



GLING

NEPPI project report

Contributors:

Sara Aito
Octavian Axinte
Haakon Jyränoja
Francisca Machado
Kosar Moghanian
Kaarlo Mustonen

Nov 2023

Boring office? Gling it!

At Gling, we believe in the power of spontaneous connections. Gling is built to revolutionize how employees interact in large offices worldwide, fostering an environment that is dynamic, collaborative, and fun!

Table of Contents

1. Gling in a nutshell \ 4
2. Concept description
 - 2.1. Problem statement \ 5
 - 2.2. Our solution \ 6
 - 2.3. Key benefits \ 7
 - 2.4. Design requirements \ 8
3. Technology and product design
 - 3.1. System overview \ 10
 - 3.2. Physical product design \ 12
 - 3.3. Mobile app design \ 18
4. Business viability
 - 4.1. How we make it happen \ 20
 - 4.2. Business model \ 21
 - 4.3. Expertise and collaboration for realization \ 23
 - 4.4. Price point \ 25
5. Publicity of document \ 29
6. References \ 30

1. Gling in a nutshell

In today's fast-paced work environment, fostering meaningful connections and spontaneous collaboration can be challenging. Gling is an innovative IoT solution designed to bridge this gap, creating a dynamic office ecosystem that encourages spontaneous social and professional interactions.

Gling operates as a smart device within office spaces. Through the device and also through the mobile app, employees can express their availability and interests for spontaneous activities, such as grabbing a coffee, taking a walk, or engaging in a deep conversation. Gling's machine learning capabilities continuously adapt to user behavior, facilitating more personalized and serendipitous connections over time.

The market is perfectly ripe for Gling to be taking over, aligning perfectly with the growing demand for solutions that prioritize well-being, connectivity, and enriched workplace culture. As organizations worldwide seek innovative ways to enhance employee satisfaction and engagement, Gling emerges to match these needs.

The key vehicle for taking over the market is through direct sales engagement with tech companies and co-working spaces, alongside with a strong online presence and digital marketing. While our customer demands rise based on these vehicles, we are outsourcing most of our operations such as logistics, manufacturing and customer service in order to be able to focus on our core competence - improving Gling to enable even more spontaneous interactions at offices.

In a world in which people feel increasingly disconnected from other human beings, Gling is not just good to have. It is essential for the wellbeing and happiness of the employees working in modern corporate office spaces. Join us in shaping the future of work with Gling – where connectivity is not just a feature but the essence of workplace culture.

2. Concept description

2.1. Problem statement

In the dynamic landscape of modern corporate offices, a pervasive issue has emerged—the struggle to cultivate a cohesive community atmosphere. As organisations grow in size and complexity, the challenge intensifies, leading to a notable absence of genuine connections among employees. Despite being physically present, individuals often find themselves isolated, yearning for more than just a workspace. The lack of a sense of belonging and opportunities for spontaneous interactions creates a palpable void in large office environments.

Delving deeper into the problem, it becomes evident that employees, beyond fulfilling their professional responsibilities, seek a more fulfilling and connected experience at work. The desire for impromptu engagements, shared interests, and the simple joy of interacting with colleagues on a personal level is a fundamental human need that the traditional office setup often neglects. This disconnect not only affects individual well-being but also hampers the creation of a vibrant and collaborative corporate culture.

2. Concept description

2.2. Our solution

Introducing Gling, the revolutionary solution designed to bridge the gap and transform the traditional corporate landscape. Gling is not just a device; it's a catalyst for change. The device emerges as an innovation that seeks to redefine the way employees connect and engage in the workplace. With a focus on simplicity, Gling offers a suite of options—from casual coffee breaks to invigorating walks and meaningful conversations. It addresses the yearning for spontaneous interactions and shared experiences, fostering a sense of community that has been missing in conventional office settings.

Gling goes beyond being a mere tool; it's a conduit for creating vibrancy and collaboration within the workplace. By providing a platform for employees to connect over shared interests and engage in spontaneous activities, Gling becomes the cornerstone of a more connected and vibrant corporate culture. This chapter explores how Gling's features and functionalities align with the fundamental human need for connection, laying the groundwork for a workplace where individuals thrive both professionally and personally.

As organizations adopt Gling, the impact on individual well-being and organizational culture becomes increasingly apparent. This chapter delves into the transformative power of Gling, showcasing how it contributes to improved mental health, enhanced human connectivity, and a more balanced work-life experience. By fostering a positive and collaborative atmosphere, Gling sets the stage for a cultural shift within organizations, where individuals feel valued, connected, and inspired to contribute their best.

2. Concept description

2.3. Key benefits

The modern corporate landscape is undergoing a significant shift towards prioritizing well-being, happiness, and overall workplace culture. The Millennial generation, often labeled as the burnout generation (Hassan 2019), has experienced a surge in mental health challenges within corporate settings. A crucial contributing factor to this phenomenon is the perceived disconnection from authentic human interactions in the workplace. Individuals struggle to bring their true selves to their professional environment, especially in the current era of hybrid work, where physical presence alone does not guarantee meaningful connections across teams.

