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**THE IMPACT OF DIGITAL LOYALTY PROGRAMS (E-LP) ON CUSTOMER RETENTION
IN AGRI-FOOD SMEs: CASE STUDY OF PROJECT 1275 (FIDIALY)**



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Dedications

This work is dedicated to:

Our parents and families, the source of unconditional love and endless support. To those who sacrificed their own comfort to see us reach this moment, whose sincere prayers and unwavering dedication were the bridge to our ambitions. You are the true foundation of this success.

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List of Abbreviations

Abbreviation	Full Term
AI	Artificial Intelligence
AML	Anti-Money Laundering
ANDI	Agence Nationale de Développement de l'Investissement
ANPDP	Autorité Nationale de Protection des Données à caractère Personnel
APIs	Application Programming Interfaces
ARPCÉ	Autorité de Régulation de la Poste et des Communications Électroniques
ARPT	Autorité de Régulation de la Poste et des Télécommunications
ARPU	Average Revenue Per User
ARR	Annual Recurring Revenue
AWS	Amazon Web Services
B2B	Business-to-Business
B2B2C	Business-to-Business-to-Consumer
B2C	Business-to-Consumer
BEP	Break-Even Point
BMC	Business Model Canvas
BOAL	Bulletin Officiel des Annonces Légales
BSD	Berkeley Software Distribution (<i>open-source license</i>)
CAC	Customer Acquisition Cost
CapEx	Capital Expenditure
CDN	Content Delivery Network
CERIST	Centre de Recherche sur l'Information Scientifique et Technique
CGU	Conditions Générales d'Utilisation
CGV	Conditions Générales de Vente
CI/CD	Continuous Integration / Continuous Deployment
CIB	Crédit Industriel et Bancaire
CIMAA	Caisse Interprofessionnelle des Mutuelles Algériennes d'Assurance
CLV	Customer Lifetime Value
CMR	Customer Margin Ratio
CNAS	Caisse Nationale des Assurances Sociales
CNCSIU	Comité National de Coordination et de Suivi de l'Innovation et de l'Incubation Universitaire
CNR	Caisse Nationale des Retraites

CNRC	Centre National du Registre du Commerce
COGS	Cost of Goods Sold
CRM	Customer Relationship Management
CRR	Customer Retention Rate
CTRF	Cellule de Traitement du Renseignement Financier
CX	Customer Experience
DDDM	Data-Driven Decision Making
DGI	Direction Générale des Impôts
DSO	Days Sales Outstanding
DZD	Algerian Dinar
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EBT	Earnings Before Taxes
e-CRM	Electronic Customer Relationship Management
E-LP	Electronic Loyalty Program
ESMT	École Supérieure de Management de Tlemcen
FOMO	Fear Of Missing Out
GAAP	Generally Accepted Accounting Principles
GDPR	General Data Protection Regulation
GIE	Groupement d'Intérêt Économique
HMR	Home Meal Replacement
IBS	Impôt sur les Bénéfices des Sociétés
INAPI	Institut National Algérien de la Propriété Industrielle
IP	Intellectual Property
IT	Information Technology
KPI	Key Performance Indicator
KYC	Know Your Customer
LBM	Location-Based Marketing
LBS	Location-Based Services
m-CRM	Mobile Customer Relationship Management
MIT	MIT Open-Source License
MVP	Minimum Viable Product
NIF	Numéro d'Identification Fiscale

NIS	Numéro d'Identification Statistique
NPS	Net Promoter Score
OpEx	Operational Expenditure
PCI-DSS	Payment Card Industry Data Security Standard
PESTEL	Political, Economic, Social, Technological, Environmental, and Legal
POS	Point-of-Sale
RC	Registre du Commerce
RFM	Recency, Frequency, Monetary
RM	Relationship Marketing
ROI	Return on Investment
SaaS	Software as a Service
SARL	Société à Responsabilité Limitée
SATIM	Société d'Automatisation des Transactions Interbancaires et de Monétique
SCF	Supply Chain Finance
SDT	Self-Determination Theory
SLA	Service Level Agreement
SMEs	Small and Medium-sized Enterprises
SOM	Serviceable Obtainable Market
SOW	Share of Wallet
SPA	Société Par Actions
SPAS	Société Par Actions Simplifiée
STP	Segmentation, Targeting, Positioning
SWOT	Strengths, Weaknesses, Opportunities, Threats
TAM	Total Addressable Market
TAP	Taxe sur l'Activité Professionnelle
TCR	Total Cost Ratio
TLS	Transport Layer Security
UBP	Usage-Based Pricing
UI	User Interfaces
UI/UX	User Interface / User Experience
UX	User Experience
VCR	Value Creation Ratio

General Introduction

General introduction:

In a fiercely competitive global retail landscape, the ability to secure and sustain consumer loyalty has become the ultimate determinant of business survival.¹ For Small and Medium sized Enterprises (SMEs) operating within the agri-food sector, mastering customer retention is no longer optional; it represents their most viable strategic defense against the aggressive expansion of large-scale distribution networks and hypermarkets.

In Algeria, the retail ecosystem—comprising over 500,000 active points of sale faces a significant structural gap. While the consumer base is increasingly young, mobile-connected, and shaped by digital platforms,² the vast majority of local merchants still rely on outdated, analogue practices (e.g., paper punch cards and memory-based inventory) devoid of behavioral intelligence.

This disconnect is not driven by merchant indifference, but by a market failure in the global Software-as-a-Service (SaaS) industry: the absence of an accessible, enterprise-grade solution tailored to the budgetary constraints of Algerian SMEs. Addressing this precise deficit is the foundational logic of **Fidialy** an all-in-one B2B2C SaaS loyalty and Point-of-Sale (POS) platform, developed as a startup project within the ESMT Tlemcen incubator under Ministerial Decree N° 1275.

Consequently, this thesis occupies a dual position. Academically, it investigates digital loyalty programs (E-LP) and retention strategies. Entrepreneurially, it presents a field-validated business model for the Fidialy startup, effectively translating theoretical CRM concepts into a deployable commercial solution.

➤ Previous Studies and Theoretical Positioning:

This research is anchored in relationship marketing, CRM theory, and SME digitalization. Cultivating lasting relationships is considered the bedrock of competitive advantage.³ In this context, value is continuously co-created between the business and the customer—a concept vital to Fidialy's SaaS model.⁴ Empirically, a mere 5% increase in customer retention can boost

¹ Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15th ed.). Pearson.

² ARPT. (2023). *Annual Report on Telecommunications and Network Coverage in Algeria*.

³ Kotler, P., & Keller, K. L. (2016). *Op. cit.*

⁴ Berry, L. L. (1983). Relationship marketing. In *Emerging perspectives on services marketing* (pp. 25-28). American Marketing Association ; Grönroos, C. (1994). From marketing mix to relationship marketing: Towards a paradigm shift in marketing. *Management Decision*, 32(2), 4–20.

profits by up to 95%.¹ To operationalize this, established CRM frameworks are utilized to evaluate the platform's performance.²

Regarding digital adoption, resource-constrained SMEs face specific barriers when integrating SaaS solutions³, which can be mitigated by the validated efficacy of gamified rewards.⁴ Despite this robust theoretical foundation, recent Algerian studies focus primarily on mass distribution, leaving a significant research gap regarding small local businesses in the national context.⁵ This thesis proposes the first integrated framework articulating digital loyalty, retention metrics (CLV, RFM), and Algerian SME constraints through a market-ready SaaS prototype.

Problematic and Sub-Questions:

Drawing upon the identified theoretical gap and structural market diagnosis, the central research question guiding this thesis is formulated as follows:

To what extent can digital loyalty programmes (E-LPs), implemented through a contextually adapted SaaS platform like Fidialy, serve as an effective lever for improving customer retention within Algerian agri-food SMEs, and what are the organizational, behavioral, and technological conditions required for their successful deployment?

To address this, the inquiry is deepened through four sub-questions:

- Q1. How do the defining characteristics of Algerian consumer behavior condition the design of E-LPs?
- Q2. How can foundational retention mechanisms be operationalized through gamified CRM within resource-constrained SMEs?
- Q3. Does the transition to fully digitalized loyalty platforms generate measurable advantages regarding retention rates, Customer Lifetime Value (CLV), and RFM profiling?

¹ Reichheld, F. F., & Sasser, W. E. (1990). Zero defections: Quality comes to services. *Harvard Business Review*, 68(5), 105–111.

² Payne, A., & Frow, P. (2005). A strategic framework for customer relationship management. *Journal of Marketing*, 69(4), 167–176.

³ Santos, J. (2003). E-service quality: A model of virtual service quality dimensions. *Managing Service Quality*, 13(3), 233–246.+ Haddara, M., & Zach, O. (2011). ERP systems in SMEs: A literature review. *Proceedings of the 44th Hawaii International Conference on System Sciences*, 1–10.

⁴ Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: defining gamification. *Proceedings of the 15th International Academic MindTrek Conference*, 9–15.

⁵ Chaib, W. (2020). Le secteur de la grande distribution en Algérie : apprendre des expériences du Maroc et de la Tunisie. *Revue Algérienne d'Economie et gestion*, 14(1), 515-535.+ Almi, H., Hamza, Z., & Boucenna, W. (2025). Digital Economy and Its Role in Enhancing Financial Institutions in Algeria. *Economic Researcher Review*, 13(1), 78-93.

- Q4. Is Fidialy's B2B2C SaaS business model commercially viable, financially scalable, and strategically sustainable in the Algerian market?

➤ **Research Objectives:**

This thesis pursues a dual set of objectives:

- **Theoretical:** To synthesize CRM and E-LP literature, critically evaluate core retention metrics (churn rate, CLV, RFM), and identify the structural constraints conditioning their adoption in Algerian SMEs.
- **Entrepreneurial:** To document Fidialy's complete strategic and financial architecture (BMC, STP, tech stack) under Decree N°1275, and validate commercial feasibility via targeted B2B and B2C field surveys.

➤ **Significance of the Study:**

- **Scientific:** Offers the first local theoretical framework integrating E-LPs, RFM/CLV analytics, and SME constraints in a cash-dominant transactional environment.
- **Economic:** Targets a Serviceable Available Market (SAM) of 5.4 billion DZD across 150,000 under-equipped points of sale.¹ Fidialy empowers local merchants with enterprise-grade intelligence to rebalance the competitive landscape against mass retail.
- **Institutional:** Validates the innovation capacity of Decree N°1275, having successfully secured the 'Innovative Project' label from the CNCSIU and incubation from ESMT Tlemcen.

➤ **Research Methodology:**

This thesis adopts a rigorous mixed-method design.

- **Part I (Theoretical Framework - Descriptive & Analytical):** Employs a systematic literature review to examine relationship marketing, CRM, and retention metrics. This section critically analyzes the specific macro-environmental conditions—such as market structure and SME resource constraints—that differentiate the Algerian agri-food retail sector from mature digital economies.

¹ CNRC. (2023).

- **Part II (Practical Framework - Entrepreneurial Case Study):** mobilizes the Lean Startup methodology¹ and Business Model Canvas to structure Fidialy's deployment. Strategic viability is assessed via TAM/SAM/SOM and SWOT/PESTEL, while financial feasibility uses Algerian GAAP pro forma statements, culminating in MVP testing and field surveys.

➤ **Thesis Structure:**

Conforming to Ministerial Decree N°1275, this thesis comprises two parts:

Part I: Theoretical Framework

- **Chapter 1** explores the conceptual evolution from transactional to relationship marketing, defines strategic CRM components, and examines the digitalization of loyalty. It subsequently analyzes the specific structural challenges these transformations pose for Algerian agri-food SMEs.
- **Chapter 2** deepens the focus on retention dynamics by establishing core performance metrics. It examines the theoretical impact of digital rewards on consumer behavior and introduces the Fidialy SaaS concept as a direct resolution to the identified SME retention deficit.

Part II: Practical Framework

- **Chapter 1** establishes the startup's strategic and commercial architecture. It details the market context, value proposition, innovation typology, implementation roadmap (Gantt), and rigorous strategic frameworks (SWOT/PESTEL, Business Model Canvas, and STP strategy).
- **Chapter 2** outlines the operational and financial organization. It details the platform technical architecture, the service delivery process, financial projections, and the ultimate field validation of the project through targeted B2B and B2C surveys. The chapter then provides an overview of the startup's legal framework, culminating and concluding with the UI/UX prototype design.

¹ Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Crown Books.

Part I:

Theoretical Framework

Chapter (1):
Relationship Marketing and Digital
Loyalty Programs

Chapter introduction:

The business landscape has fundamentally shifted from short-term, transactional exchanges to a strategic focus on long-term customer retention.¹ As acquisition costs soar, organizations are abandoning the "conquest fallacy" to cultivate enduring relationships through Relationship Marketing and Customer Relationship Management (CRM).² Prioritizing Customer Lifetime Value (CLV) over isolated sales is now an economic imperative, heavily propelled by continuous digital transformation.³ The integration of Big Data, Artificial Intelligence, and mobile connectivity empowers enterprises to deliver hyper-personalized, omnichannel experiences that are essential for predicting behavior and securing lasting loyalty.⁴

In Algeria, the agri-food retail sector is undergoing significant transformation under the combined pressures of market liberalization, the expansion of modern retail formats, and the gradual diffusion of digital technologies.⁵ However, translating these advanced retention mechanisms to localized Small and Medium-sized Enterprises (SMEs) presents distinct structural and cultural challenges, particularly in emerging, cash-dominant economies.⁶

To systematically explore these dynamics, this chapter is divided into three main sections. Section 1 establishes the theoretical foundations, tracing the evolution from transactional marketing to modern, digitally enabled CRM ecosystems. Section 2 analyzes the operational mechanics and typologies of digital loyalty programs, exploring strategies ranging from tiered systems and digital wallets to mobile gamification. Finally, Section 3 contextualizes these frameworks within the Algerian agri-food retail sector, critically examining the socio-economic drivers, technological divides, and adoption frictions that SMEs must navigate to successfully implement digital retention strategies against mass retail expansion.

¹ Dick, A. S., & Basu, K. (1994). Customer Loyalty: Toward an Integrated Conceptual Framework. *Journal of the Academy of Marketing Science*, 22(2), 99-113.

² Reichheld, F. F., & Sasser, W. E. (1990). *Op. cit.*

³ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Marketing 5.0: Technology for Humanity*. John Wiley & Sons.

⁴ Buttle, F., & Maklan, S. (2015). *Customer Relationship Management: Concepts and Technologies*. Routledge.

⁵ Chaib, W. (2020). *Op. cit.*

⁶ Almi, H., Hamza, Z., & Boucenna, W. (2024). *Op. cit.*

Section 01: Theoretical foundations of relationship marketing

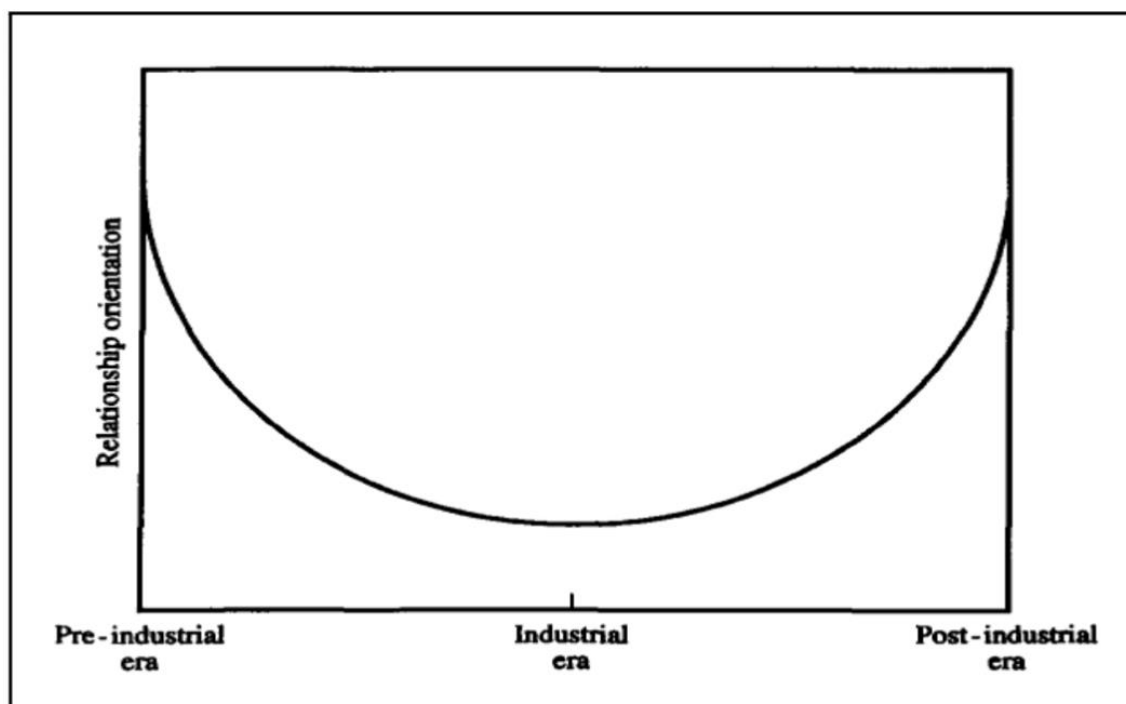
Understanding the operational mechanics of digital loyalty requires examining the theoretical roots of marketing itself. This first section explores the historical paradigm shift from traditional, product-centric mass marketing to the contemporary focus on relationship building. It subsequently details the core architecture of Customer Relationship Management (CRM)—analyzing it not merely as software, but as a strategic triad of people, processes, and technology. Finally, the section investigates how the integration of artificial intelligence and mobile ecosystems (e-CRM and m-CRM) has modernized these foundational theories, transitioning businesses toward data-driven, omnichannel retention frameworks.

1.1. Fundamental Marketing Concepts: From the Transactional to the Relational Approach:

1.1.1. Historical Evolution and the Transactional Marketing Era:

To fully comprehend Relationship Marketing, it is necessary to examine the historical trajectory of trade. Scholars argue that marketing history represents a "U-shaped" evolution where modern relationship marketing is essentially a technology-enabled reincarnation of pre-industrial commerce ¹.

Figure N°01: The U-Shaped Evolution of Relationship Marketing



¹ Sheth, J. N., & Parvatiyar, A. (1995). The evolution of relationship marketing. *International Business Review*, 4(4), 397-418.

Source: Adapted from Hollensen (2015)¹, based on Sheth and Parvatiyar (1995)²

(Phase 1: Pre-Industrial / Phase 2: Industrial / Phase 3: Post-Industrial)

While the pre-industrial era relied on direct interaction and trust, the Industrial Revolution introduced mass production and intermediaries, creating a transactional gap focused on volume rather than retention.³ During this industrial era, the "Marketing Mix" paradigm (the 4Ps) dominated marketing thought and practice.⁴ However, a critical analysis reveals this approach was fundamentally "production-oriented," reducing the buyer to a passive recipient separated from the producer due to mass production dynamics.⁵ As markets evolved into service economies, structural limitations emerged, notably "short-termism" where a firm's interest ends post-sale,⁶ and the wasteful "conquest fallacy" that prioritizes costly new customer acquisition over economical retention efforts.⁷ Because single transactional exchanges lack memory or emotional bonds, they are poor predictors of future loyalty.⁸

1.1.2. The Paradigm Shift: Drivers of Change and Defining the Relational Approach:

The transition from transactional to relationship marketing was a gradual evolution driven by profound changes in the global business environment. By the 1990s, the limitations of the traditional models prompted a paradigm shift toward managing interactive relationship networks, viewing customers as partners and co-creators of value.⁹ This transformation was heavily accelerated by the economics of customer retention, proving that cementing existing relationships is significantly more cost-effective than continuously acquiring new buyers.¹⁰ Furthermore, advancements in information technology and CRM systems enabled mass customization, effectively reversing the industrial separation of producer and consumer to re-establish early emotional bonds on a global scale.¹¹

In this context, Relationship Marketing (RM) is defined as the establishment and maintenance of profitable relationships with customers and network partners through a mutual exchange and

¹ Hollensen, S. (2015). *Marketing: A Relationship Perspective* (2nd ed.). Pearson Education.

² Sheth, J. N., & Parvatiyar, A. (1995). *Op. cit.*

³ Sheth, J. N., & Parvatiyar, A. (2000). The evolution of relationship marketing. In *Handbook of relationship marketing* (pp. 119–122). Sage Publications.

⁴ Grönroos, C. (1994). *Op. cit.*

⁵ American Marketing Association. (1985). Board approves new marketing definition. *Marketing News*, 19(5), 1 ; Berry, L. L. (1983). *Op. cit.* ; Sheth, J. N., & Parvatiyar, A. (2000). *Op. cit.*

⁶ Kotler, P. (1992). Marketing's new paradigm. (As cited in Grönroos, C. (1994). *Op. cit.*).

⁷ Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20-38.

⁸ Christopher, M., Payne, A., & Ballantyne, D. (1991). *Relationship marketing*. Butterworth-Heinemann.

⁹ Gummesson, E. (2008). *Total relationship marketing* (3rd ed.). Butterworth-Heinemann ; Kotler, P. (1992). *Op. cit.*

¹⁰ Grönroos, C. (1994). *Op. cit.* ; Berry, L. L. (1983). *Op. cit.*

¹¹ Sheth, J. N., & Parvatiyar, A. (2000). *Op. cit.*

fulfillment of promises.¹ A critical differentiator is the "Promise Concept"; whereas traditional marketing focuses on giving promises through promotion, RM centers on fulfilling them to build long-term trust, supported by the "Commitment-Trust Theory" which prioritizes cooperation over channel domination.² Modern perspectives expand this beyond the simple buyer-seller dyad to complex interactions within broader networks, represented by frameworks like the "Six Markets Model".³

1.1.3. Comparative Analysis: The Strategic Imperative of Customer Retention

The distinction between transactional marketing and relationship marketing is not merely a difference in technique, but a fundamental divergence in strategic orientation. While the transactional approach views marketing as a discrete, short-term exchange focused heavily on customer acquisition and market share, the relational paradigm prioritizes continuous value creation, long-term retention, and customer lifetime value.⁴ Consequently, relationship marketing shifts the organizational focus toward functional quality and interactive trust, which effectively reduces customer price sensitivity and establishes the relationship itself as the primary competitive advantage.⁵ The fundamental distinctions between these two paradigms are summarized below.

