

Team 2 - Microsoft

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Project Deliverable 1

Team Contract

Conflicts

Conflicts will be resolved through democratic vote for work-related conflicts.

Work Allocation

Every week, we will pick one member to be the team lead who then delegates tasks based on what work is given.

Communication Mechanisms

We will communicate through Teams. We will meet on an as-needed basis after our class on Tuesdays and Thursdays. If those times don't work, we will hop on a Teams call.

"All members of our team understand that tasks need to be allocated evenly for each project deliverable. It is our duty, as a team, to ensure that all members are progressing at an acceptable pace on their respective tasks. If certain tasks are left incomplete when a deliverable is due, all team members will be held equally accountable unless documentation is submitted to the professor which outlines that one or more team members were not active in pursuing their tasks. In such cases, the team members who were not active (i.e., did not do their work) will be held 100% accountable for the incomplete work, and all other members (who completed their tasks on time) will not be penalized."

Jess Lin Date: 7/13/23

Vishal Vuppala Date: 7/13/23

Vikram Krishnamoorthy Date: 7/13/23

Maneesha Pusuluri Date: 7/13/23

Mansha Chandna Date: 7/13/23

Product Idea

The Product

Microsoft Bean

This device acts as a physical beacon to help internal employees separate their work profile and personal profile easily without the use of any physical plugins and provides seamless transition between the profiles. Having this device within the range of recognized work devices automatically connects to the required profile. We hope to have the device constantly update the status of one's workload so that they are able to access it securely, have updated back-ups in case of emergencies, and revert back to past states of their workstations if necessary. Similarly, the device disconnects once out of range. This makes it easier for them to maintain a clear distinction between their professional and personal lives. This works on a wireless network, leveraging the connectivity options available to seamlessly manage and switch between work and personal profiles without the need for physical connections or additional hardware.

Why It Is Necessary

This system is necessary for a multitude of reasons:

- Improve work/life balance, which in turn increases morale and productivity
- Compatibility across devices
- Privacy protection
- Having all work-related devices updated with current workload
- Prevent easily-avoided situations where critical data can be stolen
- Smooth integration into the existing workflow and IT infrastructure

Stakeholders

The Microsoft Bean is intended to benefit the employees within the organization, with the inclusion of all positions that need to access digital devices as a part of their role. This includes, but is not limited to, managers and developers all the way to customer service representatives and administrative staff.

Project Deliverable 2

Justification

The Microsoft Bean project introduces a physical beacon with the help of which internal employees may simply divide their personal and professional lives and enables a seamless transition between the two. The project's goals are to enhance work-life balance, boost productivity, protect privacy, and seamlessly integrate into existing workflows. By automating profile switching and leveraging wireless connectivity, the Microsoft Bean improves efficiency and reduces distractions, resulting in increased morale and productivity. A seamless user experience is ensured by the gadget's device connectivity, and strong security measures guard important data. The anticipated gains in productivity, work-life balance, privacy protection, and seamless integration provide as justification for the initiative. The main stakeholders, including the management team, IT staff, and employees, stand to gain from the adoption of this creative approach.

While estimating the project's costs, the following categories should be considered:

- 1) Infrastructure Cost:
 - a) Server Usage
 - b) Cloud Storage
- 2) Development Cost:
 - a) Software Development
 - b) Testing
- 3) Hardware Infrastructure:
 - a) Beacon Design
 - b) Equipment Cost, including sensors like Bluetooth sensors
 - c) Production Cost, including labor, machinery and prototyping
- 4) IT Support Cost:
 - a) System Support
 - b) User Support

IT Demands

- A. Demands on the IT Department for the Microsoft Bean Project:
 1. Development: Create physical beacons that can switch between work profiles and must be prototyped. These beacons should be capable of wireless connectivity and be accessible with a range of gadgets.

2. **System Integration:** Assess the organization's existing IT infrastructure for compatibility with the Microsoft Bean and integrate the Microsoft Bean system with the network, security protocols, and device management systems.
3. **Device Compatibility:** Evaluate compatibility of devices used by employees (laptops, desktops, smartphones, tablets) with the Microsoft Bean and ensure necessary drivers and software updates are available for seamless integration.
4. **Security Implementation:** Implement robust security measures to protect work and personal profiles. Establish access controls, authentication mechanisms, and encryption protocols for data protection.
5. **Network Configuration:** Configure the wireless network infrastructure to support the Microsoft Bean and ensure proper connectivity, coverage, and network optimization for seamless profile switching.
6. **Testing and Quality Assurance:** Execute a test run of the prototype to ensure there are no faults. Use the feedback to then make improvements on quality.
7. **Deployment and Management:** Set up, configure, and register devices within the network and provide ongoing management, including firmware updates, troubleshooting, and support.
8. **User Training and Support:** Conduct training sessions to educate employees on using the Microsoft Bean and offer help desk assistance for technical issues and user queries.
9. **Monitoring and Maintenance:** Monitor system performance and reliability. Proactively resolve technical issues, perform maintenance tasks, and conduct system updates.

