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DBI Project

GROUP 8

Designing Future-Ready Workplaces

Innovation, Inclusion, and Intergenerational Collaboration

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Introduction

Overview

The effective management of workforce longevity and generational inclusion is a crucial priority in contemporary human resources management. In a rapidly changing socio-technological landscape, companies are called upon to re-imagine their strategies to cultivate **equitable, inclusive and productive environments for all age groups**. Indeed, the exponential pace of technological innovation can widen the gap between the digital skills of younger and older workers, making it essential to adopt solutions that promote **intergenerational collaboration** and enhance **workforce diversity.**

The Presented Problem

Developed in collaboration with Randstad Enterprise, this project focuses on supporting a specific public financial services company based in Milan with around 700 employees. The project's main objective is to analyse and address the challenges this organisation faces regarding **generational inclusion** and **digital adaptability**. External research and a survey, sent to employees of companies in the financial and public sectors, identified several critical issues that need to be addressed, including improving communication and collaboration between different age groups, balancing and enhancing the experience of seniors and the digital skills of juniors, enhancing training opportunities, increasing transparency in reward systems and career paths, and strengthening accessibility to digital tools. A particularly acute challenge, especially in the public and financial sectors, relates to **the difficulty of attracting and retaining younger talent**.

Report Purpose

The report has the dual purpose of analysing in detail the context and problems identified and of proposing the '**IntraHub**' project solution to address them, illustrating its methodologies, characteristics and potential implementation. To achieve these objectives, the document begins with an analysis of the project partner, Randstad Enterprise. Subsequently, the profile and context of the client company is explored, also examining internal dynamics and generational needs. Section 4 is devoted to the detailed presentation of the 'IntraHub' solution, with its components and functionalities. Finally, the technical, implementation and economic feasibility of the solution is examined.

Randstad Enterprise

2.1 Overview

Randstad is the **global leader in the HR services industry**. By serving as a trusted human partner in today's technology-driven world of talent, they help people secure rewarding jobs and stay relevant in the ever changing world of work. Randstad was founded in 1960 and is headquartered in Diemen, the Netherlands. In 1960 Randstad founder Frits Goldschmeding believed the labor market could be different and better through temporary labor. His vision has grown into a global leader in the HR services industry.

Randstad Enterprise is a specialized division that delivers **strategic talent and workforce solutions** to large multinational companies, particularly those navigating cultural and organizational challenges. It specializes in services such as RPO (Recruitment Process Outsourcing), MSP (Managed Service Provider), total talent solutions, workforce intelligence, and career transition.

To draw a complete strategic picture of Randstad Enterprise, we conducted an in-depth analysis of both the organisation's internal structure and the external context in which it operates. This dual investigation helped us to understand the dynamics of Randstad Enterprise, clarify its market context and identify the distinctive resources and competencies that give it a competitive advantage. The following sections will therefore present the **internal analysis**, focused on the resources and competencies-based approach (RCBV) to unveil the intrinsic strengths, and the **external analysis**, carried out using the PESTEL and Porter's Five Forces models to map the opportunities and threats arising from the macro-environment and specific industry dynamics.

2.2 Internal Analysis of Randstad Enterprise

The **Core Resources and Competences Approach (RCBV)** framework guided our identification of Randstad Enterprise's key resources and distinctive competencies that underpin its competitive advantage. As a service-oriented entity, its intangible assets are particularly significant, though tangible assets form a fundamental part of its global operational structure.

Randstad Enterprise's **tangible assets** include a widespread international presence with offices and operational headquarters in numerous countries, supported by essential IT infrastructure, technology, and equipment necessary for daily operations and advanced data analytics. Robust financial standing enables ongoing investment in these areas, ensuring a solid foundation for its global service delivery.

Among its crucial **intangible assets**, human capital is central, encompassing deep knowledge, industry expertise, and a motivated workforce. Randstad Enterprise strongly emphasizes Talent Development through personalized programs and coaching, alongside Organizational Culture & Change Management via its Talent Advisory services. Technologically, the company leverages digital competencies and proprietary information systems, including Talent Technologies and Talent Intelligence, to support HR processes with predictive analysis and innovative training. Its reputation is further solidified by a strong brand identity, positive stakeholder relationships, a focus on customer and candidate experience, and a certified commitment to Inclusion and DE&I, all reflecting a human-centric ethos.

Randstad Enterprise's **core competencies** are manifested in several key areas. These include

its proven HR methodologies and data-driven strategic consulting across the entire talent lifecycle; a capacity for in-depth client needs analysis leading to co-designed, customized solutions; the integration of technology, including AI, with a human-centered approach in recruitment, training, and talent transition; recognized expertise in Diversity, Equity, and Inclusion (DE&I) supported by certifications; and a global delivery capability across numerous markets that combines strategic coherence with adaptation to local regulations and cultures.

2.3 External Analysis of Randstad Enterprise

To evaluate the macro-environmental and industry-specific factors impacting Randstad Enterprise, particularly its operations in Italy, a detailed external analysis was conducted using the PESTEL framework and Porter's Five Forces model. These tools provided a clear understanding of external pressures, opportunities, and threats.

The **PESTEL analysis** highlighted how dynamic political and economic climates in Italy necessitate adaptable long-term business planning, while supportive institutional frameworks can foster growth. Economic conditions present opportunities, though challenges such as skill mismatches in the labor market require sophisticated recruitment solutions. Socially, trends like an aging population and increasing labor market diversity create both pressures and avenues for Randstad's specialized staffing and advisory services. The Italian technological landscape is generally favorable, with AI and big data significantly reshaping recruitment and HR management. Environmentally, Randstad demonstrates a strong commitment to sustainability, a key consideration given broader climate concerns. Legally, strict adherence to evolving labor laws and data protection regulations underscores its commitment to ethical operations.

Porter's Five Forces model illuminated the competitive landscape. The threat of new entrants is relatively low due to regulatory hurdles and Randstad's established brand. Supplier bargaining power is also limited by the company's extensive network. However, buyer power is moderate to high, as staffing services can sometimes be perceived as standardized. A rising threat of substitutes comes from the gig economy and digital recruitment platforms. Industry rivalry is intense, with major players competing closely. Randstad Enterprise maintains its competitive edge through continuous innovation, strong client relationships, the strategic integration of AI, and a comprehensive suite of complementary services, such as strategic talent advisory and career transition support, which differentiate its value proposition in the market.

Client Company

3.1 Overview

The client company for which Randstad has requested our contribution in developing a tailored solution has not been explicitly identified. The information provided refers to an organization operating in the financial sector, partially owned by MEF (Ministry of Economy and Finance). It is headquartered in Milan and employs around 700 people, with an average age of around 50, who are distributed across various offices throughout the country. The company is also active internationally.

This company is facing significant challenges due to its multi-generational workforce. The main problems are a pronounced generational divide and age-related prejudices hindering collaboration and mutual appreciation, difficulties with digital adaptation among senior employees impacting knowledge sharing, and a significant intergenerational leadership gap with younger managers struggling to lead more experienced staff. This contributes to the disengagement of senior employees, posing a risk of losing critical know-how and making it difficult to attract and retain talent. Consequently, the company urgently requires more effective strategies and tools to actively promote collaboration and knowledge sharing across generations, including digital and welfare tools.

In order to develop a strategic and relevant proposal for this company, we undertook an in-depth analysis of its potential operating environment, focusing on internal dynamics and the specific needs of its workforce. In the absence of direct information on the organisation, a PESTEL analysis was conducted to understand the external context of the sector, based on a benchmarking exercise involving comparable companies (SACE, MCC, AMCO and CDP). This allowed us to extrapolate relevant macro-environmental and sector factors. In parallel, we adopted a dual strategy to investigate the internal context of the financial sector. First, we administered a qualitative survey to a diverse sample of financial sector employees. This survey aimed to capture perceptions, critical issues, team dynamics, levels of digital competence, engagement, and reactions to change typically found in organisations with similar characteristics. Secondly, an in-depth study of the specific needs of different generations in the workforce was conducted to better understand the expectations, values and challenges of a multi-generational workforce, such as that hypothesised for the client company.

This methodological approach aims to construct a plausible profile of environmental pressures, internal organisational challenges and, above all, the heterogeneous needs of employees. This knowledge base is crucial for formulating a solution that is both theoretically valid and concretely targeted and effective, as will be detailed in the analyses presented in the following sections.

3.2 External context

To better understand the external context in which our client company operates, we conducted a **PESTEL** analysis based on four comparable case studies: **SACE**, **MCC**, **AMCO**, and **CDP**. These financial institutions, all directly or indirectly controlled by the Ministry of Economy and Finance (MEF), share key characteristics with our client: a similar size, national presence, and institutional setup. This makes them a relevant benchmark for anticipating external challenges and opportunities, especially in the absence of specific data about the company's identity.

SACE, specialized in export credit and investment protection, and MCC, focused on

SME financing, highlight how state-owned institutions align with public policy and are directly affected by economic volatility. AMCO's work in managing non-performing loans and CDP's strategic investments in infrastructure and sustainable development further reflect the importance of aligning with national economic goals and broader EU priorities.

From a political and economic perspective, our client, like these institutions, will be strongly influenced by government strategies, regulatory frameworks, and macroeconomic shifts. This alignment with public development agendas may shape its investment and operational decisions.