Table N° 01 : The Fundamental Distinctions Between Transactional and Relationship Marketing

Dimension	Transactional Marketing	Relationship Marketing
Primary Focus	Single Transaction	Continuous Relationship
Time Horizon	Short-term	Long-term
Goal	Customer Acquisition	Customer Retention & Loyalty
Customer Interaction	Discrete, isolated events	Ongoing, interactive process
Price Sensitivity	High (Customers switch for lower price)	Low (Value outweighs price)
Quality Focus	Output (Technical Quality)	Interaction (Functional Quality)
Measurement	Market Share	Customer Satisfaction & Equity

¹ Grönroos, C. (1994). *Op. cit.*

² Morgan, R. M., & Hunt, S. D. (1994). *Op. cit.*

³ Christopher, M., Payne, A., & Ballantyne, D. (1991). *Op. cit.*

⁴ Grönroos, C. (1994). *Op. cit.* ; Morgan, R. M., & Hunt, S. D. (1994). *Op. cit.* ; Christopher, M., Payne, A., & Ballantyne, D. (1991). *Op. cit.*

⁵ Grönroos, C. (1994). *Op. cit.*

Role of Internal Marketing	Limited importance	Critical (Employees are enablers)
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Source: Author's elaboration based on Grönroos (1994)¹ and Gummesson (2008).²

1.2. Customer Relationship Management (CRM): The Foundation of Customer Retention

1.2.1. The CRM Concept: From Strategy to Technological Enabler

Following the shift from transactional to relational marketing, Customer Relationship Management (CRM) has emerged as the practical application of these theoretical advancements. CRM represents a comprehensive business strategy that evolved from traditional mass marketing, driven by de-intermediation and the rise of the service economy, which necessitated direct, emotional bonding with consumers.³ Whereas mass marketing relied on one-way broadcasting and product differentiation, CRM utilizes two-way dialogue to differentiate customers and focus on continuous, long-term retention .⁴

Defining CRM is complex, but it is fundamentally understood strategically as a holistic process of acquiring, retaining, and partnering with selective customer segments to create superior value for both the company and its shareholders .⁵ Behaviorally, it is an enterprise-wide approach to understanding and influencing customer actions through meaningful communication to improve loyalty and profitability .⁶ Crucially, organizations must distinguish CRM as a business strategy from CRM as a technology; viewing it merely as a software installation is a primary cause of project failure, highlighting that strategic relationship development must always precede and guide technological enablers .⁷

1.2.2. The Strategic Triad: People, Processes, and Technology

The "People" component is arguably the most critical yet often the most neglected dimension of CRM, forming part of a foundational triad essential for success. Effective CRM

¹ Ibid

² Gummesson, E. (2008). *Op. cit.*

³ Parvatiyar, A., & Sheth, J. N. (2001). Customer relationship management: Emerging practice, process, and discipline. *Journal of Economic and Social Research*, 3(2), 1–34.

⁴ Swift, R. S. (2001). *Accelerating customer relationships: Using CRM and relationship technologies*. Prentice Hall.; Brown, S. A. (2001). *Customer relationship management: A strategic imperative in the world of e-business*. John Wiley & Sons.

⁵ Parvatiyar, A., & Sheth, J. N. (2001). *Op. cit.* ; Payne, A., & Frow, P. (2005). *Op. cit.*

⁶ Buttle, F., & Maklan, S. (2019). *Customer relationship management: Concepts and technologies* (4th ed.). Routledge.

⁷ Payne, A., & Frow, P. (2005). *Op. cit.* ; Buttle, F., & Maklan, S. (2019). *Op. cit.* ; Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). The customer relationship management process: Its measurement and impact on performance. *Journal of Marketing Research*, 41(3), 293-305.

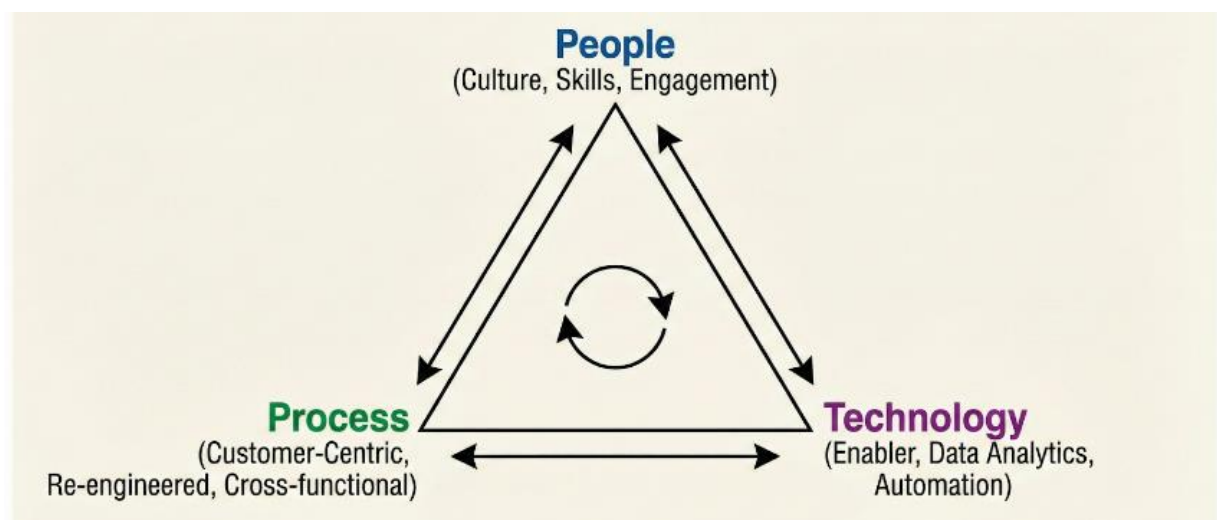
implementation relies on the interdependent "Golden Triangle" framework, which necessitates aligning human culture, operational mechanisms, and digital infrastructure to create value.¹

People: Implementing CRM requires a fundamental cultural shift from a product-orientation to customer-centricity, demanding comprehensive employee engagement and internal marketing to ensure technology builds relationships rather than just automating tasks.²

Processes: Traditional, compartmentalized organizational functions must be aggressively re-engineered into integrated, cross-functional processes that guarantee seamless customer interactions and translate high-level strategy into operational reality.³

Technology: Serving strictly as the scalable enabler, IT facilitates data management and mass customization; however, deploying software over broken or outdated workflows merely accelerates bad practices—a critical failure known as "automating chaos".⁴

Figure N°02: The CRM "Golden Triangle" (People, Process, Technology)



Source: Author's elaboration based on Buttle & Maklan, 2019.⁵

A structural model illustrating interdependence: People use Technology, Technology supports Processes, and Processes guide People.

1.2.3. Types of CRM Systems: The Strategic and Technical Backbone

The practical execution of relationship marketing and digital loyalty programs relies on a comprehensive CRM ecosystem, encompassing three interconnected types⁶:

¹ Buttle, F., & Maklan, S. (2019). *Op. cit.*

² Payne, A., & Frow, P. (2005). *Op. cit.* ; Buttle, F., & Maklan, S. (2019). *Op. cit.*

³ Payne, A., & Frow, P. (2005). *Op. cit.* ; Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). *Op. cit.*

⁴ Parvatiyar, A., & Sheth, J. N. (2001), *Op. cit.*; Buttle, F., & Maklan, S. (2019), *Op. cit.*

⁵ Buttle, F., & Maklan, S. (2019), *Op. cit.*

⁶ Parvatiyar, A., & Sheth, J. N. (2001). *Op. cit.*

□ **Operational CRM:** The visible, automated execution of customer-facing processes (marketing, sales, and service) ¹. It dynamically manages the customer lifecycle through targeted programs: prospecting, loyalty and retention, up-selling expansion, and win-back recovery campaigns ².

□ **Analytical CRM:** The intelligence behind the operations. It transforms captured customer data into actionable insights ³, guiding tactical decisions by identifying the most profitable customers, predicting potential churn, and measuring the overall performance of CRM initiatives ⁴.

□ **Collaborative CRM:** The alignment of communications across organizational boundaries and external partners. It breaks down departmental silos to ensure consistent interactions across all touchpoints, creating a seamless "Single View of the Customer" ⁵.

Table N°2: Types of CRM Systems

Type of CRM	Dominant Characteristic	Key Question It Answers
Operational	Automation of Processes	"How do we improve efficiency in selling and serving?"
Analytical	Data into Insight	"Who are our valuable customers?"
Collaborative	Integration of Channels	"How do we interact consistently across all touchpoints?"

Source: Author's elaboration based on Buttle & Maklan, 2019.⁶

1.2.4. CRM as a Driver of Customer Retention and Lifetime Value (CLV)

In the information age, competitive advantage is no longer solely derived from product features but from deep customer insight. CRM systems serve as the repository for this insight, aggregating disparate data into a "Single View of the Customer" that enables behavioral segmentation and highly targeted resource allocation.⁷ By leveraging this deep knowledge, CRM operationalizes the core relational tenet that retention is significantly more profitable than acquisition; it utilizes churn prediction models for proactive intervention and builds structural bonds that elevate mere satisfaction into true, emotional loyalty.⁸

¹ Buttle, F., & Maklan, S. (2019). *Op. cit.*

² Ray, D., & Sabadie, W. (2016). *Le marketing relationnel : Au cœur de la stratégie CRM*. Dunod.

³ Buttle, F., & Maklan, S. (2019).

⁴ Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). *Op. cit.*

⁵ Buttle, F., & Maklan, S. (2019).

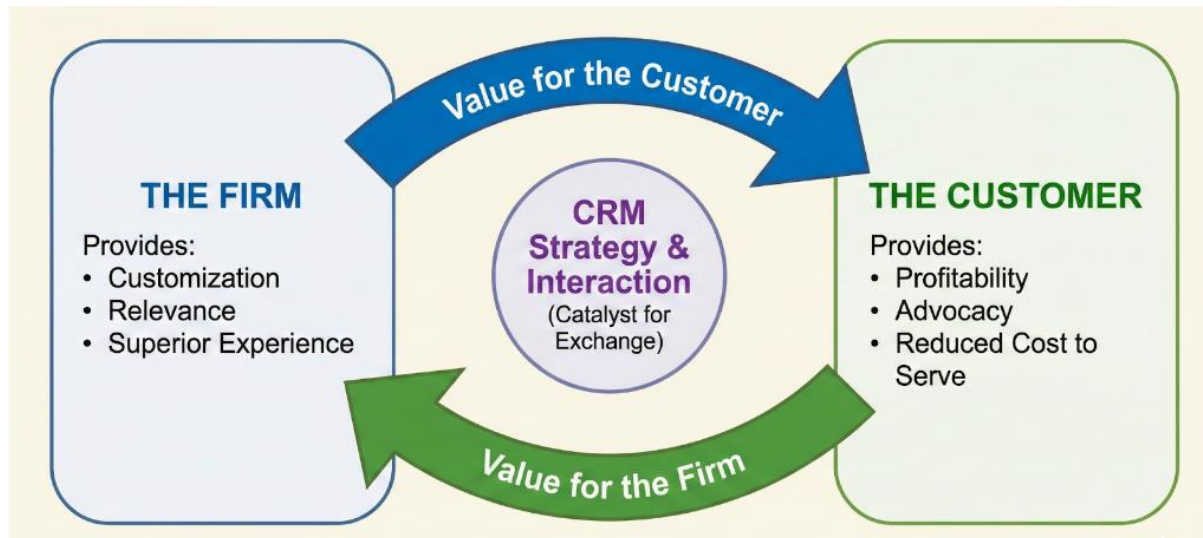
⁶ *ibid*

⁷ Swift, R. S. (2001). *Op. cit.* ; Buttle, F., & Maklan, S. (2019). *Op. cit.*

⁸ Buttle, F., & Maklan, S. (2019). *Op. cit.* ; Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). *Op. cit.*

Ultimately, the strategic pinnacle of CRM is maximizing Customer Lifetime Value (CLV), allowing firms to calculate individual profitability to strategically allocate resources—protecting high-CLV relationships while maximizing the "Share of Wallet" through intelligent cross-selling and up-selling.¹

Figure N°03: The Dual Value Creation Process in CRM



Source: Author's elaboration based on Payne & Frow, 2005 ²

A reciprocal model illustrating that value creation is mutual: the firm provides customization, relevance, and superior experience, while the customer provides profitability, advocacy, and a reduced cost to serve.

1.3. The Digital Transformation of Relationship Marketing and CRM Systems

1.3.1. The Evolution towards Electronic CRM (e-CRM):

Electronic Customer Relationship Management (e-CRM) represents the strategic integration of the Internet into the CRM ecosystem rather than the mere addition of a web presence.³ Modern e-CRM is grounded in high-quality customer data and enabled by Information Technology, making it a prerequisite for executing customer strategies in the digital age.⁴ This evolution expands traditional business boundaries by utilizing "Software as a Service" (SaaS) and cloud computing models, allowing clients to access CRM functionality via web browsers while

¹ Payne, A., & Frow, P. (2005). *Op. cit.* ; Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). *Op. cit.*

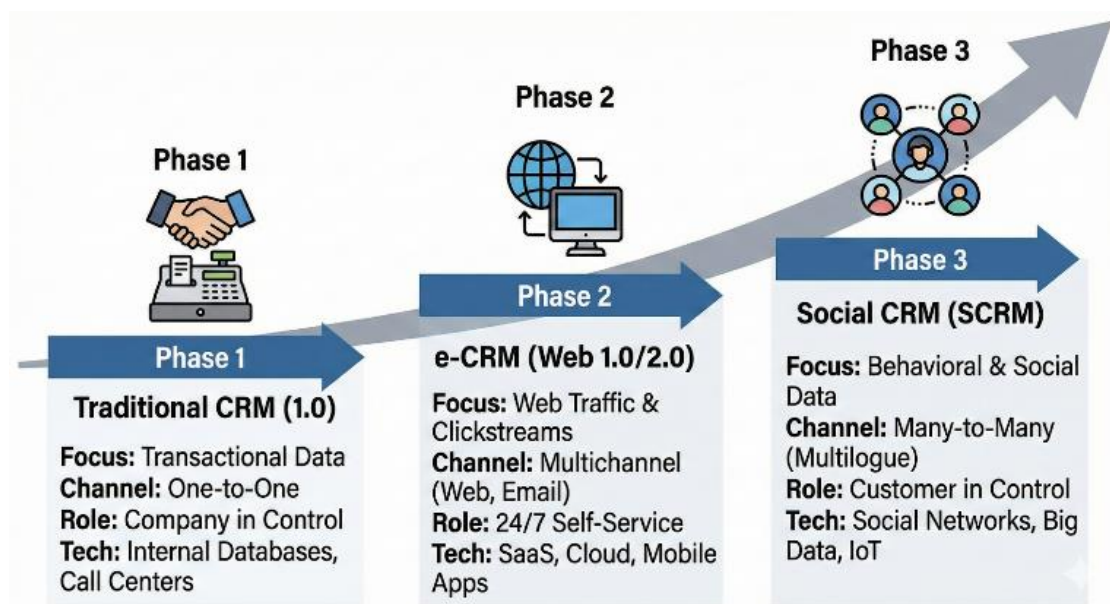
² Payne, A., & Frow, P. (2005). *Op. cit.*

³ Buttle, F., & Maklan, S. (2019). *Op. cit.*

⁴ Ibid

interacting with centralized data.¹ This shift facilitates the "digitalization of customer touchpoints," creating massive volumes of data used to profile customers at a granular level.²

Figure N°04: The Historical and Conceptual Evolution of CRM



Source: Author's elaboration based on Greenberg, 2010,³ and Buttle & Maklan, 2019.⁴

Note: Social CRM (s-CRM) represents the subsequent evolutionary stage shown in the figure, characterized simply by the integration of social media platforms for direct customer engagement.

Comparative Analysis: Traditional CRM vs. e-CRM : The transition to e-CRM marks a fundamental shift from a corporate "monologue" to a digital "multilogue," where customers often control the dialogue.⁵ Unlike traditional CRM's focus on managing internal data for the company's sole benefit, the digital approach prioritizes mutual value through insight and engagement.⁶ Strategically, this represents a move from standardized mass marketing focused on "market share" toward a relational approach focused on "customer share" and personalized offerings.⁷ The fundamental differences are synthesized in the table below.

Table N° 3: Comparative Analysis: Traditional CRM vs. e-CRM

Dimension	Traditional CRM (Offline/Internal)	e-CRM (Digital/External)
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¹ Buttle, F., & Maklan, S. (2019), *Op. cit.*, p. 17.

² Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*, p. 130.

³ Greenberg, P. (2010). *CRM at the Speed of Light*. McGraw-Hill, pp. 36-37.

⁴ Buttle, F., & Maklan, S. (2019). *Op. cit.*

⁵ Greenberg, P. (2010). *Op. cit.*, p. 15.

⁶ *Ibid.*, pp. 36-37.

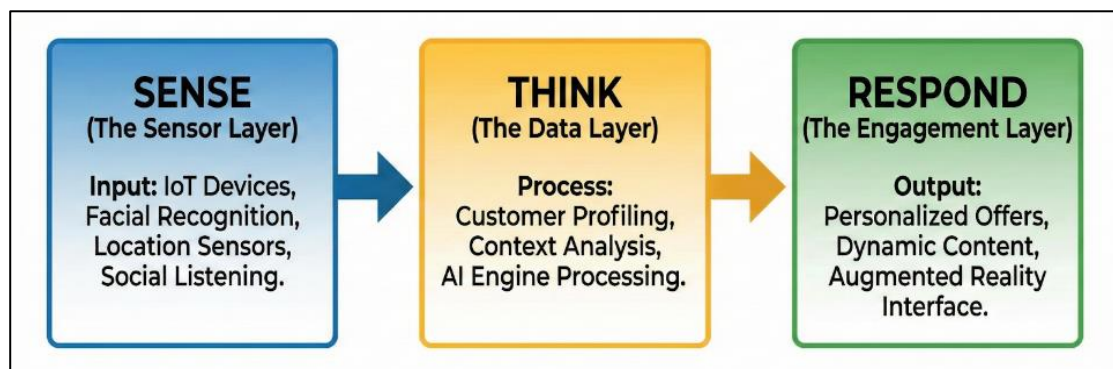
⁷ Ray, D., & Sabadie, W. (2016). *Op. cit.*, p. 30.

Primary Focus	Internal operations and data management	External engagement and customer experience
Communication	One-to-One (Monologue)	Many-to-Many (Multilogue)
Access	On-premise software (Locally installed)	Cloud-based / SaaS (Web browser access)
Data Source	Transactional data (Structured)	Behavioral and social data (Unstructured)
Goal	Customer Acquisition and Retention	Customer Advocacy and Loyalty
Responsiveness	Delayed (Business hours)	Real-time / 24-7 Availability

Source: Author's elaboration based on Greenberg, 2010¹ and Buttle & Maklan, 2019²

Strategic Benefits: Personalization, Accessibility, and Efficiency : The primary advantage of e-CRM is hyper-personalization, or "segments of one" marketing, where big data analytics allow firms to profile individuals based on their digital footprints.³ This enables "Contextual Marketing," utilizing a "Sense-Think-Respond" loop to offer the right product at the exact moment of need.⁴

Figure N°05: The Mechanism of Contextual Marketing (The Sense-Think-Respond Loop)



Source: Author's elaboration based on Kotler, Kartajaya, & Setiawan, 2021⁵

¹ Greenberg, P. (2010). *Op. cit.*, pp. 36-37.

² Buttle, F., & Maklan, S. (2019), *Op. cit.*, p. 17.

³ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*, pp. 6, 130.

⁴ *Ibid.*, p. 158.

⁵ *Ibid.*

Furthermore, e-CRM eliminates geographical barriers through 24/7 accessibility via chatbots and automated web portals.¹ Real-time marketing automation enables "Next Best Offer" delivery, enhancing the customer journey while simultaneously reducing operational costs through SaaS-based infrastructure and the automation of routine tasks.²

1.3.2. The Role of Big Data and Artificial Intelligence in CRM :

The concept of "Big Data" encompasses vast, complex datasets—including unstructured text, audio, video, and social media footprints—that exceed traditional database capabilities.³ For modern CRM systems, acquiring and analyzing this data is crucial for generating actionable insights and driving strategic decision-making.⁴ By aggregating diverse internal and external data sources, Analytical CRM constructs a comprehensive "360-degree view" of the individual customer, laying the essential groundwork for digital personalization.⁵

If Big Data serves as the fuel for this ecosystem, Artificial Intelligence (AI) and Machine Learning act as the engine. AI enables systems to process massive datasets dynamically without explicit programming, facilitating "hyper-personalization" and allowing firms to execute data-driven, one-to-one marketing at scale.⁶ This technological capability transitions traditional marketing from broad segmentation to serving a "segment of one," delivering contextual marketing that presents the right product to the specific customer at the exact right moment.⁷ Additionally, AI powers "Augmented Marketing" through automated service tools like chatbots, which handle routine inquiries and efficiently reduce workloads so human agents can focus on complex, empathy-driven interactions.⁸

Ultimately, the strategic pinnacle of analytical CRM is shifting from descriptive data (what happened) to predictive analytics (what will happen).⁹ By analyzing behavioral patterns and transaction histories, predictive models forecast future market activities, estimating Customer Lifetime Value (CLV) and utilizing recommendation engines to determine a customer's "Next Best Offer".¹⁰ Crucially for customer retention, these AI algorithms can predict churn by

¹ Ibid., p. 123

² Buttle, F., & Maklan, S. (2019). *Op. cit.*, pp. 8, 17 ; Verhoef, P. C., et al. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, p. 7 ; Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*, p. 174.

³ Buttle, F., & Maklan, S. (2019). *Op. cit.*, p. 12.