B. IT Roles Required:

To support the Microsoft Bean project, the IT department requires the following roles:

1. **IT Project Manager:** Oversees project planning, coordination, and team management.
2. **Developer:** Plans and create applications
3. **System Integrator:** Evaluates IT infrastructure, designs integration solutions, and oversees system deployment.
4. **Network Engineer:** Configures and optimizes the wireless network.
5. **Security Specialist:** Implements data security measures and protocols.
6. **Device Management Specialist:** Handles device registration, configuration, and ongoing management.
7. **Help Desk Support:** Provides technical support, troubleshooting, and user training.
8. **System Administrator:** Monitors system performance, conducts maintenance, and ensures reliability.

Implementing these roles will facilitate successful implementation of the Microsoft Bean, meeting organizational needs and supporting employees effectively.

SWOT Analysis

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> ● Offers extreme security via a two-factor authentication system. ● Provides on-the-go access to user's systems and workload ● Allows for easy recovery - saves and backs-up current workload every hour (this is user-determined based on personalized needs) ● Balance of professional and personal lives thereby increasing morale and productivity ● Ability to integrate smoothly into existing workflows and IT infrastructure due to its instinctive nature, minimizing disruptions ● Portable device and easy to carry, and it can minimize all other authentications ● No external hardware is required 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> ● Need for a large cloud-based system or physical hardware to hold all of an organization's user information, files, and ongoing tasks ● Depending on company size, it might be expensive to provide every single employee with a hand-held device ● Initial resistance from employees to a new technology may pose challenges during the adoption phase
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> ● Different modes based on user availability - vacation, lunch break, etc ● It can explore additional features such as workload status updates, advanced workload management tools, and integration with productivity applications, providing added value to users ● Departmental-specific needs ● Further features can be added to enhance work-life balance ● This product opens a new vertical 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> ● Theft of devices and/or work platforms ● Misuse of devices due to not enough training or misunderstanding of purpose ● Because this is based on a wireless network, what happens if the network goes down? ● Data breaches and unauthorized access

<p>under the Microsoft family of products</p> <ul style="list-style-type: none">● Once launched and tested, this can be purchased by other firms which would generate revenue for Microsoft	<ul style="list-style-type: none">● Rival companies may introduce similar solutions, impacting the market share of the Microsoft Bean
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Project Deliverable 3