Our belief is rooted in the transformative power of reconnecting people, a catalyst for enhancing individual well-being in numerous ways. By fostering genuine connections, individuals not only experience personal improvement but also contribute to a positive shift in organizational culture. As the fabric of the firm's culture strengthens, we anticipate a ripple effect, positively influencing the products and services offered by the organization. This virtuous cycle holds the potential to catalyze a significant and enduring enhancement in business outcomes. Such outcomes have been summarized below:

There are multiple benefits of our product for your **firm** as a whole:

- Improve's firm culture by including and connecting together people regardless of their status or position within the firm
- Drives innovation and creativity by connecting diverse minds
- Cross-silo collaboration and innovation

But perhaps more importantly we believe that cultural wellbeing starts from the **individual**, and for him we offer following benefits:

- Improved employee wellbeing and mental health
- Increased sense of human connectivity and decreased loneliness
- Encourages work-life balance through wellness and social activities.

2. Concept description

2.4. Design requirements

Our intention to create a user-centric device required us to consider various key design points to achieve the different functionalities and desirability of the product. While a product that connects people spontaneously could also be made with just an app, we wanted to focus on decreasing one's screen time and avoid sending numerous annoying notifications that are often distracting during the workday.

Deep design:

Our intention was to create a solution that would diminish the need for screen time. We wanted to create a minimalistic and user-friendly device with simple functions that do not require the user to have to learn multiple actions before being able to use the device. The user interface is also a reflection of user-friendliness. It simultaneously creates a more intuitive user experience and encourages the user to connect spontaneously more often. To add value and to fit our goal of creating something fun, a fidgety rotation function with a pleasant and satisfying feeling is available when the device is not powered on.

Key functionalities:

The key functionalities of Gling are choosing an activity from the various options by rotating and pressing down, and indication of the chosen activity with colored LED lights. The different colors of the LEDs also indicate that someone has chosen an activity as well as a connection between different devices. The connection also should work rapidly to ensure successful meetings during short breaks.

Key mechanical factors:

The key mechanical factors that were required to create the device were the input controls that consequently can send the information of the chosen activities to the cloud and back. Another important key feature is durability. The shell of the device is made from a slightly flexible and elastic plastic to prevent the device from fracturing or breaking due to small drops, since it can absorb some of the shock. The use of plastic also protects the inner electronic parts from breaking.

2. Concept description

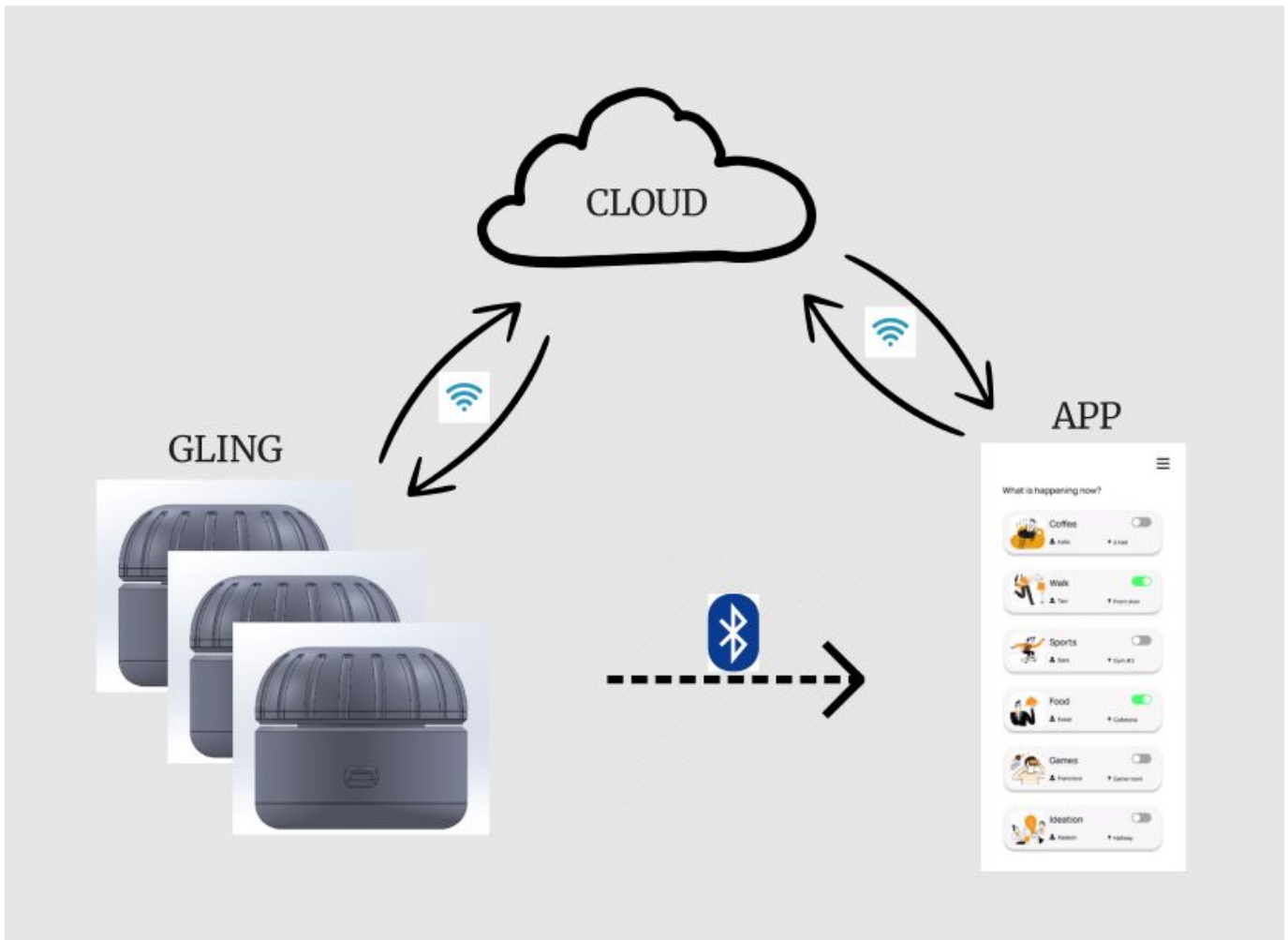
2.4. Design requirements

Key form factors:

To achieve the key functionalities, the device has a circular design that makes the rotation through different activity choices easy and is seamlessly fitted with the rotating function of the knob. The frame design also takes into consideration the pressing function. By having a small gap between the upper and lower parts, it is easier to rotate as well as press down the knob. The small and functional design was chosen with minimalism and usability in mind. The device fits well into a hand but is still large and weighty enough to feel expensive. To further this goal, and to avoid having anything too striking sitting on an office table, the device has a minimalistic and scandinavian design. The small ridges on the knob allow for easy rotation, while the weight at the bottom part ensures that the device does not move while using the device.

3. Technology and product design

3.1. System overview



The comprehensive system architecture depicted in the figure above illustrates the seamless communication between our platform, Gling, the mobile application, and the cloud. Gling establishes a Bluetooth connection with the end user's mobile phone in close proximity, providing detailed information about the selected activity and the individuals participating in the event. Furthermore, our product offers the capability to integrate with Smart Home systems through a Wi-Fi configuration setup, eliminating the necessity for Bluetooth connections. This enhances the versatility of our product and expands its connectivity options.

3. Technology and product design ---

3.1. System overview

The seamless Wi-Fi and Bluetooth connectivity of our IoT product is facilitated by the compact and efficient SEEED STUDIO XIAO ESP32C3 WIFI+B microcontroller. Its petite size plays a crucial role in preserving the sleek proportions of our device. Additionally, the user-friendly rotary encoder from Bourns empowers users to effortlessly rotate the knob, enhancing the overall functionality of the product. The integration of this encoder, coupled with a connection to the LED strip, results in a sophisticated and modern design. Our commitment to simplicity in electronic design not only enhances user experience but also allows us to maintain an affordable price point for our IoT product.

The application provides comprehensive details about the event, offering participants a seamless experience post-matching through the physical devices. Within the app, users can access information about fellow participants, creating a personalized and engaging environment. The app automatically populates details about the event location, tailored specifically for each venue during the device setup. This ensures that users have accurate and relevant information at their fingertips. Additionally, the app incorporates a convenient feature that allows participants to cancel their attendance in case of unforeseen circumstances, providing flexibility and accommodating the dynamic nature of event planning.

3. Technology and product design

3.2. Physical product design

The physical Gling-product is a small device meant for choosing activities and indicating choices along with the Gling application. It is the primary contact point to the Gling ecosystem. This device would stay on tabletops in offices and allow users to choose a variety of activities to spontaneously jump into. We wanted Gling to get people away from the screens and into real-life encounters with as little as possible screen time. That's why the Gling device does not have a screen and is only using minimalistic lighting and gesture designs.

By pushing down the rotary knob, the user activates the device. After that, they can rotate the knob and choose a desired activity by moving the LED light on top of an icon indicating the activity. When the light has been left on top of an icon for a short time, the LED lights indicate that an activity has been chosen and this information is transmitted to the paired mobile device. The rest of the activity with Gling is operated with the Gling application that you learn of in the next chapter.

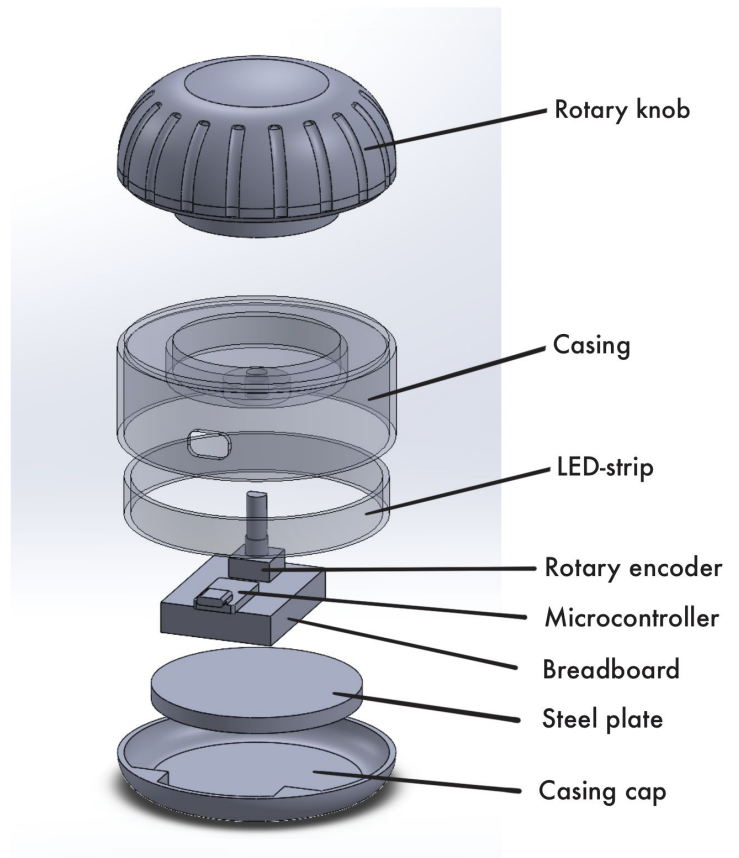
Gling device doubles as a fidget to play with. When the device is not plugged in with the charging cable, it doesn't operate with the app. This allows users to play around with the satisfying feeling of the rotary knob while they are thinking or participating in a meeting call for example.