⁴ Verhoef, P. C., et al. (2021). *Op. cit.*, p. 7.

⁵ Buttle, F., & Maklan, S. (2019). *Op. cit.*, p. 12.

⁶ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*, p. 130.

⁷ Ibid., pp. 130, 158.

⁸ Ibid., p. 174.

⁹ Ibid., p. 123.

¹⁰ Buttle, F., & Maklan, S. (2019). *Op. cit.*, p. 12 ; Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*, p. 123.

identifying subtle patterns in complaints or declining engagement, enabling marketers to deploy proactive retention measures before the customer actually defects .¹

Table N°4: Predictive Marketing Applications in CRM

Application Area	Key Predictive Functions
Customer Management	• Churn Prediction (Identifying at-risk clients) • CLV Prediction (Estimating future value) • Loyalty Prediction
Product Management	• Product Recommendation (Next Best Offer) • New Product Forecasting
Brand Management	• Sentiment Analysis (Social Listening) • Brand Equity Tracking

Source: Adapted from Kotler et al., 2021²

1.3.3. Mobile CRM (m-CRM) and the Omnichannel Experience :

Mobile CRM (m-CRM) distinguishes itself from traditional e-CRM by introducing physical context, utilizing GPS and constant connectivity to engage customers based on their immediate location and needs. This enables "Contextual Marketing," defined as identifying and profiling customers to provide personalized interactions via digital interfaces in physical spaces .³ Achieving this relies on a "Sense-Think-Respond" mechanism, where mobile devices act as sensors tracking behavior, feeding data into the CRM's artificial intelligence engine to instantly trigger personalized, real-time responses .⁴ The practical application of m-CRM manifests in Location-Based Services (LBS), empowering both service automation for staff and "one-to-one marketing at scale" for consumers .⁵ By tracking movements, retailers can dynamically push relevant promotions the moment a shopper enters a physical location, bridging the gap between digital loyalty and in-store action.⁶

As digital touchpoints proliferate, organizations must transition from fragmented "Multi-channel" environments, where platforms operate in isolated data silos, to a unified "Omnichannel" approach .⁷ The omnichannel imperative prioritizes the continuity of the

¹ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*

² Ibid.

³ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*, p. 158.

⁴ Ibid., p. 160.

⁵ Buttle, F., & Maklan, S. (2019). *Op. cit.*, p. 123 ; Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*, p. 14.

⁶ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*, p.

⁷ Verhoef, P. C., et al. (2021). *Op. cit.*, p. 1.

customer journey over individual channels, aiming to ensure communication consistency and high-quality information flows across all interactions .¹ Achieving this frictionless experience requires deep integration to establish a "single unified view of the customer" .² Continuous synchronization with the centralized CRM database ensures that data from every touchpoint is instantly accessible across the organization, eliminating customer frustration (such as repeating information to different agents) and solidifying the retention-driven objectives of modern relational marketing .³

While advanced CRM analytics and omnichannel infrastructures establish the vital foundation for relationship marketing, this technological capacity alone cannot autonomously sustain long-term retention. To actively translate predictive insights into tangible exit barriers and genuine affective commitment, organizations require a dedicated operational mechanism—the loyalty program, to continuously capture, reward, and solidify customer engagement.

¹ Iriana, R., & Buttle, F. (n.d.). *Strategic, Operational, and Analytical Customer Relationship Management.*, p. 28.

² Payne, A., & Frow, P. (2005). *Op. cit.*, p. 171.

³ Buttle, F., & Maklan, S. (2019). *Op. cit.*, p. 11.

Section 02 : Loyalty Programs: Concepts, Typologies , and Digitalization (E-LP)

Cultivating enduring customer loyalty requires transcending short-term promotional discounts to establish structurally defensive retention frameworks. Loyalty programs function as the primary operational lever of Customer Relationship Management (CRM), strategically designed to increase switching costs, facilitate data-driven segmentation, and maximize Customer Lifetime Value. Implementing varied typologies—from hierarchical status tiers to deferred-value digital wallets, enables firms to engineer mutual value creation. Today, this paradigm is fundamentally propelled by digitalization. Integrating omnichannel ecosystems, location-based mobile applications, and psychological gamification mechanics transforms passive consumer tracking into habitual, real-time engagement, equipping enterprises to secure deep, affective brand commitment.

2.1. Loyalty Programs within the CRM Framework: Key Concepts, Positioning, and Strategic Objectives

2.1.1. The Conceptual Framework of Loyalty Programs

The definition of loyalty programs is intrinsically linked to how customer loyalty is conceptualized, transitioning from purely behavioral metrics to a composite approach. Traditionally, loyalty was measured through behavioral indicators such as purchase sequences and repeat purchase probabilities.¹ However, relying solely on behavior is insufficient, as repeat purchases might merely reflect situational constraints or a lack of alternatives rather than genuine preference.² Conversely, the attitudinal approach views loyalty as a deeply held commitment to rebuy a preferred product consistently despite external influences.³ Recognizing these limitations, modern CRM relies on a composite view, defining "True Loyalty" as the strong relationship between an individual's positive relative attitude and their repeat patronage.⁴ Within this framework, businesses must acknowledge that most consumers exhibit "polygamous loyalty" across multiple brands, requiring strategic intervention to manage the "leaky bucket" of customer attrition.⁵

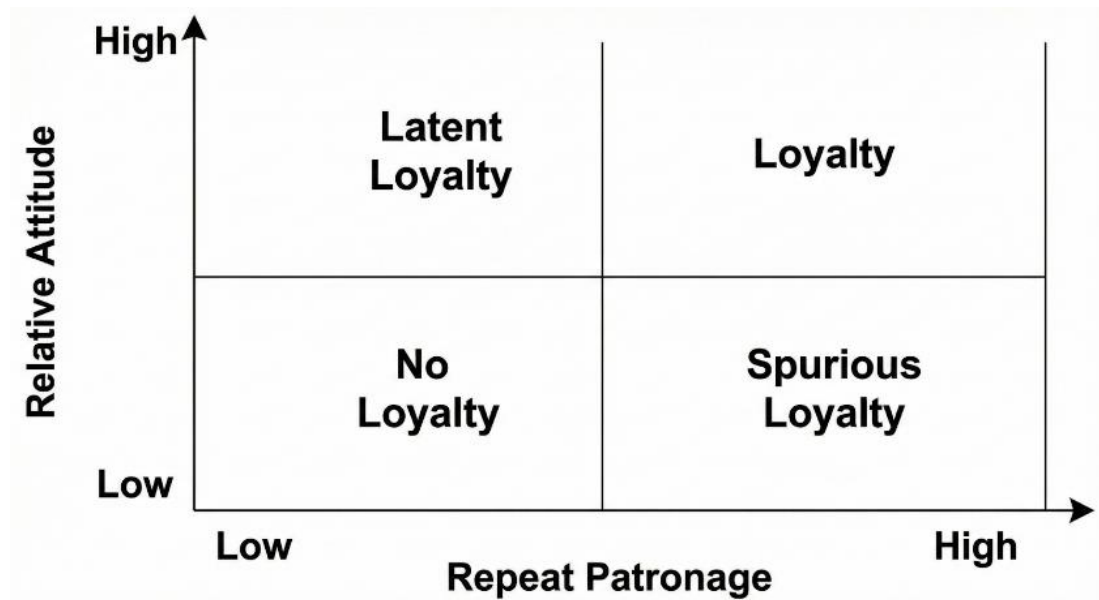
¹ Dick, A. S., & Basu, K. (1994). *Op. cit.*, pp. 99-101.

² Ibid.

³ Ibid.; Oliver, R. L. (1999). Whence Consumer Loyalty? *Journal of Marketing*.

⁴ Dick, A. S., & Basu, K. (1994), *Op. cit.*, pp. 99-101.

⁵ Sharp, B., & Sharp, A. (1997). Loyalty programs and their impact on repeat-purchase loyalty patterns. *International Journal of Research in Marketing*, 14(5), 473-486, p. 474 ; Dowling, G. R., & Uncles, M. (1997). Do Customer Loyalty Programs Really Work? *Sloan Management Review*, 38(4), 71-82, pp. 71-74.

Figure N°06: The Relative Attitude-Behavior Relationship Matrix

Source: Author's elaboration based on Dick & Basu, 1994 ¹

A critical strategic error for SMEs is conflating these structured loyalty programs with short-term sales promotions. While price promotions reward price-sensitive brand switchers and encourage promiscuity, true loyalty programs are defined by their long-term, defensive orientation.² When a short-term promotion ends, consumers often revert to their previous behaviors; conversely, loyalty programs aim to transition the customer's choice process from a spot market to a multi-period relationship.³ By offering delayed, accumulating benefits (such as points), loyalty programs actively increase the customer's switching costs over time, functioning as an exit barrier that generates sustainable rather than "spurious" loyalty.⁴

Table N° 5: Comparison of Reward Schemes: Promotions vs. Loyalty Structures

Type of Reward	Timing: Immediate (Promotional Nature)	Timing: Delayed (Loyalty Nature)
Direct (Product Related)	Instant Discounts / Scratch Cards	Frequent-Flyer Clubs / Accumulated Points
Indirect (Non-Product)	Instant Gifts (e.g., Toys)	Multi-product Clubs (e.g., Coalition Programs)

¹ Dick, A. S., & Basu, K. (1994), Op. cit.

² Dowling, G. R., & Uncles, M. (1997), Op. cit., pp. 71-74.

³ *Ibid.* ; O'Malley, L. (1998). Can loyalty schemes really build loyalty? *Marketing Intelligence & Planning*, 16(1), 47-55, pp. 48-50.

⁴ Dick, A. S., & Basu, K. (1994). *Op. cit.*, pp. 99-101 ; Dowling, G. R., & Uncles, M. (1997). *Op. cit.*, pp. 71-74.

Source: Author's elaboration based on Yi & Jeon, 2003¹ and Dowling & Uncles, 1997²

To succeed, a loyalty program must operate as a mutual value-creation mechanism rather than a mere cost center. For the firm, value is generated defensively by holding onto existing customers and increasing their "share of wallet".³ Programs often utilize mechanisms like "points barriers" to lift the average transaction value, ensuring profitability.⁴ Simultaneously, the program must deliver perceived value to the customer to be effective. This value perception is driven by elements such as cash value, convenience, and the nature of the reward itself, with research indicating that hedonic luxuries are often valued more highly as rewards than utilitarian necessities.⁵

2.1.2. Strategic Positioning of Loyalty Programs within the CRM Ecosystem

Loyalty programs function as the primary operational lever of a CRM strategy by creating structural exit barriers that "lock in" the customer, effectively increasing the switching costs associated with moving to a competitor.⁶ This operational shift transitions the customer's choice process from a fleeting spot market into a multi-period contractual relationship.⁷ Furthermore, these programs provide vital competitive leverage in established markets, allowing firms to bypass margin-eroding price wars and weaken pure price competition by making rewards contingent on continued patronage.⁸

In mass-market environments, a loyalty program is often the only viable method for identifying individual customers, serving as the critical bridge between anonymous transactions and rich customer profiles. It provides businesses with both the justification and the mechanism to collect personal data.⁹ This gathered intelligence acts as a "secret weapon," allowing the firm to understand purchasing patterns and establish a virtuous feedback loop: the program incentivizes identification, the identification yields data, and the data enables highly targeted rewards that further reinforce loyalty.¹⁰

¹ Yi, Y., & Jeon, H. (2003). Effects of Loyalty Programs on Value Perception, Program Loyalty, and Brand Loyalty. *Journal of the Academy of Marketing Science*, 31(3), 229-240.

² Dowling, G. R., & Uncles, M. (1997), Op. cit.

³ *Ibid.*, pp. 71-74 ; Mathew, S. S., & Agrawal, R. (2012). Loyalty program membership: A study of factors influencing customer decision. *Academy of Marketing conference*.

⁴ O'Malley, L. (1998), Op. cit., pp. 48-50.

⁵ Yi, Y., & Jeon, H. (2003), Op. cit., p. 230.

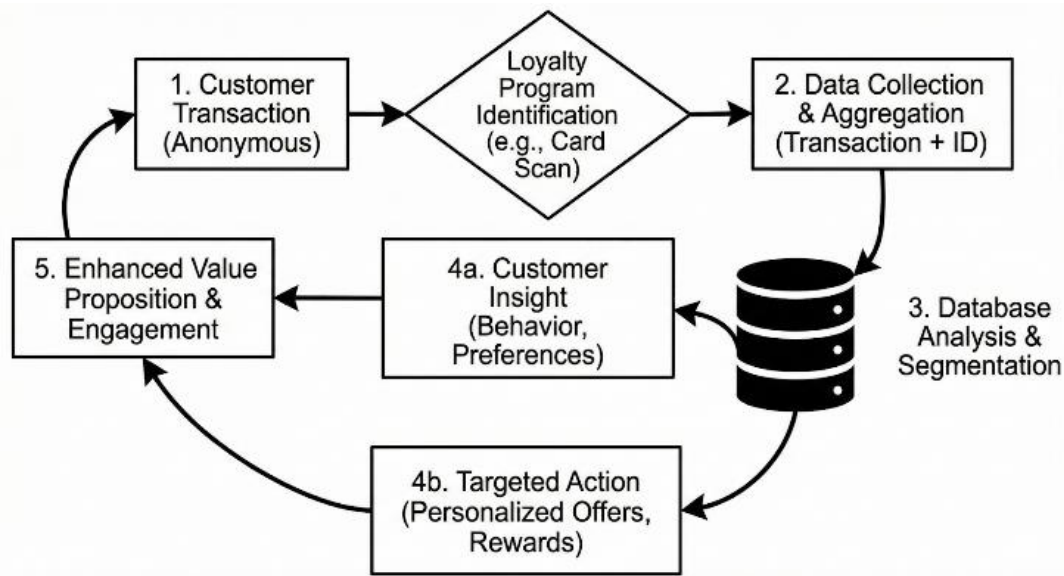
⁶ Dowling, G. R., & Uncles, M. (1997), Op. cit., pp. 71-74.

⁷ *Ibid.*

⁸ Sharp, B., & Sharp, A. (1997), Op. cit., pp. 481-482.

⁹ O'Malley, L. (1998), Op. cit., pp. 48, 52.

¹⁰ *Ibid.*

Figure N°07: The Loyalty Program Data Feedback Loop

Source: Author's elaboration based on Uncles et al., 2003 ¹ and O'Malley, 1998 ²

Ultimately, the power of this enriched data lies in its ability to facilitate strategic customer segmentation. A core tenet of CRM is that not all customers—even regular repeat buyers—are equally profitable or cost-effective to serve.³ Instead of allocating resources uniformly, loyalty data enables firms to discriminate, identifying high-value segments for targeted resource allocation and manipulating consumer behavior through customized, individualized incentives

.⁴

Table N° 6: Customer Segmentation Based on Loyalty Program Data

Customer Segment	Characteristics (Behavioral & Financial)	CRM Strategy via Loyalty Program
Heavy Buyers / High Value	High purchase frequency, high average transaction value, high share of wallet.	Retention & Reward: Provide high-value, aspirational rewards (e.g., luxuries). Focus on maintaining relationship depth.
Light Buyers / Low Value	Low purchase frequency, low average transaction value.	Development or Maintenance: Use program to lift average purchase

¹ Uncles, M. D., Dowling, G. R., & Hammond, K. (2003). Customer Loyalty and Customer Loyalty Programs. *Journal of Consumer Marketing*, 20(4), 294-316.

² O'Malley, L. (1998), Op. cit.

³ Dowling, G. R., & Uncles, M. (1997), Op. cit., pp. 71-74.

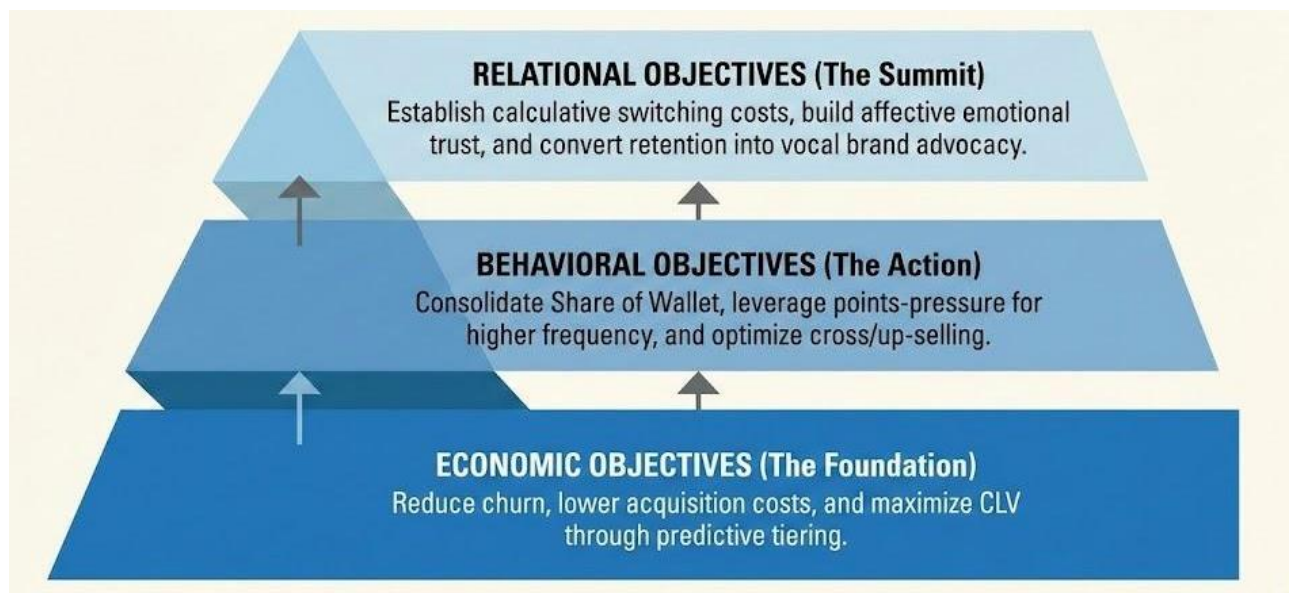
⁴ O'Malley, L. (1998), Op. cit., pp. 48, 52.

		frequency via points barriers, or maintain at low cost.
Unprofitable Customers	High service costs relative to revenue generated.	Cost Reduction: Minimize marketing spend and reward allocation.

Source: Author's elaboration based on Dowling & Uncles, 1997 ¹; Sharp & Sharp, 1997 ²; Yi & Jeon, 2003 ³

2.1.3. Strategic Objectives of Implementing Loyalty Programs

Figure N°08: The Multi-Dimensional Objectives of Loyalty Programs



Source: Author's elaboration based on Dick & Basu, 1994 ⁴; Dowling & Uncles, 1997 ⁵; and Leenheer et al., 2007 ⁶

The primary economic imperative of a loyalty program is defensive marketing, as retaining existing customers is significantly more cost-effective than acquiring new ones ⁷. At the core of this objective is the maximization of Customer Lifetime Value (CLV), a forward-looking metric estimating the net present value of future profits over the relationship's duration ⁸. By utilizing predictive analytics to detect early attrition signals, firms can deploy targeted Next-

¹ Dowling, G. R., & Uncles, M. (1997), Op. cit.

² Sharp, B., & Sharp, A. (1997), Op. cit.

³ Yi, Y., & Jeon, H. (2003), Op. cit.

⁴ Dick, A. S., & Basu, K. (1994), Op. cit.

⁵ Dowling, G. R., & Uncles, M. (1997), Op. cit.

⁶ Leenheer, J., van Heerde, H. J., Bijmolt, T. H., & Smidts, A. (2007). Do loyalty programs really enhance behavioral loyalty? An empirical analysis accounting for self-selecting members. *International Journal of Research in Marketing*, 24(1), 31-47.

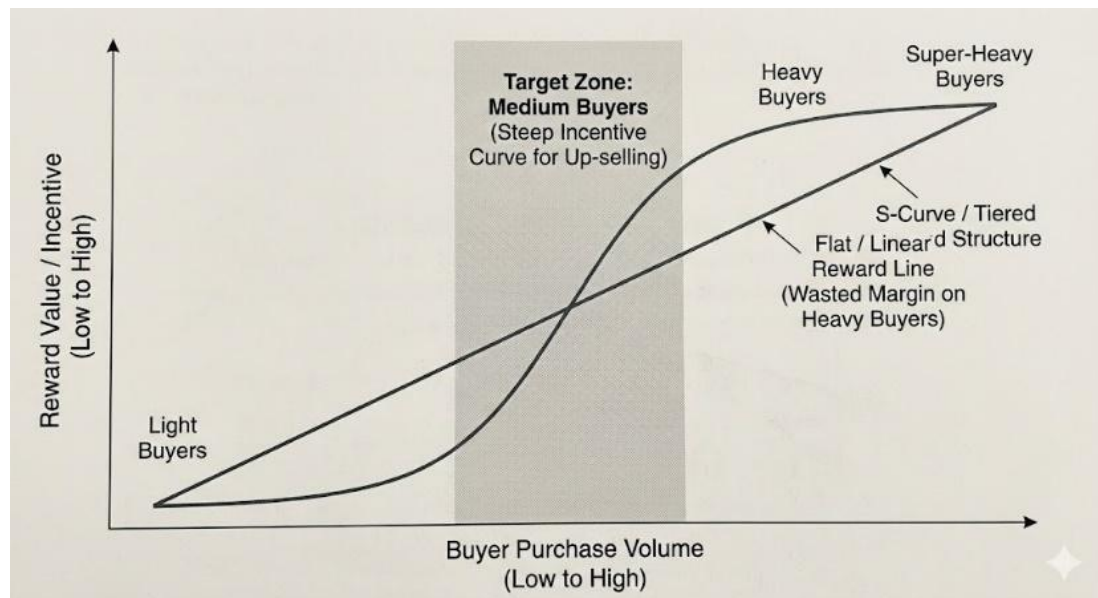
⁷ Reichheld, F. F., & Sasser, W. E. (1990). Op. cit. ; Sharp, B., & Sharp, A. (1997). Op. cit.

