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**From Services to SaaS: Creating a Service-First, Product-Next
Startup for International Trade Companies**

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**From Services to SaaS: Creating a Service-First, Product-Next
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ABSTRACT

This work presents the development of a Service-First, Product-Next B2B startup focused on the international trade sector. The startup emerges from the intersection of entrepreneurial experience and a culture of continuous innovation, emphasizing close customer interaction, rapid experimentation, and validated learning as core principles. Initially, the team provides consulting-like services to identify client pain points, map workflows, and co-create tailored solutions, generating immediate value while acquiring deep sector knowledge.

Building on prior entrepreneurial experience and a network inherited from previous ventures, the startup applies these insights to design scalable software-as-a-service (SaaS) products that address real market needs. The approach is guided by a community-oriented mindset, fostering collaboration with clients and partners to create sustainable and impactful solutions. This work highlights the importance of practical experimentation as a foundation for developing products that are both relevant and effective, demonstrating a model that integrates academic rigor, systemic thinking, and market pragmatism in the process of creating innovative B2B solutions.

Keywords: SaaS; B2B; palavra 3; Business Model Validation; Product Development.

LIST OF ACRONYMS

- **SaaS** – Software as a Service
- **B2B** – Business to Business

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1. INTRODUCTION

This work presents the development of a B2B startup guided by the Service-First, Product-Next model, focusing on the creation of SaaS solutions to automate the issuance and receipt of Electronic Service Invoices (NFS-e) in the context of international trade. The startup originates from the founders' previous entrepreneurial experience, inheriting from Clonex values such as resilience, pragmatism, and an established client network. Initial operations focus on the international trade sector, identifying urgent needs and automation opportunities while aiming to develop a scalable product aligned with market demands.

1.1 Problem

The Brazilian international trade market faces complex and often manual fiscal processes. Issuance and receipt of NFS-e involve multiple channels, manual entries, risk of inconsistencies, lack of traceability, and auditing difficulties. Existing tools, such as ERPs and taxtechs, only partially meet these needs, leaving gaps in integration, automation, and real-time visibility. These factors lead to rework, increased costs, and exposure to fiscal risks, highlighting the need for automated and scalable solutions.

1.2 Objectives

The general objective of this work is to develop a SaaS solution to automate the issuance and receipt of NFS-e, starting with applied consultancy and gradually evolving into a scalable product.

1.2.1 Specific Objectives

Map and understand the problems and needs of the international trade sector related to NFS-e issuance and receipt;

Apply Service-First practices to co-create solutions with clients, validating business hypotheses;

Develop prototypes and MVPs using technologies such as n8n, Supabase, OCR, and AI APIs;

Ensure data security, compliance, and integrity according to LGPD;

Evaluate technical feasibility and scalability of the solution for subsequent SaaS development;

Generate dashboards and KPIs for real-time monitoring and control.

2. METHODOLOGY

The methodology combines applied research with incremental development, guided by Action Research, enabling continuous learning from practical interactions with clients and hypothesis validation in real scenarios.

2.1 Action Research Methodology

Action Research focuses on solving real-world problems collaboratively with stakeholders, promoting continuous learning and adjustment. In this startup, it was used to identify client pain points, map NFS-e workflows, test technical solutions, and validate the feasibility of a scalable SaaS product.

2.2 Action Research Approach

The Action Research cycle involved iterative steps of diagnosis, planning, implementation, evaluation, and reflection. Each project module — from business discovery to final product consolidation — corresponded to a sprint with hypotheses, experiments, and validations. This approach ensured that solutions were aligned with real market needs and allowed the technological architecture to be adjusted according to practical results.

3. PROJECT CONTEXT

The project was structured into four main modules, focusing on NFS-e automation in the Brazilian international trade sector.

3.1 Startup Background

The founding team brings entrepreneurial experience and a culture of continuous innovation inherited from Clonex. Core values include resilience, pragmatism, validated learning, and collaboration with clients and partners. Initial operations target micro and small companies in international trade, leveraging pre-existing connections and addressing urgent market needs.

3.2 Market Context

The NFS-e market in Brazil is growing (adopted in 70% of capitals and 19% of municipalities) but remains fragmented, causing rework and fiscal risks. Key players include ERPs such as SAP and TOTVS, as well as taxtechs and specialized startups (Oobj, eNotas, NFe.io). Opportunities exist for integration, fiscal automation, and application of AI/ML, but regulatory and cybersecurity risks remain.

3.3 Business Model and Approach

The startup applies the Service-First, Product-Next model, beginning with applied consultancy to identify pain points, map workflows, and co-create solutions. This phase generates immediate revenue, provides practical learning, and forms the foundation for a scalable SaaS product.

