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**AUTOMATED SYSTEM FOR ONBOARDING IN A MEDIUM-
SIZED COMPANY**

Final thesis

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PREFACE

The rapid integration of low-code technologies and automated workflows within human resource management has transformed traditional administrative operations from manual, task-oriented processes into data-driven ecosystems. This bachelor's thesis addresses the optimization of onboarding and offboarding procedures through the implementation of an automated architecture developed on the n8n platform. While the technical advantages of workflow automation are well-documented in general information technology contexts, there remains insufficient scholarly and practical attention to the specific challenges of migrating fragmented manual systems, characterized by a reliance on legacy spreadsheets and decentralized communication, into a cohesive low-code infrastructure within medium-sized enterprises. The research problem focuses on identifying systemic operational bottlenecks and data integrity risks inherent in manual HR management and evaluating the effectiveness of MVP solution.

The present thesis is organized into an introduction, four main chapters, and a conclusion. The introduction establishes the research framework by defining the core problem of administrative inefficiency and outlining the objectives and Design Science Research methodology. The first chapter provides a theoretical foundation for HR automation and modern onboarding practices. The second chapter details the research methodology, data collection methods, and data analysis principles used to evaluate the organization's workflows. The third chapter presents the systemic "AS-IS" analysis of the current processes, identifies critical vulnerabilities, and details the technical design and implementation of the "TO-BE" automated system in n8n. The fourth chapter discusses the architectural limitations of the current implementation and provides recommendations for future scalability and development. Finally, the conclusion synthesizes the research findings and evaluates the overall impact of the developed system.

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INTRODUCTION

In today's world, where technology and companies are evolving at rapid pace, the IT market's needs are changing, along with the internal processes of the companies. Onboarding, a crucial process, is always being refined. It is a part of human resource management that directly influences employee integration, understanding, productivity, and overall achievement. Conversely, the lack of new technologies and well-designed onboarding structure impairs such metrics as adaptability, understanding, and overall success. Research shows a direct impact of onboarding on employee engagement and long-term retention (Rogozińska-Pawełczyk & Jankowski, 2024).

The increasing digitalization of companies, along with the use of multiple software tools have significantly increased the complexity of onboarding processes. Modern onboarding requires coordination between many people, systems, and stages. Including communication with candidates, scheduling, document management, and access provisioning. At the same time, workflow automation and no-code/low-code solutions are increasingly used to improve efficiency, reduce manual workload, and ensure consistency in process execution (Greg, 2026).

However, despite the availability of such technologies, many small and medium-sized enterprises (SMEs) still use manual and fragmented processes. This is mainly due to limited resources and lower levels of digital maturity. These processes are often distributed across different tools and require constant people coordination, which increases the risk of errors, delays, and loss of information (Kallmuenzer et al., 2024).

The company analysed in this study is a clear example of these challenges. Currently, the onboarding process is almost entirely manual and distributed across several disconnected tools, including email, Google Forms, Google Sheets, and Jira. Most actions, such as sending template emails, updating candidate statuses, and tracking progress, require HR managers to monitor tables and folders constantly. This reliance on manual labour results in a lack of transparency, inconsistent communication with candidates, and a high risk of steps being missed or delayed.

The central problem addressed in this thesis is the absence of a centralized, automated onboarding system in the target company. The existing workflow depends significantly on manual execution and a variety of unrelated tools, which creates inefficiencies and increases the likelihood of human error. Furthermore, standard automation products often do not fit the specific needs or the existing software stack of the company, making it necessary to develop a customized, flexible solution.

To reach this goal, the research is organized into several practical stages. It begins with an exploration of the theoretical foundations of onboarding and the role of automation in modern HR. This is followed by a detailed audit of the company's current manual workflow to identify exactly where the most significant delays and errors occur. These findings served as the basis for defining the system requirements and selecting the most effective low-code tools, such as n8n, for the prototype. The final part of the study focuses on building this automated system and evaluating how it changes the daily workload for HR managers and the transparency of the process for new hires.

What makes this work distinct is its focus on a real-world, applied solution rather than just theoretical concepts. While many studies discuss HR digitalization in general, this thesis addresses the specific systemic vulnerabilities of a medium-sized company, such as fragmented tools and human memory errors. By merging process analysis with the implementation of a functional n8n prototype, the research provides a practical roadmap for businesses to modernize their onboarding without requiring a massive IT budget or complex custom software.

1.1. Research problem relevance

Automation has become increasingly relevant and important in the field of Human Resource Management (HRM), as many companies and organisations enhance selection technologies and tool efficiency, thereby reducing errors, risks, and routine tasks. As a result, the efficiency of employee selection and their satisfaction increases (Sahu, 2025).

The topic of automating various Human Resources (HR) processes is becoming increasingly popular in both research and practical solutions which is evident from the growing popularity of automation, the emergence of new, interesting tools, the integration of AI into HR processes, and numerous articles on the topic. Many authors examine the optimal structure of the entire process, how this affects workflows, how organisational structures are changing, and how HR management functions overall (Marler & Parry, 2016). However, a solution for the case described in present bachelor's thesis remains elusive, as many existing studies lack practical and flexible solutions for medium-sized enterprises.

This indicates that, despite the extensive research and rapid development of HR automation tools, many existing solutions are either too complex, require significant customization, or are primarily designed for large enterprises. As a result, they are not directly applicable to medium-sized companies. This gap determines the relevance of the present study, which is driven by the practical

needs of a specific medium-sized company and the absence of a ready-to-use solution that could be implemented without extensive modification.

The novelty of this thesis lies in considering the specific needs and constraints of a particular medium-sized enterprise, analysing, generalizing and categorizing them, then developing a practical and adaptable approach to HR process automation accordingly. Unlike existing studies that focus on theoretical models or large-scale implementations, this work proposes a solution that can be integrated into existing workflows with minimal changes, thereby bridging the gap between theory and practice.

1.2. Objective and tasks

Objective

To develop a practical and adaptable approach to the automation of onboarding processes in a medium-sized enterprise, based on the analysis of academic research, best practices, and company-specific requirements.

Tasks

1. To analyse existing academic literature and best practices related to onboarding processes in Human Resource Management.
2. To examine the current onboarding practices within the selected medium-sized enterprise and identify existing challenges and inefficiencies.
3. To collect and analyse empirical data to determine the organisation's specific requirements for HR process automation.
4. To identify and structure key onboarding processes suitable for automation.
5. To design automated workflows for onboarding using a low-code automation platform.
6. To evaluate the proposed automation solution in terms of its applicability, efficiency, and alignment with both best practices and organisational needs.

1.3. Methodology

The methodological framework of the research is based on the Design Science Research (DSR) paradigm, focusing on the practical development and evaluation of an IT automation solution. To understand the current operational context and gather system requirements, a mixed-methods approach was employed, including participant observation, semi-structured expert interviews with the HR team, and digital surveys distributed to administrative staff and employees. The collected

data was subsequently evaluated using business process mapping and thematic analysis to identify systemic vulnerabilities and design the proposed automated architecture. Ethical principles and data protection requirements are maintained in accordance with the internal policies of the enterprise, which holds primary responsibility for data subject consent and regulatory compliance.

LITERATURE REVIEW AND THEORETICAL BACKGROUND

1.1 Onboarding in modern organizations

In the current context of human resource management (HRM), the onboarding process has evolved from a basic administrative task to an essential strategy for organizational success. In the academic literature, “organizational socialization” is defined as a comprehensive process in which new employees acquire the knowledge, skills, and behaviours necessary to become members of effective organizations (Mosquera & Soares, 2025). Unlike traditional orientation, which is typically a one-time event focused on administrative checklists, onboarding is a complex, long-term transition that can last from several months to a year.

The main goal of the onboarding is to turn a newcomer into a fully integrated and productive team member. This shift requires both job-specific training and a clear understanding of the company's culture. A practical way to analyse this transition is through Bauer's (2010) “Four Cs” model, which outlines the four distinct levels of successful onboarding:

1. **Compliance:** Serving as the foundational level, this dimension focuses on familiarizing new hires with essential legal requirements, administrative procedures, and overarching organizational policies.
2. **Clarification:** The second level ensures that employees fully comprehend their specific roles and performance expectations. Notably, a deficit in such understanding remains a primary catalyst for early employee frustration.
3. **Culture:** As a comprehensive category, cultural integration immerses individuals in both formal and informal organizational norms, effectively conveying the unwritten rules and internal operational ethos of the enterprise.
4. **Connection:** Finally, the ultimate level emphasizes the critical interpersonal relationships and informational networks that new employees must cultivate to achieve full social integration (Bauer, 2010).

To achieve these levels, modern organizations typically structure their onboarding processes into a series of sequential stages, each designed to fulfil a specific function within the employee's development.

The Pre-boarding Stage

The pre-boarding phase serves as a critical transitional period that fundamentally shapes the candidate's overall impression of the organization. It usually begins with the candidate accepting the company's offer. In many companies, this stage is underestimated and underdeveloped, leading to candidates losing interest or failing to understand the context of events and processes within the organization, including their first days on the job. In contrast, effective pre-boarding includes completely clear and well-articulated process instructions, a prepared technical environment, necessary access to files and documents, and other administrative tasks such as contract preparation (BambooHR, 2024).