⁸ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). Op. cit. ; Greenberg, P. (2010). Op. cit.

Best-Action (NBA) retention strategies to prevent defection, stabilize future revenue streams, and positively impact overall shareholder value .¹

Beyond economic retention, loyalty programs are engineered to enhance specific consumer behaviors, primarily by increasing the customer's "Share of Wallet" (SOW) through rewards that encourage purchase consolidation .² This behavioral shift is frequently stimulated by a "points-pressure mechanism," where the perceived value of an imminent tiered reward pressures customers to accelerate their purchases to cross the points barrier .³

Figure N°09: Optimal Loyalty Program Reward Schedules (Targeting the Middle)



Source: Adapted from Dowling & Uncles, 1997⁴

Furthermore, continuous analysis of this behavioral data empowers recommendation systems to execute targeted cross-selling and up-selling campaigns, accelerating the customer's transition into highly profitable segments .⁵ However, to prevent spurious loyalty driven merely by convenience, programs must also build sustainable relational equity.⁶ Structurally, loyalty platforms create high "calculative commitment" by establishing exit barriers; leaving the relationship implies a tangible loss of accumulated financial and psychological equity, thereby increasing switching costs .⁷ Transcending calculative ties, successful programs foster affective commitment by inducing feelings of trust, ultimately driving the customer from mere retention

¹ Sharp, B., & Sharp, A. (1997). *Op. cit.* ; Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*

² Leenheer, J., et al., *Op. cit.*; Sharp, B., & Sharp, A. (1997), *Op. cit.*

³ *Ibid.*

⁴ Dowling, G. R., & Uncles, M. (1997), *Op. cit.*

⁵ Kotler, P., Kartajaya, H., & Setiawan, I., *Op. cit.*; Yi, Y., & Jeon, H. (2003), *Op. cit.*

⁶ Dick, A. S., & Basu, K. (1994), *Op. cit.*

⁷ *Ibid.* ; Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*

to active advocacy.¹ These customer evangelists generate positive word-of-mouth, effectively reducing future acquisition costs to near zero while exponentially expanding the brand's reach.²

2.2. Typology of Loyalty Programs

2.2.1. Point-Based Programs: The "Earn and Burn" Digital Accumulation Model

Point-based systems represent the foundational archetype of the digital accumulation model, where members earn virtual currency directly proportional to their monetary spending.³ The primary strategic function of this structure is the creation of formidable exit barriers; because a permanent switch to a competitor forces the consumer to forfeit all accumulated value, they are economically incentivized to remain loyal.⁴ Psychologically, these points function as a "medium"—an inherently worthless token acting as an immediate payoff for effort that can eventually be traded for a desired outcome.⁵

The operational core of this system is the "earn-and-burn" mechanism, designed to capture and subsequently release value. Customers accumulate points until they hit a designated threshold, creating a "points-pressure mechanism" that actively stimulates loyal purchasing behavior as they strive to unlock the reward.⁶ To optimize this, programs often deploy strategic "points barriers," setting minimum transaction thresholds slightly above the average purchase amount to encourage additional expenditure.⁷ However, the effectiveness of these barriers relies heavily on the customer's awareness of the program's accumulation rules.⁸ Mathematically, these systems are structured either nonlinearly (where the redeemable value of a point escalates as more are stockpiled) or linearly (where each point holds a fixed, flat cash equivalent).⁹

Figure N°10: Example of Linear versus Nonlinear Rewards

¹ Greenberg, P. (2010). *Op. cit.* ; Leenheer, J., et al. (2007). *Op. cit.*

² Dick, A. S., & Basu, K. (1994). *Op. cit.* ; Greenberg, P. (2010). *Op. cit.*

³ Leenheer, J., et al. (2007). *Op. cit.*

⁴ Ibid.

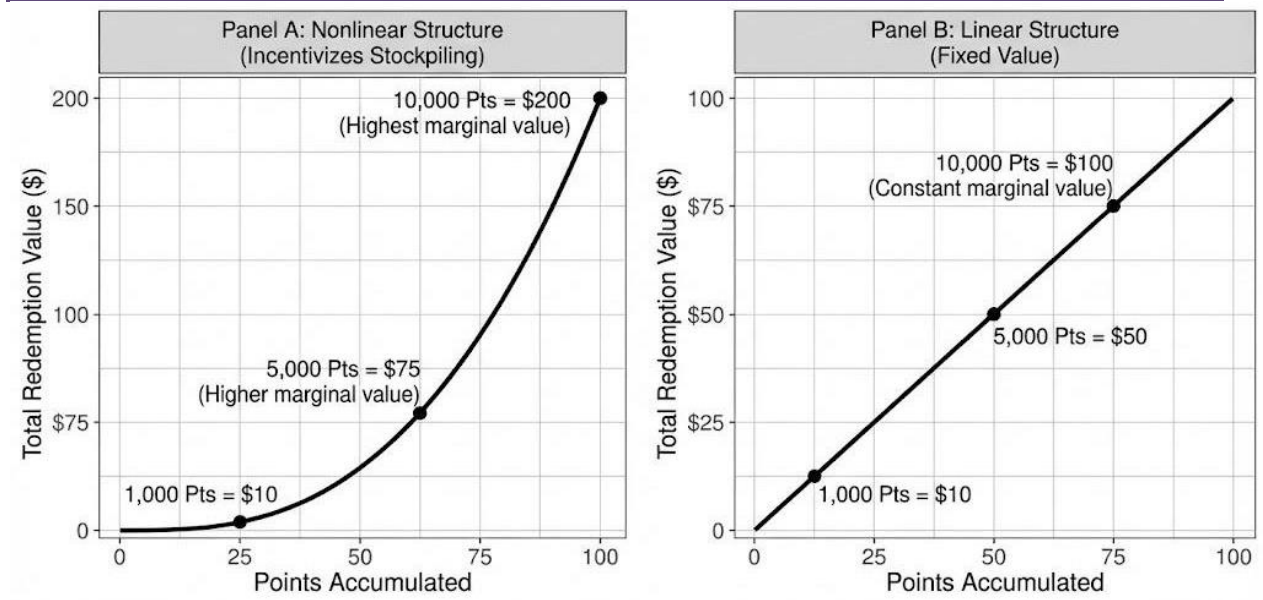
⁵ Hsee, C. K., Yu, F., Zhang, J., & Zhang, Y. (2003). Medium Maximization. *Journal of Consumer Research*, 30(1), 1-14.

⁶ Leenheer, J., et al. (2007). *Op. cit.*

⁷ Sharp, B., & Sharp, A. (1997). *Op. cit.*

⁸ Ibid.

⁹ Stourm, V., Bradlow, E. T., & Fader, P. S. (2015). Stockpiling Points in Linear Loyalty Programs. *Journal of Marketing Research*, 52(2), 253-267.



Source: Author's elaboration based on Stourm, Bradlow, & Fader, 2015 ¹

Despite the apparent simplicity of these mathematical structures, the perceived value of accumulated points is highly subjective. Consumers often fall victim to "medium maximization," a cognitive bias where they irrationally overvalue the points themselves, driven by an illusion of certainty rather than the true utility of the final product .² When deciding whether to redeem or stockpile, customers face a complex cost-benefit trade-off heavily influenced by cognitive costs .³ Often, the mental effort required for redemption—such as remembering passwords or calculating exchange rates—outweighs the economic benefit, leading to a "point of indifference" and passive stockpiling .⁴ Consequently, data reveals that in linear programs, only 3% of purchases involve redemptions, even when utilizing points could significantly reduce the basket price .⁵

¹ Stourm, V., Bradlow, E. T., & Fader, P. S. (2015). Op. cit.

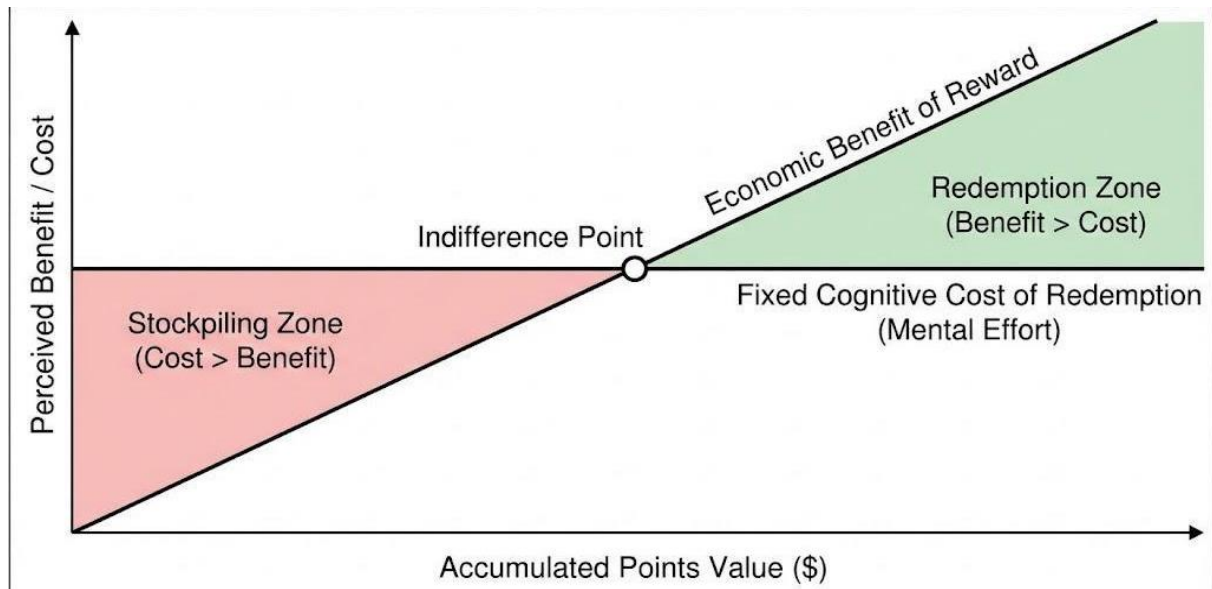
² Leenheer, J., et al. (2007). Op. cit. ; Hsee, C. K., et al. (2003). Op. cit.

³ Stourm, V., Bradlow, E. T., & Fader, P. S. (2015). Op. cit.

⁴ Ibid.

⁵ Ibid.

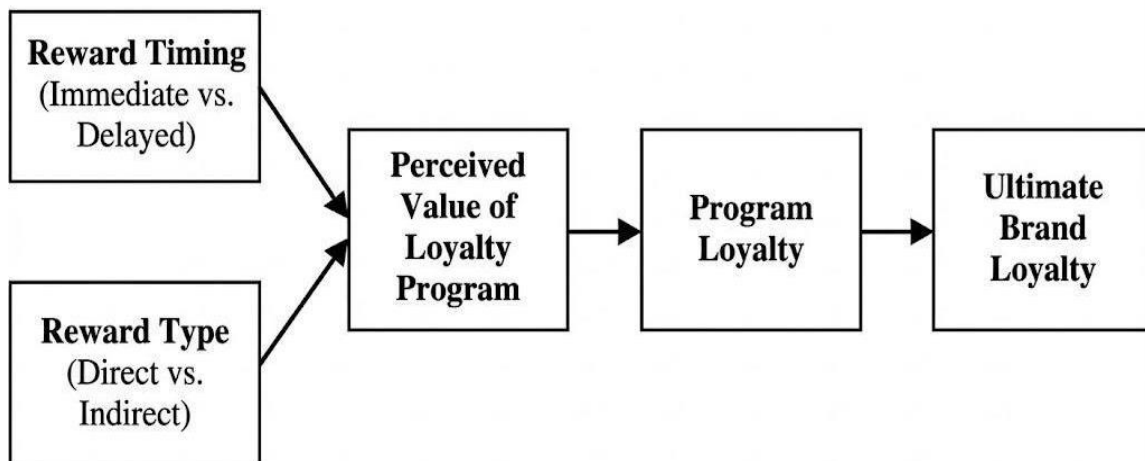
Figure N°11: The Stockpiling Indifference Point: Cost-Benefit Trade-off



Source: Author's elaboration based on Stourm, Bradlow, & Fader, 2015 ¹

The final phase of the point lifecycle involves redemption logic, balancing immediate monetary discounts against delayed, non-monetary catalog rewards .² To maximize the perceived value of these rewards, research suggests that luxury items (associated with hedonic experiences) are valued significantly higher than utilitarian necessities, directly influencing the customer's transition from mere program loyalty to ultimate brand loyalty .³

Figure N°12: Structural Path Model: Reward Design Impact on Brand Loyalty



Source: Author's elaboration based on Yi & Jeon, 2003⁴

¹ Stourm, V., Bradlow, E. T., & Fader, P. S. (2015). *Op. cit.*

² Leenheer, J., et al. (2007). *Op. cit.* ; Yi, Y., & Jeon, H. (2003). *Op. cit.* ; Chandon, P., Wansink, B., & Laurent, G. (2000). A benefit congruency framework of sales promotion effectiveness. *Journal of Marketing*, 64(4), 65-81.

³ Yi, Y., & Jeon, H. (2003), *Op. cit.*

⁴ Ibid.

2.2.2. Tiered Loyalty Programs: Gamification, Status Acquisition, and Retention

The hierarchical model of loyalty programs is rooted in Customer Relationship Management principles, utilizing the "Customer Pyramid" to categorize consumers into Platinum, Gold, Iron, and Lead tiers based on their varying levels of profitability.¹ The strategic goal of this structure is "customer alchemy," incentivizing upward mobility by rewarding both financial expenditures and nonfinancial engagements.² As customers climb the hierarchy, their acquired status is heavily influenced by the program's structural design.³ Exclusivity serves as a primary driver; establishing fewer elite positions and multiple subordinate tiers significantly enhances the consumer's perception of positional status through downward social comparison.⁴

Figure N°13: The Customer Pyramid of Profitability



Source: Author's elaboration based on Zeithaml, Rust & Lemon, 2001⁵

To differentiate these hierarchical tiers, programs strategically deploy both hard and soft benefits.⁶ Hard benefits are strictly transactional, relying on financial incentives like discounts and point bonuses to secure baseline retention.⁷ However, relying solely on financial rewards

¹ Zeithaml, V. A., Rust, R. T., & Lemon, K. N. (2001). The Customer Pyramid: Creating and Serving Profitable Customers. *California Management Review*, 43(4), 118-142 ; Buttle, F., & Maklan, S. (2019). *Op. cit.*.

² Zeithaml, V. A., Rust, R. T., & Lemon, K. N. (2001). *Op. cit.* ; Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*

³ Drèze, X., & Nunes, J. C. (2009). Feeling Superior: The Impact of Loyalty Program Structure on Consumers' Perceptions of Status. *Journal of Consumer Research*, 35(6), 890-905.

⁴ *Ibid.* ; Henderson, C. M., Beck, J. T., & Palmatier, R. W. (2011). Review of the theoretical underpinnings of loyalty programs. *Journal of Consumer Psychology*, 21(3), 256-276.

⁵ Zeithaml, V. A., Rust, R. T., & Lemon, K. N. (2001). *Op. cit.*

⁶ Drèze, X., & Nunes, J. C. (2009). *Op. cit.*

⁷ *Ibid.*; Berry, L. L. (1995). Relationship Marketing of Services—Growing Interest, Emerging Perspectives. *Journal of the Academy of Marketing Science*, 23(4), 236-245.

can mimic simple pricing policies, making soft benefits—such as experiential privileges, priority services, and personalized recognition—essential for fostering deeper structural and social bonds.¹ Crucially, businesses must align their cost-to-serve with the customer's acquired tier; low-value customers might interact solely with automated digital interfaces, while high-tier members receive costly, dedicated human assistance.² Furthermore, incorporating hedonic luxury rewards within upper tiers significantly elevates value perception and demonstrates a commitment to the relationship's future.³

Table N°7: Structuring the Gap: Benefit Descriptions for Elite Members

Benefit Type	Common to Lower Tiers (Silver)	Unique to Elite Tiers (Gold)
Hard Benefits	15% point bonus	50% point bonus
Soft Benefits (Service)	Late checkout upon request	Guaranteed 2 p.m. late checkout
Soft Benefits (Experiential)	Exclusive "Silver" check-in	Exclusive "Gold" check-in counter
Soft Benefits (Communication)	Standard reservation line	Exclusive account telephone line

Source: Adapted from Drèze & Nunes, 2009⁴

The effectiveness of these tiered systems relies heavily on Social Identity Theory, where elevated status within an exclusive "in-group" motivates loyal behavior and stimulates affective commitment.⁵ The accumulated status and bespoke privileges act as powerful psychological exit barriers, as defection equates to a tangible loss of social standing and investment.⁶ However, the dynamics of exclusivity must be managed carefully, as highly visible service disparities can evoke envy or hostility among lower-tier customers.⁷ When differential

¹ Drèze, X., & Nunes, J. C. (2009), *Op. cit.*; Berry, L. L. (1995), *Op. cit.*; Henderson, C. M., et al., *Op. cit.*

² Zeithaml, V. A., Rust, R. T., & Lemon, K. N. (2001). *Op. cit.* ; Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*

³ Henderson, C. M., et al. (2011). *Op. cit.* ; Yi, Y., & Jeon, H. (2003). *Op. cit.*

⁴ Drèze, X., & Nunes, J. C. (2009). *Op. cit.*

⁵ Leenheer, J., et al. (2007). *Op. cit.* ; Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. *Psychology of intergroup relations*, 5, 7-24.

⁶ Buttle, F., & Maklan, S. (2019). *Op. cit.*

⁷ Zeithaml, V. A., Rust, R. T., & Lemon, K. N. (2001). *Op. cit.* ; Henderson, C. M., Beck, J. T., & Palmatier, R. W. (2011). *Op. cit.*

treatment is perceived as legitimate and justified, it acts as a powerful motivator, encouraging average buyers to consolidate their purchases to attain elite status .¹

2.2.3. Cashback and Digital Wallet Programs: Transparency and Deferred Value

The fundamental economic design of value-based loyalty programs revolves around discount and savings features, which enhance utility by financially compensating consumers for frequent purchases .² However, simply recasting direct price reductions as a "loyalty program" fails to generate enduring retention, as consumers will readily defect when competitors offer better financial deals .³ Furthermore, relying solely on immediate discounts negatively impacts profit margins, damages brand equity, and resembles a simple pricing policy rather than a genuine relationship marketing strategy .⁴ To combat this, modern programs shift from direct transaction discounts to deferred value accumulation, explicitly incentivizing loyalty based on the total monetary amount spent over time .⁵

These programs must continuously navigate the tension between instant gratification and deferred monetary rewards .⁶ While immediate discounts are highly effective in low-involvement purchasing situations and satisfy the customer's demand for instant gratification, they are front-loaded incentives that often conflict with long-term strategic goals .⁷ Conversely, delayed rewards (such as accumulated cashback in a digital wallet) act as rear-loaded incentives that are highly compatible with the firm's primary objective of building structural exit barriers and increasing long-term retention.⁸

Table N°8: Types of Reward Schemes by Timing and Value Proposition

Timing of Reward	Directly Supports Product's Value Proposition (Direct)	Other Indirect Types of Reward (Indirect)
Immediate	Retailer/Brand Price Promotions	Competitions & Lotteries (Instant Scratch cards)
Delayed	Airline Frequent Flyer Clubs	Multi-product Frequent-buyer Clubs

¹ Zeithaml, V. A., Rust, R. T., & Lemon, K. N. (2001). *Op. cit.* ; Tajfel, H., & Turner, J. C. (1986). *Op. cit.*

² Leenheer, J., et al. (2007). *Op. cit.* ; Henderson, C. M., et al. (2011). *Op. cit.*

³ Henderson, C. M., et al. (2011). *Op. cit.*

⁴ Ibid.

⁵ Fader, P. S., & Toms, M. E. (2018). *The Customer Centricity Playbook*. Wharton School Press.

⁶ Leenheer, J., et al. (2007). *Op. cit.*

⁷ Ibid. ; Yi, Y., & Jeon, H. (2003). *Op. cit.*

⁸ Ibid.

Source: Adapted from Dowling & Uncles, 1997¹

For a deferred value-based program to succeed, its value proposition must be highly transparent and simple.² Consumers often behave irrationally, prioritizing the maximization of points rather than assessing the true utility of the final rewards.³ Firms can reduce this uncertainty by explicitly providing the retail cash equivalence of the accumulated rewards, ensuring the program does not devolve into a confusing pricing scheme.⁴ Transparency is especially critical when programs introduce upfront monetary commitments, such as paid subscriptions. Economically, these contractual models aggressively lock in high-value customers, profoundly altering consumer psychology by eliminating the "pain of paying" at the point of consumption.⁵ Notably, introducing a membership fee or subscription cost shifts consumer preference away from luxury rewards and heavily toward necessity rewards (like cashback), establishing digital cash as the most attractive reward currency in high-commitment programs.⁶

2.2.4. Hybrid Models and Multi-Merchant Ecosystems: Structuring B2B/B2C Loyalty

Although single-vendor loyalty programs have historically dominated the market, strategic partnerships are becoming increasingly prominent.⁷ These multi-vendor programs—traditionally known as coalition models—typically allow a specialized third-party operator to manage a unified loyalty ecosystem where members can accumulate and redeem points across multiple, complementary retail categories.⁸ To maximize engagement within these networks, operators frequently deploy hybrid structures that integrate frequency rewards (points) with customer tiers.⁹ This integration reinforces loyalty by generating "points pressure" as members strive to reach points barriers to unlock higher, more exclusive hierarchical levels of reward.¹⁰ Crucially, this tiering dictates the cost-to-serve; high-value members may receive dedicated human assistance, while lower tiers are managed via automated digital interfaces.¹¹

¹ Dowling, G. R., & Uncles, M. (1997), *Op. cit.*

² Leenheer, J., et al., *Op. cit.*

³ *ibid*

⁴ Henderson, C. M., et al. (2011). *Op. cit.* ; Kivetz, R., & Simonson, I. (2002). Earning the right to indulge: Effort as a determinant of customer preferences toward frequency program rewards. *Journal of Marketing Research*, 39(2), 155-170.