On the social front, the issue of an aging workforce, especially in publicly controlled companies, emerges as a shared challenge. Encouraging intergenerational collaboration and addressing evolving work models will be crucial for knowledge transfer and employee engagement.

Technologically, all case studies underscore the urgency of embracing digital transformation. This includes the adoption of AI tools, cybersecurity systems, and efficient digital platforms. CDP's continued investments in digital infrastructure serve as a clear indicator of where the sector is heading, and our client must keep pace to remain competitive.

Environmental concerns are also increasingly relevant. As seen in SACE and MCC, institutions are progressively integrating sustainability and green finance into their operations. Our client must respond to EU decarbonization targets and adopt ESG criteria to guide its strategies.

Legally, public financial institutions operate under stringent national and European regulations. Like SACE, AMCO, and others, our client must ensure compliance with frameworks concerning data protection, financial transparency, and evolving digital finance laws.

In conclusion, the analysis of these four institutions offers valuable insights into the external environment shaping the Italian financial sector. For our client, key challenges will lie in managing an aging workforce, driving digital transformation, and aligning financial strategies with sustainability and regulatory goals.

3.3 Internal context Analysis

3.3.1 Survey

To gain an in-depth understanding of the internal context of the sector in which our client company operates, and to overcome the lack of direct access to specific data, we chose to adopt an analytical approach based on the **administration of a survey**. The main reason for this approach was the need to build a representative profile based on real data on the dynamics, critical issues and needs typical of organisations operating in the Italian financial sector. By sending the survey to a sample of around **150 public and private sector employees**, we were able to gather authentic insights to inform and validate our project proposal.

The survey was structured to investigate five key thematic areas: **Professional profile** (age, role, seniority, and type of organization), **Team Dynamics** (collaboration and communication within teams), **Digital skills and training** (skill levels and organizational support), **Engagement and Wellbeing** (motivation, productivity, corporate welfare, and satisfaction), and **Reaction to change** (adaptability, skill adequacy, and awareness of digital change needs).

This analysis is crucial for our project. The results not only allow us to avoid making assumptions but also provide concrete

evidence of the **real challenges** experienced by employees in the target sector. Therefore, the data from this survey is of crucial importance, as it enables us to design a relevant, targeted and effective solution that responds to empirically validated needs and critical issues. The subsequent analysis of these results therefore constitutes the foundation on which our intervention strategy is based.

Workforce Demographics: A Mature and Stable Environment

The survey reveals a **demographic composition** heavily skewed towards senior professionals, indicating a highly **stable but aging workforce**. A significant majority of respondents, over 73%, are over the age of 50, with the 50-59 age bracket alone constituting 51.6% of the sample. Conversely, employees under 40 represent a marginal 12%. This demographic trend is mirrored in the seniority data, where 61.1% of participants have been with their current organization for over 20 years, while only 5.1% have a tenure of less than one year. Consequently, **team structures are predominantly senior-heavy**, with 43.9% of respondents reporting a predominance of senior figures in their teams, and 52.2% describing their teams as having a 'mixed' age composition. While this mature professional environment ensures operational continuity and deep-seated experience, it also signals a potential challenge to innovation and highlights a strategic need for active youth recruitment and enhanced intergenerational collaboration.

Collaboration and Communication: Bridging the Generational Divide

The dynamics of **communication and collaboration** present a mixed but insightful picture. While the overall **level of intergenerational collaboration** is perceived as generally positive, a notable 30% of respondents rate it as merely **fair to poor**, indicating significant room for improvement. The data suggests that younger employees, despite their openness, perceive a greater communication barrier with older colleagues, probably because they have less experience in managing heterogeneous professional relationships. A key tension emerges in what **different age groups feel should be value**d: senior employees emphasize the need to value their experience, while junior employees stress the importance of recognizing their competences. It would therefore be advisable to listen to both sides, to value the experience gained and to support the skills of the younger generation in order to create the most complete working environment possible. **Communication** is key for knowledge integration and goal achievement. Although evaluated positively, it **could improve**, especially across different teams. Employees' opinions vary by sector: the private sector shows better cohesion and likely uses more efficient tools. Our company, positioned between public and private, may also need to improve communication.

Digital Skills and Training: A Paradox of Proficiency and Inadequate Support

A key paradox emerges from the analysis of **digital skills**. Employees across all age groups report a good level of mastery over the digital tools used in their daily work, challenging the common stereotype of older employees being less digitally adept. However, this self-perceived proficiency is in stark contrast to the widespread view that the technical training and support provided by their organizations are inadequate. This gap suggests a significant organizational opportunity. The quality of digital tools also varies, with over 80% of private-sector employees rating them as adequate, a much more positive view than that of their public-sector counterparts. While training is generally available, it is perceived as qualitatively improvable, with respondents

indicating a need for more personalized, experiential, and up-to-date programs. A critical deficiency is identified in transversal training (e.g., soft skills, personal growth, leadership), which is largely absent and represents a key area for investment to boost both productivity and job satisfaction.

Engagement, Motivation, and Wellbeing: The Centrality of Recognition and Culture

The survey detects a moderate level of work engagement across all age groups, signaling a need for initiatives that stimulate active participation and strengthen employees' sense of belonging. The latter, in fact, seems to be present but not well consolidated, which once again highlights the need to improve the sense of attachment and bonding with the team. While half of the respondents feel they can express their ideas freely, the other half feel constrained, highlighting a need for greater active involvement.

A particularly critical finding relates to recognition and reward systems, which are perceived as neither clear nor transparent, with meritocracy not always seen as being fully applied. This may impact motivation, so innovative systems for objective rewards, recognition, and promotions would be advisable.

More than **50% of respondents do not always feel valued**, which reduces motivation and affects the **working climate**. The analysis of motivational factors confirms this, with personal satisfaction (70%) and positive relationships with colleagues (48%) ranking higher than salary or job stability. These results underscore the urgent need for a more merit-based reward system and a culture that actively values employee contributions. Finally, comparing **public and private sectors** in wellbeing and welfare, **public sector employees report poorer work-life balance** due to **less flexible arrangements**, which impacts **wellbeing, productivity, and satisfaction**. Public employees also find **benefits inadequate**, unlike private sector views. Attention to **psychophysical wellbeing** shows similar differences, underlining the need for **investment in such initiatives**.

Reaction to Change: A Receptive but Cautious Workforce

The workforce demonstrates a generally **positive and optimistic attitude towards organizational change** and new technologies, with over half of the sample not feeling discouraged by it. However, the **introduction of advanced tools** like Artificial Intelligence (AI) elicits a divided response: 40% of respondents see AI as an **opportunity for growth**, while the remaining 60% express a mix of **indifference, skepticism, concern over skills, or fear of being replaced.** This division highlights the necessity of accompanying technological transitions with clear communication strategies, targeted training, and psychological support. The data also shows that younger employees feel more confident in their digital skills, a dynamic that could be leveraged to create a supportive environment where they assist older colleagues. Despite these generational nuances, there is a strong, unified **awareness of the urgency for innovation**, with over 75% of all respondents considering the introduction of technological innovations "very necessary." This widespread consensus provides a fundamental mandate for organizations to drive a participatory, sustainable, and inclusive digital transformation.

The survey results provided **strong empirical validation** of the scope of our project, confirming that the identified challenges are deeply rooted in the target sector's current working environment. The analysis paints a consistent picture, highlighting a mature

workforce that requires greater engagement and better intergenerational collaboration. It also reveals a workforce with ample room for improvement, characterised by tension between valuing senior experience and junior skills. A critical paradox emerges between employees' perceived proficiency with digital tools and the inadequacy of the training support offered by organisations. Combined with moderate general engagement and a widespread need for greater recognition, these elements unequivocally confirm the relevance of the project objectives and the need to introduce innovative tools and strategies to improve collaboration, training, and motivation.

3.3.2 Different generations' needs analysis

While the survey confirmed the challenges related to the workforce, it also highlighted the **need for a more in-depth analysis of the specific motivations and needs of each generational cohort**. One of the main reasons for conducting this additional analysis was the low number of junior respondents to the survey, which meant that we could not gain an equally robust view of their perspectives from our primary data alone. To design an effective solution that identifies and solves problems, it is crucial to understand the 'why' behind the data collected for both seniors and juniors.

To complement the preliminary survey data and gain a deeper understanding of the specific needs of all key working-age groups, then, we conducted targeted **qualitative analysis** based on **external research**. This approach enabled us to link employees' everyday experiences to broader generational patterns influencing their behaviour, motivation and engagement, while recognising the unique values, challenges and expectations of each generation.

This in-depth analysis has therefore enriched our understanding of senior employees' needs, going beyond purely quantitative data. At the same time, it has helped to close the information gap on younger generations, who were less represented in the initial survey sample. This comprehensive, multi-generational analysis is therefore crucial to ensuring that the proposed solution is genuinely inclusive and flexible. It must be capable of balancing the different needs of each generation in a meaningful and practical way in order to build a collaborative environment that enhances their strengths.