The Orientation and First Week

The first day and week serve as the initial representation of the company. This stage focuses on immediate functional integration. For an IT-driven organization, this involves the rapid provision of hardware, software licenses, and access to internal systems like Jira and Slack. When these processes are manual, as seen in many SMEs, the employee often spends their first days idle, waiting for permissions, which negatively impacts their first impression of the company's professionalism (BambooHR, 2024).

The Integration and 90-Day Mark

Following the initial orientation, the employee enters the integration phase, which marks the critical transition from theoretical learning to active professional contribution. During the first 90 days, the organization should provide consistent feedback, training, and social opportunities. It is during this window that an employee decides whether they see a long-term future with the firm. High-growth companies often use automated check-ins or forms to track the employee's state of mind and satisfaction during this period (Bauer, 2010).

Specifics of Onboarding in the IT Sector

Integrating new employees in the IT sector demands a highly specific approach. Since technical positions involve working with unique codebases, specialized project management methods, and various software environments, the role-clarification phase naturally takes more time and effort (Abhimanyu, 2026). Additionally, the shift toward remote work means that traditional face-to-face mentoring is often no longer an option, pushing organizations to move their training and integration processes entirely online. Consequently, for technical specialists, the efficiency of these digital workflows serves as a primary indicator of the company's actual technological maturity.

For medium-sized businesses, the challenge lies in balancing the need for personal interaction with the need for a structured and accurate system. As organizations grow, relying on HR managers to remember every email and reminder during onboarding becomes a major problem. Therefore, a shift toward centralized, automated systems is necessary to ensure that no candidate or employee is overlooked.

In essence, onboarding is a socialization process, designed to immerse new employees in the organization's professional, cultural and technical environment. Ultimately, these standardized integration frameworks serve as a direct reflection of an organization's professionalism and overall developmental maturity.

1.2 Impact of effective onboarding

The strategic significance of a well-executed onboarding process extends far beyond basic administrative compliance, acting as a measurable driver of organizational sustainability, financial growth, and talent retention. In contemporary human resource management, onboarding is no longer viewed as a brief orientation but as a high-return investment in human capital. Empirical research consistently demonstrates that the quality of a new hire's initial experience directly correlates with their long-term trajectory within the company. When an organization systematically supports an employee during the early stages of socialization, it builds psychological safety and role clarity. These elements are essential for aligning the individual's abilities with the company's strategic goals. As a result, effective onboarding converts a phase of heightened vulnerability into a robust psychological contract between the employer and the employee, thereby establishing a basis for enduring operational stability (Bauer & Erdogan, 2011).

Moreover, structured onboarding process significantly affects employee retention, particularly during the crucial early months of employment. Industry data reveals that the initial 45 to 90 days represent the highest-risk retention window, with a significant percentage of all employee turnover occurring within this brief timeframe. However, when companies implement comprehensive onboarding programs, the trajectory changes dramatically. Employees are significantly more likely to remain with a company for at least three years if they experience a highly structured and positive onboarding journey. Furthermore, the integration of predictive analytics into the early stages of employment allows organizations to forecast employee retention with up to 82 percent accuracy, relying on factors such as training participation and initial engagement scores (Sharma, 2025). By preventing early departures and quickly creating a sense of belonging, organizations can keep their most talented employees and avoid the constant cycle of hiring and firing (Madeline, 2015).

The financial implications of neglecting this process are substantial, as the true cost of employee turnover represents a massive drain on corporate resources. Replacing a specialized worker or a technical professional is not simply a matter of paying recruitment fees; it encompasses a wide range of hidden financial burdens. Analytical reports indicate that the total cost of replacing a single employee typically ranges from one-half to twice their annual salary, depending heavily on their seniority and technical expertise. This figure includes direct costs such as advertising and interviewing, alongside indirect costs like temporary productivity declines, diminished team morale, and delayed project deliveries. When a position remains vacant or a new hire underperforms due to poor integration, the company suffers a daily loss in operational output. Therefore, a robust onboarding framework acts as a critical cost-saving mechanism, directly protecting the company's bottom line by drastically reducing voluntary churn and mitigating the financial shock of continuous recruitment (McFeely & Wigert, 2019; Patrick & Sundaram, 2018).

In addition to preventing financial losses, effective onboarding accelerates a new hire's time-to-proficiency, which is the duration required for an employee to reach their full productive capacity. In IT organizations, new engineers typically spend several months learning specific system architectures and internal project methods before they can work independently. Systematic onboarding protocols that guarantee immediate access to essential hardware and software licenses can substantially shorten this integration period. In fact, standardized integration practices have been shown to boost new hire productivity by as much as 70%. Handling basic administrative setup quickly and defining job expectations early helps technical staff finish their initial training faster and start contributing to actual projects (Madeline, 2015).

Beyond the individual metrics of retention and financial cost, a comprehensive onboarding experience significantly influences team dynamics and the company's external employer brand. When new employees are integrated smoothly into processes, the amount of work is effectively reduced on existing team members and managers, preventing the burnout often associated with continuously training high-turnover staff. A well-structured onboarding ensures that the existing workflow is not disrupted, maintaining the overall momentum of the department. Furthermore, employees who experience a good and supportive entry into an organization often become its strongest members, who stay for a long-term. This positive word-of-mouth enhances the company's reputation in the highly competitive tech labour market, making it easier and more cost-effective to attract top-tier candidates in the future. In essence, the success of the onboarding phase radiates outward, strengthening both internal cohesion and external market positioning (Yousf & Khurshid, 2021).

1.3 HR process automation concepts

Human resource process automation involves deploying technology to execute recurring administrative workflows with minimal manual intervention. Historically, the digitization of HR was limited to electronic human resource management systems, which primarily served as static databases for storing employee records. Modern automation concepts, however, focus on dynamic task execution and represent a mutual relationship between technology and HR strategy. The deployment of automated systems is not merely a hierarchically imposed technological change, but a strategic choice by managers aiming to restructure their departments into strategic business units (Marler & Parry, 2016). While automation decentralizes authority and empowers employees through self-service and autonomy, it is critical that these digital workflows maintain a human connection to sustain trust and emotional engagement within the workplace (Sarangi & Sahu, 2025).

The concrete impact of this transition is most evident when analysing organizational performance metrics before and after implementation. Recent empirical studies demonstrate that automation serves as a powerful predictor of HR service efficiency, with statistical models showing a strong positive correlation ($r = 0.72$) between automated workflows and overall operational effectiveness (Sarangi & Sahu, 2025). Quantitative industry data consistently reveals dramatic reductions in administrative overhead. For instance, recent analyses demonstrate that HR professionals can reduce the time spent on repetitive induction tasks from approximately twelve hours per week to under three hours (Best of HR, 2025). Furthermore, integrating AI and automated systems into HR workflows can reduce recruitment and processing time by up to 40 percent by eliminating manual data transfers and automating candidate screening (El Garem, 2026). By resolving these administrative bottlenecks, HR professionals report a 30 percent improvement in their ability to handle complex, strategic tasks, such as predictive workforce planning (El Garem, 2026). Ultimately, this allows HR teams to shift their focus from repetitive data entry to strategic workforce planning and relationship building.

From a technical standpoint, this level of efficiency is generally achieved through two primary approaches: Robotic Process Automation (RPA) and Application Programming Interface (API) integrations. RPA software utilizes software robots to simulate human actions on digital platforms, performing repetitive, rule-based tasks with speed, precision, and consistency (Sharma, 2020). This makes it particularly useful for legacy systems that lack modern integration capabilities. API-based automation, on the other hand, allows disparate software applications to communicate directly and exchange data in real time at the server level. For complex organizational procedures

like onboarding, where candidate information must flow seamlessly between email clients, task management tools, and communication platforms, API-based workflow automation provides a significantly more stable and scalable architecture.

Despite the clear quantitative and operational advantages of HR automation, medium-sized enterprises face specific barriers to adoption. Empirical studies highlight that implementation challenge, particularly system complexity, integration with existing infrastructure, and resource constraints remain significant hurdles for HR professionals (Sarangi & Sahu, 2025). Traditional enterprise-grade systems often prove too rigid and financially demanding for SMEs, whereas fragmented, off-the-shelf HR applications can inadvertently exacerbate data silos. Consequently, there is a recognized need within organizational research for adaptable integration approaches that allow companies to connect their disparate digital tools and automate workflows without requiring extensive custom software development.

1.4. Low-code/No-code platforms

Low-code and no-code (LCNC) platforms have transformed organizational approaches to process automation. By replacing traditional code authoring with visual, model-driven development, these systems allow administrators to configure workflows via drag-and-drop mechanics. This reduces the technical barrier, allowing non-developers to build functional applications without writing extensive source code. While low-code platforms still permit custom scripting for complex logic, no-code platforms abstract the coding layer entirely. Empirical studies demonstrate that this approach democratizes software development, enabling non-technical professionals to build functional digital solutions independently, achieving processing efficiency and task correctness comparable to professional programmers (Guthardt & Kosiol, 2024).