⁵ Fader, P. S., & Toms, M. E. (2018). *Op. cit.* ; Dowling, G. R., & Uncles, M. (1997). *Op. cit.* ; Kivetz, R., & Simonson, I. (2002). *Op. cit.*

⁶ Kivetz, R., & Simonson, I. (2002). *Op. cit.*

⁷ Dorotic, M., Bijmolt, T. H., & Verhoef, P. C. (2012). Loyalty programmes: Current knowledge and research directions. *International Journal of Management Reviews*, 14(3), 217-237.

⁸ *Ibid.* ; Dowling, G. R., & Uncles, M. (1997). *Op. cit.* ; Sharp, B., & Sharp, A. (1997). *Op. cit.*

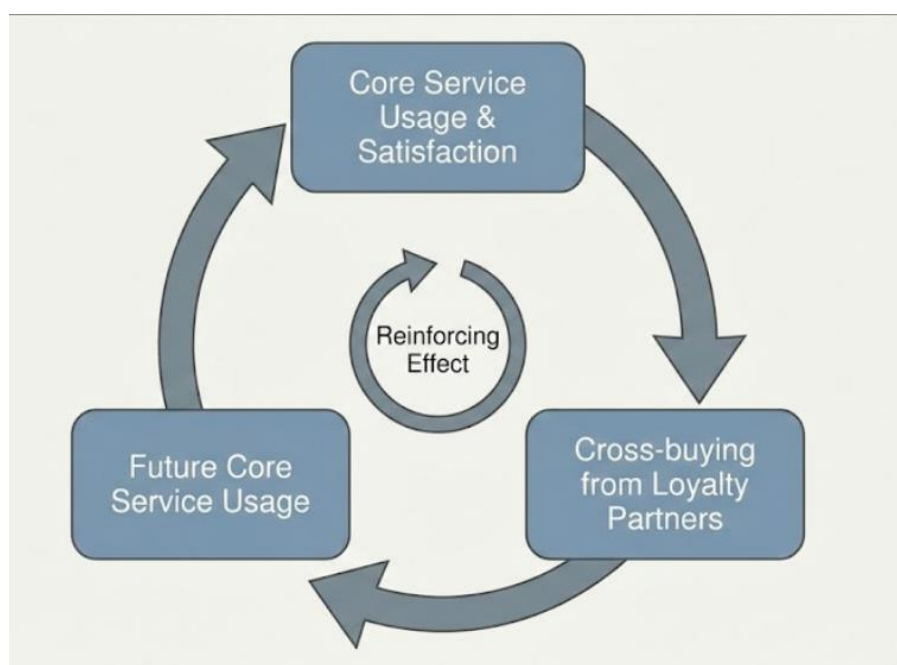
⁹ Dorotic, M., et al. (2012). *Op. cit.*

¹⁰ Dorotic, M., et al. (2012). *Op. cit.* ; Dowling, G. R., & Uncles, M. (1997). *Op. cit.* ; Sharp, B., & Sharp, A. (1997). *Op. cit.*

¹¹ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.*

For the consumer, multi-partner ecosystems offer significant advantages, including greater convenience, faster point accumulation, and a wider variety of redemption options through a single digital identity.¹ For the participating businesses (SMEs), these ecosystems offer strategic networking advantages, shared brand equity, and extensive cross-selling opportunities.² The theoretical engine driving this model is the dynamic reinforcement of cross-buying; customer satisfaction with a core service positively influences purchasing from network partners, which in turn reinforces their relationship with the core service, allowing firms to amortize their initial service investments through network-generated returns.³

Figure N°14: Conceptual Model of Cross-Buying in Loyalty Ecosystems



Source: Author's elaboration based on Lemon & von Wangenheim, 2009⁴

The evolution of these coalition programs reflects a broader industry shift toward ecosystem-based loyalty, where the modern customer sits at the hub of a complex, interconnected network of vendors.⁵ Consequently, "Network Development" has become a primary stage in the CRM Value Chain, as firms realize their competitive advantage is increasingly determined by the strength of their digital partnerships rather than internal capabilities alone.⁶ For digital platform operators, the primary strategic objective is to transition from a traditional product-based

¹ Dorotic, M., et al. (2012). *Op. cit.*

² *ibid*

³ Lemon, K. N., & von Wangenheim, F. (2009). The reinforcing effects of loyalty program partnerships and core service usage. *Journal of Retailing*, 85(4), 357-370.

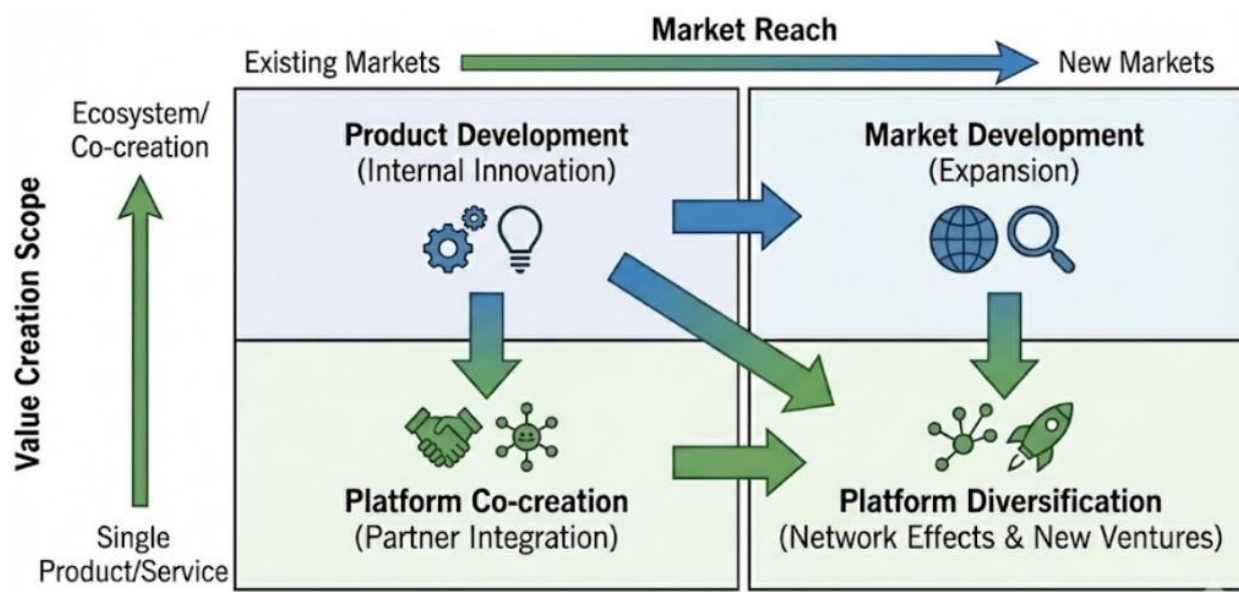
⁴ *ibid.*

⁵ Greenberg, P. (2010). *Op. cit.*

⁶ Buttle, F., & Maklan, S. (2019). *Op. cit.* ; Verhoef, P. C., et al. (2021). *Op. cit.*

mindset to a platform-based mindset, aiming to grow the sheer number of participating users and SME partners to create powerful, self-reinforcing network effects .¹

Figure N°15: Digital Growth Strategies for Platform Firms



Source: Author's elaboration based on Verhoef et al., 2021 ²

2.3. The Transition to Digital (E-LP): Mobile Apps and Gamification.

2.3.1. The Shift to Digital Loyalty (E-LP): Omnichannel Engagement and Real-Time Personalization

The transition from physical to digital loyalty programs is driven by "digitalization"—the strategic application of digital technologies to optimize existing processes and create new customer value.³ In cyberspace, e-loyalty evolves from a traditional marketer-controlled dynamic into a highly consumer-controlled reality.⁴ Unlike the offline world where physical distance limits consumer choice, the digital landscape offers infinite alternatives and drastically reduced search costs, making customers highly susceptible to competitor overtures.⁵ To secure e-loyalty in this hyper-competitive environment, firms must provide compelling incentives,

¹ Verhoef, P. C., et al. (2021). *Op. cit.*

² Ibid.

³ Ibid.

⁴ Gommans, M., Krishnan, K. S., & Scheffold, K. B. (2001). From brand loyalty to e-loyalty: A conceptual framework. *Journal of Economic and Social Research*, 3(1), 43-58.

⁵ Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. *Psychology & Marketing*, 20(2), 123-138 ; Hofacker, C. F., Malthouse, E. C., & Sultan, F. (2016). Big Data and consumer behavior: imminent opportunities. *Journal of Consumer Marketing*, 33(2), 89-97.

such as instant cashback or exclusive digital promotions, delivered directly through interactive mobile applications that foster habitual, direct engagement.¹

To maximize the effectiveness of these digital interfaces, organizations must transition to a fully integrated omnichannel strategy. Unlike traditional multi-channel approaches that operate physical stores, websites, and apps as isolated silos, omnichannel management synergistically unifies all customer touchpoints to provide a seamless, frictionless journey.² In an optimized omnichannel environment, the perceived interaction is not with a specific platform, but with the brand as a cohesive whole, effectively blurring the borders between physical retail transactions and digital mobile engagement.³

Table N°09: Multi-channel versus Omni-channel Management

Element	Multi-channel Management	Omni-channel Management
Channel scope	Retail channels: store, online website, and direct marketing (catalog).	Retail channels, mobile channels (smartphones, apps), social media, and mass-communication.
Separation of channels	Separate channels with no overlap.	Integrated channels providing seamless retail experiences.
Brand vs. channel focus	Customer-Retail channel focus.	Customer-Retail channel-Brand focus.
Channel management Objectives	Channel objectives (e.g., sales per channel; experience per channel).	Cross-channel objectives (e.g., overall retail customer experience, total sales over channels).

Source: Adapted from Verhoef et al., 2015⁴

Underpinning this omnichannel integration is the capacity for real-time data processing and dynamic personalization. Modern consumers continuously generate vast volumes of structured and unstructured behavioral data, necessitating robust technological platforms capable of

¹ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.* ; Reinartz, W., Wiegand, N., & Imschloss, M. (2019). The impact of digital transformation on the retailing value chain. *International Journal of Research in Marketing*, 36(3), 350-366.

² Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015).; Piotrowicz, W., & Cuthbertson, R. (2014). Introduction to the special issue information technology in retail: Toward omnichannel retailing. *International Journal of Electronic Commerce*, 18(4), 5-16..

³ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.* ; Piotrowicz, W., & Cuthbertson, R. (2014). *Op. cit.*

⁴ Verhoef, P. C., et al. (2015), *Op. cit.*

analyzing this intelligence in real time.¹ Retailers leveraging this Big Data can execute "one-to-one" individualization, deploying predictive marketing and highly targeted, context-specific offers based on real-time locational metrics (such as mobile GPS or in-store iBeacons).² However, as platforms gather increasingly granular intelligence to automate these dynamic loyalty campaigns, firms must carefully navigate the delicate balance between hyper-personalization and consumer privacy concerns to maintain ongoing engagement.³

2.3.2. Mobile Applications as the Retention Engine: Accessibility, UX, and Push Notifications

The tremendous development of mobile computing has positioned high-end smartphones as the primary digital interface, fundamentally shifting the retailing paradigm from consumers entering a physical environment to retailers continuously inhabiting the consumer's digital space.⁴ Because smartphones are intimate, unshared devices abundant with sensors, they create an "always-on" connection that acts as a direct gateway for the retailer.⁵ This constant accessibility provides immense value, empowering users to conduct transactions independently of time and place while necessitating real-time remote synchronization with the central CRM database.⁶

Capitalizing on this "always-on" connection, mobile applications serve as active retention engines primarily through location-based marketing and push notifications. By leveraging geolocation metadata, physical proximity sensors (beacons) trigger the mobile app to push instant, customized promotional messages to consumers in the vicinity of a store.⁷ A prominent, aggressive tactic in this space is "geo-fencing"—broadcasting targeted messages within a specific virtual perimeter—which evolves into "geo-conquesting" when strategically applied around a competitor's physical location.⁸ While research indicates consumers are highly receptive to these persuasive, location-relevant discounts, the success of push notifications

¹ Erevelles, S., Fukawa, N., & Swayne, L. (2016). Big Data consumer analytics and the transformation of marketing. *Journal of Business Research*, 69(2), 897-904.

² Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.* ; Reinartz, W., Wiegand, N., & Imschloss, M. (2019). *Op. cit.* ; Grewal, D., Roggeveen, A. L., & Nordfält, J. (2017). The future of retailing. *Journal of Retailing*, 93(1), 1-6.

³ Piotrowicz, W., & Cuthbertson, R. (2014). *Op. cit.* ; Grewal, D., Roggeveen, A. L., & Nordfält, J. (2017). *Op. cit.*

⁴ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.* ; Shankar, V., Kleijnen, M., Ramanathan, S., Rizley, R., Corjo, S., & Higgins, S. (2016). Mobile Marketing in the Retailing Environment: Current Insights and Future Research Avenues. *Journal of Interactive Marketing*, 34, 37-48.

⁵ Ibid.

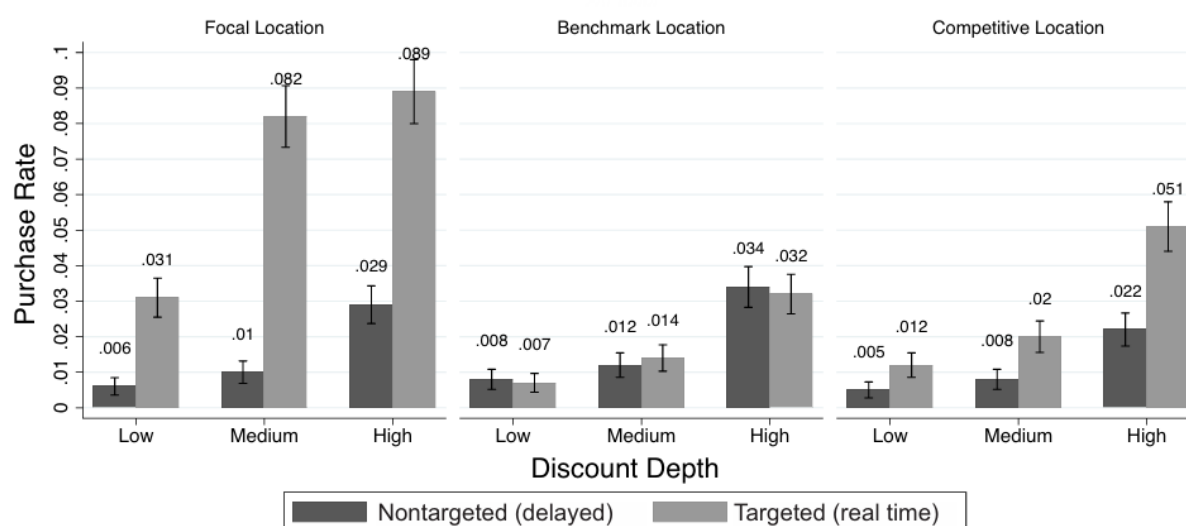
⁶ Ström, R., Vendel, M., & Bredican, J. (2014). Mobile marketing: A literature review on consumer value. *International Journal of Information Management*, 34(3), 365-373.; Buttle, F., & Maklan, S. (2019). *Op. cit.*

⁷ Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Op. cit.* ; Shankar, V., et al. (2016). *Op. cit.*

⁸ Fong, N. M., Fang, Z., & Luo, X. (2015). Geo-conquesting: Competitive locational targeting of mobile promotions. *Journal of Marketing Research*, 52(5), 726-735.

heavily depends on balancing high relevance with low frequency to avoid irritation and privacy concerns.¹

Figure N°16: Targeting Effects by Location and Discount Depth (Geo-Conquesting)



Source: Adapted from Fong, Fang, & Luo, 2015 ²

However, the efficacy of these technical features is entirely contingent upon the application's User Experience (UX) and Interface Design. UX encompasses all aspects of a user's interaction—utility, usability, and aesthetics—and works directly to retain users by ensuring a frictionless digital journey.³ Designing for mobile requires strictly simplifying data input and content to accommodate severe physical constraints, such as small screens and touch-based navigation.⁴ Because intuitive navigation is the cornerstone of effective UX, confusing or cumbersome interfaces are the primary reason 79% of users abandon applications.⁵ Conversely, a seamless UX reduces frustration, fosters trust, and directly drives the habitual engagement required for digital loyalty.⁶

2.3.3. Gamification Mechanics: Driving Habitual Engagement Through Challenges and Rewards

Gamification is defined as the intentional use of specific game design elements—such as explicit rule systems and structured competition toward discrete goals—within non-game

¹ Ström, R., et al. (2014). *Op. cit.* ; Fong, N. M., et al. (2015). *Op. cit.*

² Fong, N. M., et al. (2015). *Op. cit.*

³ *The Influence of UX Design on User Retention and Conversion Rates in Mobile Apps.* (n.d.); Al-Qeisi, K. (n.d.). *Impact of Software User Experience (UX) on Customer Satisfaction of Mobile phone Users.*

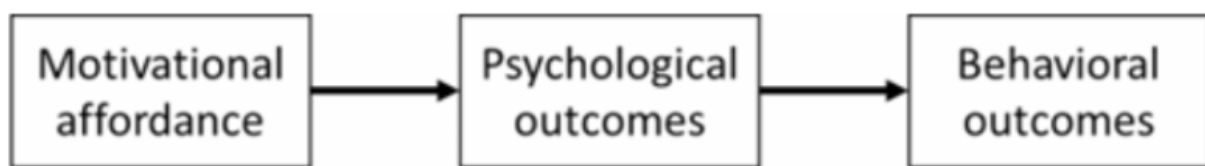
⁴ Shankar, V., et al. (2016). *Op. cit.* ; Ström, R., et al. (2014). *Op. cit.*

⁵ Buttle, F., & Maklan, S. (2019). *Op. cit.* ; *The Influence of UX Design on User Retention and Conversion Rates in Mobile Apps.* (n.d.). *Op. cit.*

⁶ *The Influence of UX Design on User Retention and Conversion Rates in Mobile Apps.* (n.d.). *Op. cit.*

contexts to invoke gameful experiences and drive user participation.¹ Rather than creating full-fledged video games, this strategy utilizes motivational affordances to enhance digital services and stimulate positive behavioral outcomes, particularly user activity and long-term retention.² The effectiveness of these game dynamics is rooted in Self-Determination Theory (SDT), which posits that enhanced intrinsic motivation requires the satisfaction of three basic psychological needs: competence (feelings of efficiency and success), autonomy, and social relatedness (feelings of belonging and connectedness).³ Gamification addresses these needs by establishing clear goals that elevate user self-efficacy and by providing a platform for social validation where users can observe and compare the activities of their peers.⁴ Furthermore, removing these gamified elements once established can severely damage retention, as users suffer from loss aversion when stripped of their earned status and psychological equity.⁵

Figure N°17: The Gamification Process: Affordances, Psychology, and Behavior



Source: Adapted from Hamari, Koivisto, & Sarsa, 2014⁶

To operationalize these psychological drivers, digital loyalty applications heavily rely on a specific service layer of mechanics—often referred to as a "pointsification" strategy—comprising points, badges, levels, and leaderboards.⁷ Points serve as the foundational numerical units indicating progress toward specified activities, while leaderboards introduce structural competition and social pressure by ranking users against success criteria, significantly increasing goal commitment.⁸ Badges act as permanent visual icons of achievement, systematically designed with explicit completion logic and signifiers (such as color coding and

¹ Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: defining gamification. *Proceedings of the 15th International Academic MindTrek Conference*, 9-15.; Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does Gamification Work? A Literature Review of Empirical Studies. *47th Hawaii International Conference on System Sciences*, 3025-3034.; Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*, 69, 371-380.

² Deterding, S., et al. (2011). *Op. cit.* ; Hamari, J., Koivisto, J., & Sarsa, H. (2014). *Op. cit.*

³ Sailer, M., et al. (2017). *Op. cit.* ; Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.

⁴ Hamari, J. (2017). Do badges increase user activity? A field experiment on the effects of gamification. *Computers in Human Behavior*, 71, 469-478.

⁵ Hamari, J., Koivisto, J., & Sarsa, H. (2014). *Op. cit.*

⁶ *Ibid.*

⁷ Deterding, S., et al. (2011). *Op. cit.* ; Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. *International Journal of Human-Computer Studies*, 74, 14-31.

⁸ Sailer, M., et al. (2017). *Op. cit.* ; Seaborn, K., & Fels, D. I. (2015). *Op. cit.*

descriptive text) to visually facilitate social validation within a user's digital profile.¹ Ultimately, the cumulative feedback generated by the seamless integration of these mechanics has been empirically proven to satisfy the psychological need for competence, transforming sporadic transactions into habitual engagement.²

Table N°10: The Anatomy of a Gamification Badge Design

Element / Component	Implementation Description
Signifier (name, visual, description)	The badge itself and its name directly represent the specific type of activity that the user carried out in order to unlock it . These elements are typically associated with the level of the badge, utilizing clear color coding and text (e.g., bronze, silver, gold) to indicate progress. The visual style is designed to connect seamlessly to the existing overarching theme of the digital service . Furthermore, the description explicitly details exactly what the user has to do, or has already done, to successfully unlock the badge.
Completion logic	The badge is unlocked only when the user has carried out a pre-defined amount of specific actions within the system . Users are automatically eligible to unlock these badges upon completing the required behavioral conditions without any additional hidden prerequisites .
Reward	The primary reward derived from unlocking the badge is that the achievement becomes permanently unlocked and visually displayed within the user's personal profile to facilitate social validation .

Source: Adapted from Hamari, 2017³

Although sophisticated digital typologies and gamified ecosystems offer powerful mechanisms to maximize customer lifetime value, their seamless execution is highly contingent upon an environment of advanced digital readiness. When shifting focus from these idealized technological frameworks to the operational reality of traditional, emerging markets, profound socio-economic and infrastructural barriers emerge that fundamentally complicate the transition to data-driven retention.