We found that today's labour market is characterised by the coexistence of four main generations: **Baby Boomers** (born 1945–1960), who are gradually retiring; **Generation X** (born 1961–1980); **Millennials** (born 1981–1995); and **Generation Z** (born 1996–2015), the newcomers. Managing this diversity, known as '**generation management**', is crucial as each generation brings distinct values, beliefs and experiences. While this age diversity represents a potential asset, it also introduces significant organisational challenges in areas such as employee engagement, inclusion, adaptation to digital transformation, and an increasing mismatch between employee expectations and company supply. The following analysis will explore the main characteristics and needs that distinguish each of these generations.

While **Baby Boomers** generally show **high levels of engagement, well-being and value**, they face significant stress due to the **rapid evolution of work**. This is particularly evident in the increasing complexity of digitised tasks (71% of which have been transformed in the last five years), the green transition and new remote working models. This dynamic makes **updating and upgrading skills** (upskilling and reskilling) particularly challenging for this generation. They are mainly dissatisfied with limited growth and career opportunities, pay and benefits issues, and a perceived lack of wellness initiatives. Also critical for diversity and

inclusion is the feeling that their **talents and vast experience are not always fully recognised or utilised**. Consequently, Baby Boomers' key needs focus on targeted training support ('age-sensitive training') for acquiring new digital skills and managing complex tasks. They also demand fair career opportunities, transparent reward and benefit systems, increased recognition of their contributions, initiatives aimed at improving work-life balance and reducing stress, and encouragement to participate in organisational change, recognising their experience.

Generation X is **highly dedicated to work and focused on career progression**, sometimes at the expense of wellbeing and relationships. This group expresses dissatisfaction mainly due to **limited growth opportunities**, a **lack of focus on motivation and engagement**, and an **absence of wellbeing programmes**. This cohort experiences stress due to intense workloads and rhythms, as well as sometimes difficult professional relationships. However, the root of their dissatisfaction lies in the widespread perception that **their talents and strengths are not adequately valued.**

Consequently, they primarily need professional development paths that explicitly recognise their previous experience, tangible appreciation of their individual contributions, targeted engagement and motivation initiatives, and concrete support for wellbeing and stress management. They also require assistance in adapting to digital and organisational changes, ensuring their experience is recognised and complemented by ongoing training.

Millennials, a transitional generation between the traditional and digital working world, seek **autonomy, continuous learning and a strong value alignment**. Although they are generally more engaged than Generation Z, they often perceive a gap between their career aspirations and the actual opportunities on offer. This is why they **prioritise continuous professional development**, seeking quality training and structured growth paths.

They aspire to greater autonomy in managing their work, positive and inclusive relationships, support in overcoming communication and cooperation barriers within teams and between generations, and clear recognition of their contributions through motivating initiatives, transparent meritocratic processes and fair reward systems. To retain them, it is crucial that they feel fulfilled and appreciated as an integral part of an organisation that actively invests in their potential and supports them in bridging any communication and cooperation gaps between teams and generations.

Generation Z is digital native and innovation-driven. They are looking for **meaningful, flexible work** that focuses strongly on **psychophysical well-being and work-life balance**. These young professionals demand clear, fast, meritocratic career paths and a collaborative, empathetic work environment in which their talents can flourish through active listening, respect and recognition. However, despite these aspirations, Generation Z shows the **lowest levels of engagement and the highest tendency to resign**, often due to a perceived lack of clear career prospects, emotional support and authentic relationships in the workplace. The primary needs of this generation for a satisfactory working environment therefore include the creation of safe spaces that foster individual expression and active inclusion, a high degree of flexibility in working conditions (hours and modalities), a strong strategic focus on well-being, substantial investment in cross-training (soft skills, leadership and personal growth), an authentic and empathetic corporate culture that promotes collaboration, and effective communication aimed at reducing intergenerational barriers and supporting inclusiveness.

In our analysis, we categorised Baby Boomers and Gen X as **senior employees** and Gen Z and Millennials as **junior employees**. These groups have distinct profiles: Senior employees, who have extensive experience, may require support with digital adaptation. They are primarily looking for recognition of their talents and experience, as well as targeted training, career opportunities, flexible working hours and fair rewards. Junior employees, on the other hand, are digitally savvy and innovative. They seek meaning, values, flexibility and continuous learning in an inclusive, supportive and meritocratic corporate culture.

3.4 Comparison between analytical results and project objectives

Our analysis provided crucial findings that empirically validated the client's central challenges, such as managing an age and longevity diverse workforce effectively, overcoming generational barriers and prejudices, and fostering fluid collaboration and engagement, particularly among older employees. The analysis also added a level of detail that is indispensable for designing an effective and relevant solution.

Our analysis of the external context shed light on the macro-environmental and sectoral context. In terms of society, the widespread trend of an ageing workforce has emerged as a shared challenge, reinforcing the urgency for the client to implement models that foster constructive collaboration between different age groups and adaptation to evolving, flexible ways of working. Technologically, the drive towards digital transformation and AI integration, confirmed as sector priorities, highlights the need for clients to adopt efficient platforms and advanced digital tools to support productivity, knowledge sharing, and the development of innovative career paths. Growing environmental concerns also drive the integration of sustainability criteria into business strategies. These external factors define the scenario and amplify the relevance of internal customer challenges.

In parallel, analysis of the sector's internal context revealed specific dynamics. The survey confirmed the presence of an experienced workforce, highlighting the need for strategies that not only revitalise the commitment and performance of this important group, but also facilitate fruitful synergies and knowledge transfer between all generations, in line with customer expectations. The need for interventions to enhance the performance of multi-generational teams through more effective knowledge sharing and mutual respect that overcomes age-related prejudices is reflected in collaboration dynamics, with a significant proportion of respondents perceiving them as improvable, and in the tension between the valorisation of senior experience and junior skills. The e-skills paradox (good individual perceptions, but a lack of training support) and moderate levels of engagement, with a significant proportion of employees not always feeling valued, point to the need for inclusive, adaptive training interventions and recognition and welfare systems that support everyone's motivation and well-being. These systems should focus particularly on more experienced professionals and their career transitions.

Further analysis of the needs of different generations was therefore crucial. It enabled us to understand the specific expectations, values and challenges faced by each group. For example, seniors expressed a need for recognition and targeted upskilling, while juniors sought clear career paths, flexibility and supportive leadership. Such details are essential for defining approaches that promote genuine intergenerational synergies, such as peer coaching, digital mentoring and corporate welfare solutions that truly respond to different needs, as desired by the client. This integrated

vision combines an understanding of external pressures and validation of internal realities with a detailed generational focus. It enables us to design a solution that is deeply targeted to the specific, nuanced needs of an organisation like our client's, while also being scalable, given that the identified issues are widespread in the sector.

Solution

Our analysis revealed the complex dynamics, challenges and opportunities presented by a multi-generational workforce, thus confirming and enriching our understanding of the issues outlined in the project brief. In response to this, the subsequent design phase focused on identifying strategic priorities to effectively address the client's needs and achieve the set objectives.

The need to **strengthen intergenerational collaboration and facilitate organic knowledge sharing** emerged as a key priority. The analysis revealed an urgent need to overcome age-related prejudices and create mechanisms that enhance the experience of senior professionals and the innovative skills of junior professionals. In parallel, the need to **increase employee engagement** was identified, particularly among senior professionals, as well as the need to promote a culture of recognition, given the widespread feeling of not always being valued that emerged from our sector survey. A third strategic pillar identified was **support for digital adaptation and ensuring inclusive technological accessibility**. Lastly, the importance of **promoting overall well-being and a supportive work culture** was recognised. This resulted in the creation of a strong sense of corporate community where open dialogue, trust, and mutual support are core values. This responds to the need for an environment that values and supports people.

The decision to focus on these aspects stems from the conviction that they are the most effective way of transforming key customer challenges into concrete opportunities for innovation, productivity, and greater employee satisfaction. The solution presented below is designed to address these priorities in an integrated, synergistic manner.

The following section provides a detailed description of the proposed solution, which is called "**IntraHub**". It is presented as a digital ecosystem comprising two main, interconnected elements:

1. **The Web App "IntraHub":** The heart of the platform, providing complete management of functionalities.

2. **Integrated Virtual Assistant:** A tool that provides quick, contextual access to IntraHub functionalities directly from everyday work tools (e.g. Google Workspace).

The ultimate goal of IntraHub is to increase employee satisfaction, productivity and well-being, while fully respecting users' privacy and data security, by creating a more connected work environment, reducing information fragmentation, enhancing different knowledge and experiences, promoting a culture of continuous feedback and building internal corporate knowledge.

Integrating the solution within the company's existing workspace aims to maximise adoption of the web app and support users during traditional work tasks. The virtual assistant offers quick and easy access to essential information in the different sections of the web app while encouraging users to explore it for a more detailed and complete view.

4.1 Web App "IntraHub"

The primary objective of IntraHub is to encourage communication, collaboration and integration within the workplace. It encourages the sharing of experiences and knowledge between people of different ages, with different roles and levels of experience, so that each employee feels valued for their unique qualities, regardless of their seniority.