The necessity for such flexible solutions becomes highly evident when analysing the technological constraints of smaller organizations. Traditional enterprise resource planning (ERP) and comprehensive human resource information systems (HRIS) are predominantly designed for large corporations. Recent systematic reviews indicate that small and medium-sized enterprises (SMEs) frequently encounter a software gap when attempting to automate their processes. Implementing comprehensive enterprise platforms is generally unfeasible for SMEs due to prohibitive costs and the requirement for specialized IT team (Myataza et al., 2024). At the same time, basic HR software tends to be too rigid to synchronize with the varied digital tools already in use by these companies, thereby trapping information in disconnected silos (Kasali et al., 2025). As a result,

SMEs face a severe shortage of adaptable software options that do not require complex custom development.

Instead of relying on custom-coded integrations, which demand dedicated engineering resources and lengthy development cycles, many organizations now utilize Integration Platform as a Service (iPaaS) models to resolve these software gaps. Platforms like n8n operate as event-driven architectures, utilizing webhooks and pre-configured API connectors to synchronize data across isolated cloud applications (Venkiteela, 2025). Practically, this enables administrators to construct visual workflows where a single data input, such as logging a new hire, instantly executes subsequent technical tasks, including corporate email provisioning and Jira account creation.

For SMEs, adopting low-code infrastructure effectively neutralizes the budget and scheduling hurdles associated with traditional software engineering. This approach accelerates the implementation of internal systems, allowing departments to digitize their workflows without extended development periods. Furthermore, empirical insights confirm that low-code automation provides extreme modularity, allowing SMEs to seamlessly adapt their business process management (BPM) lifecycle despite organizational constraints (Arno, 2025). Organizations can connect their existing IT stack into a unified, synchronized ecosystem without discarding their preferred specialized tools. Ultimately, LCNC platforms offer SMEs a highly scalable and cost-effective framework to modernize their HR processes, tailor workflows to their specific operational needs, and maintain agility in a rapidly changing digital landscape.

RESEARCH METHODOLOGY AND PROCESS ANALYSIS

This chapter outlines the practical steps taken to analyse and improve the onboarding workflows at the target organization. Building upon the theoretical framework established in the preceding chapter, it presents the specific research questions that guide this study. It also describes the project's design and explains the combination of qualitative and quantitative methods used to collect reliable data for the subsequent process analysis. By strictly defining the methodological approach, this chapter ensures the validity, reliability, and academic rigor of the subsequent practical implementation phase.

2.1. Research objectives and questions

This research focuses on creating and evaluating a new automated onboarding workflow. The primary objective is to reduce the HR department's manual workload by implementing a low-code platform such as n8n. The practical implementation involves several steps, beginning with mapping the current routines and identifying existing technical limitations. Subsequently, the new IT architecture is developed, and its time-saving efficiency is measured against the manual baseline. Ultimately, this study seeks to answer the following research questions:

- To identify the critical administrative bottlenecks and operational inefficiencies within the current manual onboarding process of the target organization.
- To determine and categorize specific HR processes that can be effectively automated using a low-code solution to bridge fragmented workflows without extensive custom development.
- To design and implement an MVP.
- To evaluate the operational impact of the new automated setup on the HR team's daily workload and its effectiveness in facilitating error-free tracking of onboarding data.

By completing these objectives, the study aims to resolve the systemic delays in the company's onboarding pipeline. The practical outcome is a functional, tailored automation system designed to stabilize and accelerate their internal HR procedures.

2.2. Research design and context!

The study relies on a practice-oriented development strategy, applying Design Science Research (DSR) principles to structure the practical work (vom Brocke et al., 2020). In IT research, the DSR paradigm is highly effective because it requires both the design and the evaluation of a new

technical system. This means the project extends beyond simply observing the current situation. Instead, it takes the specific problems found during the analysis and solves them by building a working system.

The empirical context of this research is a target organization operating within the financial technology (fintech) sector. The target organization is a medium-sized enterprise (SME) employing between 50 and 100 individuals. Now, the company is going through a period of rapid growth, requiring the HR team to process and onboard three to ten new employees every month.

While this volume reflects healthy organizational growth, it introduces a disproportionately high administrative burden on the HR department. The existing onboarding procedures rely entirely on manual execution across various disconnected platforms (e.g., email clients, task trackers, internal databases) rather than automated data synchronization. Doing all this work manually drains HR resources. It also creates a higher chance of errors and slows down system access for the candidates. Given the clarity of such operational challenges, the target fintech enterprise provides an ideal case study for evaluating automated HR platforms.

2.3. Data collection methods

To ensure a comprehensive and objective understanding of the target organization's onboarding workflow prior to developing the IT solution, this study utilized a mixed-methods approach for data collection. To collect reliable information, the study used a mix of participant observation, expert interviews, and structured surveys. Combining these methods made it possible to understand the daily reality of the new hires as well as the background work handled by the HR team.

Participant observation: The author possesses direct, hands-on experience within the target organization, having personally navigated the complete onboarding cycle as a new employee. Furthermore, the author has previously contributed to the partial formalization of these internal IT procedures. This insider perspective allowed for an authentic, longitudinal assessment of the practical friction points, delays, and cross-departmental communication gaps that new hires typically encounter during their integration period.

Expert interviews: Personal observation shows only the user's side of the process. To understand the actual administrative workload, the author conducted several semi-structured interviews with the organization's HR manager and team. In these sessions, the manager systematically explained the entire daily routine of onboarding a new hire. HR team demonstrated the exact manual data

entry steps and explained how different departments communicate. The information gathered from these meetings was then used to draw the current “AS-IS” process model.

Structured surveys: Interviews and observations provide good background, but the study also needed measurable data. To achieve this, the researcher sent digital surveys to the HR staff and the newly hired employees. The questions for the HR team looked at how many hours they lose to manual tasks and how often tracking mistakes happen. On the other side, the employee questionnaire asked new hires if their initial instructions were clear and how long they had to wait for IT access. Gathering these responses created a solid numerical baseline showing exactly how inefficient the current setup is.

2.4. Data analysis principles

The collected empirical data was evaluated using business process mapping for workflow visualization and thematic analysis for qualitative feedback categorization. By aggregating the expert interviews with HR personnel and the operational survey metrics, a formal "AS-IS" business process model was developed. This visualization isolated critical friction points within the existing infrastructure, specifically pinpointing areas degraded by repetitive manual data entry, excessive platform switching (e.g., between email clients and task trackers), and delayed inter-departmental coordination.

After mapping the process, the open-ended survey comments were categorized by common topics to locate the main operational problems. The HR team's answers showed that working without automated reminders and tracking candidates manually caused significant mental fatigue. For the new hires, the most frequent complaints involved long, text-heavy emails and confusing task instructions during their first days. Alongside these written responses, the quantitative survey data helped measure the exact level of current inefficiency. Combining these findings provided the necessary evidence to define the exact technical requirements for the new n8n architecture.

PRACTICAL IMPLEMENTATION AND EVALUATION

This chapter transitions from the methodological framework to the practical execution of the research. It begins by mapping and analysing the current manual onboarding workflows based on the empirical data collected. Subsequently, it evaluates potential integration platforms and details the technical development of the automated “TO-BE” architecture using n8n. Finally, the chapter presents the validation and measurable outcomes of the implemented solution.

3.1. Analysis of the current onboarding process (AS-IS)

Before developing an automated solution, it is necessary to document exactly how the target company handles the employee lifecycle and to identify the systemic vulnerabilities within the existing manual workflow. The current architecture consists of several sequential steps spread across disconnected platforms, primarily email, Google Forms, a shared Google Sheet, and Jira.

The Onboarding Pipeline and Operational Friction

The process begins when a candidate applies via email or LinkedIn. Without automated alerts, the HR representative must constantly monitor company inboxes, searching for new applications and then sending a standard Google Form link. Consequently, this dependence on manual tracking systems presents a considerable risk of human error, as human resources staff may inadvertently overlook an application, thereby cause delayed responses and possibly forfeiting the opportunity to recruit exceptionally qualified individuals. Once the candidate fills out this form, their information lands directly in a master Google Sheet. Additionally, the lack of automated alerting mechanisms requires HR administrators to manually audit the database for new entries, thereby increasing administrative overhead and impeding the pre-selection process.

The transition from the interview phase to the actual hiring stage exposes additional systemic inefficiencies. A primary constraint is the manual execution of employment contracts, which depends on the physical signature of the company owner. This dependency introduces multi-day delays that can degrade the candidate's perception of the organization. Furthermore, subsequent onboarding tasks remain decentralized; HR administrators are required to manually compile welcome communications and provision access to corporate platforms (e.g., Jira, Figma, Google Drive). The HR team also must assign manually the initial training tasks in Jira. Because these provisioning steps are uncoordinated and depend entirely on human memory, new hires often face unnecessary "idle time" and confusion during their crucial first days, severely delaying their time-to-productivity.