¹ Sailer, M., et al. (2017). *Op. cit.* ; Seaborn, K., & Fels, D. I. (2015). *Op. cit.* ; Hamari, J. (2017). *Op. cit.*

² Sailer, M., et al. (2017). *Op. cit.*

³ Hamari, J. (2017). *Op. cit.*

Section 3 : Challenges of Loyalty Programs in the Agri-food Sector (SMEs/Retail)

The digital transformation of retail offers powerful retention mechanisms, yet practical implementation within the Small and Medium-sized Enterprise (SME) sector faces severe structural barriers. In localized markets like the Algerian agri-food sector, acute macroeconomic constraints, a cash-dominant economy, and profound cultural reliance on traditional proximity commerce clash with the expansion of mass retail. Traditional SMEs suffer from acute "data paucity," limited capital, and systemic digital resistance. Overcoming these asymmetries requires a strategic pivot toward frictionless, cloud-based Software-as-a-Service (SaaS) architectures. Tailored mobile ecosystems can bypass legacy infrastructural constraints, successfully bridging traditional interpersonal trust with scalable, data-driven retention.

3.1. Particularities of Algerian Consumer Behavior in the Agri-food Sector

3.1.1. Economic Drivers and the "Hanout" Culture: Transitioning from Interpersonal to Digital Trust

Algerian consumption is deeply rooted in social influence and family structures, yet it is ultimately dictated by severe macroeconomic constraints.¹ Chronic inflation and sluggish purchasing power force households to allocate nearly half of their budgets to food, establishing price sensitivity as the overriding determinant of buying decisions.² This acute financial limitation severely undermines traditional brand loyalty; during economic anxiety, consumers rapidly abandon premium products and exhibit rampant switching behavior to secure the cheapest available alternatives.³ Empirical data underscores this fragility, revealing that when a specific brand increases its prices, an overwhelming 83% of Algerian consumers will instantly

¹ Touiza, B. (2022). العوامل المؤثرة في السلوك الشرائي للمستهلك الجزائري - حالة شراء الهاتف المحمول (Factors affecting the purchasing behavior of the Algerian consumer - the case of the mobile phone). *مجلة المنتدى للدراسات والأبحاث الاقتصادية*, Vol. 06, N° 02, pp. 199-219 ; Chaib, W. (2020). Le secteur de la grande distribution en Algérie : apprendre des expériences du Maroc et de la Tunisie (The retail sector in Algeria: learn from the experiences of Morocco and Tunisia). *Revue Algérienne d'Economie et gestion*, Vol. 14, N° 01, pp. 515-535.

² Chaib, W. (2020). *Op. cit.* ; Belghalem, H. (2024). The impact of inflation levels on financial development in Algeria during the period (1991-2022). *Journal of Contemporary Economic Studies*, Vol. 08, N° 02, pp. 271-288 ; Antoine, P., & Labbé, D. (1983). L'inflation en Algérie (Inflation in Algeria). *O.R.S.T.O.M. Fonds Documentaire*, N° 3704 ; Khafallah, M., & Guetatlia, W. (2019). أثر التسويق عبر مواقع التواصل الاجتماعي على قرار الشراء لدى المستهلك (The impact of social media marketing on consumer purchasing decisions). *Université du 8 Mai 1945 Guelma*, Algérie, pp. 1-135.

³ Grari, Y. (2022). Cocooning et comportement du consommateur algérien face à la pandémie du COVID 19 (Cocooning and behavior of the Algerian consumer facing the COVID 19 pandemic). *Revue de l'innovation et marketing*, Tlemcen, Vol. 09, N° 01, pp. 686-706 ; Benothmane, K., & Elaib, K. (2022). العوامل المؤثرة على هلع الشراء أثناء الأزمات (Factors affecting panic buying during crises). *Université Abdelhafid Boussouf - Mila*, Algérie, pp. 1-66.

abandon it for a cheaper substitute.¹ Consequently, modern mass retail formats struggle to capture lasting loyalty, as their failure to achieve sufficient economies of scale to lower prices leaves consumers disappointed and reliant on traditional, more flexible retail networks.²

In this highly cautious economic environment, the traditional neighborhood grocery store (the "Hanout") maintains enduring supremacy by offering functional advantages such as immediate geographic proximity, product splitting, and informal consumer credit.³ Beyond these conveniences, the "Hanout" thrives on profound interpersonal knowledge and daily interactions that forge a powerful bond of trust and mutual dependence.⁴ Field data confirms that this combination of interpersonal trust and physical proximity frequently outweighs price alone as the primary driver of retail loyalty, establishing a relational baseline that modern, standardized supermarkets consistently fail to replicate.⁵ In contrast, consumers harbor deep cultural mistrust towards large supermarkets, fearing manipulation through deceptive promotional techniques.⁶

¹ Nacéri, D. (2014). Le comportement du consommateur face à l'augmentation des prix : Etude de cas : Le lait Tchén-Lait/Candia (Consumer Behavior Facing Price Increases: Case Study: Tchén-Lait/Candia Milk). Université Abderrahmane Mira de Béjaïa, Algérie, 141 p.

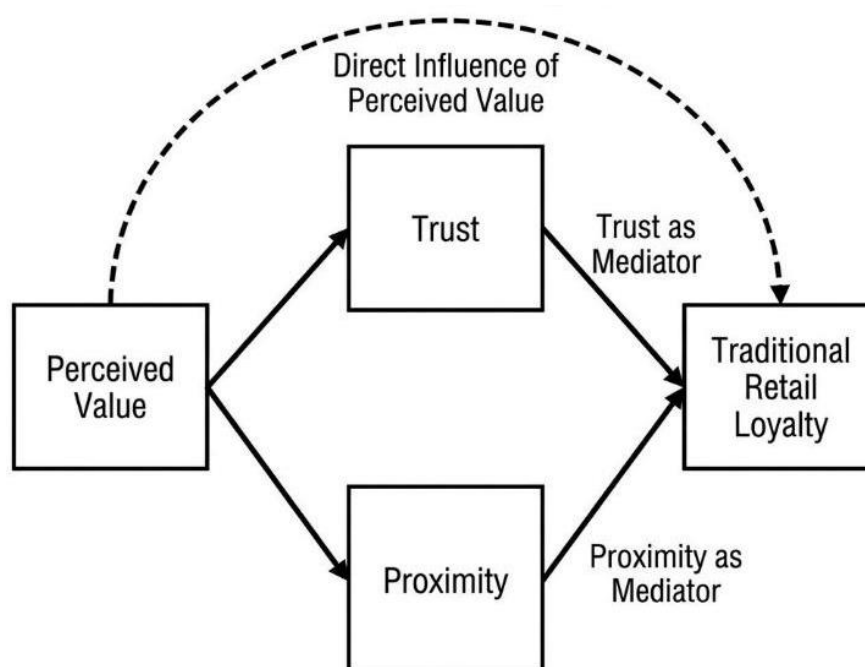
² Chaib, W. (2020). *Op. cit.* ; Centrale Digitale. (2018, 29 Mars). Grande distribution en Algérie : quelle transformation digitale ? (Large-scale distribution in Algeria: what digital transformation?). Extrait le 17 Mai 2026, de : <https://centraledigitale.com/grande-distribution-retail-quelle-transformation-digitale/> ; Ghidouche, F. (2011). Comportement de magasinage en Algérie : Approche exploratoire (Shopping Behavior in Algeria: Exploratory Approach). *La revue des sciences commerciales*, Alger, Vol. 10, pp. 91-110.

³ Chaib, W. (2020). *Op. cit.* ; Centrale Digitale. (2018, 29 Mars). *Op. cit.* ; Ghidouche, F. (2011). *Op. cit.*

⁴ Ameyoud, E., & Brahimi, B. (2017). Le comportement du consommateur algérien envers la production locale : cas produit agroalimentaire (The behavior of the Algerian consumer towards local production). *Université Mouloud Mammeri de Tizi-Ouzou*, Algérie, 112 p. [5] Ameyoud, E., & Brahimi, B. (2017). *Op. cit.* ; Zerarga, K. (2021). Le développement de la grande distribution en Algérie : Etat des lieux et perspectives (The development of large-scale distribution in Algeria). *Université A. Mira-Bejaia*, Algérie, pp. 1-118. [6] Ghidouche, F. (2011). *Op. cit.*

⁵ Ameyoud, E., & Brahimi, B. (2017). *Op. cit.* ; Zerarga, K. (2021). *Op. cit.*, pp. 1-118.

⁶ Ghidouche, F. (2011), *Op. cit.*

Figure N°18: The Mediating Role of Trust and Proximity in Traditional Retail Loyalty

Source: Author's elaboration based on Salah, S. C., 2018 ¹

However, this cultural skepticism extends heavily into digital distribution channels and automated payment infrastructures, presenting a unique barrier for digital transformation.² Furthermore, while traditional independent commerce excels in spontaneous interpersonal relationships, it critically lacks a structured "customer retention culture," often treating transactions as finite exchanges once the material profit is achieved.³ Therefore, as retail experts forecast a looming structural shift toward larger modern formats, the survival of small retail enterprises depends entirely on formalizing their traditional assets .⁴ A digital loyalty SaaS platform designed for Algerian SMEs must not attempt to erase the "Hanout" culture; rather, it must serve as a technological enabler that digitizes and scales this inherent face-to-face trust into a structured, long-term retention framework.

¹ Salah, S. C. (2018). *Effet de la valeur perçue sur la fidélité du consommateur dans un contexte relationnel* (Effect of Perceived Value on Consumer Loyalty in a Relational Context). *Revue de l'Innovation et du Marketing*, Vol. 05, N° 01, pp. 66-98.

² Idir, A. (2013). *Etude du comportement du consommateur algérien : étude analytique et critique* (Study of Algerian Consumer Behavior: Analytical and Critical Study). Université de Constantine 2, Constantine, Algérie, 459 p.; Khafallah, M., & Guetatlia, W. (2019), Op. cit.

³ Idir, A. (2013), Op. cit.

⁴ Touiza, B. (2022). *Op. cit.* ; Ghidouche, F., & Ghidouche, K. (2011). Étude prospective du commerce de détail en Algérie (Prospective study of retail trade in Algeria). *La revue des sciences commerciales*, Alger, Vol. 10, N° 02, pp. 89-120.

3.1.2. Agri-Food Purchasing Patterns: Transaction Frequency and the Retail Dichotomy

Agri-food purchasing patterns in Algeria reflect a profound dichotomy between historically rooted proximity networks and the challenging emergence of modern retail formats.¹ Traditionally, shopping frequency is inversely correlated with household income; financial realities force consumers to divide purchases strictly between daily indispensable goods (captured by neighborhood "Hanout" stores) and less frequent, spaced-out supply runs.² Consequently, the traditional independent grocery store remains deeply anchored in the daily consumption habit, comprehensively covering neighborhoods and currently holding an overwhelming 99% of the national retail market share, a statistic supported by the persistent vitality of the informal market.³

Conversely, modern retail—structured around superettes, supermarkets, and hypermarkets—struggles to establish itself, representing a mere fraction of a percent of total retail volume.⁴ While these larger formats attract middle- and upper-class consumers seeking hygiene, diversity, and the convenience of "one-stop" weekly shopping via car transport, they frequently clash with local realities.⁵ Supermarkets compete by offering wide but shallow assortments to leverage economies of scale; however, Algerian consumers maintain a hybrid approach, utilizing modern spaces for occasional bulk purchases while remaining deeply loyal to proximity commerce for daily needs.⁶ Furthermore, the lack of modern consumer retention strategies in both sectors presents a critical vulnerability.⁷

Figure N°19: Mapping of Retail Assortment Types: Width vs. Depth

¹ Sané, M. (2020). Analyse empiriques des déterminants de la consommation alimentaire et leurs corrélations avec l'insécurité alimentaire chez les ménages vulnérables sénégalais (Empirical Analysis of the Determinants of Food Consumption...). *Revue d'Economie & de Gestion*, Vol. 04, N° 01, pp. 01-19 ; EcoTimes DZ. (2025, 3 Juin). La distribution alimentaire en Algérie : Entre traditions marchandes et mutations modernes (Food distribution in Algeria...) : <https://ecotimesdz.com/la-distribution-alimentaire-en-algerie-entre-traditions-marchandes-et-mutations-modernes/>

² Idir, A. (2013), Op. cit.

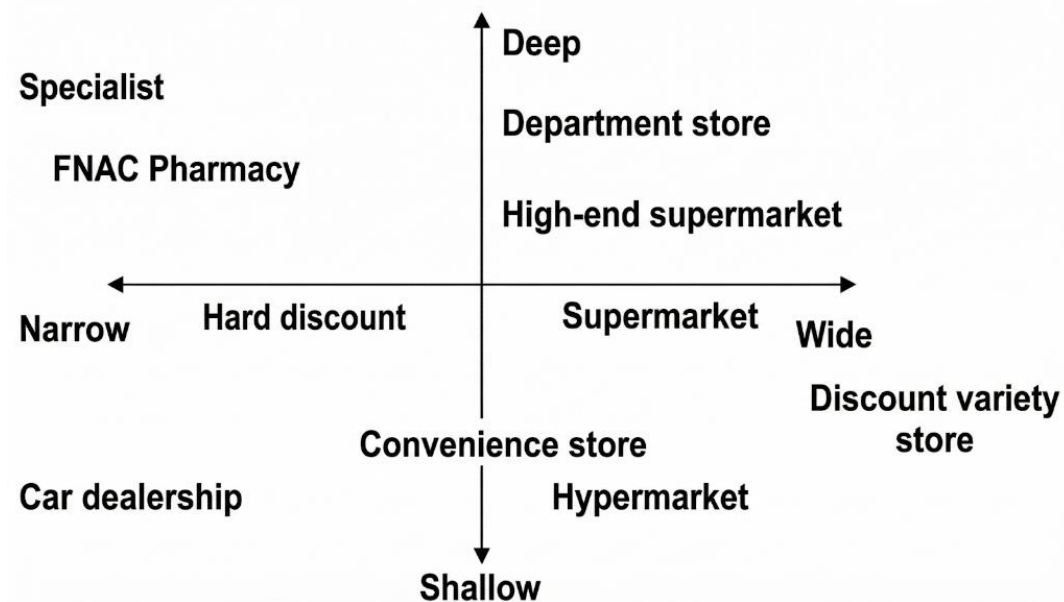
³ Centrale Digitale. (2018, 29 Mars), Op. cit.

⁴ Centrale Digitale. (2018, 29 Mars), Op. cit.

⁵ Idir, A. (2013), Op. cit.; Sané, M. (2020), Op. cit.; Amirouche, I., & Ould Lamara, N. (2018). *Étude et analyse des pratiques merchandising dans la grande distribution Cas : Supermarché PRIBA Azazga* (Study and analysis of merchandising practices...). Université Mouloud Mammeri de Tizi-Ouzou, Algérie, P.143

⁶ Ghidouche, F. (2011). *Op. cit.* ; Dakhane, H. (2023). أثر ندرة المنتجات على اتخاذ قرار الشراء لدى المستهلك الجزائري (The impact of product scarcity on the purchase decision of the Algerian consumer). *Ibn Khaldūn Journal of Innovation and Development*, Vol. 05, N° 01, pp. 65-78. [7] Naceri, D. (2014). *Op. cit.*

⁷ Naceri, D. (2014). *Op. cit.*



Source: Adapted from Wellhoff & Masson, cited in Amirouche, 2018¹

Compounding this structural dichotomy is the chronic irregularity of product availability. Systemic supply chain bottlenecks, import disruptions, and market speculation frequently trigger severe stockouts across both traditional and modern retail². This scarcity provokes extreme behavioral responses: during crises, rational planning collapses into impulsive hoarding and panic buying, driven by the psychological fear of missing out (FOMO).³ When hoarding is impossible, acute inflation drives massive substitution behavior, forcing consumers to abandon preferred brands for cheaper, inferior alternatives.⁴ Empirical data reveals that if a specific brand is unavailable, 49% of consumers will instantly switch to a substitute, while 41% will abandon the store entirely.⁵ Ultimately, to survive this volatile environment, emerging digital loyalty programs must pivot away from rigid brand exclusivity; instead, they must utilize agile data management to reward flexible purchasing behavior and proactively engage consumers with available alternatives before stockouts trigger defection.⁶

¹ Amirouche, I., & Ould Lamara, N. (2018), *Op. cit.*

² Amirouche, I., & Ould Lamara, N. (2018). *Op. cit.* ; Zeddoor Mohamed Brahim, H. (2011). Marketing de la datte en Algérie : Cas de quelques wilayas (Marketing of dates in Algeria: Case of some wilayas). *Université Abou Bakr Belkaïd - Tlemcen*, Algérie, 227 p. ; Abdessemed, A. (2015). L'impact de l'innovation des produits en Algérie sur le comportement du consommateur. Cas de l'innovation des Smartphones et tablettes CONDOR (The impact of product innovation in Algeria...). *Université du 8 Mai 1945*, Guelma, pp. 1-94.

³ Benothmane, K., & Elaïb, K. (2022). *Op. cit.* ; Zerarga, K. (2021). *Op. cit.* ; Dakhane, H. (2023). *Op. cit.* ; Abdessemed, A. (2015). *Op. cit.*

⁴ Idir, A. (2013). *Op. cit.* ; Sané, M. (2020). *Op. cit.*

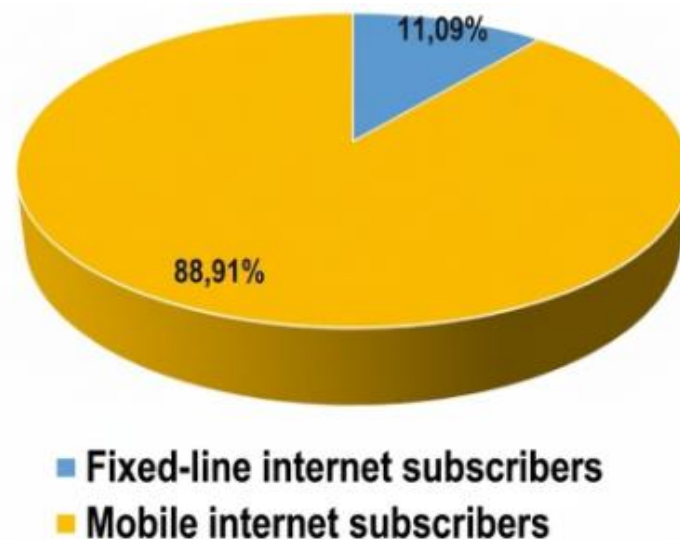
⁵ Naceri, D. (2014). *Op. cit.*

⁶ Centrale Digitale. (2018, 29 Mars). *Op. cit.* ; Imene, A. (2017, 2 Février). Commerce : 85% des grossistes se plaignent des ruptures de stock (Commerce: 85% of wholesalers complain about stock shortages). *Algerie Eco*. Extrait le 17 Mai 2026, de : <https://algerie-eco.com/2017/02/02/commerce-85-grossistes-se-plaignent-ruptures-de-stock/> ; Khafallah, M., & Guetatlia, W. (2019). *Op. cit.*

3.1.3. Digital Readiness for E-Loyalty: Mobile Penetration and Navigating the Cash-Economy

Algeria has experienced a profound evolution from historical infrastructural limitations to a highly connected, mobile-first society, establishing a robust technological foundation for digital loyalty programs.¹ By early 2025, active cellular mobile connections surged to 54.8 million—representing 116% of the population—while the national internet penetration rate reached 76.9%.² A defining characteristic of this digital readiness is the absolute dominance of mobile platforms over traditional desktop computing; nearly 89% of all internet subscribers in Algeria access the web exclusively via mobile devices, supported by a massive structural migration toward high-speed 4G networks.³

Figure N°20: Distribution of Global Internet Subscribers by Access Type (Q1-2025)



Source: Adapted from Autorité de Régulation de la Poste et des Communications Électroniques (ARPCE), 2025⁴

This near-universal mobile connectivity has fundamentally transformed the consumer's purchasing process, specifically regarding information search.⁵ The Algerian consumer is increasingly relying on digital ecosystems to navigate market complexity, with 83.5% of the

¹ Djoudi, M. (2004). Le commerce électronique en Algérie à travers le projet ELABWEB (Electronic Commerce in Algeria through the ELABWEB Project). *Séminaire international sur les métiers de l'économie fondée sur le savoir*, Alger, pp. 1-8.

² DataReportal. (2025). *Digital 2025: Algeria*. Extrait le 17 Mai 2026, de : <https://datareportal.com/reports/digital-2025-algeria>

³ DataReportal. (2025). *Op. cit.* ; ARPCE. (2025). Observatoire du marché de l'Internet en Algérie : 1er trimestre 2025 (Observatory of the Internet Market in Algeria: 1st Quarter 2025). *Autorité de Régulation de la Poste et des Communications Electroniques*, Algérie, pp. 1-8.

⁴ ARPCE. (2025), *Op. cit.*

⁵ Hadji, M. C., & Hadjidj, Z. A. (2019). L'influence des réseaux sociaux sur le comportement d'achat du consommateur. Etude de cas : EXAGOAL (The influence of social networks on consumer buying behavior. Case study: EXAGOAL). *Ecole des Hautes Etudes Commerciales*, Alger, pp. 1-103.

adult population utilizing social media platforms.¹ Facebook and Instagram currently dominate this space, serving not merely for social interaction, but as critical commercial search engines where 54.7% of users explicitly seek brand information.² The economic conversion of this digital activity is highly significant; over 84% of surveyed respondents report executing a physical purchase after viewing a brand's social media publication, while 55% have made purchasing decisions directly based on local influencer recommendations.³

However, while mobile and social media penetration provides a vast top-of-funnel audience, the successful implementation of transactional e-loyalty programs is severely constrained by the structural dominance of the Algerian cash economy. The retail landscape operates within a society that inherently prefers physical cash (liquide) and exhibits profound cultural resistance to electronic payment methods, rendering fully integrated e-commerce practically non-existent.⁴ This financial informality is compounded by deep-rooted psychological barriers regarding cybersecurity; consumers display significant distrust toward digital transactions and data privacy.⁵ Furthermore, despite widespread smartphone usage, stark digital inequality persists, with roughly 75% of households lacking access to fixed home internet, particularly isolating the lowest economic quintiles.⁶

Table N° 11: Key Challenges Facing Algeria's Digital Economy

Challenge	Description
Regulatory Gaps	Lack of comprehensive legal frameworks for e-commerce.
Informal Economy	Cultural preference for cash transactions.
Infrastructure Deficiencies	Limited high-speed internet, particularly in rural areas.
Digital Skills Gap	Low digital literacy and workforce training.
Cybersecurity Weaknesses	Inadequate data protection and cybersecurity measures.