4.1.1 Community

This Community section aims to amplify the voices of employees by providing a safe, open, and participatory digital space where relevant topics can be discussed. To achieve this, it is organised into **thematic interest groups** (e.g., #DigitalTools, #Finance, #Leadership, #Environment), which employees can join voluntarily, replicating the dynamics of **professional social network**s. Each area serves as an informal space for sharing experiences, proposing innovative ideas, launching polls, and discussing daily challenges. This creates a **free space for users to interact, continuously exchange views, and engage in authentic, multidirectional dialogue on various topics**, both among colleagues and with management. Such interaction effectively **overcomes traditional hierarchical barriers** and connects colleagues across departments, stimulating communication between people with complementary skills and interests. This level of transparency and open dialogue fosters mutual trust and supports a collaborative approach, even when addressing complex or sensitive issues. Furthermore, it facilitates the **emergence of tacit knowledge and distributed expertise**, cultivating a fertile ground for continuous innovation and collective growth. Unlike traditional tools such as email, legacy intranets, or PowerPoint presentations, which are often used for one-way communication, this platform is inherently dialogic, **fostering rich, multidirectional conversations that actively engage the entire organizational community**. To ensure such an environment remains constructive and respectful at all times, clear participation and effectiveness guidelines will be established for each area, supported by the option of appointing moderators (e.g., subject matter experts or particularly active and passionate employees) to stimulate discussion, encourage valuable contributions, and boost engagement.

4.1.2 Ask for Help Board

This forum-style Q&A board allows employees to **post questions** on operational issues, internal processes, work tools, and other professional challenges. Colleagues, particularly those with more experience or expertise, can respond by sharing practical solutions, documentation, useful links, or established best practices.

Key features include an **intelligent search bar** that can be used to consult existing answers and knowledge base articles before posting a new question. There is also a '**Publish a Question**' section with thematic tag suggestions (e.g. #HR, #IT, #InternalRegulation, #ProcedureOperative) to help with proper categorisation and direct queries to the most qualified potential respondents. Recent and featured question threads give visibility to relevant issues or current discussions. Users can also **customize notifications** to receive updates on answers to their questions or new posts in areas of specific interest. Finally, a robust **answer validation system** is crucial to constantly enriching the quality and reliability of the internal knowledge base. This system includes mechanisms to flag solutions as useful or officially 'accepted'.

The main objective of this section is to develop a **proactive system for creating, sharing and preserving intellectual capital and tacit corporate knowledge**. Firstly, it facilitates the dynamic construction of an internal knowledge base: each validated answer is integrated into the knowledge base, reducing repetitive queries and accelerating future resolution times. This continually updated knowledge base is then used to constantly **train the IntraHub Digital Assistant**: the more accurate and extensive the knowledge base, the more 'intelligent' and

autonomous the assistant will become. It will be capable of providing precise, contextualised answers to user queries based on the organisation's specific know-how. This also enables the tacit knowledge and accumulated experience of employees, particularly those about to leave the company, to be captured, thus **preserving internal know-how** that is useful for maintaining a competitive advantage over time.

4.1.3 Feedback

The objective of this section is to establish a **culture of continuous and constructive feedback** within the organisation. Feedback should become an essential daily tool for individual growth, strategic alignment, and continuous performance improvement. This mechanism aims to foster an **open communication environment** where everyone feels comfortable sharing and receiving constructive advice and observations as opportunities for development. As well as driving personal and professional growth, establishing this type of frequent developmental dialogue improves engagement, productivity, and the quality of relationships with managers. It also facilitates the creation of **stronger interpersonal relationships**, enhancing psychological security and well-being within the work team.

The platform actively encourages various forms of feedback, such as **peer-to-peer feedback** after virtual meetings or upon completing shared projects, which allows for the exchange of timely and direct observations. It also facilitates the provision of **requested feedback**, either from managers to their team members or from any employee to their colleagues or superiors, promoting proactivity and self-improvement.

The platform enables users to **send and request feedback**. Both options are supported by **guided forms and customisable predefined templates**, which help to structure feedback in a clear and constructive way. Users can select the recipient, the type of feedback, and the visibility level (private, shared with the manager, or visible to the team for specific projects), thus ensuring the necessary confidentiality or transparency depending on the context. Users can also view the feedback they have received in an area called '**Feedback Received**', where all comments can be viewed and filtered by type, subject, sender (where not anonymous and permitted by policy) and date. It's also possible to have an overview of the topics most frequently mentioned and the trends that have emerged from the feedback received, given by the AI-generated tool. Employees can also receive customized training suggestions from the Digital Assistant, such as links to specific courses on the company's e-learning platform or links to the Expertise Center to find an expert.

Finally, aggregated and anonymised analysis of this data can provide HR and management with valuable insights into the training needs and dynamics of the entire organisation.

4.1.4 Expertise Centre

The aim of this section is to encourage the **spontaneous and peer-driven sharing of knowledge**, experience and practical tools within the organisation. Short, voluntary, informal sessions between colleagues promote different forms of knowledge exchange between 'experts': horizontal (between peers), intergenerational (between seniors and juniors), and reverse (where younger people share digital skills with older people, for example). The primary objective is not to create formal, rigid learning paths, but rather to facilitate **micro-moments of meaningful learning**, which are crucial for continuous development.

In this section, any employee can apply to become an '**expert'** on a specific topic by filling in a simple form. This form includes details such as the session title, category, a short topic description and preferred meeting mode. Employees' profiles can also be analysed using innovative AI-based support to suggest relevant topics on which they could offer their expertise, taking into account factors such as skills, courses attended, feedback received, length of service and interests. Meanwhile, those who wish to learn can explore the available sessions and register as '**learners**' via an intuitive dashboard featuring filters by category, mode, or functional area. They can then add themselves to the list of interested parties with a simple click on 'Join'. Once one or more mentees have been reached for a specific offer (or after a defined time interval), the **intelligent matching and scheduling phase** begins: with consent, the AI accesses the participants' Google Workspace calendars to identify and propose compatible meeting slots. The mentor will then select their preferred option, after which the system will automatically send invitations to everyone involved. To conclude the cycle and encourage continuous improvement, an automatic reminder is sent to learners and experts via the post-session feedback system. This reminder asks them to share their thoughts on the usefulness and clarity of the session, as well as any suggestions or reflections they may have.

In terms of **benefits**, the Expertise Center fosters the sharing of tacit, experience-based knowledge, as well as the dissemination of various types of expertise. It promotes the **recognition of individuals' expertise**, regardless of their formal role or seniority, giving each employee the opportunity to be recognised as an 'expert' in a given field, even outside their usual work context. This feature goes far beyond the boundaries of a traditional mentorship program and enables employees to contribute to their colleagues' growth, which increases personal motivation and satisfaction. The tool also improves **collaboration and internal networking** by bridging skills gaps and improving cross-generational understanding. Ultimately, it aims to break down hierarchical barriers and promote a more open and collaborative corporate culture. The result is accelerated personal and professional growth for learners, thanks to direct access to specific knowledge, and for experts, thanks to the opportunity to hone their leadership, communication, coaching and active listening skills.

4.1.5 Personal Profile

The personal profile is not just a biographical presentation of the employee; it is also a useful tool for increasing individual visibility, facilitating internal networking, and supporting continuous professional development. Information collected in this section includes **biographical data** such as first name, surname, official role, team/department, level of seniority and company contact information; **competences** such as hard, soft and language skills, and certifications obtained; **professional and extra-occupational interests**; **professional training experiences** and projects contributed to; and **digital badges** (with their progress bars)**,** which are earned through active and qualitative participation in the various sections of IntraHub (see 4.3).

To further enrich this profile and streamline its creation, employees can upload their CVs directly to the platform. The document is read and analysed by the AI engine, which extracts relevant information, such as education, work history, skills, and certifications, and suggests additions or updates to the profile accordingly. This functionality not only simplifies the onboarding process and helps keep profiles accurate and up-to-date, but also aids in uncovering hidden competencies that may not

have been manually declared by the user. Then, to further ensure accuracy and ease of maintenance, master data can be synchronised with existing HR systems, and skills and knowledge can be synchronised with other platforms (e.g., LinkedIn) to speed up continuous updating.

The CV upload functionality, combined with the platform's guided self-assessment processes and continuous, artificial intelligence-driven insights, creates an evolving professional identity that grows with the employee. This provides a clear view of their capabilities and makes their skills easily searchable by colleagues, managers, or the virtual assistant, who can use it to identify suitable people to answer specific questions or find potential experts (see 4.2).

Aggregated data on declared skills, expressed interests, and obtained badges can provide valuable insights to support internal mobility, strategic workforce planning, creating a corporate culture based on people empowerment and transparency, and mapping emerging organisational training needs.

Users retain complete control over which information in their profile is visible and to whom (e.g. the whole company, team members only or their manager only), ensuring full awareness.

When the user first logs on to the platform, they are prompted to complete an **AI-guided skills assessment**. This process primarily involves the self-assessment of their diverse competencies, encompassing both hard skills (e.g., technical proficiencies, software expertise) and soft skills (e.g., communication, leadership, problem-solving). Users are guided by the AI to indicate their current proficiency level for each skill, typically using a predefined scale such as beginner, intermediate, advanced, or expert, and may also identify areas for future development. Subsequently, the Virtual Assistant sends periodic reminders (e.g. monthly) to update skills and certificates. It also analyses the user's activity on the platform, such as the specific feedback received, the topics discussed in communities, and participation in expert sessions, in order to suggest the addition of new acquired skills or the exploration of related areas of potential interest. No user activity is tracked or analysed for these skill-suggestion purposes without this explicit consent, ensuring full user control over their data and how it is used to support their professional development (see 4.4).