Work Breakdown Structure

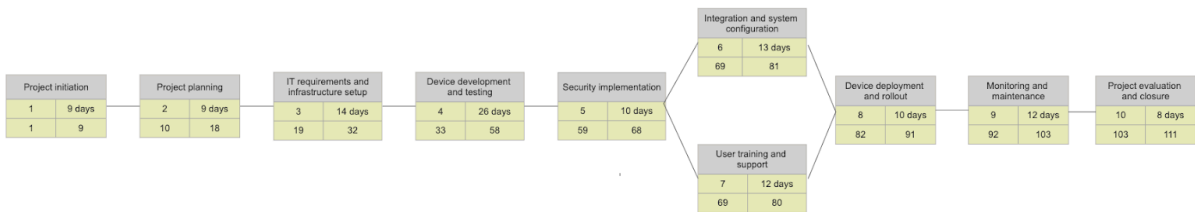
Task list

Task No	Description	Duration (Days)	Dependenc
1	Project Initiation	9	
1.1	Define Project Scope and Objectives	4	
1.2	Identify Stakeholders and Roles	3	1.1
1.3	Conduct Project Kickoff Meeting	2	1.2
2	Project Planning	9	
2.1	Define Project Deliverables and Milestones	2	1.3
2.2	Create Work Breakdown Structure (WBS)	3	2.1
2.3	Identify Task Dependencies	2	2.2
2.4	Resource Allocation and Budgeting	2	2.3
3	IT Requirements and Infrastructure Setup	14	
3.1	Assess Existing IT Infrastructure	3	2.4
3.2	Procure Necessary Hardware (Beacon Devices, Sensors)	5	3.1
3.3	Set Up Cloud-Based Storage and Servers	3	3.1
3.4	Establish Wireless Network Connectivity	3	3.1
4	Device Development and Testing	26	
4.1	Design Physical Beacon Prototype	7	3.2
4.2	Develop Firmware and Software for Beacon	7	4.1
4.3	Conduct Beacon Testing (Functionality, Security, Compatibility)	7	4.2
4.4	Revise and Finalize Beacon Design based on Feedback	5	4.3
5	Security Implementation	10	
5.1	Implement Two-Factor Authentication System	5	4.4
5.2	Conduct Security Testing and Penetration Testing	5	5.1
6	Integration and System Configuration	13	
6.1	Integrate Beacon System with Existing IT Infrastructure	4	5.2
6.2	Configure Network for Seamless Profile Switching	4	6.1
6.3	Test Integration with Different Devices and Platforms	5	6.2
7	User Training and Support	12	
7.1	Develop User Training Materials	4	5.2
7.2	Conduct User Training Sessions	4	5.2
7.3	Set Up Help Desk Support for Technical Assistance	4	5.2
8	Beacon Deployment and Rollout	10	
8.1	Register and Configure Beacons for Employees	5	6.3
8.2	Distribute Beacons and Provide User Instructions	5	7.2
9	Monitoring and Maintenance	12	
9.1	Monitor Beacon Performance and Network Connectivity	4	8.2
9.2	Conduct Regular Maintenance and Firmware Updates	4	9.1
9.3	Address Technical Issues and Provide User Support	4	9.1
10	Project Evaluation and Closure	8	
10.1	Conduct Project Review and Assessment	2	9.3
10.2	Document Lessons Learned and Best Practices	2	10.1
10.3	Prepare Final Project Report	2	10.2
10.4	Celebrate Project Success and Closeout	2	10.3

Gantt Chart

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17
Project Initiation	1.1 Define Project Scope and Objectives 1.2 Identify Stakeholders and Roles 1.3 Conduct Project Kickoff Meeting																
Project Planning		2.1 Define Project Deliverables and Milestones 2.2 Create Work Breakdown Structure (WBS) 2.3 Identify Task Dependencies 2.4 Resource Allocation and Budgeting															
IT Requirements and Infrastructure Setup			3.1 Assess Existing IT Infrastructure 3.2 Procure Necessary Hardware (Beacon Devices, Sensors) 3.3 Set Up Cloud-Based Storage and Servers 3.4 Establish Wireless Network Connectivity														
Device Development and Testing				4.1 Design Physical Beacon Prototype 4.2 Develop Firmware and Software for Beacon 4.3 Conduct Beacon Testing (Functionality, Security, Compatibility) 4.4 Revise and Finalize Beacon Design based on Feedback													
Security Implementation								5.1 Implement Two-Factor Authentication System 5.2 Conduct Security Testing and Penetration Testing									
Integration and System Configuration								6.1 Integrate Beacon System with Existing IT Infrastructure 6.2 Configure Network for Seamless Profile Switching 6.3 Test Integration with Different Devices and Platforms									
User Training and Support								7.1 Develop User Training Materials 7.2 Conduct User Training Sessions 7.3 Set Up Help Desk Support for Technical Assistance									
Beacon Deployment and Rollout										8.1 Register and Configure Beacons for Employees 8.2 Distribute Beacons and Provide User Instructions							
Monitoring and Maintenance												9.1 Monitor Beacon Performance and Network Connectivity 9.2 Conduct Regular Maintenance and Firmware Updates 9.3 Address Technical Issues and Provide User Support					
Project Evaluation and Closure																10.1 Conduct Project Review and Assessment 10.2 Document Lessons Learned and Best Practices 10.3 Prepare Final Project Report 10.4 Celebrate Project Success and Closeout	

PERT Chart



Risk Assessment and Response Plan

The Microsoft Bean could handle potential vulnerabilities, improve security and privacy, and give internal employees a seamless and safe profile management experience by putting this risk events and response plan into practice.