¹ DataReportal. (2025), Op. cit.

² Hadji, M. C., & Hadjidj, Z. A. (2019). *Op. cit.* ; Adnane, H. (2023). The Impact Of Algerian Influencers On Consumer Behavior. *Administrative And Financial Sciences Review*, University of Khenchela (Algeria), Volume 07, N° 01, pp. 487-501.

³ Ibid.

⁴ Djoudi, M. (2004). *Op. cit.* ; Almi, H., Hamza, Z., & Boucenna, W. (2025). Digital Economy and Its Role in Enhancing Financial Institutions in Algeria. *Economic Researcher Review*, Skikda University, Volume 13(1), 78-93 ; World Bank Group. (2021). Algeria Economic Monitor: Accelerating Reforms to Protect the Algerian Economy (Suivi de la situation économique de l'Algérie : Accélérer les réformes pour protéger l'économie algérienne). *World Bank*, Washington DC, Spring 2021, 1-51.

⁵ Djoudi, M. (2004), Op. cit.; Almi, H., Hamza, Z., & Boucenna, W. (2025), Op. cit.

⁶ World Bank Group. (2021), Op. cit.

Source: Adapted from Almi, Hamza, & Boucenna, 2025 ¹

Consequently, launching a digital loyalty SaaS platform in Algeria requires a strategic workaround. Given the crippling barriers of the cash-economy and the lack of digital payment trust, an effective program must leverage the high mobile penetration (the smartphone) to digitally track points and rewards, without forcing the consumer to execute digital financial payments. This approach seamlessly bridges the gap between the modern, mobile-first consumer and the traditional, cash-based retail reality.

3.2. Constraints of SMEs (Mini-markets) Facing Mass Retail Expansion

3.2.1. Economic Asymmetries: The Inability to Compete on Price and the Shift to Relational Value

At the core of the competitive imbalance between mass retail and traditional Small and Medium-sized Enterprises (SMEs) are supply-side economies of scale.² Large modern retailers leverage massive purchasing volume to command significant negotiating power over suppliers, securing deep discounts and preferential treatment.³ Conversely, SMEs suffer from a critical volume disadvantage; their inability to place large, stable orders results in higher procurement costs and frequently forces reliance on intermediary wholesalers, which adds crippling layers of logistical cost.⁴ In extreme market conditions, this power imbalance creates a state of "economic dependence" where suppliers are coerced into offering exclusive advantages to large retail chains, structurally handicapping the traditional proximity store before the product even reaches the shelf.⁵

This unequal procurement landscape translates directly into severe margin compression at the retail level. Large chains leverage their high fixed costs and low marginal costs to ignite aggressive price wars, often deploying asymmetric tactics like "price-matching" which act as

¹ Almi, H., Hamza, Z., & Boucenna, W. (2025). *Op. cit.*

² Porter, M. E. (2008). The Five Competitive Forces That Shape Strategy. *Harvard Business Review*, January 2008, pp. 25-40 ; Guenouche, N. (2023). Etat des lieux du secteur de la grande distribution en Algérie (A state of play in the sector of large distribution in Algeria). *Revue Le Manager*, Vol. 10, N°01, pp. 216-246.

³ Porter, M. E. (2008). *Op. cit.* ; Dobson, P. W. (2005). Exploiting Buyer Power: Lessons from the British Grocery Trade. *Antitrust Law Journal*.

⁴ Dobson, P. W. (2005). *Op. cit.* ; Setyaningsih, S., & Kelle, P. (2021). Barrier factors of supply chain management implementation in small and medium-sized enterprises: Evidence from Hungary and Indonesia. *Economics and Sociology*, Volume 14 (No. 4), pp. 73-88 ; Wahyuni, A. S. (2023). Survival Strategy of Traditional Small Retail in Competition with Modern Large Retail. *Sriwijaya International Journal of Dynamic Economics and Business*, Indonesia/7(1), pp. 51-60.

⁵ Mezghiche, A. (n.d.). التعسف في استغلال وضعية التبعية الاقتصادية كممارسة مقيدة للمنافسة (Abuse of Exploitation of the State of Economic Dependence as a Restrictive Practice of Competition). *Majallat al-Mufakir* (The Thinker Journal), University of Mohamed Khider - Biskra, Issue 11, pp. 494-520 ; Guenouche, N. (2023). *Op. cit.* ; Algérie. (2003). Ordonnance n° 03-03 du 19 Joumada El Oula 1424 correspondant au 19 juillet 2003 relative à la concurrence (Ordinance No. 03-03 of 19 Joumada El Oula 1424 corresponding to 19 July 2003 relating to competition). *Journal officiel de la République algérienne démocratique et populaire*, n° 43, pp. 25-33.

profound barriers to entry for smaller competitors.¹ Furthermore, massive retail buying power induces a "waterbed effect," forcing suppliers to raise prices on SMEs to financially offset the heavy discounts demanded by the large chains.² Consequently, SMEs operate on suffocatingly thin profit margins and are financially incapable of sustaining direct price competition.³ In the Algerian context, chronic macroeconomic inflation further erodes these margins, increases operational overhead, and starves SMEs of necessary capital, making price-based competition fundamentally unsustainable.⁴

Table N° 12: Drivers of Margin Compression for SMEs in the Retail Sector

Economic Driver	Mechanism	Consequence for SMEs
Waterbed Effect	Suppliers increase prices for SMEs to offset the heavy discounts demanded by large retailers.	Artificially higher procurement costs.
Price-Matching	Large retailers publicly commit to matching the lowest market prices.	Acts as a barrier to entry; SMEs cannot sustain matching such low margins.
Logistical Inefficiencies	Smaller purchasing volumes lead to proportionally higher storage and transport costs.	Direct reduction of already thin profit margins.
Financial Constraints	Lack of capital prevents investment in supply chain technology.	Sustained operational inefficiencies compared to mass retail.

Source: Author's elaboration based on Dobson, 2005⁵; Setyaningsih & Kelle, 2021⁶; Wahyuni, 2023⁷; and Muhsyi et al., 2026⁸

¹ Porter, M. E. (2008), Op. cit.; Dobson, P. W. (2005), Op. cit.

² Dobson, P. W. (2005), Op. cit.; Imene, A. (2017, 2 Février). *Commerce : 85% des grossistes se plaignent des ruptures de stock* (Commerce: 85% of wholesalers complain about stock shortages). *Algerie Eco*. Extrait le 17 Mai 2026, de : <https://algerie-eco.com/2017/02/02/commerce-85-grossistes-se-plaignent-ruptures-de-stock/>

³ Setyaningsih, S., & Kelle, P. (2021). *Op. cit.* ; Wahyuni, A. S. (2023). *Op. cit.*

⁴ Muhsyi, A., Khusna, K., & Sukarno, H. (2026). Barriers to Implementing Just in Time (JIT) Inventory Management Among Coffee Shop MSMEs in Jember Regency. *Ilomata International Journal of Management*, Indonesia/7(1), pp. 106-119 ; Belghalem, H. (2024). The impact of inflation levels on financial development in Algeria during the period (1991-2022). *Journal of Contemporary Economic Studies*, Vol. 08, N° 02, pp. 271-288.

⁵ Dobson, P. W. (2005), *Op. cit.*

⁶ Setyaningsih, S., & Kelle, P. (2021), *Op. cit.*

⁷ Wahyuni, A. S. (2023), *Op. cit.*

⁸ Muhsyi, A., Khusna, K., & Sukarno, H. (2026), *Op. cit.*

Recognizing these vast economic disparities, business strategy strictly dictates that SMEs must avoid direct price competition with retail giants and instead pivot towards non-price dimensions, specifically quality, service, and continuous customer value.¹ Because they cannot win a race to the bottom on pricing, the survival of small independent retailers relies entirely on their ability to cultivate deep relational value and secure long-term customer retention.² However, severe financial constraints prevent these traditional merchants from accessing the modern, data-driven tools required to effectively build this relational equity, leaving them highly vulnerable to agile, well-capitalized modern competitors.³

3.2.2. The Technological Divide: Data Paucity and the Absence of Accessible CRM Systems

As the retail landscape undergoes a rapid digital revolution driven by big data and mobile ecosystems, a profound technological divide has emerged between large, digitally integrated retailers and traditional Small and Medium-sized Enterprises (SMEs).⁴ While mass retail leverages advanced Point-of-Sale (POS) systems and Customer Relationship Management (CRM) software to track real-time inventory and map personalized customer journeys, SMEs frequently rely on fragmented, legacy systems or purely manual processes.⁵ This failure to adopt integrated technologies creates a severe state of "data paucity"; SMEs may collect vast amounts of raw transactional data, but they completely lack the analytical tools and robust data management practices required to derive meaningful insights about customer preferences.⁶ Consequently, without a unified system connecting transactional data to relational customer profiles, SMEs are operationally blind to the omnichannel customer journey, rendering them

¹ Hicks, M. (2009). Wal-Mart and Small Business: Boon or Bane? *The Review of Regional Studies*, Vol. 39, No. 1, pp. 73-83 ; Mazanai, M. (2012). Impact of just-in-time (JIT) inventory system on efficiency, quality and flexibility among manufacturing sector, small and medium enterprise (SMEs) in South Africa. *African Journal of Business Management*, Volume 6(17), pp. 5786-5791 ; Nielsen, J. E., Aleksić, V. S., & Spasenić, A. T. (2022). Just-In-Time Strategy Implementation Challenges and The Organizational Structure Dimensions. *Economic Analysis*, Kragujevac/Volume 55(1), pp. 30-47.

² Setyaningsih, S., & Kelle, P. (2021). *Op. cit.* ; Mazanai, M. (2012). *Op. cit.*

³ Setyaningsih, S., & Kelle, P. (2021). *Op. cit.* ; Nielsen, J. E., Aleksić, V. S., & Spasenić, A. T. (2022). *Op. cit.*

⁴ Syamsuddin, S. (2024). Adapting to Digital Transformation: Challenges and Strategies for Traditional Businesses. *Global International Journal of Innovative Research*, 2(3), pp. 705-711 ; Wang, H.-M. D., & Ho, F. N. (2023). The Effects of Information Technology in Retailer Performance and Survival: The Case of Store-Based Retailers (Les effets des technologies de l'information sur la performance et la survie des détaillants : le cas des détaillants en magasin). *SAGE Open*, October-December 2023, pp. 1-15.

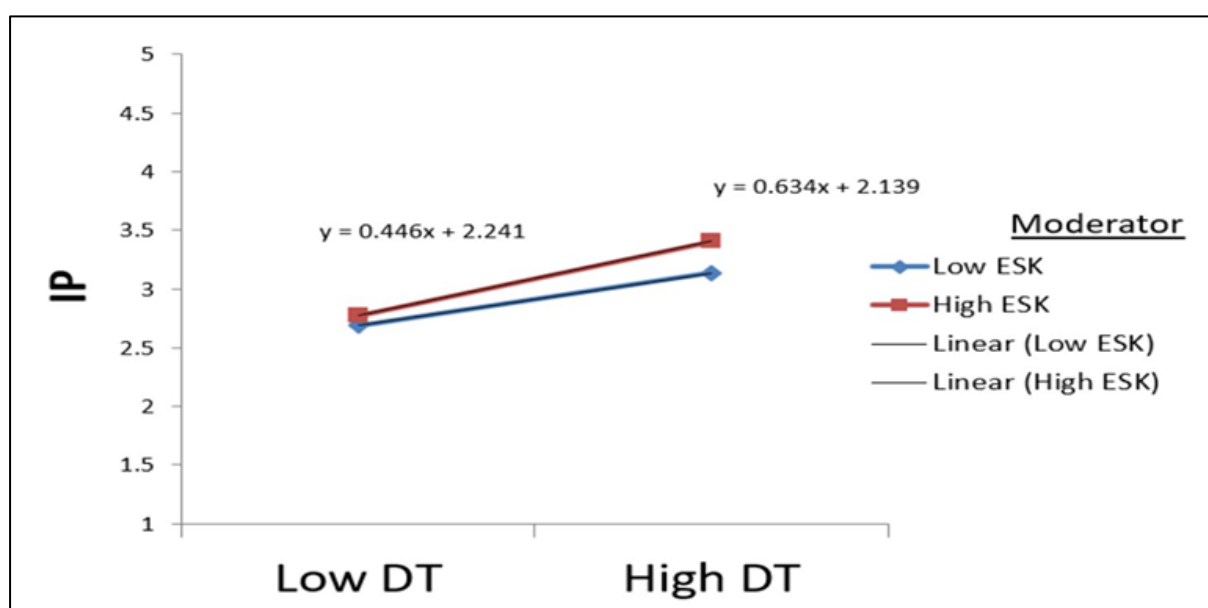
⁵ Wang, H.-M. D., & Ho, F. N. (2023), *Op. cit.*; Plomp, M. (2011). *Determinants of Point-of-Sale System Adoption: A Survey among Small Retailers in The Netherlands*. 17th Americas Conference on Information Systems, Detroit, Michigan, pp. 1-9.; Haessner, P., Haessner, J., & Thomas, J. (2024). *Maximizing Retail Potential: The Role of Big Data Analytics*. University of Central Arkansas, Arkansas, pp. 1-15.

⁶ Yasiukovich, S., & Haddara, M. (2021). *Social CRM in SMEs: A Systematic Literature Review*. *Procedia Computer Science*, 181, pp. 535-544.; Wang, H.-M. D., & Ho, F. N. (2023), *Op. cit.*; Djoudi, M. (2004), *Op. cit.*

incapable of executing the personalized marketing strategies necessary for modern customer retention.¹

This technological stagnation is not born of ignorance, but rather from severe, multi-dimensional resource constraints.² Financially, the high upfront acquisition and maintenance costs of traditional enterprise-level POS and CRM systems act as an insurmountable barrier for micro-retailers.³ Beyond capital, SMEs are fundamentally crippled by a critical shortage of technical expertise; they lack the skilled data analysts and IT personnel required to interpret complex data sets or manage sophisticated software infrastructures.⁴ Research explicitly proves that an SME's capacity to derive strategic value from technology is heavily moderated by the digital proficiency of its workforce, an area where the Algerian retail sector faces a notable deficit.⁵

Figure N°21: The Moderating Role of Employee Skills on Digital Transformation Performance



¹ Haessner, P., Haessner, J., & Thomas, J. (2024), Op. cit.; Wang, H.-M. D., & Ho, F. N. (2023), Op. cit.

² Dinh, H. V., Nguyen, H. T., Tran, K. M. T., & Doan, A. T. (2025). *Retail SMEs' performance under impacts of technological uncertainty*. *Innovation & Management Review*, Hanoi, Vietnam, pp. 1-17...

³ Syamsuddin, S. (2024), Op. cit.; Shankar, V. (2019). *Big Data and Analytics in Retailing*. *NIM Marketing Intelligence Review*, Vol. 11 (No. 1), pp. 36-40.; Chaib, W. (2020), Op. cit.

⁴ Dinh, H. V., Nguyen, H. T., Tran, K. M. T., & Doan, A. T. (2025), Op. cit.; Forootani, S. (n.d.). *Factors affecting the adoption of cloud-based CRM in small and medium enterprises*. *International Journal of Services Technology and Management*, Vol. X, No. Y, pp. 1-21.; Ukeje, C. (n.d.). *Identifying And Addressing Technological Constraints Hindering Data-Driven Decision Making In Small And Medium Enterprises (SMEs) in Nigeria*. Bournemouth University, Manuscript, n.p.

⁵ Wang, H.-M. D., & Ho, F. N. (2023), Op. cit.; Ukeje, C. (n.d.), Op. cit.; Loo, P. (2025). *Transformation of Traditional Marketing Strategy to Digital; Challenges and Opportunities for Retailers* (Transformation de la stratégie de marketing traditionnel vers le numérique ; défis et opportunités pour les détaillants). *Oikonomia: Journal of Management Economics and Accounting*, Vol. 2 No. 2, pp. 32-44.

Source: Adapted from Bilal et al., 2024 ¹

Compounding these financial and technical deficits are deep-rooted behavioral and managerial barriers.² SME owners, often preoccupied with daily operational survival, suffer from severe time deficits and frequently lack the strategic digital literacy to oversee complex transformation projects.³ Internally, the introduction of digital tools is often met with hostility from employees accustomed to conventional, face-to-face methods, a resistance fueled by a lack of training and the fear of complex interfaces.⁴ In the Algerian context, this systemic digital inertia is exacerbated by a broader macro-environmental deficit of reliable retail statistics and an informal economy that resists the traceability inherent to digital systems.⁵ Ultimately, to overcome this multifaceted divide, SMEs do not need complex, enterprise-level software that requires dedicated IT staff; they desperately require lightweight, frictionless, and highly accessible digital solutions—such as turnkey mobile SaaS applications—that bypass these financial and technical constraints while automatically generating actionable customer insights.

3.2.3. Retention Vulnerabilities: Overcoming the Dependence on Passive Foot Traffic.

Traditional Small and Medium-sized Enterprises (SMEs) face severe structural limitations in customer acquisition and retention, fundamentally relying on their geographic positioning and spontaneous foot traffic.⁶ Unlike large-scale retailers that leverage extensive marketing budgets for mass media campaigns, SMEs are heavily restricted to informal, hyper-local communication

¹ Bilal, M., Xicang, Z., Jiying, W., Sohu, J. M., Akhtar, S., & Ul Hassan, M. I. (2024). *Digital Transformation and SME Innovation: A Comprehensive Analysis of Mediating and Moderating Effects*. *Journal of the Knowledge Economy*, <https://doi.org/10.1007/s13132-024-02054-0>, pp. 1-3.

² Syamsuddin, S. (2024), Op. cit.

³ Haessner, P., Haessner, J., & Thomas, J. (2024), Op. cit.; Dinh, H. V., Nguyen, H. T., Tran, K. M. T., & Doan, A. T. (2025), Op. cit.; Nguyen, T. H., Newby, M., & Waring, T. S. (2012). *Understanding Customer Relationship Management (CRM) Technology Adoption In SMEs: An Empirical Study In The USA* (Comprendre l'adoption de la technologie de gestion de la relation client (CRM) dans les PME : une étude empirique aux USA). UK Academy for Information Systems Conference Proceedings 2012, Spring 3-27-2012, pp. 1-25.

⁴ Forootani, S. (n.d.), Op. cit.; Loo, P. (2025), Op. cit.; Prakasa, Y. (2024). *Understanding the Technological-Organizational-Environmental Concepts on SMEs' Performance in Emerging Market*. *KnE Social Sciences*, Volume 2024 (Brawijaya International Conference on Business Administration, Taxation, and Tourism), pp. 43-66..

⁵ Chaib, W. (2020), Op. cit.; Ghidouche, F. (2011), Op. cit.; Guenouche, N. (2023), Op. cit.

⁶ Khafallah, M., & Guetatlia, W. (2019), Op. cit.; Jaravaza, D. C., & Chitando, P. (2013). *The Role of Store Location in Influencing Customers' Store Choice*. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, Scholarlink Research Institute Journals, 4(3), pp. 302-307..

channels such as flyers, physical window displays, and word-of-mouth.¹ This structural dependence makes the physical storefront the primary—and often only—engine for visibility.²

Figure N°22: Factors Affecting Customer Store Choice



Source: Adapted from "The Role of Store Location in Influencing Customers' Store Choice", by Jaravaza, D. C., & Chitando, P., 2013, p. 306³

As demonstrated by spatial retail behavior, convenience and travel time overwhelmingly dictate a consumer's choice of a local store.⁴ However, this renders the SME completely captive to its immediate geography; if the catchment area experiences a decline in pedestrian traffic, the traditional retailer possesses no secondary omnichannel framework to maintain its sales volume, exposing a critical vulnerability in relying purely on passive, spontaneous visits.⁵

Beyond physical boundaries, SMEs struggle intensely to capture customer "mindshare" against established mass retail brands. In a hyper-informed market overwhelmed by advertising, modern consumers utilize established brand images as "cognitive simplifiers" to reduce decision-making risk.⁶ Well-known retail chains benefit from deep-rooted consumer trust and

¹ Amirouche, I., & Ould Lamara, N. (2018), Op. cit.; Baporikar, N., & Deshpande, M. (2017). *SMEs and Branding Strategies*. *International Journal of Applied Management Sciences and Engineering*, Volume 4, Issue 1, pp. 43-55.; Yendra, Y., Zakaria, Z., & Noy, I. (2024). *The Impact of Digital Marketing on Local Businesses*. *Advances in Community Services Research*, Jayapura, Volume 2(1), pp. 49-61.; Mashingaidze, M., Bomani, M., & Derera, E. (2021). *Marketing practices for Small and Medium Enterprises: An exploratory study of manufacturing firms in Zimbabwe*. *Journal of Contemporary Management*, Volume 18 Issue 1, pp. 482-507.

² Amirouche, I., & Ould Lamara, N. (2018), Op. cit.; Jaravaza, D. C., & Chitando, P. (2013), Op. cit.

³ Jaravaza, D. C., & Chitando, P. (2013), Op. cit.