4.1.6. Smart Digital Assistant

The web app is integrated with a Smart Digital Assistant (SDA), an **AI-generated tool** that acts as an interactive, contextual **guide** to help employees make optimal use of the platform.

It can provide clear, detailed explanations of IntraHub's different sections, demonstrate specific usage modes and answer user questions about the platform's operation, in order to support technological accessibility.

As well as providing this guidance, the SDA actively **supports employees in their daily workflow** by facilitating collaboration (e.g. suggesting colleagues to contact based on skills or availability) and providing timely, intelligent notifications relating to various sections of the web app (e.g. updates on the 'Ask for Help' board or new learning sessions in the Expertise Centre).

The aim is to provide **intelligent support** that goes beyond platform navigation to become a real digital partner for the employee. The full functionality will be explored in detail in the following section, as the SDA and the Integrated Virtual Assistant essentially offer the same functionality, except for platform guidance, which is only offered by the SDA.

4.2 Integrated Digital Assistant

The Integrated Digital Assistant (IDA) is an **AI-generated tool** designed to support employees in their daily workflows by providing quick and simplified access to certain web app features, and by encouraging internal collaboration and knowledge sharing. Unlike generic AI tools, the IDA is not designed to replace humans in certain tasks or reduce the need for human interaction in the workplace. Instead, it acts as an **'intelligent enabler'**: when faced with a question or need, the IDA can provide direct information if it is available in the knowledge base. More importantly, **it stimulates the user to explore the topic in depth** with the most suitable person, who is indicated by the assistant as an expert in that specific field thanks to its ability to map the internal competencies of employees.

It takes a series of **data as input** from the web app or workspace, which is managed with regard to privacy and user consent. This includes:

- academic and professional background (CV, role, department, etc.);
- certifications, language skills, and courses completed;
- personal preferences and interests;
- feedback from other employees (with controlled visibility);
- initial skills assesment;
- data accessible from the workspace (e.g. Google Calendar), but only with explicit consent for specific functionalities such as scheduling and availability checks.

The **key functionalities** of the integrated virtual assistant include the following:

- **Daily tasks and reminders:** Support with planning and managing daily tasks and deadlines through intelligent to-do lists and contextual reminders.
- **Intelligent colleague suggestions:** The AI identifies and suggests the most suitable colleague or team to answer a specific request, solve a problem, or collaborate on a task. This is based on an analysis of their skills, experience, availability, and recent authorised activity.
- **Availability updates:** Provides a quick, non-intrusive view of colleagues' availability, integrating authorised calendar data to facilitate the organisation of meetings and synchronous collaboration.
- **Proactive feedback:** Based on the work context (e.g. completion of a project or attendance at an important meeting), IDA can discreetly suggest opportunities to exchange feedback with relevant colleagues. It also notifies users of feedback requests and provides a direct link to the personal dashboard.
- **Notifications on the 'Community' or 'Ask for Help' dashboard:** Promptly notifies the user when a question they have asked, or are interested in, receives a validated answer or solution.
- **Expertise Hub/Centre Notifications:** Keeps experts informed of new requests to participate in sessions or areas of expertise, and alerts learners to new mentorship opportunities that are relevant to their interests or development goals.

This innovative tool offers the organisation a range of **benefits**. Firstly, it **stimulates**

collaboration and the direct exchange of internal knowledge by suggesting the most suitable experts for employees to consult on a specific topic. Secondly, IDA capitalises on and reuses **corporate knowledge**, including tacit knowledge and the experience of senior employees, by constantly learning from the internal knowledge base (fed by Q&As, profiles, etc.). This ultimately **improves employee efficiency** by providing simplified, timely access to information and personalised support for daily workflows, while reducing information overload.

4.3 Gamification System and Digital Badges

To incentivise use and active participation in the various sections of the web app, a simple **gamification system** is proposed, involving **digital badges, levels and progress bars** to recognise and incentivise users' qualitative contributions to the platform.

The system will track and reward a series of **actions indicative of valuable contribution**s by users in each section of IntraHub: providing useful answers or marking answers as 'solutions' in the 'Ask for Help' section; conducting sessions in the Expertise Hub/Centre; completing multiple sessions as a learner; and providing feedback to other users.

Each trackable action will be assigned a **precise score in Experience Points (XPs)**. The amount will be predefined in the system based on the effort required, the complexity of the action, and the value generated for the community and organisation. For example, providing an answer that is marked as the 'solution' will earn more XPs than providing a regular answer. Similarly, within the Expertise Center, employees earn XPs for each expertise session they offer and conduct. To encourage broad participation and content creation without fostering undue competition based on subjective evaluations, this specific XP accrual for offering sessions is awarded independently of the positive or negative feedback subsequently received for those individual sessions. **XPs** are needed to **unlock digital badges** related to each section of IntraHub. These badges are visible on the user's personal profile and recognise engagement milestones. These badges are structured into **several levels of progression**. On the 'Ask for Help' board, for instance, users can unlock the bronze level of the 'Problem Solver' badge by providing 10 useful answers, the silver level by providing 20 useful answers and 5 marked as 'solution', and the gold level by providing 40 useful answers and 10 marked as 'solution'. The criteria for unlocking badges and their respective levels are **objective, measurable and transparent**. From the personal profile, users can view the badges they have obtained and check the **progress bar** relating to the XP points they have obtained in each section. This gives them clear criteria for unlocking the individual levels of the offered badges. The available badges will be: 'Community Member', 'Solution Finder', 'Expert Guide', 'Dedicated Learner', 'Constructive Communicator' and 'IntraHub Explorer' (if the user achieves a certain number of points in all sections of the web app).

In addition to incentivising users to engage with the platform's functionalities, contributing to internal collaboration, and expanding the corporate knowledge base, these tools are also designed to **boost user motivation and personal satisfaction**. Finally, managers or HR could use this information to reward employees who actively participate in the platform more concretely, thus contributing to improving the organisational climate and the general growth of the corporate culture.

4.4 Privacy Management and Data Security

To protect the privacy and data security of employees, which are of paramount importance in the design and management of IntraHub, we will adopt an approach consistent with the 'Privacy by Design' and 'Privacy by Default' principles enshrined in Article 25 of the General Data Protection Regulation (GDPR) [x].

First and foremost, users will be clearly informed about **what data is collected**, **how it is used** and for **what purposes**. They will also have considerable control over sharing their data and granting authorisations. The principle of **data minimisation** will be respected: only data that is strictly necessary for the offered functionalities will be collected, and it will only be used for broadly stated purposes.

Personal profile data, which includes information provided directly by the user, as well as data synchronised from HR systems (subject to consent), is used to suggest expert colleagues or matches for the Expertise Hub/Centre, and to facilitate functionality. Iteration data, such as community membership, question formulation, answer posting and feedback, is used to enable the platform's intrinsic functionalities and generate **aggregated, anonymised analytics** that are useful for internal HR analysis. The digital assistant only accesses data following **explicit authorisation** from the user for each type of data or integration requested (e.g. calendar access). The same privacy principles will also apply to personal conversations with the virtual assistant. For example, they will not be stored for long periods without specific consent, nor will they be analysed for any purpose other than improving the service.

Each user has access to a **dedicated privacy dashboard** in the web app settings. Through this dashboard, users can manage their privacy settings, view collected data, and revoke consents that have previously been given. Explicit consent will also be required to access sensitive or externally sourced data, such as Google Calendar. Consent will be specific to each feature, and users will be able to configure the visibility of each piece of information in their personal profile for other colleagues.

Employee Experience Journey

The following section provides a practical and concrete example of an employee's experience within the IntraHub ecosystem. It illustrates how the proposed solution fits into daily workflows, supporting activities, facilitating collaboration, and promoting professional development. To achieve this, we will follow a typical employee: a specialised mid-level professional who is focused on continuously improving his technical skills and effectively managing the projects he participates in. This professional uses the IntraHub platform, particularly its Integrated Digital Assistant (IDA), as a central tool for their day-to-day activities. The narrative demonstrates the solution's tangible benefits in terms of improved productivity, easier access to internal knowledge and skills, enhanced collaboration, a culture of feedback and support for individual well-being and growth. It also highlights the interconnectedness of the solution's components and their added value to the overall user experience.

At the start of his working day, at 9:00 am, the employee accesses his customised daily brief, provided by the Integrated Digital Assistant (IDA). This consolidates his key activities and deadlines (e.g. 'Complete the preliminary analysis for the quarterly review by the end of the day', 'Submit the draft budget report by 2 pm'), as well as reminding him of an Expertise Centre session he is registered for at 12 pm. This proactive organisation enables the employee to plan their day efficiently.

Later, at 10:00, while working on the draft report, he encounters a technical difficulty with a specific software tool (e.g. Power BI). Rather than making isolated attempts to solve the problem, he uses the IDA for quick access to support. Drawing on the knowledge base of the 'Ask for Help' board and the competence mapping of colleagues, the IDA immediately suggests three similar questions that have already been solved by the community and identifies two colleagues with relevant experience, including a senior consultant. The IDA also offers the option of posting the specific question directly on the 'Ask for Help' board. The employee chooses to contact one of the suggested colleagues directly, and the IDA facilitates a smooth connection despite them having never worked together before. This interaction quickly resolves the problem and fosters new internal connections.