3.4 Technical Context

The technical architecture involves:

- **n8n**: low-code workflow automation;
- **Supabase**: scalable database and storage;

- **OCR/OpenCV and AI APIs:** automatic data extraction from NFS-e;
- **Integration with ERPs** and existing systems;
- **Monitoring, logging,** and **manual fallback** for risk mitigation.

3.5 Risks and Requirements

Critical risks include ERP integration, OCR/AI accuracy, data security, and dependence on external APIs. Functional requirements cover automatic capture, validation, normalization, and secure storage of NFS-e, alongside minimal dashboards. Non-functional requirements include availability, scalability, security, observability, and modularity.

This work presents the development of a B2B startup guided by the Service-First, Product-Next model, focusing on the creation of SaaS solutions to automate the issuance and receipt of Electronic Service Invoices (NFS-e) in the context of international trade. The startup originates from the founders' previous entrepreneurial experience, inheriting from Clonex values such as resilience, pragmatism, and an established client network. Initial operations focus on the international trade sector, identifying urgent needs and automation opportunities while aiming to develop a scalable product aligned with market demand.

4 Artifacts

As the development of this project is structured to span one year, we have adopted an agile methodology with bi-monthly deliverables, enabling continuous cycles of learning, validation, and product evolution. Each two-month period is carefully planned with clear objectives, well-defined tasks, and priorities aligned with the long-term vision of the solution.

This approach not only ensures greater control over the project's progress but also allows for strategic adjustments based on real-world feedback, reducing risks and increasing development efficiency. Organizing the work into bi-weekly sprints enables

incremental and measurable deliveries, fostering rapid experimentation and continuous improvement.

Below is a summary of the activities completed in this first deliverable, organized by two-week sprints and highlighting the key achievements of the project's initial phase.

Sprint 1 – Hypotheses and Objectives

In Sprint 1, the focus was on defining the business hypotheses, strategic goals, and execution plan of the project, marking the beginning of the Discovery and Business Analysis phase. This stage was essential to align the team's vision and establish the foundation that will guide all future deliverables.

During this sprint, the team developed the Project Plan, consolidating the venture's hypotheses, core purpose, and initial scope. The main business objectives were defined, as well as each team member's roles and responsibilities, along with key milestones and deliverables structured by modules and sprints.

The group also discussed and validated the "Client-Financed Co-Creation" hypothesis, which underpins the "Service-First, Product-Next" model — a strategy in which the project generates early-stage revenue through automation services while using the acquired insights to design a scalable and market-validated SaaS solution.

This initial phase played a crucial role in aligning expectations between the team and mentors, ensuring a shared understanding of the business problem and structuring a consistent plan for the next steps — such as market research and client process mapping.

Sprint 1 served as the strategic starting point, consolidating the project's direction, methodology, and conceptual foundation for the NFSe Automation for Foreign Trade initiative.

Sprint 2 – Market Research

In Sprint 2, the focus was on conducting a comprehensive market research to deeply understand the foreign trade sector, the digital maturity level of companies, and the

main pain points and operational challenges related to fiscal automation and NFSe issuance.

Throughout this sprint, the team consolidated data from official sources (MDIC, IBGE, Sebrae, Receita Federal) and sector reports to build an updated overview of electronic Service Invoice (NFSe) adoption in Brazil and its impact on the foreign trade context. The study revealed a significant increase in the number of exporting and importing companies, especially small and medium-sized enterprises, which expands the potential market for automation solutions.

The analysis also highlighted the key operational challenges companies face, particularly the fragmentation of municipal NFSe systems, which results in varying formats and rules across cities. This diversity creates rework, higher costs, and compliance risks, reinforcing the hypothesis that a unified, intelligent platform for NFSe receipt could optimize processes, reduce errors, and lower operational costs.

Additionally, the team mapped international trends that confirm a global shift toward fiscal automation and the integration of emerging technologies such as artificial intelligence, machine learning, and RPA for document processing, validation, and compliance. This reinforced the project's strategic positioning as a forward-looking initiative aligned with digital transformation trends in the fiscal automation sector.

Sprint 2 provided key insights to guide the development of the solution, validating the relevance of the problem and revealing opportunities for competitive differentiation within the NFSe automation market for foreign trade.

Sprint 3 – Process Mapping and Opportunity Identification

In Sprint 3, the focus was on mapping the current processes for issuing and receiving electronic Service Invoices (NFSe) in detail and identifying concrete opportunities for automation and operational improvement. The study was based on the analysis of the client Superia, a company operating in the foreign trade sector, where NFSe management proved to be complex, costly, and heavily dependent on manual tasks.