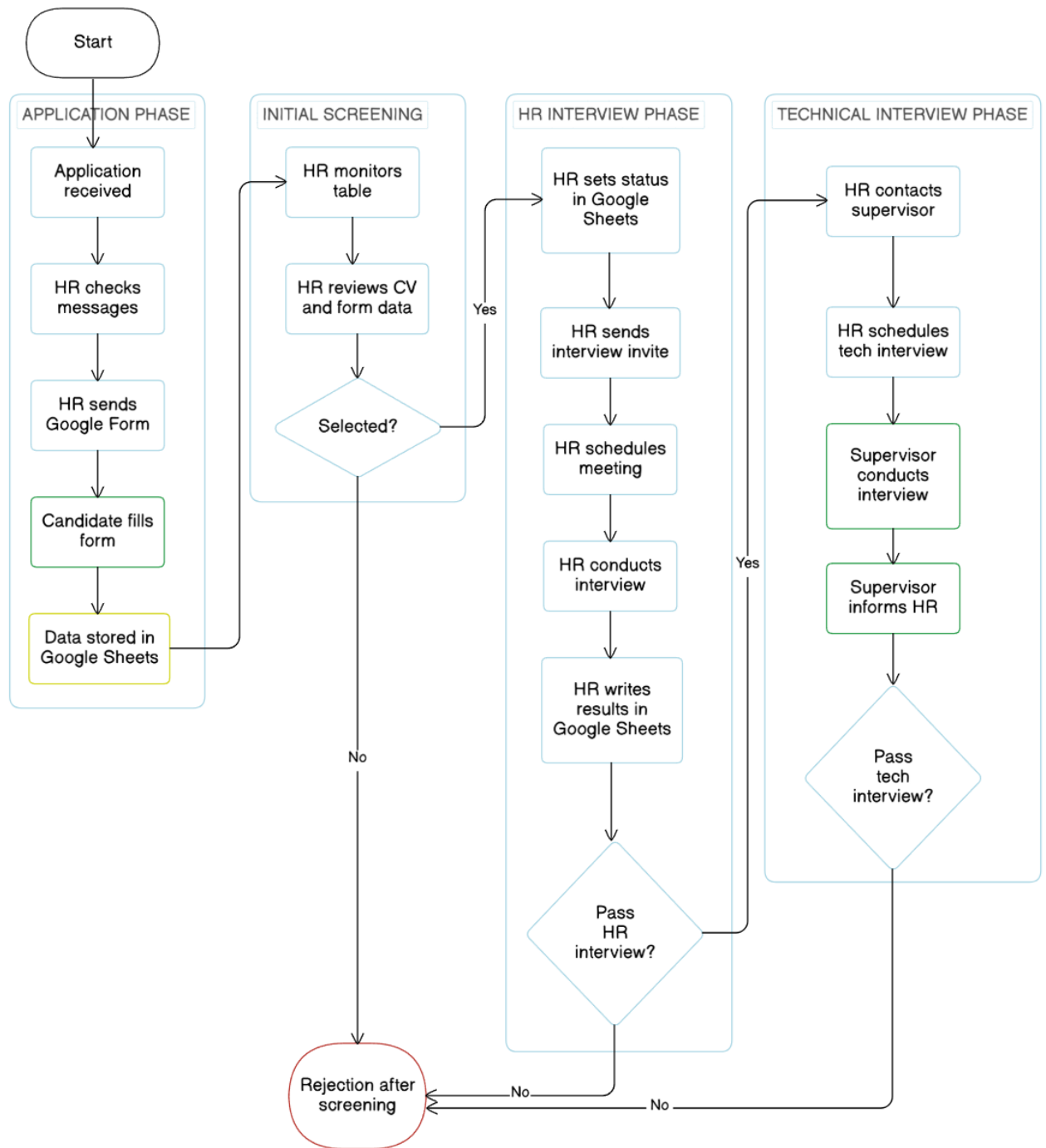


Figure 1. The AS-IS manual onboarding workflow (part 1)

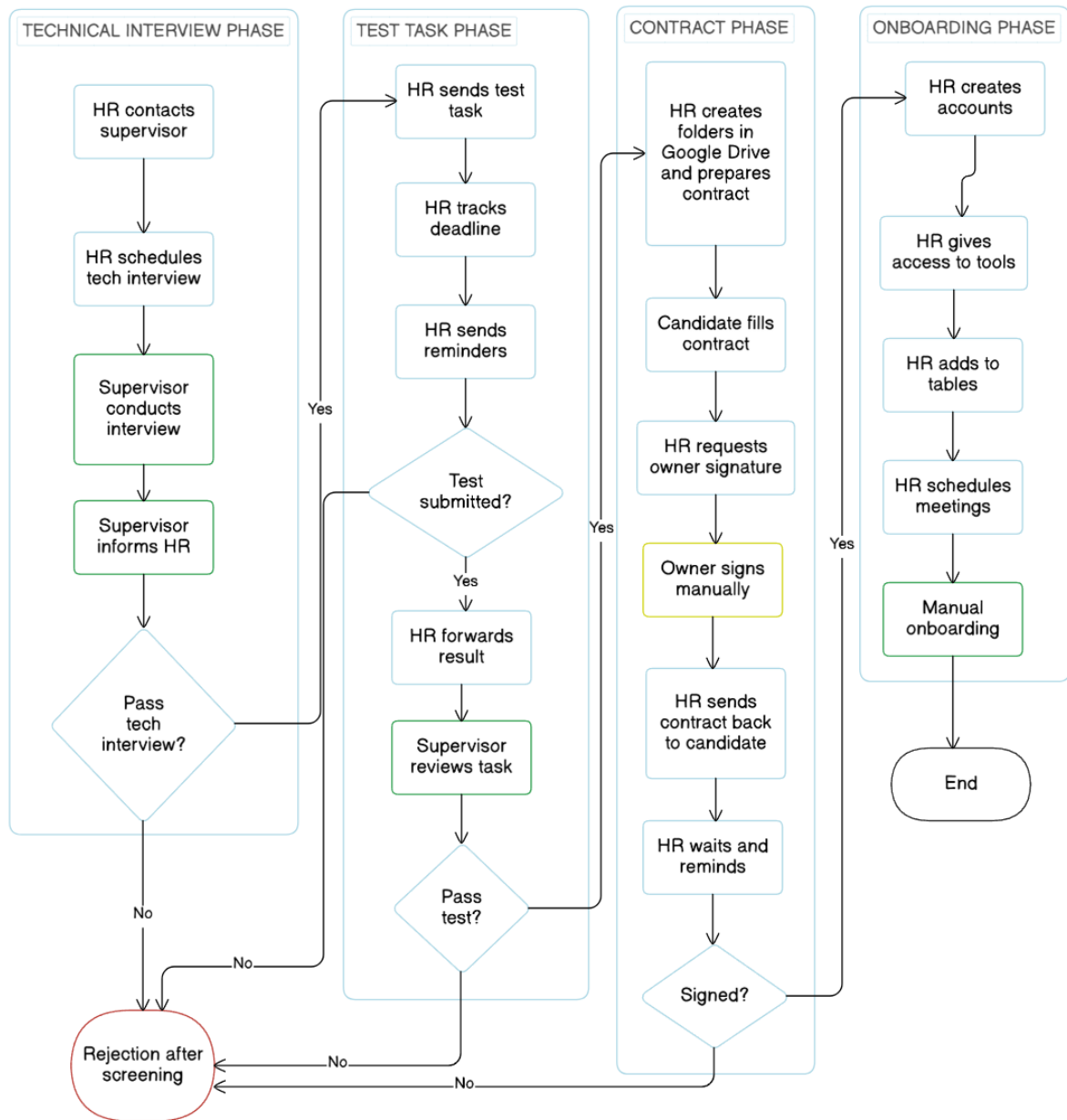


Figure 1.1. The AS-IS manual onboarding workflow (part 2).

The Offboarding Vulnerability and Security Risks

The lack of automation creates equally critical issues when an employee leaves the company. The current offboarding process relies heavily on human memory rather than a standardized, trigger-based protocol. Because accesses to Slack, Figma, Google Drive, and Jira are scattered and unlinked, HR team must search and manually remove the user from each individual platform. Consequently, this fragmented approach leads to severe compliance vulnerabilities. Company data indicates that some platform accesses frequently remain active for six months or more after an employee's departure, posing a significant data security risk and highlighting the urgent need for a centralized, automated offboarding mechanism.

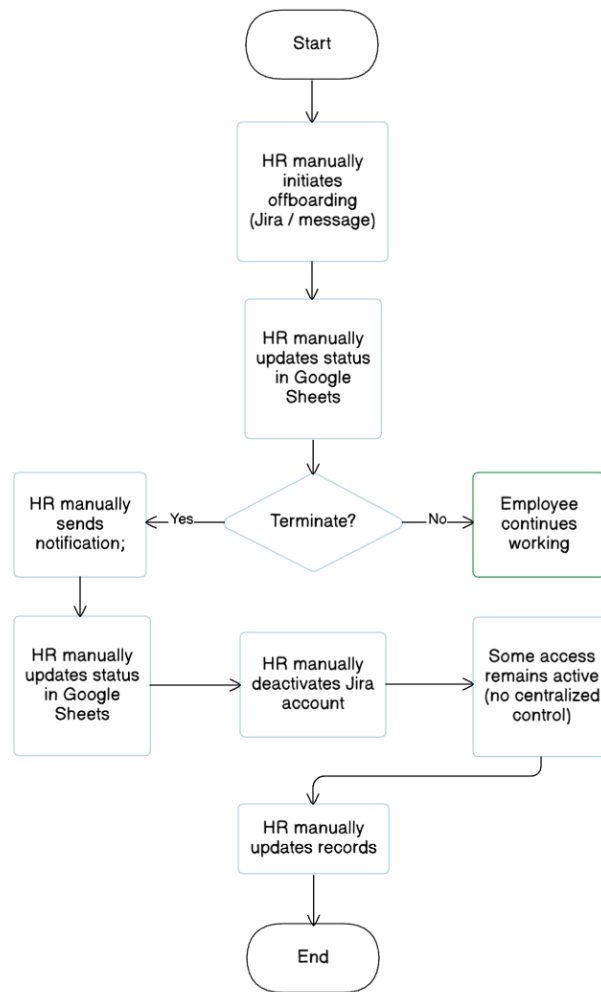


Figure 2. The AS-IS manual offboarding workflow.