3. Technology and product design

3.2. Physical product design

The Gling device consists of two distinguishable sections that consist of multiple parts. The upper section is the rotary knob that is the main touchpoint of the device and is used to choose the activities. It fits into the lower section, the casing that contains the electronics. The rotary encoder arm reaches through the casing into the rotary knob enabling the rotating motion to be transmitted.

A stainless steel plate is placed under the electronics to push them to the right height as well as to add weight to the device.

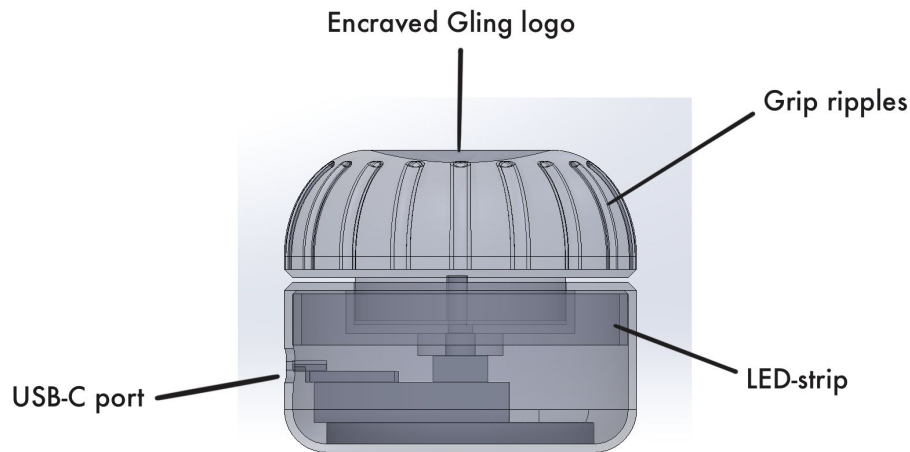


This weight keeps the device in place and gives the device a “feel of quality” as without it the device would be very light and could feel cheap. Finally, a casing cap shuts the casing of the device. It also has notches to keep the electronics from rotating.

Initially, in the early startup phase of the company, the casing of the device is designed to be 3D printed as it is cheaper to a certain extent. However, the casing is designed so that it is easy to scale up to injection molding as the parts are “releasing” from the molds. This makes it considerably cheaper to switch to injection molding when the production numbers grow.

3. Technology and product design

3.2. Physical product design



In the picture above, the assembled Gling device can be seen. In this prototype device where a breadboard is used for the electronics, some extra room had to be left in the casing so that the LED-strip fit in. In a final product where the circuitry can be produced smaller, the size of the device (see picture below) can be scaled down by approximately 25%. This size would still fit nicely to the hand but would cut out the excess bulk from the device.



3. Technology and product design

3.2. Physical product design

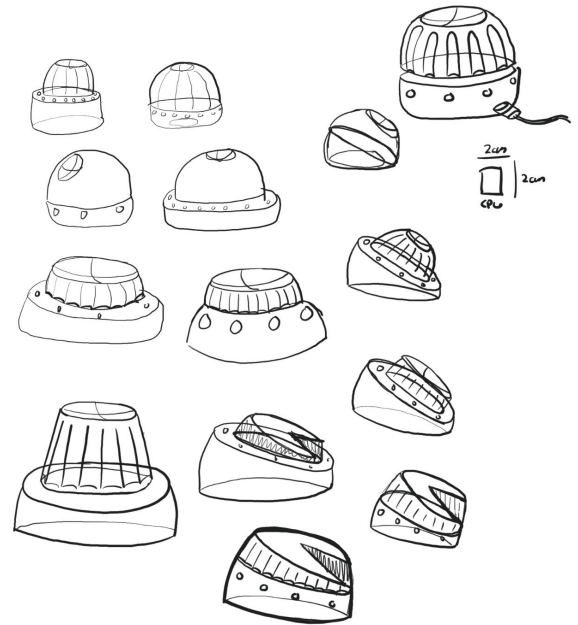
The design of the device is minimalistic but the key features guide and assist the user. A small less than millimeter gap between the casing and the rotary knob indicates to the user that they are separate parts and the upper one is to be interacted with. The grip ripples communicate the same thing and make holding the device easier. An engraved Gling logo on top of the knob is part of the product's branding as well as the logo's "bullseye" design suggests to the user to press the button. The only contact point to the electronics is the USB-C port on the side of the device.

The spontaneous activity to do is chosen by moving the LED light to the top of the corresponding activity icon. In this prototype designed for office use, there are seven different activities to choose from: coffee, games, brainstorming, food, walking, exercising, and an open option for the company to choose a fitting activity for them. These icons are portrayed on the side of the device and they light up when the LED is moved under them. The icon design is kept minimalistic for easy understandability and to keep the device design simple.