One hour later, the employee considers arranging a short meeting with his project manager. Using the IDA, he checks the manager's non-invasive availability indicator, which shows: 'Not available now. Try between 15:00 and 16:00.' This allows for effective coordination and avoids interruptions.

At 12:00 pm, the employee attends the 'Expertise Centre' session titled 'How to Improve Emotional Intelligence Skills?', for which he had previously registered. The session is led by a colleague from the finance department. The Expertise Centre's AI-based intelligent scheduling functionality had already cross-checked the participants' calendars and automatically sent the Google Meet link, ensuring a smooth start to this informal, practical learning experience. Immediately after the session, the employee receives an automatic request to provide feedback on its usefulness. His contribution provides valuable feedback on the quality of the session, which is helpful to the expert colleague for improving his future sessions. Separately, the colleague conducting the session earns Experience Points (XP), which allow him to unlock badges such as 'Expert Guide', visible on his 'Personal Profile', by creating and offering valuable sessions in the Expertise Centre. Inspired, the employee subsequently explores the 'Expertise

Centre' in search of other sessions, filtering by 'Soft Skills' and noting a future session on 'How to Give Effective Feedback'. Shortly afterwards, and also motivated by recent company discussions on sustainability, the employee accesses the 'Community' section. He navigates to the '#EnvironmentalSustainability' thematic group, which he had previously joined, and decides to share his thoughts on a recent article about the best ways to reduce an office's environmental impact. He also proposes a short poll to gather ideas. His post quickly stimulates a constructive discussion, receiving comments and insights from colleagues across different departments, some of whom are experts on the topic. This interaction enriches the internal conversation on a relevant topic and strengthens the sense of community and cross-functional collaboration. The employee earns Experience Points for their active participation, as provided by the platform's gamification system.

After lunch, he decides to contribute his knowledge by proposing themselves as an 'expert' in a specific technical area related to their role, such as 'Advanced Use of Data Analysis Tools'. He accesses the 'Expertise Centre' section in the web app. Leveraging AI, the system analyses his profile (skills, courses, feedback, seniority and interests) and suggests relevant topics on which he could offer his expertise. He then completes the simplified form to propose a session titled 'Best Practices for Data Analysis with R Studio' in the 'Technical Skills' category, specifying his preference for a virtual meeting.

Throughout the day, the employee can interact with the Smart Digital Assistant (SDA), which is integrated into the Web App, for any questions about the platform's functionalities. For instance, if he asks, 'How do I post a question on the Ask for Help board?', the SDA provides him with a clear and detailed guide to help him navigate and use all the features smoothly.

At 16:00, the Integrated Digital Assistant proactively suggests the following to the employee: 'Would you like to provide feedback to the members of your project team?'. Following the link takes him to the 'Feedback' section where he can select a colleague, choose a 'post-project feedback' template and submit their constructive contribution. This action earns the employee XP within the platform's gamification system. Shortly afterwards, the colleague responds, appreciating the feedback. Meanwhile, the employee uses the 'Request Feedback' function in the same section to ask his project manager for feedback on a recent client presentation, setting the visibility to 'shared only with the manager'.

At the end of the day, the employee reviews his 'Personal Profile'. He can view a summary of his skills, completed activities and earned digital badges. He updates his profile to include a certification obtained the previous month. He also accesses his feedback summary, where a tag cloud displays the most frequent topics and the system suggests relevant training modules or new growth opportunities from the 'Expertise Centre'. Finally, he checks his progress in the gamification system via his profile. For example, he notes that if one of his 20 responses on the 'Ask for Help' board is marked as a solution, he will move up to the silver level of the 'Solution Finder' badge.

The employee's typical day illustrates how IntraHub's interconnected functionalities, supported by the proactive and contextual assistance of the Integrated and Smart Digital Assistants, can enhance daily productivity, encourage collaboration and knowledge sharing, facilitate continuous learning and development, and foster a positive and engaging work environment. Ultimately, this contributes to increased employee satisfaction, productivity and well-being.

Feasibility Analysis

This section is dedicated to analysing the feasibility of the IntraHub solution. The aim is to assess its technical, implementation and economic feasibility, and to provide a clear view of its practicability and potential impact on the organisation.

Firstly, we will examine the technological architecture of its main components and their implementation methodologies. This will be followed by a strategic rollout plan divided into phases, which outlines the timeline and activities for developing and launching the platform, from the minimum viable product (MVP) to the most advanced functionalities. Finally, a cost-benefit analysis will be presented, including cost estimates and a five-year cash flow projection, to determine the investment's sustainability and strategic value to the organisation.

6.1 Technical Feasibility Analysis

In order to see if our solution is technically feasible we are going to have a look more in detail on it. So it is composed of two main components: the web app and the virtual assistant.

6.1.1 WebApp Technical Implementation

The Web App is going to have a user-friendly frontend for our six features: the community interaction, the ask for help, the expertise, the feedback, the personal profile and the virtual assistant. The frontend is responsible for the user experience and can be implemented with React, a library for web and native user interfaces.

The backend will handle all the core logic, database access, and the connection with our virtual assistant. The framework for the backend can be Node.js, because it is well integrated with React.

The database securely stores user data, posts, questions and answers, feedback and more. We suggest having two seperate PostgreSQL databases for security and efficiency. The first database should store the employee data and is going to be hosted in Polo Strategico Nazionale, Italy's sovereign cloud that specializes at handling public administration data ensuring full regulatory compliance. The second database should be an internal one using PostgreSQL to store the community posts, Q&A content, feedback, and AI ready knowledge snippets allowing fast iterative changes that will have to be performed especially in the early stage without exposing sensitive HR records. This arrangement protects personal data while accelerating product evolution.

6.1.2 Virtual Assistant Technical Implementation

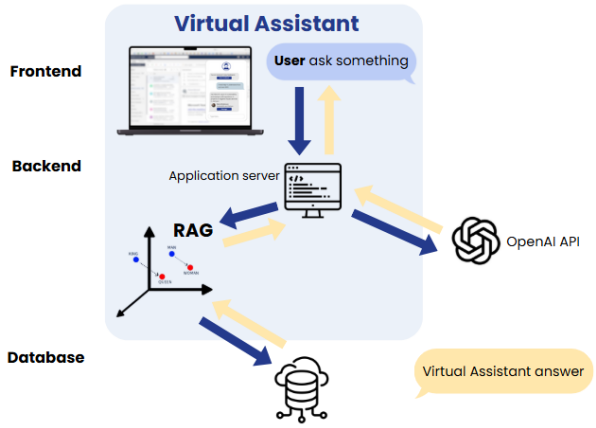
The second key component is our Virtual Assistant. It is the core AI-powered component of our solution. Its interface will be integrated into the web app and also integrated into existing company workflows (e.g. browser Copilot) in order to be accessible in the internal tools of the company. Multiple layers must be considered in the architecture to make this feasible. The main technologies that should be used are first, a RAG-powered system which uses embeddings and a vector database to retrieve the most relevant information from past questions answers, documents etc., combined with generative AI capabilities to retrieve accurate context-aware responses. Combining it with a RAG system is of utter importance due to the limitations of the traditional language models for providing context specific responses, thus RAG can enable the language model to provide responses grounded to the company's data.

Let's look at how it works more in detail: imagine a user opens the virtual assistant's

browser extension and asks a question. The application server handles it and sends it to a Retrieval augmented generation (RAG) which uses embeddings and a vector database to retrieve the most relevant information from past questions and answers. Then this context, combined with the user's query, is then sent to OpenAI to generate a precise and helpful answer. Finally, this answer goes back to the server and is delivered to the user.

A key implementation is that the system considers and processes data from many sources of the company such as employee profiles, feedbacks, community posts, questions & answers, and workspace integrations such as google calendar. This comprehensive data integration enables the assistant to provide personalized recommendations for colleague matching, availability updates, and task management.

Finally, an important characteristic of the assistant is that it must remain up to date. This is achieved by using continuous data synchronization with the company's systems and automated data preprocessing pipelines that can convert new data into embeddings to ensure that the knowledge base remains up to date.



6.2 Implementation Rollout Plan

Before delving into the detailed timeline and technical phases of the proposed solution's rollout, it is essential to highlight why such an implementation plan is critical. A structured and realistic rollout plan not only ensures the feasibility of the solution within organizational constraints, but it also allows stakeholders to anticipate required resources, potential risks, and strategic milestones. Providing a clear breakdown of phases, timelines, and responsibilities enhances transparency, fosters alignment across departments, and facilitates early engagement from key actors.

Moreover, linking the implementation to industry benchmarks and best practices reinforces its credibility and reduces uncertainty. By detailing each step this plan provides a roadmap for how the platform can evolve in a sustainable and scalable manner.

Timeline Overview

With a team of 5 developers, the completion of our proposed solution rollout plan spans **between 8 to 12 months across four strategic phases**. The MVP can be delivered in 6 to 12 months, aligning with industry standards. It is important to note that the timeline associated with each implementation phase should not be interpreted as strictly sequential. Several activities, particularly those related to training, communication, or technical refinement, may run in parallel across different phases. This overlapping approach enables greater flexibility, reduces overall lead time, and allows for continuous feedback integration throughout the rollout process.