Risk	Event	Response Plan
Security	If the process of authentication is not effective, there is a chance that unauthorized people will access the work profile and sensitive work-related information may be exposed as a result of a possible loss of data.	Install fingerprint systems to guarantee secure access to work profiles.
Data Backups	Data may be lost during system failures if the device doesn't regularly update and backup the user's workload and irregular backup procedures may result in out-of-date backups.	To ensure current copies of the work profiles, implement automated and frequently updated cloud backups.
Connectivity	Depending on wireless communication, the possibility of interruptions caused by network failures.	Implement an offline mode in the Bean where users are able to switch between profiles, loading the last workload to have been backed up previously on Internet.
Integration	Microsoft Bean may encounter difficulties connecting with the multiple devices and operating systems used by employees.	To find and fix integration problems, deeply assess a variety of devices' and operating system compatibility.
Device Safety	Employees may lose or damage the actual beacon, which could result in problems with profile access.	Implement a tracking system to keep track of the Microsoft Bean's location and enable remote deactivation in the event of loss or theft.
Technical Challenges	Users might face technical challenges while using the product initially which might impact their performance.	The IT Team should be there for 24/7 support for any technical help required.

Manufacturing Issues	Internal defects, yield rates, and supply chain disruptions may occur during mass production that can be challenging for the firm	Make sure that suppliers are adhering to the quality requirements. The best approach would be to create clear routes for communication and keep an eye on their progress.
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Systems Requirements

Requirements

1. User Requirements:

- Customization: Users should be able to personalize their preferences based on their needs.
- Compatibility and smooth integration: The device should integrate seamlessly with existing workflows and devices.
- Efficient switching: The switching process should avoid delays or technical bugs, and be quick and easy.
- Privacy and data protection: Any personal data and preferences should be stored securely and protected from unauthorized access.
- Reliability and availability: The system must be reliable and available at all times to allow for smooth profile switching without interruptions.

2. Technical Requirements:

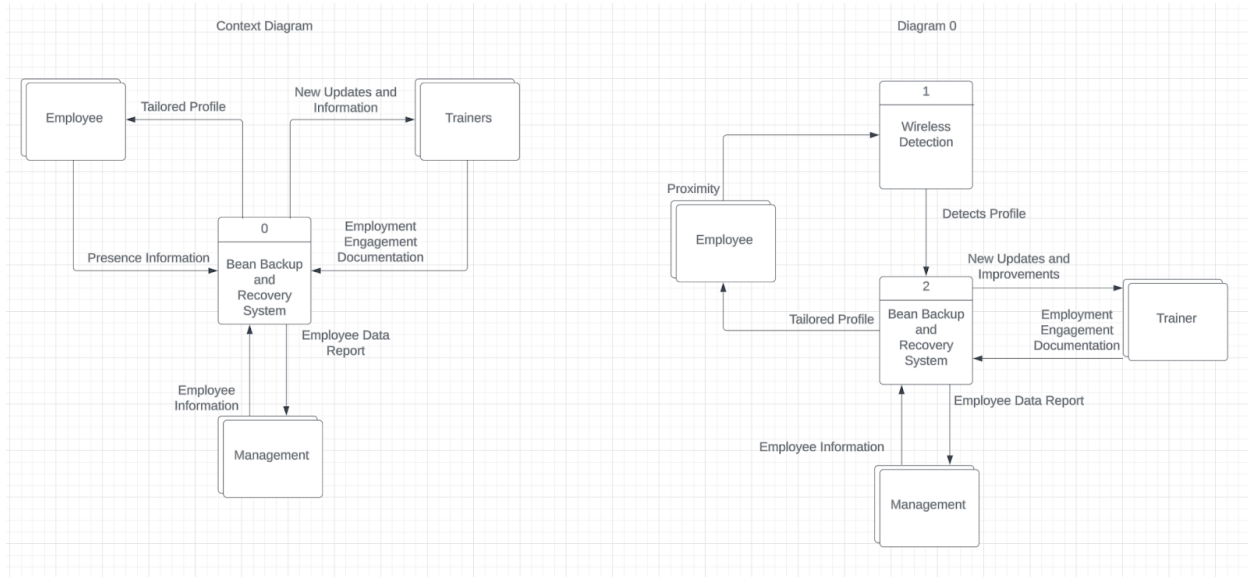
- Security measures: Strong security protocols need to be implemented to protect personal data and prevent potential breaches.
- Wireless connectivity: Determine appropriate wireless standards to ensure reliability and efficient connectivity.
- Software compatibility: Ensure the device will be compatible with common software applications that employees may use to avoid future conflicts.
- Scalability: Identify how many users will be using the device at once and ensure the system will be able to accommodate potential future expansion.
- Data storage and cloud integration: A cloud-based system should be set up for storing user profiles, workloads, and backup data securely.