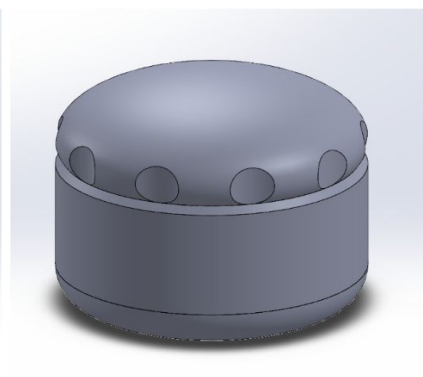
3. Technology and product design

3.2. Physical product design

Developing the concept and final product design for the device was an iterative process. It started by sketching different kinds of forms and functions for the device. The first physical iteration was a cardboard mockup made out of a single-use mug. The core idea was carried to a fast 3D-printed prototype, which was then again refined to an expo-ready prototype with functioning electronics.



The rotary knob is a key element for the device's looks, feel and ergonomics. For that reason, some variations of its design were tried using the SolidWorks 3D-modeling software.



3. Technology and product design

3.2. Physical product design



3. Technology and product design

3.3. Mobile app design

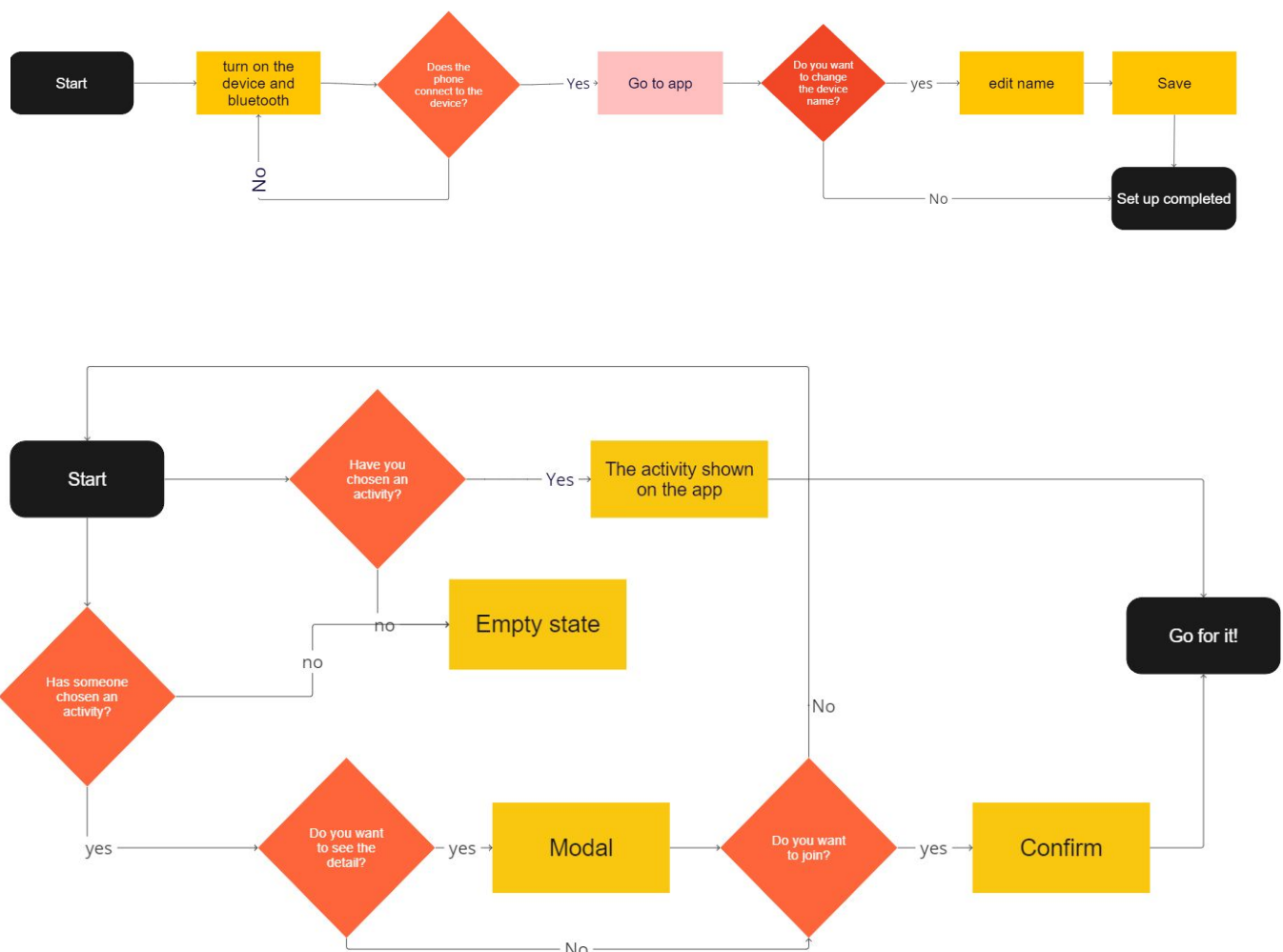
First and foremost, we defined a list of design must-haves for the mobile app:

- Minimum functions to avoid screen time
- Encourage connecting to others
- Supporting the privacy of users

The required functions were then selected as follows:

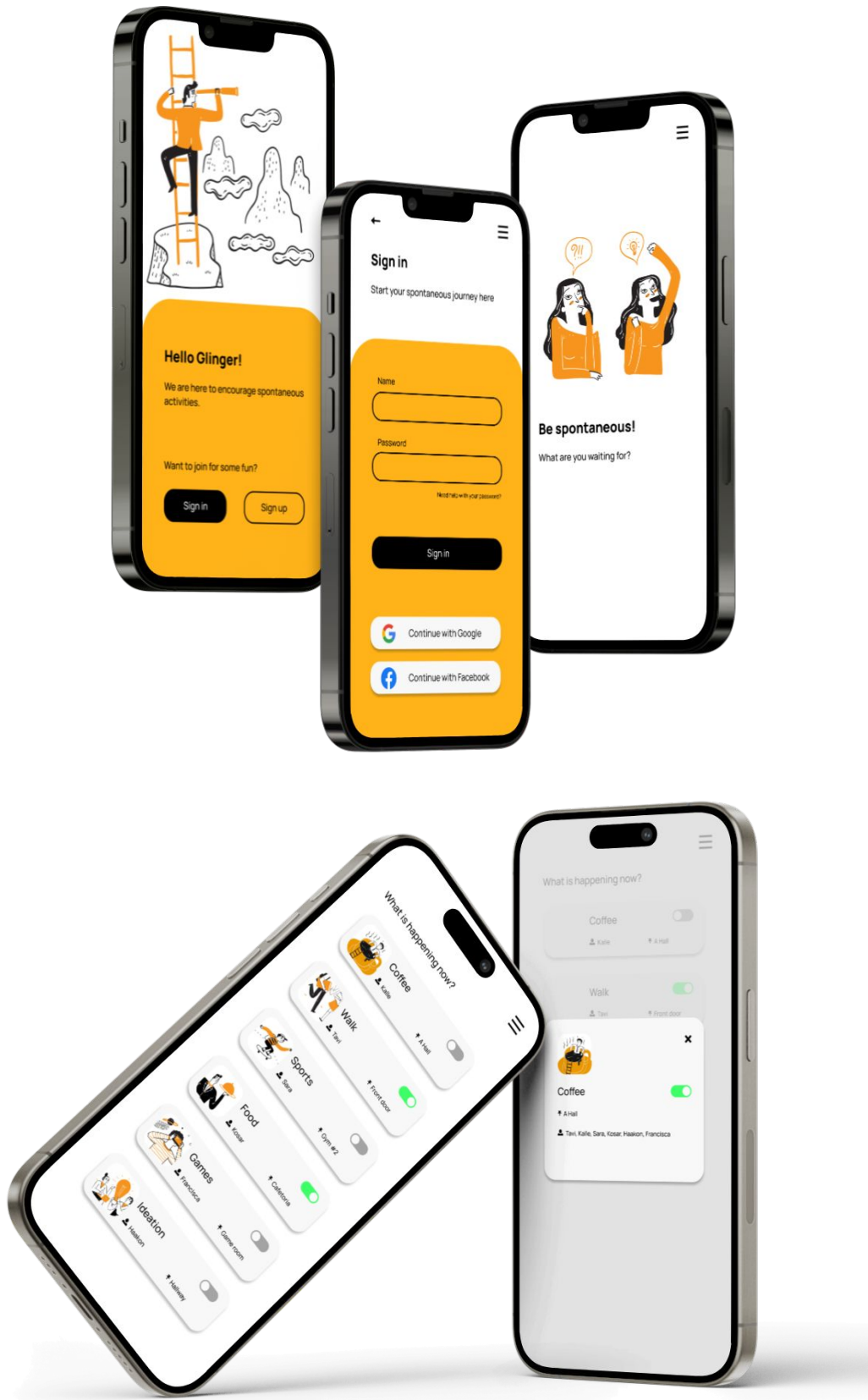
- Creating an account
- Connecting to the device
- Receiving data from the device
- Showing the activity requests
- Accepting or declining the requests

After coming up with the flowchart, the low-fidelity wireframe was designed.



3. Technology and product design

3.3. Mobile app design



4. Business viability

4.1. How we make it happen

The strategic journey of Gling over the next five years is a path charted with precision, practicality, and an unwavering commitment to innovation. Our vision—to integrate Gling into the global corporate landscape, with a targeted sales approach. By initiating pilot programs with large stakeholders, such as vibrant co-working spaces, specialized HR tech consultancies, and leading vendors, we pivot our way towards organic growth. These initial engagements are more than just market entry points; they are symbiotic relationships that enable us to refine our product, aligning its evolution with the dynamic pulse of modern workplaces.

Engaging directly with multinational companies, like Salesforce, not only validates Gling within diverse corporate ecosystems but also serves as a beacon, attracting the attention of additional global enterprises. We recognize, however, that with the scale of these channels comes the challenge of scaling our operations to match. To navigate this, we are investing in a modular operational structure that can expand in a responsive and cost-effective manner. This involves leveraging automation for efficiency, adopting agile methodologies for flexibility, and fostering a culture of continuous improvement.

As we scale, our operational ethos remains rooted in maintaining the integrity of the customer experience. To achieve this, we're building a scalable way to create high quality products that feel good for the end user. Also we are emphasizing customer relationship management in general as we see it as a key way to grow our way into the future.