Identifying Specific Operational Bottlenecks

Survey feedback from the HR department confirmed that guiding candidates through this manual pipeline causes heavy mental fatigue and increases the risk of administrative mistakes. Rather than just highlighting general delays, combining the process map with the survey responses revealed several highly specific operational vulnerabilities:

Blind spots in data collection occur because Google Forms does not trigger automated alerts, meaning new applications remain unnoticed in the master spreadsheet until an administrator actively logs in to check.

Routine communication, such as drafting welcome emails and interview invitations, introduces a significant risk of human error due to its complete reliance on manual data entry. During phases of rapid organizational scaling, administrators are particularly prone to omitting follow-up correspondence or inadvertently cross-contaminating candidate records. Furthermore, the protocol

for provisioning workspace access remains highly decentralized. HR team are required to manually initiate access requests, which frequently experience prolonged delays pending the owner's authorization. As a result, new hires often lack necessary access to essential platforms (e.g., Flutter Flow, Jira) upon commencement, thereby impeding their initial productivity and creating substantial operational friction.

Uncoordinated task assignments mean that creating the initial training tickets in Jira requires the HR manager to set them up manually. This reliance on human memory leads to tasks being forgotten or assigned too early, causing unnecessary stress for new employees before their introductory coaching session.

Project Scope and Limitations

Although the systemic analysis identified critical vulnerabilities across both onboarding and offboarding procedures, automating the complete employee lifecycle falls outside the permissible scope of this research. The practical implementation is therefore restricted to the initial onboarding pipeline, as engineering and validating a holistic HR architecture necessitates an extended development timeline.

Therefore, the practical implementation in this study will focus strictly on resolving the preboarding and onboarding pipelines, which the HR team identified as their most time-consuming daily challenge. The offboarding vulnerabilities documented here serve to highlight the overall need for digital transformation and provide a clear direction for future iterations of the system.

3.2. Comparative analysis of tools

Having identified the specific technical issues in the onboarding pipeline, the next step is to select a suitable digital solution. Building custom software from scratch is highly inefficient in terms of time and budget. Consequently, implementing a ready-made, low-code integration platform is the most practical approach to connecting Google Forms, email clients, Slack, and Jira.

To determine the optimal architecture for the target company, this study evaluated three major integration platforms on the market: Zapier, Make, and n8n. According to recent technical reviews of business automation tools (Tugui, 2025; Factors.ai, 2026), selecting the right platform depends heavily on three key metrics: pricing architecture, development flexibility, and data security.

Zapier

Zapier is the industry standard, offering a massive library of over 7,000 supported applications. However, its major vulnerability lies in its pricing model. Zapier charges users per individual “Task” (an action performed within a workflow). If a single candidate onboarding workflow consists of five steps (creating a user, sending an email, assigning a task, etc.), one execution consumes five tasks. For a growing company, basic plans (e.g., ~\$20 for 750 tasks) deplete rapidly. Furthermore, Zapier heavily favours simple linear logic, making it difficult to build complex branching scenarios.

Make

Make provides a highly advanced visual router that handles complex data branching much better than Zapier. It also offers a more generous pricing structure, with base plans (around ~\$9) allowing up to 10,000 “operations”. Despite these advantages, Make remains a strictly cloud-based Software-as-a-Service (SaaS) solution. This means candidate data must pass through third-party servers. Additionally, Make restricts the use of custom programming code if a standard integration node does not exist.

n8n

The architecture of n8n differs significantly from its competitors. According to a technical comparison by Contabo (2025), n8n uses a pricing model based on executions. In n8n, a complex onboarding workflow with ten steps is counted as one execution. In contrast, the same workflow would use ten tasks in Zapier. This difference leads to significant cost savings when the system is used extensively.

Technically, n8n provides maximum flexibility by allowing developers to write custom JavaScript and Python directly inside the workflow nodes. Most importantly, n8n offers a self-hosted deployment option. For a company handling sensitive HR data (such as employment contracts and personal identification details), keeping data entirely within the organization's own servers is a critical security advantage.

Summary of Platform Characteristics

***Table 1.** Technical and commercial comparison of integration platforms (based on 2025-2026 market data)*

Feature / Criteria	Zapier	Make	n8n
Pricing Architecture	Pay per Step (Task)	Pay per Operation	Pay per Workflow (Execution)
Base Tier Cost (Est.)	~\$20 / 750 tasks	~\$9 / 10,000 operations	Free / Open source (Self-hosted)
Hosting & Security	Cloud only (SaaS)	Cloud only (SaaS)	Cloud OR Self-hosted
Custom Code Logic	Highly restricted	Moderate (Visual routers)	High (Native JS/Python support)
Best Use Case	Simple, linear marketing flows	Complex visual data routing	Secure, engineering-heavy processes

Conclusion

The comparative analysis clearly indicates that n8n is the superior tool for this specific project. The ability to deploy the platform on self-hosted infrastructure resolves the security concerns associated with handling sensitive candidate data. Combined with a highly efficient pricing model and the technical freedom to execute custom API requests via JavaScript, n8n provides the necessary depth to completely automate the company's onboarding pipeline.

3.3. Design and Technical Development of the “TO-BE” Workflow

Building the automated system required balancing academic best practices with the company's actual operational limits. While standard HR digitalization practices recommend migrating all data to a dedicated Human Resource Information System (HRIS), the target company strongly preferred to keep their existing, fragmented tool stack, which included emails, Google Forms, a master Google Sheet, and Jira. Therefore, rather than forcing the organization to adopt an entirely new software ecosystem, the n8n architecture was designed to act as an invisible integration layer. It connects their preferred legacy tools and applies automated logic behind the scenes. Based on the visual workflow developed in n8n, the technical implementation is divided into three distinct automated modules, each triggered by different events to handle specific phases of the candidate journey.

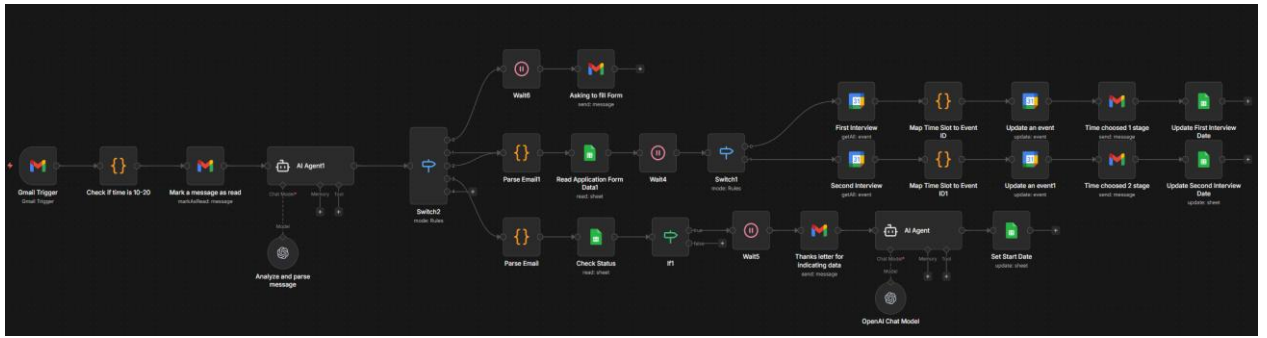


Figure 3.1. The complete pre-boarding and onboarding automated architecture developed in n8n.