During the mapping of the AS-IS (current) workflow, several bottlenecks were identified, such as the lack of standardization among municipal systems, the absence of integration with internal platforms, and the rework caused by manual data entry. Each step of the process, from municipal registration, use of digital certificates, manual completion and transmission of invoices, to the sending of DANFE documents, requires human intervention, increasing the likelihood of errors, rework, and billing delays.

Regarding invoice reception, the analysis revealed great variability in document formats (PDF, XML, or direct portal downloads) and a fully manual validation process, followed by decentralized storage that complicates control and legal compliance.

Based on this analysis, the team designed the TO-BE (future desired) process, identifying five main automation opportunities:

1. Automation of manual tasks, using automatic XML/PDF capture and parsing to eliminate rework and increase accuracy;
2. System integration between email, ERP, and municipal portals, enabling automatic registration of invoices and reducing redundant typing;
3. Real-time dashboards consolidating NFS data
4. Centralized storage and automated compliance, with cloud-based indexing and full traceability;
5. Client co-creation model, enabling early hypothesis validation and revenue generation from service-based implementations.

This sprint was crucial to understand the real operational workflow and translate key inefficiencies into innovation opportunities, providing direct input for the MVP's technical design and for prioritizing the features that will deliver the greatest impact on the financial processes of foreign trade companies.

Sprint 4 – Technical Feasibility

In Sprint 4, the focus was to assess the technical feasibility of NFSe automation, exploring the most suitable technologies and architectures to capture, read, validate, and structure invoices while considering the clients' existing manual workflows. The

goal was to ensure that the solution could be implemented in an agile, reliable, and context-appropriate manner.

The team adopted an applied consulting approach, working directly with the client Superia, an importer with highly complex fiscal processes. This close collaboration allowed the team to validate hypotheses in a real-world setting, ensuring that technical decisions were grounded in the client's actual operational challenges.

Several recurring issues were identified: manual entry of invoices into spreadsheets and ERPs, human errors in values and taxes, and lack of system integration. Based on these findings, the team designed an initial automation pipeline (MVP) composed of the following components:

- n8n as a low-code automation orchestrator, managing data flow between different components of the solution;
- Qive as the primary data source for retrieving electronic service invoices (NFSe), leveraging its extensive integration with municipal and state tax authorities;
- AI-based OCR APIs, used when necessary to interpret unstructured documents (PDF/XML) and convert them into structured data;
- Supabase as a centralized repository providing relational database, authentication, and file storage;
- Integration with the client's ERP system (Conexos) for automatic insertion of processed invoices.

This architecture emphasizes speed, low cost, and rapid prototyping, enabling the team to validate business hypotheses before scaling to a more complex infrastructure. The proposed workflow can be summarized as: Qive → n8n → AI-based OCR (when required) → ERP, with continuous synchronization through Supabase.

Throughout the analysis, alternative tools such as Zapier, AWS, GCP, Tesseract, and OpenCV were evaluated, but the team prioritized solutions that provided the best balance of simplicity, cost efficiency, and delivery speed.

As a result, the sprint concluded that the Qive + n8n + Supabase + AI APIs combination offers the optimal balance of speed, accuracy, and affordability for this project stage. While not the final architecture, it represents an evolutionary proof of concept that will mature as market validation and client adoption progress.

In summary, Sprint 4 defined the technical foundations and initial MVP architecture, paving the way for the performance and integration testing planned for Sprint 5.

Sprint 5 – Consolidation and Risks

In Sprint 5, the team focused on consolidating insights gathered from previous sprints, integrating market research, process mapping, and technical feasibility analyses into a unified strategic view. This sprint aimed to prioritize problems and opportunities, define initial requirements for the MVP, and identify potential risks, establishing a solid foundation for the next phase of development.

The deliverables produced during this sprint include:

- Consolidation of Insights – integrates findings from market research, process analysis, and technology evaluation into a comprehensive overview to support strategic decision-making.
- Risk and Requirements Matrix – lists and prioritizes potential risks, and outlines functional and non-functional requirements that will guide the MVP design.
- Value Stream Mapping (VSM) – presents the mapping of the value stream, highlighting process inefficiencies and opportunities for optimization to maximize customer value.

This sprint was essential for translating the exploratory and analytical work from Sprints 1–4 into actionable guidance for the MVP. By consolidating all insights and identifying critical risks, the team ensured that subsequent development efforts would be focused on high-impact solutions, mitigating uncertainties, and aligning technical,

operational, and business considerations. The Value Stream Mapping, in particular, provided a clear visualization of workflow inefficiencies, enabling the team to target automation opportunities that deliver measurable value to clients in the foreign trade sector.

Sprint 5 thus represents the culmination of the Discovery and Business Analysis phase, producing a structured and prioritized foundation for the implementation, testing, and refinement of the NFSe Automation MVP.

REFERENCES