4. Business viability

4.2. Business model

Our business model, depicted in the Business Model Canvas, is our blueprint for market penetration and revenue generation. At its core, Gling's monetization strategy relies on a mix of the SaaS (Subscription as a Service) model and individual product sales. We aim to generate a substantial portion of revenue from the product sale itself. While the long-term subscription to the app incurs a fee, we have decided to introduce free trials initially, following the model adopted by other SaaS companies in our industry. This not only ensures a predictable and recurring revenue stream, but also gives payments upfront that can help us finance our period of strong growth.

BMI • Business model canvas



Brought to you by Business Models Inc

www.strategyzer.com

4. Business viability

4.2. Business model

In our quest to revolutionize workplace culture, Gling's long-term strategy extends beyond corporate environments, envisioning penetration into diverse markets such as hotels and hostels. As we continue to establish ourselves as a pivotal player in enhancing connectivity and collaboration, our expansion plan includes targeting sectors where community engagement is equally vital.

Our sales channels are strategically designed to reach a broad audience. Direct outreach targets HR departments, corporate decision-makers, and co-working spaces like Maria 01 and WeWork, positioning Gling as an essential tool for fostering workplace culture. Simultaneously, our digital strategy employs targeted online marketing, content strategies, and social media engagement, creating a compelling online presence to convert interest into sales. Looking ahead, we aim to develop a consulting practice around our product, evolving from a pure SaaS company to a specialist in enhancing company culture and collaboration on a broader scale.

To maintain the seamlessness of delivery and operational fluidity, Gling is implementing an outsourcing strategy that focuses on operational excellence. Manufacturing processes are entrusted to industry-leading partners, ensuring the capability to meet surges in demand without compromising quality. Furthermore, we are leveraging third-party logistics expertise to streamline the distribution network, ensuring that our product reaches clients effectively and efficiently.

At the heart of Gling's operational strategy lies a robust technological infrastructure. We prioritize cutting-edge cloud computing services that provide scalability, fortified cybersecurity measures to safeguard data integrity, and an adaptable API architecture that ensures seamless system integration. This technological foundation is pivotal to supporting our scaling ambitions while maintaining service excellence.

4. Business viability

4.2. Business model

In parallel with our technological advancements, our human resources strategy is equally paramount. Gling is committed to assembling a workforce that embodies both exceptional skill and innovative spirit. Our organizational culture is designed to attract and retain such talent, offering a dynamic work environment characterized by flexibility, remote work opportunities, and a compelling company mission. We emphasize inclusivity and diversity in our hires to get the best out of our own company culture. We believe that when people are given meaningful direction and great support networks, then people will naturally start to solve the problems that the business faces.

4.3. Expertise and collaboration for realization

The realization of Gling's vision relies on a diverse range of expertise, partnerships, and collaborations that contribute to the successful delivery of the product to the market. These collaborations and partnerships will gradually be built and introduced to our organization based on the prioritized need of the collaboration or expertise. The following key areas of expertise and partnerships are paramount for our journey to infiltrate the target markets of our product:

Co-working spaces and office providers

Collaborating with leading co-working spaces like Maria 01 and office providers such as Technopolis offers a strategic entry point. These spaces act as hubs where Gling can pilot its product and gain traction among diverse professional communities. Engaging with co-working spaces fosters a vibrant ecosystem for Gling's spontaneous engagement platform.

4. Business viability

4.3. Expertise and collaboration for realization

Logistics and Distribution Networks

Efficient distribution is critical for delivering Gling devices to clients globally. Partnering with logistics experts streamlines our supply chain, ensuring timely and cost-effective delivery to diverse markets. We have chosen companies such as FedEx and UPS to be our main partners because they can deliver worldwide.

Manufacturing and 3D Printing

Gling's physical device requires precision in manufacturing and 3D printing processes. Partnering with experts in these fields ensures the quality and efficiency of production, allowing us to meet market demands effectively.

Cloud Hosting and IT Infrastructure

The backbone of Gling's technological infrastructure relies on robust cloud hosting and IT services. Collaborating with leading cloud service providers ensures scalability, data security, and seamless integration, crucial for delivering a reliable IoT solution. Our main partner's are going to be UpCloud and AWS.

Digital Marketing and Online Presence

To effectively reach our target audience, partnerships with digital marketing agencies are essential. Crafting a compelling online presence, engaging content, and targeted marketing strategies contribute to lead generation and conversion. Great partners for this are BobtheRobot and Advance B2B.

Human Resources and Culture Consultants

As Gling extends beyond a product to a workplace culture solution, partnerships with human resources and culture consultants become integral. These collaborations help clients maximize the benefits of Gling within their organizational context.

4. Business viability

4.4. Price point

To effectively meet the demands of our sales organization and ensure business viability, we have devised a comprehensive financial plan that meticulously outlines our cost structure and revenue streams. This financial roadmap is supported by conservative estimates and realistic scenarios that ensure we remain grounded and focused on sustainable growth.

Below, we present an estimation of the cost and revenues structure for the first year of operations of our project. During this period, we anticipate the production of approximately 1000 items, supported by a sales strategy designed to drain our stock and establish a robust client base for subsequent years.

The price ranges of the material costs were obtained by market research and the same methodology was applied to the 3D printing system. While we have opted for this approach in building our prototype and consider it viable for the first year, we remain open to revising it as we establish better contracts with suppliers. As a reference, our current projection suggests a production time of 2 hours per item, meaning we anticipate an annual output of around 1000 units.

The remaining components of our cost structure are rooted in data from the Finnish Labor Market and by additional market research on average costs for our operations.