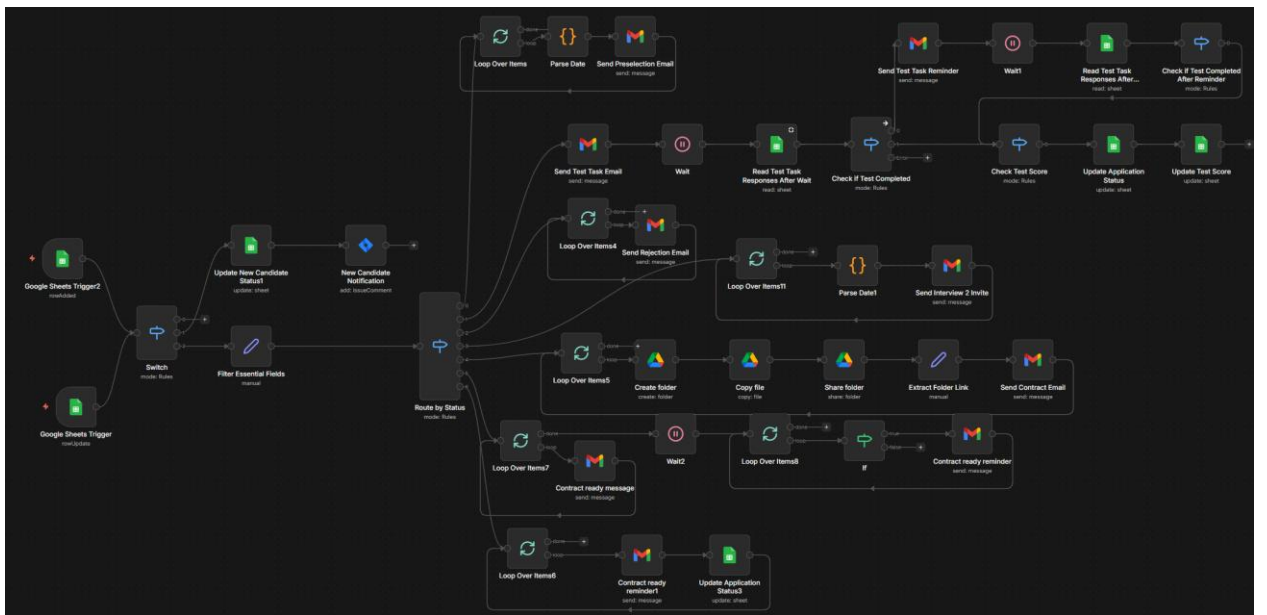


Figure 3.2. The complete pre-boarding and onboarding automated architecture developed in n8n.

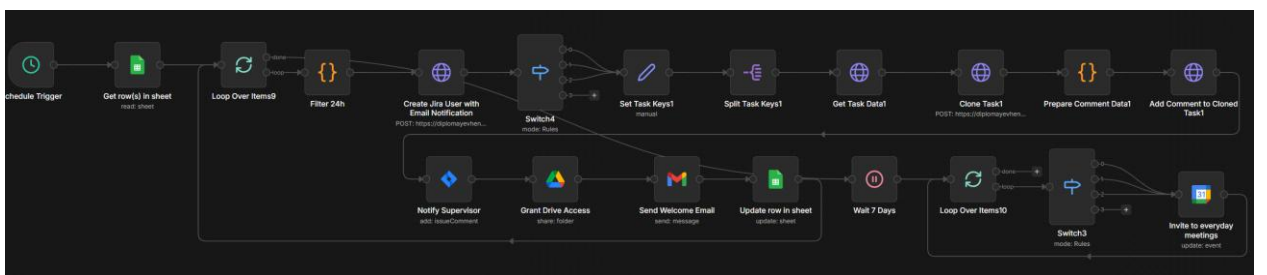


Figure 3.3. The complete pre-boarding and onboarding automated architecture developed in n8n.

Module 1: Automated Intake and AI Parsing

The first major challenge identified in the AS-IS analysis was the lack of automated notifications, which caused candidate applications to get lost in the workflow. To solve this, the top branch of the n8n workflow operates as an event-driven intake system.

It begins with a Gmail Trigger node that captures incoming application emails in real-time. Due to the unstructured nature of candidate data received via email, this workflow incorporates an AI Agent (OpenAI Chat Model) node. This AI model's function is to extract specific candidate details from the unrefined text and subsequently standardize the information. Following this, the workflow employs a Switch node to direct the data, thereby facilitating the automatic updating of a Google Sheet. Furthermore, this module integrates directly with Google Calendar to automatically map time slots and generate interview events, completely removing the need for manual scheduling.

Module 2: Status-Driven Pre-boarding

The central and most complex part of the workflow (the middle branch) handles candidate progression. HR departments used to depend on manually sending template emails, a process prone with the potential for mistakes. This new module operates as a state machine driven by Google Sheets Triggers. Whenever a candidate's status changes in the master table, the data passes through a massive Route by Status switch node. Depending on the HR manager's decision, the system directs the candidate down specific automated paths:

- **Test Task Tracking:** In the manual process, HR had to manually track the 4-day test period and send reminders. The n8n workflow resolves this by sending the test instructions automatically and utilizing Wait nodes. If the test is not completed, the system loops back to send automated reminders.
- **Contract Generation:** When a candidate is selected, the workflow automatically duplicates contract templates using Google Drive nodes, creates personalized links, and dispatches them to the candidate, considerably accelerating the final hiring process.

Module 3: Technical Provisioning and IT Setup

The final branch of the architecture handles the actual technical onboarding of successful hires. The AS-IS analysis revealed that manually creating Jira accounts and granting Drive accesses was a major bottleneck. To resolve this, the provisioning workflow relies on a Schedule Trigger. Every day, this node job pulls newly hired candidates from the database. It executes an HTTP POST request to automatically create a new user profile in Jira (Create Jira User node). Instead of the HR manager manually assigning tasks, the workflow uses a Clone Task node to duplicate standard onboarding tickets, assigns them to the new user, and leaves an automated comment for the supervisor (Notify Supervisor). Simultaneously, it grants access to the necessary Google Drive folders (Grant Drive Access) and sends out the final welcome email. Finally, a Wait node pauses

the flow for 7 days before automatically inviting the new employee to everyday recurring meetings.

Data Storage Architecture and Data Flow Management

The system's primary function, beyond workflow automation, centres on the storage, structuring, and synchronization of data across diverse platforms. Given the company's decision against adopting a centralized HRIS, the solution employs a distributed data architecture, with Google Sheets serving as the principal data repository.

In contrast to conventional database-driven systems, the suggested architecture employs a lightweight relational data model, specifically designed to integrate with the current tools. Each candidate and employee is represented by a distinct record, which is consistently referenced throughout the various phases of the onboarding process.

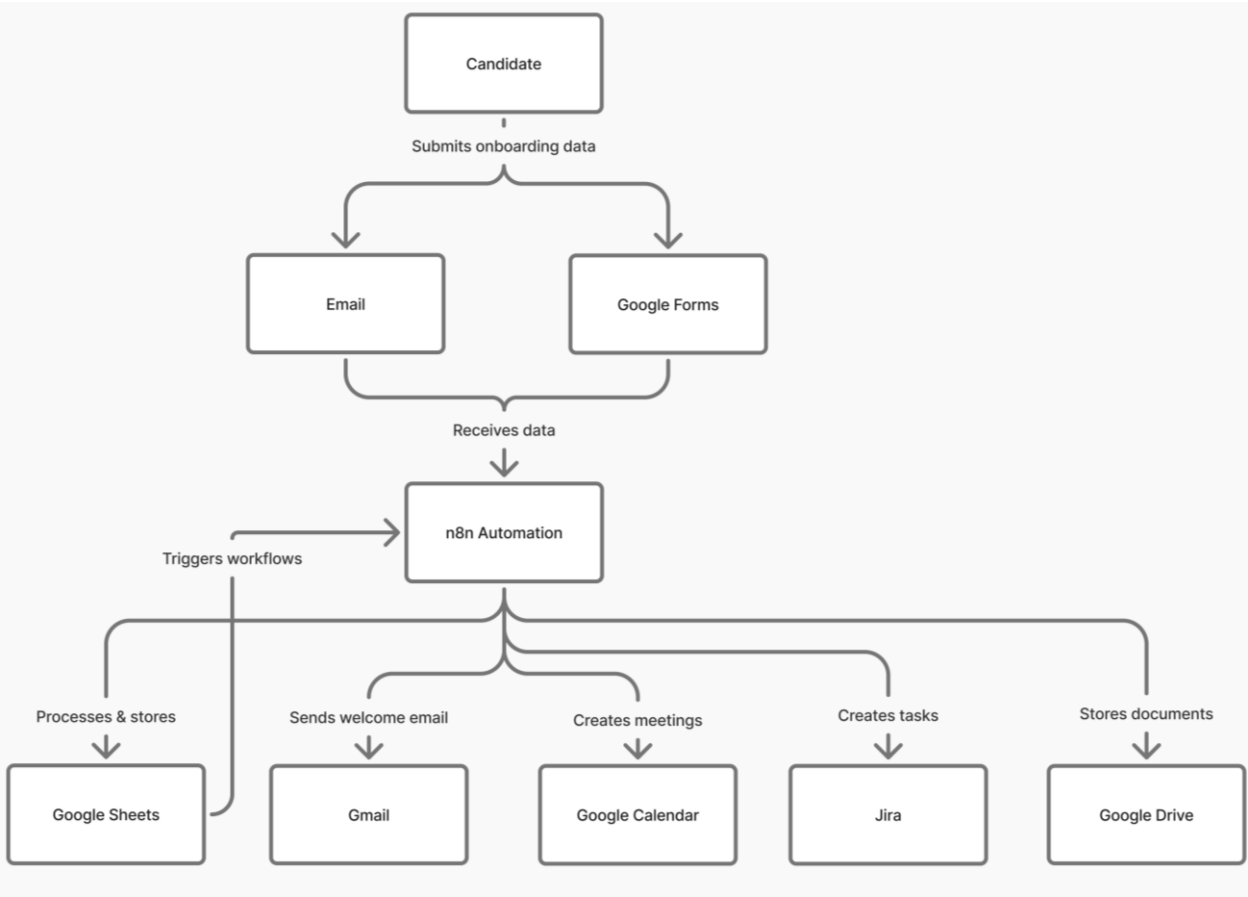


Figure 4. Logical Data Model of the TO-BE System

Core Data Entities

The system is built around three main logical entities:

Candidate (pre-hire stage)

This entity stores all incoming applicant data collected from Google Forms and email parsing. It includes:

- Candidate ID (unique identifier)
- Name
- Surname
- Email address
- Position applied
- Status (e.g., Applied, Interview, Test Task, Accepted, Rejected)

Employee (post-hire stage)

Once a candidate is accepted, their record transitions into an employee entity. This includes:

- Employee ID (linked to Candidate ID)
- Assigned role
- Start date
- System access flags (Drive, Jira, etc.)