Requirement Gathering Techniques

- User surveys and interviews: Conduct surveys and interviews with internal employees to identify their issues, needs, and expectations related to work-life balance, productivity, and privacy.
- Test prototypes: Create prototypes of the device and conduct usability tests on a diverse range of employees to gather feedback.
- Competitor analysis: Analyze similar projects or initiatives to pinpoint additional improvements that can be included.
- Engage stakeholders: Collaborate with IT staff, employees, and management to understand their thoughts, concerns, and suggestions through the use of meetings and workshops.
- IT Team collaboration: Work closely with the IT team to understand technical limitations and opportunities for integration.

Project Deliverable 4

Data and Process Modeling



Development Strategy

Based on the project requirements and the timeline of 123 days, using the Rapid Application Development (RAD) approach would be a suitable choice. RAD allows for the rapid development of systems with a focus on iterative prototyping and feedback. This approach enables us to break down the project into smaller, discrete tasks, promoting faster development cycles and cost savings.

Regarding the type of system, a hybrid approach combines elements of both traditional and web-based system. Here are some points highlighting the benefits of a hybrid approach for developing the Microsoft Bean system:

- **Flexibility and Adaptability:** A hybrid approach offers greater flexibility, allowing the project to adapt to changing requirements and priorities
- **Rapid Iterative Development:** Incorporating RAD principles enables quick prototyping and iterative cycles for faster development
- **Early User Involvement:** End-users are involved early during iterative prototyping, ensuring alignment with user needs

- **Risk Reduction:** The hybrid approach identifies and addresses potential issues early on, reducing project risks
- **Efficient Resource Allocation:** Critical tasks use RAD, while stable components follow traditional methods, optimizing resource usage
- **Clear Milestones:** The hybrid approach defines clear milestones for each iteration, ensuring progress in a structured manner
- **Continuous Improvement:** Iterative nature promotes continuous improvement for an enhanced final product
- **Customizable Development Process:** The hybrid approach allows customization based on project requirements and team expertise
- **Accessibility:** The Microsoft Bean can be accessed from any device with an internet connection, providing greater flexibility for employees to manage their profiles and workloads remotely
- **Cross-Platform Compatibility:** The Microsoft Bean is compatible with different operating systems and devices, ensuring a seamless user experience across various platforms.
- **Centralized Management:** The Microsoft Bean allows for centralized data storage and management in the cloud, making it easier to maintain and update
- **Ease of Deployment:** The Microsoft Bean can be deployed more efficiently as there is no need to install software on individual devices, reducing deployment time and effort.
- **Scalability:** The Microsoft Bean can easily accommodate a growing number of users and data, making them suitable for both small and large organizations
- **User Experience:** Modern web technologies enable developers to create rich and interactive user interfaces, enhancing the overall user experience
- **Legacy System Integration:** Our hybrid approach would allow seamless integration of legacy systems with cloud-based applications and services, preserving existing investments while modernizing the IT landscape.
- **Cost effectiveness:** With a hybrid model, we can save up front capital costs by employing cloud services for sporadic workloads or short-term initiatives instead of purchasing and maintaining on-premises infrastructure.

In summary, by embracing a hybrid approach, the development of the Microsoft Bean system can leverage the strengths of both traditional and web based systems, leading to a faster development, improved user satisfaction, cost savings and a user-friendly device accessible from any place with an internet connection.

Systems Integration

As we prepare to deploy the Microsoft Bean system, seamless integration with the company's existing workflow and IT infrastructure is a top priority. The system should seamlessly connect

with the wireless network, device management systems, and cloud-based storage to enable smooth communication with recognized work devices and secure access to user profiles and workloads.

To ensure a successful integration, we will focus on the following key aspects:

- **Compatibility:** The Microsoft Bean system will be designed to ensure full compatibility with legacy systems, guaranteeing a seamless user experience and hassle-free adoption.
- **Data Synchronization:** Real-time data synchronization will be implemented, enabling the system to update user profiles, workload information, and authentication credentials effectively.
- **Security Integration:** Robust security protocols will be integrated, including existing authentication mechanisms, access controls, and encryption protocols, to protect sensitive data and ensure secure profile switching.
- **Employee/User Onboarding and Training:** A comprehensive training program will be devised to educate employees on effective usage of the Microsoft Bean system. The training will cover profile management, security practices, and any new features.
- **Change Management:** An effective change management strategy will be implemented to ensure smooth employee adoption. Engaging users throughout the development process and addressing their feedback will enhance acceptance.
- **Testing and Validation:** Rigorous testing and validation will be conducted to ensure seamless integration with the company's IT infrastructure. This includes testing integration points, data flow, and user scenarios to resolve any issues before deployment.
- **Post-Implementation Support:** A dedicated support team will be available to address any post-deployment issues, provide ongoing employee assistance, and maintain the system's reliability and performance.
- **Throughput and Adaptability:** In order to manage growing loads, the integrated system's performance should be optimized after every 'n' days or months.
- **Business Continuity and Recovery:** To guard against data loss and system failures, put in place a solid backup and recovery strategy.