Phase 1 - Preliminary Setup and Organisational Alignment (2 months)

The initial phase focuses on establishing the **technical foundations** and ensuring **organisational preparedness**, with an estimated duration of two months. During this stage, workshops with key stakeholders should be conducted to define the project requirements, core functionalities, rollout

timelines for different features, as well as the KPIs and success metrics applicable to each phase. Simultaneously, the technical architecture must be refined in close collaboration with the IT department or relevant partners. This includes determining how the new system will integrate with existing IT infrastructure, selecting authentication protocols (e.g., Single Sign-On), and identifying specific integration points for the Integrated Digital Assistant (IDA) within existing tools. An essential step in this phase also involves a comprehensive compliance and security review, which should include Legal, IT Security, and Data Protection Officers to obtain formal assessments and necessary approvals for the proposed technologies and architectural choices.
In parallel, to initiate internal awareness and promote a digital mindset among employees, a structured communication strategy should be implemented. Finally, a plan should be developed for training materials and sessions to support knowledge dissemination and future adoption.

Phase 2 - MVP Development and Pilot Testing (6–12 months)

This second phase, spanning approximately six to twelve months, is dedicated to the **development, testing,** and **initial deployment of the Minimum Viable Product (MVP)**. The MVP will encompass a **foundational set of features**, not all of them, including the IntraHub Dashboard and the IDA (Integrated Digital Assistant). Within the IntraHub, key components such as the Community area, User Profiles, Ask for Help board, Expertise centre, and the Smart Digital Assistant (SDA) will be implemented. The SDA will be equipped to provide context-based responses derived from internal documentation, using Retrieval-Augmented Generation (RAG) techniques. Meanwhile, the IDA will enable users to interact with the platform directly through the tools they already use, without requiring them to access the IntraHub separately. It will also provide basic notifications, including alerts for answered queries, updates in subscribed communities, and task reminders.

Prior to a company-wide release, a **pilot test** will be conducted with a small, controlled group, ideally between 10 and 30 employees, selected from a single department or representative cross-section. This approach allows for more effective training delivery, more manageable feedback collection, and closer engagement with participants. To support this pilot group, tailored onboarding will be provided, including user guides. During the pilot, collecting feedback through structured surveys, analytics, and open questions will be essential to identify any overlooked user needs, technical issues, or areas for improvement.

Phase 3 - Full Deployment and Feature Expansion (2–3 months)

Once the pilot phase is successfully concluded, the platform will be rolled out across the **entire organisation**. The first month of this phase will be focused on ensuring a smooth and stable company-wide deployment. The subsequent two months will be dedicated to enhancing the platform with additional features, particularly those aimed at fostering engagement and collaboration, such as advanced feedback tools and mechanisms to support knowledge sharing and peer interaction.

Phase 4 - Continuous Improvement and Advanced AI Integration (Ongoing)

The final phase adopts a **continuous development approach**, centred on platform refinement and the deeper integration of AI-driven personalisation. This stage is built around two main pillars. First, the SDA will progressively evolve into a proactive and

adaptive virtual assistant. Rather than requiring users to search for content, the assistant will deliver contextual guidance, suggest next steps, anticipate related questions, and improve over time based on user interactions. Second, in the Q&A component, long discussion threads will be automatically summarised, and validated solutions will be curated into a continuously updated knowledge base. This ensures the assistant can provide accurate and immediate support. A governance system will be implemented to certify that only verified, up-to-date information is retained and outdated content is systematically removed, preserving reliability and consistency.

6.3 Economic Analysis

6.3.1 Cost Classification and Scope of Analysis

In the context of estimating the investment required for the development and initial launch of the hub, we have categorized the costs into three primary types based on standard cost accounting principles: **Direct Costs**, **Indirect Costs**, and **Recurring Costs**.

Direct costs include all expenditures clearly attributable to the creation and initial deployment of the platform. These encompass salaries of developers, designers, and project managers, proportionally calculated based on their involvement in the project. Design and prototyping efforts and usability testing are also included, as they were carried out during the launch phase. Additional direct costs comprise the use of external AI APIs and data analytics services (e.g., OpenAI, Google Cloud), domain registration and SSL certificate acquisition, software licenses, platform-specific quality assurance activities, web hosting, cloud storage, and ongoing technical maintenance and updates aimed at ensuring platform reliability and performance.

Indirect costs were limited to employee training and onboarding, which are essential to support adoption and ensure effective use of the platform. Broader overhead or shared organizational costs were excluded from the analysis, as the focus remained on resources directly connected to development and implementation.

Recurring costs were not treated as a separate category in the estimation; rather, certain direct costs, such as software licenses, AI API subscriptions, web hosting, and maintenance, are expected to recur annually. These recurring components were therefore used to project costs beyond the first year of implementation, ensuring a realistic outlook on the platform's long-term operational sustainability.

6.3.2 Direct Costs

Team Salaries and Development

A significant portion of the platform's development cost is attributable to the internal technical team. For estimation purposes, we considered a multidisciplinary team composed of a frontend developer, backend developer, UI/UX designer, QA tester, and project manager, with a combined gross annual salary of €180,000. Given that employers in Italy typically face an additional employment cost of approximately 50% due to taxes and social contributions, the total cost borne by the company amounts to €270,000. Assuming a 50%-time allocation to the project, the effective cost attributable to platform development is **€135,000**. As an alternative, development could be outsourced to external consultants or software agencies, with estimated costs ranging between €75,000 and €150,000 depending on project duration and complexity. In some cases, agencies may offer the platform to multiple clients as a customizable or white-label solution, allowing for economies of scale and lower per-client costs. This model can

represent a cost-effective and scalable alternative to full in-house development.

Design and Prototyping

Design and prototyping activities are confined to the initial phase of the project and focus on defining the platform's interface and user experience through wireframes and mock-ups. Since a UI/UX designer is included in the internal team, these activities are covered within the overall team cost and **do not incur additional expenses**.

Use of AI and Data

The platform may rely on external AI services through APIs, such as OpenAI or Google Cloud, to enable features like natural language processing, image recognition, and advanced recommendations. Based on an estimated 1,400 daily sessions from 700 employees, moderate use of such functionalities could lead to an annual cost of **around €3,000**, assuming efficient usage and cost optimization. In estimating the costs associated with integrating external Artificial Intelligence (AI) services into our platform, we analysed publicly available pricing models from providers.

Domain and SSL Certificates

To ensure secure and professional platform access, basic infrastructure components such as a domain name (e.g., .com or .it) and SSL certificate are required. The estimated annual cost, based on publicly available prices, is **€15** for the domain and **€30** for a Domain Validation (DV) SSL certificate. These minimal expenses are essential for establishing a trusted web presence.

Software licenses

Software licenses for design and development tools are considered **negligible**, as such tools are often already available within the organization and not specifically acquired for the project.

Testing and Quality Assurance (QA)

Testing and Quality Assurance (QA) activities, which typically account for 10–20% of total development costs, are essential for ensuring functionality and reliability. Based on the estimated development cost of €135,000, this would imply a QA value of approximately €20,250. However, since a QA Tester is included in the internal team, this cost is already absorbed in the overall personnel budget and **is not treated as an additional expense.**

Hosting & Cloud Infrastructure

To ensure reliable performance for around 700 users, the platform requires cloud hosting and database services capable of managing up to 2 TB of data. Providers like Google Cloud and AWS offer scalable solutions, with estimated monthly costs of €300–400 for hosting and €100–150 for storage and database services. Annually, this results in a total cost of approximately **€5,700** (€4,200 for hosting and €1,500 for storage).

As an alternative, the **Polo Strategico Nazionale** (PSN) offers cloud infrastructure aligned with national data sovereignty regulations. While primarily targeting the public sector, it is exploring hybrid models with private entities. PSN costs are expected to be comparable or slightly higher, offering stronger regulatory alignment.

Maintenance & Technical Updates

In addition to infrastructure, ongoing maintenance is critical to keep the hub secure, updated, and responsive to user needs. This includes bug fixes, updates, and minor feature enhancements. Based on a 15% rate of the €135,000 development cost, the annual maintenance cost is estimated at **€20,250**. This

recurring expense ensures long-term platform stability and performance.

6.3.3 Indirect Costs

General Team Training and Internal Onboarding

To support the digital hub rollout, employees will participate in onboarding sessions to ensure effective use of the new digital hub. Although the opportunity cost of 2 hours of training per 700 employees (estimated at €35,000) was calculated using an average hourly employer cost of €25, this is not included in the financial estimate, as training hours are typically already allocated within company frameworks. However, the production of training materials is considered. Creating a 2-hour e-learning course, including slides, narration, and quizzes, is estimated at **€4,000**, based on industry benchmarks of €2,000 per hour for basic multimedia content.

6.3.4 The Benefits of IntraHub in the Workplace

IntraHub was developed to address key organizational challenges such as boosting employee engagement, enhancing skills recognition, and fostering intergenerational collaboration. It functions as an integrated digital ecosystem that promotes **mutual support** and **knowledge sharing**, connecting employees across roles, levels, and departments. The platform goes beyond digitizing processes, acting on deeper drivers such as belonging, engagement, and human capital continuity.