4. Business viability

4.4. Price point

Production costs of the Hardware (1000 units)		Best scenario	Average scenario	Worst scenario
Materials				
Outer Plastic Core		500	750	1000
Microcontroller with Bluetooth		2000	3500	5000
Rotary Encoder		500	750	1000
Type Charging Module		500	750	1000
9 LEDs		45	67	90
SUM		3545	5817	8090
Per unit		3.545	5.817	8.09
3D printing(based on Aalto using 2 printers simultaneously)		Price (Best scenario)	Price (Average scenario)	Price (Worst scenario)
1 uni		5	6	7
1000 uni		5000	6000	7000
100000 units (NOW HAVING 1 euro costs per unit)		100000	100000	100000
Labour costs (average per year)				
Marketing & Market expansion (50 % part time)		30000		
Finance & Legal (50 % part time)		30000		
Engineer (50 % part time)		30000		
Designer& App maintance (50 % part time)		30000		
Sales (50 % part time)		30000		
1 full time controller + assemble + packaging + deliver (Total costs and not just the wages for this component)		60000		
TOTAL		210000		
Per uni/year		210	100000 units	2.1
Other Expenses (average per year)		Price (Best scenario)	Price (Average scenario)	Price (Worst scenario)
Utilities(electricity , water,		100	200	300
Rent office (with supplies included)		1000	1250	1500
Legal costs (YEAR based)		83.3333333	208.333333	416.666667
Software licenses, Cloud Storage solutions and other web services (YEAR based)		5000	5000	5000
Marketing goods		500	1750	3000
Insurance costs (YEAR based)		41.6666667	104.166667	166.666667
TOTAL		80700	102150	124600
Per uni/year		80.7	102.15	124.6
100000 units		0.807	1.0215	1.246

4. Business viability

4.4. Price point

Navigating this context of high initial costs and production challenges, our first year will pose us a significant test, prompting us to incur some debt. Despite these obstacles, we expect a robust recovery in Year 2 and full financial recuperation by Year 5.

This initial struggle arises from the need to strike a balance: setting a reasonable price point that doesn't overly burden our clients while gradually covering our initial costs. Nevertheless, our future looks very promising as our strategy involves a strategic expansion, with a planned 10x increase in production over the next 5 years. This involves relocating certain aspects of production to more competitive venues and establishing partnerships to optimize efficiency throughout the entire business chain.

In that sense, we've established a price range of 30 to 40 euros per item, which we anticipate maintaining over the course of the next 5 years. It's crucial to emphasize that despite potential short-term financial constraints—quite common for any startup journey—we are determined in our commitment to being one of the most competitive options in the market for office gadgets.

<i>Final Results in the 1st year</i>	Best scenario	Average scenario	Worst scenario
Full costs per unit	299.245	323.967	349.69
Full costs per unit /NO WAGES	89.245	113.967	139.69
Margin	-197%	-226%	-249%
Price charged /NO WAGES	30	35	40
<i>Final Results in the next years</i>	Best scenario (5Y)	Average scenario (3Y)	Worst scenario (2Y)
Margin with wages in the next years	75%	72%	69%
Full costs per unit	7.452	9.9385	12.436
Price charged w/ wages	30	35	40

4. Business viability

4.4. Price point

In order to conduct some price benchmarking , we took some reference designs and potential competitors into account like productivity timers (PIHEN brand with the Ticktime Pomodoro), fidget for offices (Kinetic Desk Toy) and others. Through this analysis, we observed that products incorporating electronic components typically fetch prices exceeding 38 euros, while those serving purely as fidgets are generally sold for around 15-20 euros. What sets us apart is that none of these products offer web and network services like Gling does, making us an exceptionally appealing choice for both customers and investors.

Highlighting that Gling's mission is not just about providing a product, but also a concept that revolutionizes norms in the corporate world, it's essential for us. It's about leading the charge in the transformation of office dynamics, where technology meets human connection, fostering an environment where businesses thrive on the collective energy and creativity of their workforce. This is how we make it happen – with a clear vision, a robust business model, and a relentless pursuit of innovation.

5. Publicity of document

This document is public, embracing an open exchange of ideas. We encourage sharing, remixing, and building upon our work under the Creative Commons

Attribution-ShareAlike (CC BY-SA) 4.0. You're free to use this material, provided you give proper attribution and share any derivatives under the same license. This approach fosters collaboration, enabling others to benefit from our insights and contribute to the ongoing dialogue in design. To future student cohorts: explore, learn, and build upon our concepts, always acknowledging the original creators. Let's cultivate a culture of openness and collective growth in the IDBM community.

6. References

Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What Is Disruptive Innovation?. Harvard Business Review.

Hassan, R. (2019). Burnout Generation. World Policy Journal, 36(4), 88–96.

Osterwalder, A., & Pigneur, Y. (2010). Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. John Wiley & Sons.

Rowland, C., Goodman, E., Charlier, M., Light, A., & Lui, A. (2015). Designing connected products: UX for the consumer Internet of things (First edition). O'Reilly.

Waber, B. N., Olguin Olguin, D., Kim, T., & Pentland, A. (2010). Productivity through coffee breaks: Changing social networks by changing break structure. In Proceedings of the ACM 2010 conference on Computer supported cooperative work (pp. 295-298).

[Artwork contribution:](#) These artworks has been used in the app



With love, Gling!