Workflow State / Status Layer

Instead of storing workflow logic in code only, the system uses a status-driven architecture:

- Each row in Google Sheets contains a “status” field
- Status changes act as triggers for automation
- This effectively transforms the spreadsheet into a lightweight state machine

This approach allows non-technical HR staff to control the workflow simply by updating values in the table, without interacting with the automation logic directly.

Data Flow Between Systems

The automated architecture ensures continuous synchronization between all tools involved in the onboarding process.

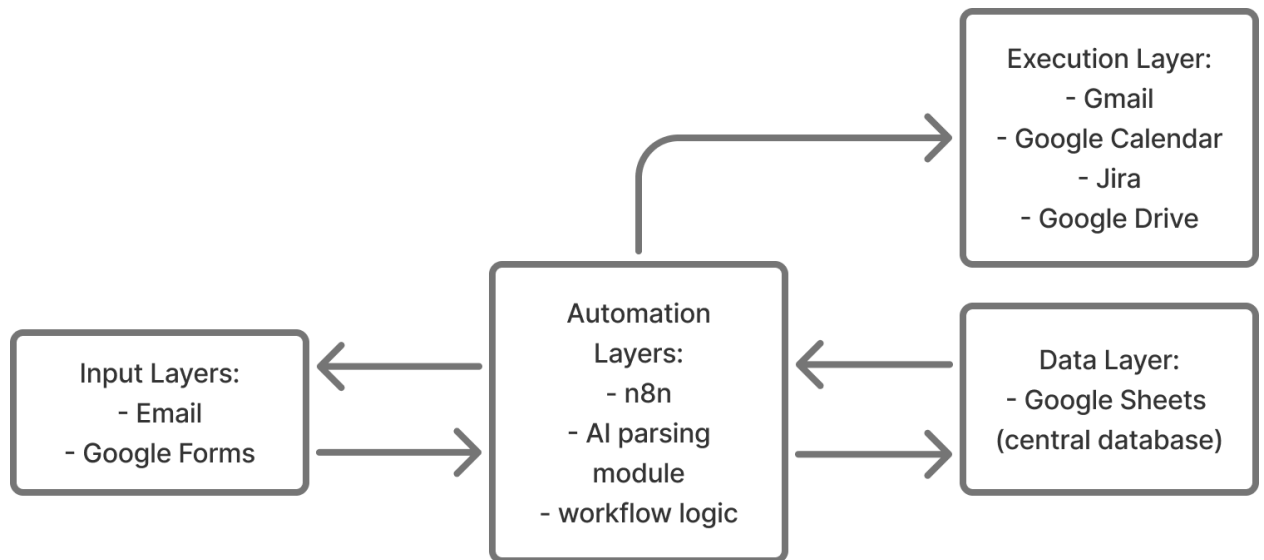


Figure 5. *Data Flow Between Systems*

The data flow can be described as follows:

Data Input Layer

- Candidate submits Google Form OR sends email
- Data is captured via Gmail Trigger or Form submission

Processing Layer (n8n)

- AI parsing extracts structured fields from unstructured input
- Data is normalized and validated
- Unique identifiers are assigned

Storage Layer (Google Sheets)

- All records are stored in a centralized spreadsheet
- Each row represents one candidate/employee lifecycle

Execution Layer

- Based on status updates, n8n triggers:
- Emails (Gmail)
- Calendar events
- Jira user creation
- Google Drive access

Feedback Loop

- System updates the same record after each action
- Ensures traceability and transparency

Data Consistency and Integrity

One of the main risks in distributed systems is data inconsistency. To mitigate this, the proposed architecture introduces several control mechanisms:

- Google Sheets acts as the only authoritative data storage
- Each candidate is assigned an ID, ensuring consistent tracking across systems
- Only predefined statuses trigger workflows, reducing human error
- All system actions write results back to the same record

This ensures that even without a traditional database, the system maintains a reliable and consistent state.

Technical Interpretation of the Data Model

From a system design perspective, the implemented architecture resembles a simplified relational database structure:

- Google Sheets - storing tables
- Rows - represent entities (candidates/employees)
- Columns - represent attributes
- Status field - acts as a workflow controller

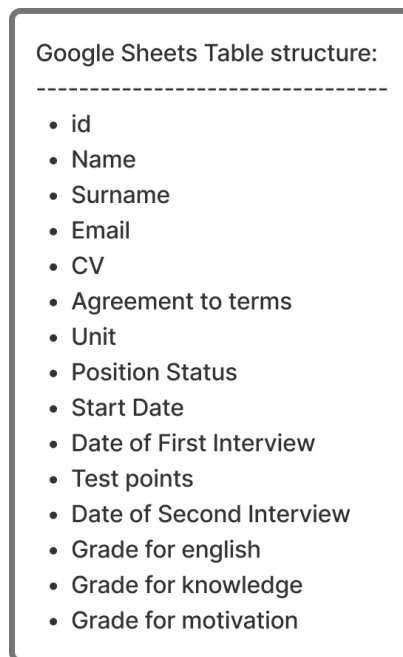


Figure 6. *Simplified Database Representation of Google Sheets Structure*

This design allows the system to simulate database-like behaviour without requiring dedicated backend infrastructure, making it highly suitable for SMEs with limited technical resources.

Technical Outcomes

The initial n8n workflow successfully bypasses the company's resistance to adopting new HR software by dividing the architecture into three operational modules: AI email parsing, status routing, and scheduled access to documents. It maintains their familiar Google Sheets interface while reducing the human error associated with manual data entry, forgotten emails, and delayed workspace creation.

However, it's important to recognize that the current architecture is a Minimum Viable Product (MVP) and a basic proof-of-concept, rather than a fully developed enterprise solution. During the implementation phase, external technical limitations forced architectural compromises, leading to the use of workarounds to create custom nodes.

Specifically, the integration limitations, API deprecations, and synchronization delays found in third-party services, particularly between the n8n platform and Jira's ecosystem, led to some suboptimal routing choices. As a result, the prototype represents a continuous, iterative development process. Subsequent iterations will prioritize the refactoring of these constrained nodes and the optimization of execution pathways as the supporting external APIs continue to advance.

3.4. Validation and Evaluation of Result

To objectively assess the efficacy of the implemented "TO-BE" architecture, the automated n8n prototype was validated against the established empirical baseline of the "AS-IS" process. The evaluation focused on quantifying the reduction in manual administrative workload while acknowledging the necessity of human intervention in qualitative decision-making. Operational data provided by the company's HR department served as the primary benchmark for this comparison.

In the legacy "AS-IS" framework, the administrative overhead for a single candidate reaching the onboarding stage (excluding the actual duration of interviews) totalled approximately 24 minutes. This time was fragmented across manual email drafting, complex interview coordination through various interfaces, and repetitive IT provisioning tasks. To ensure a realistic and scientifically sound evaluation, CV Screening was allocated a constant duration of 2 minutes in both the manual and automated frameworks. While the n8n AI parsing module successfully automates data extraction, the HR specialist must still perform a critical review of the candidate's professional background. This step remains vital for maintaining hiring quality and cannot be fully delegated to algorithmic processing.

Table 2. Comparative Analysis of Administrative Time Expenditure (AS-IS vs. TO-BE)

Recruitment Stage (HR Task)	Manual Process (AS-IS)	Automated System (TO-BE)	Technical Implementation / Justification
1. CV Screening	2 min	2 min	Constant value: requires qualitative human judgment for candidate quality.
2. Shortlisting Email	~2 min	0 min	Automated: Triggered by status change in the master database.
3. Scheduling Interview	5 min	0 min	Automated: Integration with Google Calendar for slot mapping.
4. Rejection (after 1st interview)	1 min	0 min	Automated: Instant template delivery via n8n workflow.
5. 2nd Interview Setup	7 min	0 min	Automated: Full coordination of technical interviews via API.