Although many of the benefits are intangible and not immediately measurable, they have significant long-term impacts on **productivity**, **retention**, and employee **well-being**.

Internal digital tools actively **engage** employees, increasing their motivation and job satisfaction. For instance, 29% of people who use AI tools report feeling highly passionate about their work. Furthermore, on average, workers who use AI in the workplace report a 22% higher level of satisfaction than those who do not. A Gallup study found that companies with high levels of employee engagement experience a **21% increase in productivity** compared to those with lower levels of engagement. These findings emphasise the importance of investing in strategies that promote employee engagement, such as implementing collaborative platforms and integrated digital tools, to enhance productivity and improve overall business performance. Internal platforms that connect people, such as social intranets or corporate communities like Microsoft Viva Engage, can improve the sense of belonging by allowing users to transcend classic hierarchical and functional boundaries and reinforce the idea of being part of a community rather than just a single office. A study by BetterUp shows that employees who feel a strong **sense of belonging** perform 56% better and are 50% less likely to leave the company, highlighting the positive impact that companies can achieve by addressing this issue. Furthermore, IntraHub would be able to nurture an inclusive culture in which individuals feel seen and valued by connecting people with different roles and functions, promoting open dialogue and enabling peer recognition. According to BetterUp, employees who experience a strong sense of belonging are 167% more likely to recommend their company as a great place to work. Furthermore, our platform promotes internal communication and collaboration, which improves employee **well-being**. A global Oracle survey of 12,000 workers found that 75% of employees believe that artificial intelligence improves their mental health at work by enabling them to do their jobs more effectively, for example by speeding up the search for information.

The implementation of IntraHub positively impacts the organization on multiple levels. By promoting an **inclusive and collaborative culture**, the platform encourages the free circulation of ideas and supports innovation. Research shows that companies with inclusive environments are 1.7 times more likely to be leaders in innovation and 1.8 times better at managing change. This is reinforced by the platform's capacity to give voice to all hierarchical levels, facilitating open dialogue and collective contribution.

Improving the employee experience through digital tools also enhances the organization's **internal reputation**. Continuous feedback systems, transparent communication, and peer support foster a sense of fairness and trust, reinforcing the perception of the company as an equitable and participatory workplace. This cultural alignment between stated values and actual practices strengthens **employee advocacy**.

IntraHub contributes **to reducing turnover** by creating engaging and supportive digital experiences. Data from Microsoft shows that companies using platforms like Viva Engage reach a 93% retention rate compared to 77% in similar organizations. Furthermore, a 10-point increase in platform usage is associated with a 1.1-point improvement in retention, highlighting a strong correlation between digital engagement and employee loyalty. Industry benchmarks confirm that high engagement levels can reduce turnover by up to 31%.

From a **productivity** standpoint, the platform addresses the inefficiencies caused by fragmented digital workflows. Employees typically switch between applications around 1,200 times per day, leading to a 9% loss in working time. IntraHub mitigates this by integrating key functions into a single interface, allowing employees to focus more effectively on value-added activities. According to McKinsey, full adoption of social technologies can improve the productivity of knowledge workers by 20 to 25 percent, thanks to enhanced communication, knowledge sharing, and collaboration.

6.3.5 Quantified Benefits and Five-Year Cash Flow Projection

Some of the benefits generated by the platform are intangible and therefore cannot be directly estimated in monetary terms. However, others, such as **reduced turnover** and **increased productivity**, can be quantified using external benchmarks and industry reports.

We adopted a conservative approach when quantifying **productivity gains**, applying a gradual increase from year 2 onward: **starting at 2% and growing to 4%, 6%, and 8% by year 5**. These improvements are expected to materialize progressively as the platform becomes more deeply integrated into daily work practices. This trend reflects the well-established correlation between employee engagement and productivity: highly engaged teams are significantly more productive, as demonstrated by multiple studies and corporate surveys. To reflect the time required for cultural adoption and the variability of impact across roles, only 10% of the overall productivity gain is monetized in the cash flow model.

Conversely, turnover reduction is expected to follow an opposite trajectory, starting at a lower impact in the initial phase and growing over time. By year 5, we estimate a **30% reduction in turnover**, aligned with benchmarks from similar tools such as Microsoft Viva Engage, which has shown substantial improvements in retention rates. This estimation takes into account the positive influence of IntraHub on engagement, inclusion, peer recognition, and the overall employee experience, factors known to significantly lower attrition.

Based on these estimations and reasonable assumptions, we calculated the projected cash inflows over the first five years post-implementation. By comparing these inflows with the known outflows, including one-time implementation costs and recurring annual expenses, we arrived at a total net cash flow of approximately **€463,000 by the end of year 5**. Notably, the **break-even point (payback period)** is reached between **Year 2 and Year 3**, as the cumulative cash flow turns positive in Year 3, reaching €104,010, indicating that the initial investment is fully recovered within the first three years of the project.

Conclusion

Use of AI

AI Usage

Artificial Intelligence (AI) tools have become essential in contemporary professional and academic environments. Their integration significantly accelerates research processes, ensures grammatical accuracy, and enhances the clarity, style, and overall articulation of written communication.

Diverse AI Models & Applications

A variety of AI models are available, each with unique strengths and capabilities. We have explored several different models to understand their specific applications and benefits. We have mainly used variants of ChatGPT models, such as 4o **[1]** that is good for knowledge retrieval, o3 **[2]** that is good for reasoning. Depending on whether we wanted specific knowledge that would need to consider many resources, we enabled the deep research mode **[3]**. During the development of this model we have also utilized other impressive models such as Claude **[4]** that was extremely fast in responding and Perplexity **[5]** that provided accurate resources while also guiding the user on how to perform their own research. Lastly, we utilized other AI-powered tools, for example while creating the survey, we utilized an AI-powered survey tool integrated with SurveyMonkey, to help us formulate targeted and effective questions for an internal employee analysis within similar companies.

Key Use Cases:

1. Enhanced Research with Integrated Web Access & Source Identification:

AI tools equipped with web access revolutionize the research process. They can rapidly gather, synthesize, and present information from a vast array of online sources. This capability significantly speeds up information discovery. When used responsibly, these tools also assist in identifying relevant sources, forming a solid foundation for any research endeavour.

Example: For the technical analysis, AI helped us efficiently identify suitable tools for implementing our proposed solution.

2. Accelerated Text Refinement and Improvement:

AI significantly streamlines the writing process. It allows users to focus on conveying core ideas rapidly, with the assurance that AI can subsequently refine the text. By inputting draft material, individuals can leverage AI to correct grammatical errors, improve sentence structure, enhance clarity, and polish the overall style. This results in a more professional and impactful final product.

Example: For writing the report, AI assisted us in drafting comprehensive sections and ensuring stylistic consistency.

3. Seamless Multilingual Translation:

AI-powered translation tools offer robust capabilities for converting text between languages, such as English and Italian. These tools empower users to compose content in their native language, where they can express themselves more fluently and with greater ease, and then accurately translate it into the desired target language, facilitating effective cross-lingual communication and broadening information accessibility.

Example: Some notes were drafted in Italian for clarity and speed, subsequently translated into English using AI tools for broader team collaboration and documentation.

4. Efficient Text Summarization:

AI models are highly effective for summarizing extensive texts. This functionality allows for

quicker comprehension of large volumes of information. It is also invaluable for condensing personally authored text to fit predefined space constraints, such as in presentations or reports.

Example: For the External Analysis (Randstad), after completing and detailing PESTEL and Porter's 5 Forces analyses, we used an AI model like ChatGPT to summarize all key points to fit concisely within presentation slides.

Methodology:
Different approaches can be used when utilizing these very smart models. The most common approach is providing as input the problem (e.g. give brief) and start asking questions, receiving the output, and providing it directly as the answer, without any reasoning, comparison, or validating the resources. This is not a correct approach for various reasons. Depending on which model is utilized, some models are great for retrieving data and information but lack reasoning, and others vice versa. Moreover, all of the models have a limitation in making the right reasoning when the context starts becoming large where many things should be considered, such as in our case. The larger the context and the project, the more hallucinations **[6][7]** increase, creating false information. This is why it is important to reason and interact with the model, in parallel with other models, and validate resources. Below you can find recommended steps that can increase the quality of the outcome and the validation of the result.

In the first prompt the following steps should be included:
1) Explain the problem to the model as simply as possible, omitting unnecessary words
2) Ask the model to "act" like a professional in the specific profession of the problem you are trying to solve. For example if we are doing market research and strategic analysis we suggest including in the prompt, a sentence asking it to act like market researcher and strategist **[8][9]**

3) Ask for recommended steps to be performed by yourself so you can in parallel perform your own reasoning/researching etc.

4) Ask it to find information and reason

5) Ask to include sources

After the model has outputted the results, we suggest comparing your findings and reason together. Asking on why it reasoned like that, and trying to finalize a correct solution/approach etc. To assist you in doing this we suggest using multiple models to perform cross validation/reasoning. Our final practice should be combining the results from the different models and cross-validating between them using our logic and perspective.

We suggest always prioritizing models that provide accurate resources such as "Perplexity".

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[16]

Annex