By optimizing systems integration, we will achieve a more efficient and productive work environment, allowing employees to effectively manage their work profiles and achieve a better work-life balance. The Microsoft Bean system will smoothly integrate into the existing workflow and IT infrastructure, enhancing employee productivity and experience.

Project Deliverable 5

UI Design



Home Screen

Upon turning on the Microsoft Bean, the user is greeted with the home screen. The home screen is clean and straightforward, displaying the user's name, profile picture, and the Microsoft Bean logo in the top corners. In the center of the screen, there are two large and distinct buttons:

1. **Work Profile:** This button allows the user to switch to their work profile. Tapping on it would instantly switch the device to the work mode, providing access to work-related applications and resources.
2. **Personal Profile:** Similarly, the personal profile button switches the device to the user's personal mode, enabling access to personal apps and data.

There are four other core functionalities in which the application provides access to:

1. **Backup:** When the user taps on "Backup," the Microsoft Bean initiates a secure backup process. It saves all work-related data, applications, and settings in an encrypted format

to a designated cloud storage or an integrated IT infrastructure at that current point in time. Users may choose to perform a manual backup or schedule automatic backups at specific intervals.

2. **Restore:** The "Restore" option lets users access their previous backups and restore them onto the current profile. This feature is handy in case of device loss, accidental data deletion, or when users want to revert to a previous state of their work or personal profile. Users can choose from a list of available backups and restore the one that suits their needs.
3. **Settings:** The "Settings" button allows the user to manage their profile details and preferences, such as changing the profile picture, updating the name, adjusting profile-specific settings, and changing how often they want their device to automatically back-up their workload.
4. **Live Chat:** This feature will be available both on the application as well as the support page, as mentioned below. It will give employees direct access to the IT department, where they will be able to receive assistance on an as-needed basis.

This user interface is also accessible through the desktop via a downloaded application, as well as online via the web application. However, mobile access allows for on-the-go users to quickly and efficiently control the essential functions that establish what the Microsoft Beans strives to complete at its core.

Testing, Training, and User Support

Testing Strategy

The Microsoft Bean system will undergo a comprehensive testing process to ensure its functionality, reliability, and user-friendliness. The testing approach will involve the following stages:

1. **In-House Testing:** The development team will conduct thorough in-house testing to identify and rectify any technical issues, bugs, or glitches in a controlled environment.
2. **Small Scale User Testing:** A selected group of internal users will participate in a small-scale user testing phase. Their feedback will provide valuable insights into user experience and any areas needing improvement.
3. **Pilot Testing:** A pilot test with a larger group of users will be conducted to validate the system's performance in a real-world scenario. Feedback from pilot users will guide final refinements.

4. **User Testing at Scale:** Once the system is refined based on feedback, a broader user testing at scale will be conducted, similar to the process seen with ChatGPT. This will involve a diverse user base to ensure the system's effectiveness.

Training Strategy

The training strategy will differ based on whether the system is developed for internal or external use:

1. **Internal Users (Within the Company):** Training sessions will be conducted for employees, focusing on profile management, security practices, and system navigation. These sessions can be held in person or through webinars, allowing for direct interaction and addressing questions.
2. **External Users (Potential Customers):** For systems developed for external use, an online training platform will be established. This platform will include video tutorials, user guides, and FAQs to ensure that potential buyers can efficiently utilize the system.

User Support Strategy

To support users during and after deployment, the following strategies will be implemented:

1. **Customer Support Team:** A dedicated customer support team will be available to address user queries, technical issues, and provide assistance promptly. This team will offer personalized support and troubleshoot problems effectively.
2. **Live Chat:** Implementing a live chat feature on the support page will enable users to engage with support representatives in real-time, ensuring immediate responses to their queries.
3. **FAQ Forum:** A comprehensive FAQ forum will be set up, addressing common user queries and providing self-help resources.
4. **Chatbot Assistance:** A chatbot will be integrated into the support system to offer automated responses and assist with basic queries, enhancing the overall user support experience.

By combining effective testing, tailored training strategies, and robust user support mechanisms, the Microsoft Bean system will be well-equipped to provide a seamless and satisfying user experience