Recruitment Stage (HR Task)	Manual Process (AS-IS)	Automated System (TO-BE)	Technical Implementation / Justification
6. Send Test Task	1 min	0 min	Automated: Workflow-managed delivery and reminder system.
7. Onboarding & Provisioning	5 min	0 min	Automated: Instant Jira account creation and Drive permissions.
Total Administrative Time:	24 min	2 min	Total reduction of 91.6%

The comparative analysis demonstrates that the "TO-BE" architecture reduces the cumulative administrative workload from 24 minutes to just 2 minutes per candidate, the time strictly reserved for professional CV evaluation. All logistical and clerical tasks, such as scheduling, follow-ups, and account creation, are executed instantaneously by the n8n engine upon a status change in the master database.

Consequently, the automated system achieves a 91.6% reduction in administrative time expenditure. This optimization allows the HR department to mitigate the systemic vulnerabilities identified during the process analysis phase, such as human error and notification delays. By neutralizing these bottlenecks, the organization can shift its focus from manual data management to high-value talent acquisition and strategic candidate engagement.

DISCUSSION AND RECOMMENDATIONS

4.1. Limitations

While the validation results show a significant reduction in administrative workload and the successful removal of manual onboarding bottlenecks, it is important to acknowledge the technical limitations of the current system. The deployed "TO-BE" architecture functions as a Minimum Viable Product (MVP) rather than a fully complete enterprise application. During the development phase, certain technical compromises had to be made due to the limitations of the selected tools.

Specifically, the workflow relies heavily on the stability of third-party APIs. During the IT provisioning phase, integration issues and delays were observed between the n8n platform and Jira. Because some standard integration nodes lacked the necessary updates for user management, the workflow had to use direct HTTP POST requests and Wait nodes to maintain stability. These technical workarounds create potential points of failure; if external systems respond slowly, the automated account creation could time out.

Furthermore, a major structural limitation of the current MVP is the use of Google Sheets as the main database. While using spreadsheets allowed the HR department to easily adapt to the new workflow without learning unfamiliar software, a spreadsheet lacks the structural stability and security of a standard database system. Google Sheets does not have strict data validation rules. As a result, there is a risk of data errors; accidental manual changes to the spreadsheet by HR staff could break the automated triggers and cause the n8n workflows to fail.

Moreover, the current MVP mainly covers candidate intake, pre-boarding, and the initial IT setup. Although the "AS-IS" analysis revealed significant security risks during the manual offboarding process, an automated system for removing user access has not yet been implemented in this version. Therefore, the prototype effectively resolves the most critical onboarding delays but requires further development to achieve full automation of the entire employee lifecycle.

4.2. Future Development

To elevate the current MVP into a complete, enterprise-grade architecture, future development must address the identified technical limitations and expand the automation across the entire employee lifecycle.

The most critical architectural improvement is migrating the data storage layer from Google Sheets to a secure relational database, such as PostgreSQL. This transition will enforce strict data

validation rules, ensure data integrity, and prevent the system failures caused by accidental manual edits. Furthermore, connecting this centralized database to a custom internal user interface (UI) would provide the HR department with a secure and user-friendly dashboard. This upgrade would completely eliminate the need for HR staff to interact directly with raw data tables, significantly reducing the risk of human error.

Additionally, future iterations must expand the scope of the automation to cover the employee offboarding phase. The initial "AS-IS" analysis highlighted severe data security risks when departing employees retain active access to company platforms for extended periods. Therefore, developing a new n8n module triggered by a "Termination" status is essential. This future module would automatically revoke user credentials and access rights across Jira, Slack, and Google Workspace, ensuring a secure and compliant digital offboarding process.

Finally, continuous optimization of the n8n workflows is required to maintain system stability. As the supporting third-party APIs continue to evolve, the current custom HTTP requests and Wait nodes should be systematically refactored and replaced with updated native integration nodes. This ongoing maintenance will reduce execution delays, improve error handling, and ensure the long-term scalability of the automated HR system.

CONCLUSION

This bachelor's thesis addressed the systemic vulnerabilities and operational inefficiencies inherent in manual human resource management within a medium-sized enterprise. The primary objective was to design, implement, and evaluate an automated onboarding and offboarding architecture utilizing the n8n low-code platform. By rigorously analysing the established "AS-IS" workflow, the research identified critical administrative bottlenecks, including decentralized communication, manual data entry, physical contract dependencies, and delayed IT provisioning. These manual dependencies collectively hindered organizational productivity, negatively impacted the candidate experience, and posed significant data security risks during the employee offboarding phase.

To resolve these operational challenges, the study employed a Design Science Research methodology to construct and validate a functional "TO-BE" prototype. The resulting architecture was engineered into three interconnected modules: an AI-driven data intake system, a status-based pre-boarding orchestration engine, and an automated technical provisioning workflow. This event-driven system successfully integrated previously fragmented platforms: Gmail, Google Workspace, and Jira transforming a highly manual, memory-reliant pipeline into a streamlined, automated ecosystem.

The empirical validation of the implemented Minimum Viable Product (MVP) demonstrated a profound impact on administrative efficiency. A comparative analysis of time expenditure revealed that the automated architecture reduced the administrative burden per candidate from 24 minutes to merely 2 minutes, achieving an exceptional 91.6% reduction in manual workload. By fully automating clerical tasks, such as interview scheduling, status-driven notifications, and instantaneous account generation, the human resources department can now redirect its focus exclusively toward qualitative tasks, such as critical CV evaluation and candidate engagement. Furthermore, the automated provisioning module successfully eradicated the delays associated with workspace access, directly accelerating the time-to-productivity for new hires.

Despite these substantial technological improvements, the research acknowledges the architectural limitations of the current iteration. As a foundational proof-of-concept, the system temporarily relies on a spreadsheet-based data structure and faces specific external API constraints during integration execution. Consequently, future technical development must prioritize the migration to a robust relational database system and the expansion of the automation scope to encompass a comprehensive digital offboarding module.

Ultimately, this thesis validates the core research hypothesis: low-code automation platforms, such as n8n, provide a highly effective, scalable, and economically viable strategy for medium-sized enterprises. By implementing this architecture, organizations can successfully mitigate administrative friction, eliminate human error, and secure the entirety of their employee lifecycle management.

SUMMARY IN ESTONIAN

Käesoleva bakalaureusetöö teema on „Onboardingu automatiseeritud süsteem keskmise suurusega ettevõttes” (Automated System for Onboarding in a Medium-Sized Company).

Low code tehnoloogiate ja automatiseeritud töövoogude integreerimine personalijuhtimisse on muutnud traditsioonilised manuaalsed administratiivsed protsessid andmepõhisteks süsteemideks. Käesoleva bakalaureusetöö uurimisprobleem seisneb selles, et keskmise suurusega ettevõtetes toetuvad personalijuhtimise protsessid (nagu uute töötajate värbamine ja lahkumine) sageli hajutatud ja manuaalsetele lahendustele (nt Google Sheets, Gmail, Jira). See tekitab süsteemseid pudelikaelu, suurt sõltuvust inimfaktori mälust, andmete dubleerimise riski ning tõsisaid andmeturbe probleeme, eriti töötajate offboardingu faasis.

Käesoleva bakalaureusetöö eesmärk on Design Science Research metoodika abil kavandada, rakendada ja hinnata automatiseeritud n8n platvormile tugineva MVP (Minimum Viable Product) arhitektuuri tõhusust, et lahendada "AS-IS" protsessis tuvastatud puudused.

Bakalaureusetöö koosneb sissejuhatusest, neljast peatükist ja kokkuvõttest. Sissejuhatus püstitab uurimisprobleemi ja eesmärgi. Esimesed peatükid keskenduvad olemasoleva olukorra analüüsile ja tehnoloogilise raamistiku valikule. Järgnevates peatükkides kirjeldatakse kolmest moodulist koosneva uue "TO-BE" arhitektuuri arendust (AI-andmehõive, staatusepõhine töövoog ja tehniline varustamine ehk IT provisioning) ning valideeritakse lahenduse tulemusi.

Uurimistöö empiiriline valideerimine näitas, et sündmuspõhine (event-driven) automatiseeritud arhitektuur vähendas oluliselt personaliosakonna administratiivset koormust. Varasemas manuaalses süsteemis kulus ühe kandidaadi administreerimisele (välja arvatud intervjuudele kuluv aeg) keskmiselt 24 minutit. Uue lahendusega langes see aeg 2 minutile, mis teeb administratiivse töökoormuse vähenemiseks 91,6%. Rutiinsed ülesanded, nagu e-kirjade saatmine, intervjuude planeerimine ja kasutajakontode loomine Jiras, on nüüd täielikult automatiseeritud.

Samuti käsitletakse töös loodud prototüübi tehnilisi piiranguid, sealhulgas Google Sheetsi kasutamist peamise andmebaasina ja kolmandate osapoolte API-de integratsiooniviivitusi. Tuleviku arendusvõimalustena pakutakse välja süsteemi üleviimist turvalisele relatsioonilisele andmebaasile ning automatiseeritud offboarding-mooduli väljaarendamist, mis tühistaks töötajate lahkumisel automaatselt nende ligipääsud kõikidesle platvormidele.

Kokkuvõttes tõestab töö algset hüpoteesi: low code automatiseerimisplatvormid, nagu n8n, pakuvad keskmise suurusega ettevõtetele ülitõhusat ja skaleeritavat lahendust rutiinsete personaliprotsesside optimeerimiseks ja andmeturbe tõstmiseks.

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