing workspace solutions such as meeting pods primarily focus on improving productivity, communication, and overall office efficiency. While these products often provide strong acoustic performance and functional design, they are generally not intended to support mental recovery or offer meaningful breaks from daily work activities.

Relaxation-oriented solutions such as BreeHealth and RelaxSpace provide opportunities to withdraw from the work environment. However, these concepts are highly stationary. Users remain seated in a position, with limited opportunity for physical movement or bodily awareness. Although both solutions represent strong approaches to workplace well-being, they lack, in our view, a balance between movement, privacy, and acoustic isolation.

The Inhere pod introduces a more minimal experience, aligning with some of the qualities we aim to achieve. The Iris pod is the solution most closely aligned with our intended direction, as it combines relaxation features with a more enclosed experience. We aim to extend this concept further by integrating acoustic isolation.

Energy pods generally provide opportunities for rest, but our research has revealed a lack of sufficient acoustic separation and privacy. This highlights a gap between productivity-oriented spaces and relaxation-focused solutions. Existing products tend to support either work efficiency or short-term recovery, but rarely combine acoustic isolation, visual privacy, and true disconnection from the work environment.

Summary

Based on these findings above, the proposed design adopts a closed, non-transparent capsule architecture combined with acoustic insulation materials and a comfort-oriented interior. This approach ensures a high level of sound reduction, visual isolation, and psychological detachment from the surrounding environment. In addition, the integration of controlled lighting, calming audio, and guided meditation supports mental recovery and pause during the workday.

This design direction prioritizes user well-being, mental recovery, and sensory reduction over productivity and collaboration.

In the following chapters, the proposed solution will be presented in detail. The next section will focus on project management and how the development process is planned and executed.

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[1] P. Albulescu, I. Macsinga, A. Rusu, C. Sulea, A. Bodnaru, B. T. Tulbure, 2022. Give me a break! A systematic review and meta-analysis on the efficacy of micro-breaks for increasing well-being and

performance. *Journal of Occupational Health Psychology*.
[2], **[3]** Framery, n.d.. *Framery Four – Office pods and booths.*
[4], **[5]** Breehealth, n.d.. *BreePod – High-tech relaxation pod.*
[6], **[7]** WellnessSpace Brands, n.d.. *RelaxSpace Wellness Pods – Immersive Relaxation and Meditation Pods.*
[8], **[9]** Inhere Studio, n.d.. *Meditation Pod – Relaxation Pods for Sale.*
[10], **[11]** OpenSeed, n.d.. *OpenSeed – Immersive Wellness and Meditation Pods.*
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[14] Meditation Programs for Psychological Stress and Well-Being: A Systematic Review and Meta-Analysis. *JAMA Internal Medicine*, 2014.
[15] Sophia Cho, 2022. Taking Microbreaks at Work Is Actually a Good Thing. *Blue Zones*.