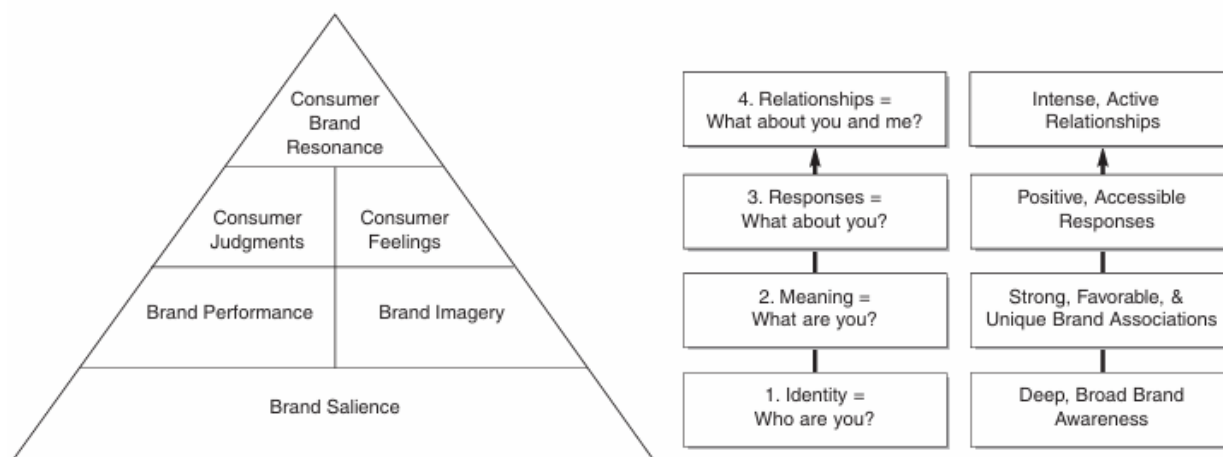
⁴ Ibid.

⁵ Jaravaza, D. C., & Chitando, P. (2013), Op. cit.; Amirouche, I., & Ould Lamara, N. (2018), Op. cit.

⁶ Khafallah, M., & Guetatlia, W. (2019), Op. cit.; Ge, R., de Haan, E., Verhoef, P. C., & Zhang, S. (2025). *Location still matters: How geographic proximity between customers shapes repeat purchase behavior in online food delivery services*. *Journal of Retailing*, <https://doi.org/10.1016/j.jretai.2025.12.002>, pp. 1-18.; Berger, P. (2016).

high brand equity, creating a formidable psychological barrier for unestablished local stores.¹ Consequently, consumers with strong brand loyalty to modern supermarkets are significantly less inclined to switch, leaving traditional store brands in a chronically weak competitive position where they are rarely considered top-of-mind.² To survive and drive retention, SMEs cannot rely on sheer mass awareness; they must proactively climb the brand equity pyramid by cultivating deep, individualized brand resonance to overcome the psychological dominance of national competitors.³

Figure N°23: The Customer-Based Brand Equity Pyramid



Source: Adapted from "Building Customer-Based Brand Equity: A Blueprint for Creating Strong Brands", by Keller, K. L., 2001, p. 7⁴

To break free from this geographical captivity and build sustainable mindshare, traditional retail must transition toward a modernized, data-driven ecosystem. Digital marketing tools—specifically Location-Based Marketing (LBM) and targeted social media—allow small businesses to bypass physical boundaries and engage local consumers in real-time.⁵ While traditional stores offer a one-size-fits-all experience limited to the physical storefront, modern

An Exploration of Customer-Based Brand Equity in Industrial Markets. The University of Gloucestershire, United Kingdom, pp. 1–334.

¹ Tsono Andzelet, S. A. (2025). *Determinants of Consumer Choice in Retail Supermarkets: A Case of Brazzaville, Republic of the Congo.* *Open Access Library Journal*, Volume 12, e14505, pp. 1-17.; Keller, K. L. (2001). *Building Customer-Based Brand Equity: A Blueprint for Creating Strong Brands.* Marketing Science Institute, Cambridge, MA, Report No. 01-107, pp. 1-31.; Ghidouche, F. (2011), Op. cit.

² Supriharyanti, E. (2022). *Proximity and Retail Loyalty: Mediation of Time Convenience.* *Asian Journal of Business Research*, Volume 12 Issue 2, pp. 108-127.; Juhl, H. J. (2006). *The fight between store brands and national brands—What's the score?.* *Journal of Retailing and Consumer Services*, Volume 13, pp. 331-338.; Amirouche, I., & Ould Lamara, N. (2018), Op. cit.

³ Baporikar, N., & Deshpande, M. (2017), Op. cit.; Ichou, M. (2024). *The Impact of Brand Image and Brand Trust on Consumer Buying Behavior.* *Global Journal of Economic and Finance Research*, Volume 01 Issue 01, pp. 251-257.

⁴ Keller, K. L. (2001), Op. cit., p. 7.

⁵ Khafallah, M., & Guetatlia, W. (2019), Op. cit.; Yendra, Y., Zakaria, Z., & Noy, I. (2024), Op. cit.; Gupta, V. (n.d.). *Effectiveness of Location-Based Marketing for Local Businesses.*

digital integration connects localized data with personalized omnichannel engagement.¹ Ultimately, without a digital loyalty framework to bridge the gap between the physical point of sale and the customer's mobile device, SMEs will remain unable to proactively engage and retain their shoppers once they step beyond the immediate visual range of the store.²

Table N° 13: Traditional Retail versus Modern Retail Comparison

Feature	Traditional Retail	Modern Retail
Inventory	In-store only	Shared across all channels
Customer Experience	One-size-fits-all	Personalized + targeted
Checkout	Cashiers only	Mobile, self, and app-based
Sales Channels	Storefront	Web, app, social, pop-up
Data Use	Minimal	Real-time insights

Source: Adapted from "Are traditional retail stores failing the modern shopper?", Shanghai Garment, n.d.³

3.3. Challenges of Implementing a Digitalized Loyalty System for Small Businesses

3.3.1. Technological and Infrastructural Barriers: Cloud Solutions versus Legacy Hardware

The deployment of a digital loyalty system in the retail sector is fundamentally contingent upon a robust technological infrastructure and the ability to achieve seamless data interoperability. Interoperability—the capacity of separate systems to connect and transfer data regardless of their hardware or software environment—is critical for integrating modern, cloud-based loyalty platforms with a store's core Point-of-Sale (POS) system and inventory management.⁴

¹ Shanghai Garment. (n.d.). *Are traditional retail stores failing the modern shopper?*. Retrieved from: <https://shanghaigarment.com/are-traditional-retail-stores-failing-the-modern-shopper/>; Equitozia May, E., Esther Bunmi, E., Oyewumi Oyekunle, D., Ogochukwu Ugbomeh, W., & Okwudili Matthews, U. (2025). *Digital Marketing Adoption in SMEs: A Technology-Organization-Environment (TOE)-Based Assessment of Business Growth and Competitiveness*. *Recent Research Reviews Journal*, Volume 4, Issue 1, pp. 50-71.; Widaningrum, D. (2015). *A GIS – Based Approach for Catchment Area Analysis of Convenience Store*. *Procedia Computer Science*, 72, pp. 511-518..

² Yendra, Y., Zakaria, Z., & Noy, I. (2024), Op. cit.; Gupta, V. (n.d.), Op. cit.

³ Shanghai Garment. (n.d.), Op. cit.

⁴ Ayem, G., Thandekkattu, S., & Vajjhala, N. (2022). *A Survey on Interoperability Issues at the SaaS Level Influencing the Adoption of Cloud Computing Technology*. Springer Nature Singapore, LNNS 481, pp. 206-214.; Santos, V., & Bacalhau, L. M. (2023). *Digital Transformation of the Retail Point of Sale in the Artificial Intelligence Era*. IGI Global, Volume 10, pp. 200-216.

However, SMEs frequently operate with outdated, legacy hardware that is fundamentally incompatible with modern cloud services.¹ Attempting to integrate new Application Programming Interfaces (APIs) with these legacy, on-premise systems often results in prohibitive costs, project stagnation, and severe functional misalignment.² To bypass this "interoperability gulf," a strategic shift is required; rather than attempting costly integrations with obsolete hardware, SMEs benefit profoundly from adopting standalone, standardized cloud architectures (SaaS) that operate independently of legacy constraints.³

However, the efficacy of these cloud-based SaaS solutions relies entirely on the external "livewire" of reliable internet connectivity.⁴ Without stable, high-speed broadband, the process of digital convergence falters, resulting in system lags, dropped transactions, and a severe degradation of the real-time customer experience.⁵ Statistical evaluations confirm that inadequate internet connectivity and the high cost of acquiring digital technology are the absolute primary deterrents to digital integration for SMEs.⁶ In regions like Algeria, where retailers frequently grapple with network bottlenecks and unreliable power supplies, this infrastructural dependency poses a critical operational threat.⁷ Consequently, for a digital loyalty framework to be viable, it must be engineered as a lightweight application capable of functioning efficiently even in low-bandwidth or intermittently connected environments.⁸

Beyond connectivity, the transition to cloud-based data management introduces profound cybersecurity and privacy vulnerabilities. As SMEs migrate customer profiles and transactional histories to third-party vendors (multi-tenancy cloud environments), they face an inherent "loss of control" over sensitive business data.⁹ Because SMEs often lack dedicated IT expertise and economic resources, they are highly susceptible to cyberattacks, data breaches, and

¹ Hariyanti, S., & Kristanti, D. (2024). *Digital Transformation in MSMEs: an Overview of Challenges and Opportunities in Adopting Digital Technology*. *Jurnal Manajemen Bisnis, Akuntansi dan Keuangan (JAMBAK)*, Vol. 3, No. 1, pp. 37-46.; Haddara, M., Gøthesen, S., & Langseth, M. (2022). *Challenges of Cloud-ERP Adoptions in SMEs*. *Procedia Computer Science*, Amsterdam/Volume 196, pp. 973-981.

² Haddara, M., Gøthesen, S., & Langseth, M. (2022), Op. cit.; Ayem, G., Thandekkattu, S., & Vajjhala, N. (2022), Op. cit.

³ Ayem, G., Thandekkattu, S., & Vajjhala, N. (2022), Op. cit.

⁴ Amirouche, I., & Ould Lamara, N. (2018), Op. cit.; Idemudia, S. O. (2023). *Digital Infrastructure Barriers Faced by SMEs in Transitioning to Smart Business Models*. *International Journal of Scientific Research in Science, Engineering and Technology*, Nigeria (Volume 10, Issue 4), pp. 353-370.

⁵ ibid

⁶ Idemudia, S. O. (2023), Op. cit.

⁷ Amirouche, I., & Ould Lamara, N. (2018), Op. cit.; Djoudi, M. (2004), Op. cit.

⁸ Haddara, M., Gøthesen, S., & Langseth, M. (2022), Op. cit.; Idemudia, S. O. (2023), Op. cit.

⁹ Ibrahim, A. M. A., & Abdullah, N. S. (n.d.). *Antecedents of Software-as-a-Service Adoption for Small and Medium Enterprise in Developing Countries*. Universiti Teknologi Malaysia, Skudai, Johor, Malaysia, pp. 1-7.; Awan, M., Alam, A., & Kamran, M. (2025). *Cybersecurity Challenges in Small and Medium Enterprises: A Scoping Review*. *Journal of Cyber Security and Risk Auditing*, Vol.2025, No.3, pp. 89-102.

vulnerabilities stemming from uncontrolled open-source software.¹ The impact of a breach on a small retailer is devastating, leading to an immediate and often irrecoverable loss of consumer trust.² To mitigate these anxieties and foster adoption, digital loyalty platforms must adopt a "privacy-by-design" framework.³ This involves implementing rigorous data encryption, utilizing visible "trust seals" to reassure consumers, and ensuring absolute transparency regarding how customer data is managed and protected by the SaaS provider.⁴

3.3.2. Adoption Friction: Overcoming Digital Resistance in Staff and Traditional Shoppers

The deployment of digital loyalty systems within small-scale retail is frequently derailed by profound behavioral resistance, rooted in both internal organizational culture and external consumer habits.⁵ Internally, the introduction of data-driven tools often triggers severe "technostress" among SME employees. This friction arises from a perceived misalignment between the new technology and their existing skills, leading employees to view digital systems as a threat to their professional autonomy rather than an asset.⁶ Consequently, resistance frequently manifests not as overt sabotage, but as covert "invisible failure"—such as cyberloafing or a passive return to established, manual routines.⁷ In the Algerian context, where professional training has historically been neglected, this lack of digital proficiency acts as a primary structural weakness, necessitating a fundamental "rewiring" of workflows.⁸ To prevent new loyalty software from being abandoned, SMEs must invest heavily in role-based capability

¹ Haddara, M., Gøthesen, S., & Langseth, M. (2022), Op. cit.; Awan, M., Alam, A., & Kamran, M. (2025), Op. cit.

² Haddara, M., Gøthesen, S., & Langseth, M. (2022), Op. cit.; TrustArc. (2025). *2025 Global Privacy Benchmarks Report*. TrustArc, San Francisco Bay Area, pp. 1-33.

³ TrustArc. (2025), Op. cit.

⁴ TrustArc. (2025), Op. cit.; Scharfenberg, O. (2024). *Impact of Seals of Quality on Consumer Behavior: An Analysis of the Influence of Seals of Quality on the Willingness of Customers to Pay when Shopping Online*. *International Journal of Progressive Research in Engineering Management and Science (IJPREMS)*, Vol. 04, Issue 11, pp. 120-130.

⁵ Naceur, K., Timmaoui, A., & Belkhir, F. (2025). *Assessing the Infrastructure Readiness for E-Commerce Growth in Algeria: Challenges and Strategic Recommendations*. *Industrial Economics Review (KHAZZARTECH)*, 15(02), pp. 177-197.; Wilson, N., Keni, K., & Tan, P. H. P. (2021). *The Role of Perceived Usefulness and Perceived Ease-of-Use Toward Satisfaction and Trust which Influence Computer Consumers' Loyalty in China*. *Gadjah Mada International Journal of Business*, 23(3), pp. 262-294.

⁶ Cieslak, V. (2025). *Moving beyond conventional resistance and resistors: an integrative review of employee resistance to digital transformation* (Au-delà de la résistance et des résistants conventionnels : une revue intégrative de la résistance des employés à la transformation numérique). *Cogent Business & Management*, Vol. 12, No. 1, pp. 1-35.; Holl, A., & Rama, R. (2024). *SME digital transformation and the COVID-19 pandemic: a case study of a hard-hit metropolitan area*. *Science and Public Policy*, Oxford, pp. 1-15.

⁷ Cieslak, V. (2025), Op. cit.

⁸ Chaib, W. (2020), Op. cit.; Tawil, A.-R. H., Mohamed, M., Schmoor, X., Vlachos, K., & Haidar, D. (2024). *Trends and Challenges towards Effective Data-Driven Decision Making in UK Small and Medium-Sized Enterprises: Case Studies and Lessons Learnt from the Analysis of 85 Small and Medium-Sized Enterprises*. *Big Data and Cognitive Computing*, 8, 79. <https://doi.org/10.3390/bdcc8070079>

training, transforming the digital transition from a perceived obstacle into an actively managed change process.¹

This internal change management requires a definitive paradigm shift at the leadership level: moving from summary, intuitive "gut-feeling" management to Data-Driven Decision Making (DDDM).² Because human decision-makers face inherent cognitive limitations when processing complex consumer information, leadership must actively champion the use of analytics to augment judgment.³ However, overcoming "cultural inertia" and an ingrained dependency on traditional business methods cannot be entirely delegated to IT departments; it requires a committed C-suite that fosters an environment of experimentation and continuously integrates digital insights into the organization's overarching strategic goals.⁴

Table N°14: Forms of Behavioral Resistance to Digital Transformation

Resistance Category	Individual Manifestation	Collective Manifestation
Active (Overt)	Sabotage or Turnover	Voicing discontent or Public displays of resistance
Active (Covert)	Cyberloafing or manipulating technology	Anonymous groups of resistance
Passive	Nonwork or absenteeism	Return to established routines

Source: Adapted from Cieslak & Valor, 2025⁵

Externally, adoption friction is heavily driven by the "digital literacy gap" among traditional shoppers. In emerging economies, consumers often exhibit a profound "frilosité" (reluctance) toward digital commerce, driven less by a lack of hardware and more by a deficit in both technical e-skills (the ability to operate an app) and informational e-skills (the cognitive ability

¹ Singla, A., Sukharevsky, A., Yee, L., Chui, M., & Hall, B. (2025). *The state of AI: How organizations are rewiring to capture value*. McKinsey & Company, March 2025, pp. 1-23.; Tawil, A.-R. H., Mohamed, M., Schmoor, X., Vlachos, K., & Haidar, D. (2024), Op. cit.; Holl, A., & Rama, R. (2024), Op. cit.

² Chaib, W. (2020), Op. cit.; Singla, A., Sukharevsky, A., Yee, L., Chui, M., & Hall, B. (2025), Op. cit.; Nurqamarani, A. S., Soegiarto, E., & Nurlaeli. (2021). *Technology Adoption in Small-Medium Enterprises based on Technology Acceptance Model: A Critical Review* (L'adoption des technologies dans les petites et moyennes entreprises sur la base du modèle d'acceptation de la technologie : une revue critique). *Journal of Information Systems Engineering and Business Intelligence*, Indonesia/Vol. 7, No. 2, pp. 162-172.

³ Chaib, W. (2020), Op. cit.

⁴ Cieslak, V. (2025), Op. cit.; Singla, A., Sukharevsky, A., Yee, L., Chui, M., & Hall, B. (2025), Op. cit.; Farinloye, T. (2024). *Bridging the digital divide: Consumer engagement with traditional and digital platforms*. *Journal of Consumer Behaviour*.

⁵ Cieslak, V. (2025), Op. cit.

to evaluate digital risk).¹ This hesitancy is deeply compounded by ingrained sociocultural habits; Algerian consumers remain highly attached to the physical proximity, face-to-face bargaining, and informal credit (carnet de crédit) offered by the traditional grocer, maintaining a psychological reliance on physical cash.² Because perceived ease-of-use is the primary predictor of technology acceptance, a digital loyalty system cannot immediately attempt to displace these deeply rooted cash-based interactions.³ Instead, successful customer "onboarding" requires the deployment of highly intuitive, frictionless User Interfaces (UI) combined with offline training and absolute data transparency, operating as a hybrid extension of the physical store rather than a disruptive replacement.⁴

3.3.3. Financial Sustainability: Balancing SaaS Cost Structures with Customer Lifetime Value (CLV)

Traditional software acquisition requires substantial capital expenditure (CapEx) for licensing, local servers, and skilled IT personnel, creating a severe financial barrier for Small and Medium-sized Enterprises (SMEs).⁵ However, the emergence of the Software-as-a-Service (SaaS) model has fundamentally shifted these expenditures to operational expenditure (OpEx), allowing small retailers to pay only for the cloud services they utilize.⁶ This shift is critical because in a highly competitive market, acquiring a new customer costs six to seven times more than retaining an existing one.⁷ To survive, SMEs must master their unit economics, specifically the ratio between Customer Acquisition Cost (CAC) and Customer Lifetime Value (CLV). A healthy digital loyalty program aims for a CLV:CAC ratio of 3:1, meaning the business earns three dollars over the customer's lifespan for every dollar spent on marketing and acquisition.⁸ Achieving this ratio signals that the technological investment is self-sustaining and efficiently repaid through repeat purchases.⁹

¹ Farinloye, T. (2024), Op. cit.; Djeffell, O. (2025). *The Impact of Digital Literacy on Algerian Consumers' Adoption of Online Shopping: An Empirical Study with S.E.M Approach*. *Forum For Economic Studies and Research Journal*, Algeria, Volume 09, N° 01, pp. 724-737.; Djoudi, M. (2004), Op. cit.

² Chaib, W. (2020), Op. cit.; Farinloye, T. (2024), Op. cit.

³ Wilson, N., Keni, K., & Tan, P. H. P. (2021), Op. cit.

⁴ Farinloye, T. (2024), Op. cit.; Djeffell, O. (2025), Op. cit.; Djoudi, M. (2004), Op. cit.

⁵ Williamson, L., Shah, I. H., Rüschenndorf, M., & Swaminathan, H. (2026). Economic and Operational Benefits of SaaS for Small and Medium Enterprises (SMEs).

⁶ ibid

⁷ Wharton Executive Education. (n.d.). *Customer Lifetime Value: What It Is and Why It Matters*. Retrieved from: <https://executiveeducation.wharton.upenn.edu/thought-leadership/wharton-online-insights/why-customer-lifetime-value-matters/> ; Hossain, M. (2026). *The Effectiveness of Loyalty Programs in Shaping Long-Term Customer Retention*. *European Journal of Science and Modern Technologies*, 2(1), pp. 111-123..

⁸ NetSuite. (2025). *Measuring Customer Lifetime Value (CLV) in Modern Retail Environments*. Oracle Help Center. Retrieved from: https://docs.oracle.com/en/cloud/saas/netsuite/ns-online-help/chapter_1542962578.html ; Rivo. (2025, December). *Customer Acquisition Cost vs Customer Lifetime Value*. Retrieved from: <https://www.rivo.io/blog/customer-acquisition-cost-vs-customer-lifetime-value>

⁹ Wharton Executive Education. (n.d.). Op. cit. ; Rivo. (2025, December). Op. cit.

Table N°15: Core Metrics for Small Business Profitability Models

Metric	Formula
Customer Lifetime Value (CLV)	$(\text{Average Purchase Value} \times \text{Purchase Frequency}) \times \text{Average Customer Lifespan}$
Customer Acquisition Cost (CAC)	$\text{Total Marketing and Sales Expenses} / \text{Number of New Customers Acquired}$
CLV to CAC Ratio	$\text{Customer Lifetime Value (CLV)} / \text{Customer Acquisition Cost (CAC)}$

(Source: Author's elaboration based on Admetrics. (2026). CLV to CAC Ratio:

Sustainable Unit Economics for SMEs ¹

Beyond initial acquisition, the SaaS model relieves SMEs of the hidden costs associated with continuous technical maintenance. Because the cloud provider manages the infrastructure, security, and automatic updates, the local retailer is freed from the financial burden of hiring specialized IT staff.² Instead, operational costs are managed through flexible subscription pricing models. By adopting tiered or usage-based pricing structures, SMEs can align their software expenses directly with their revenue cycles and actual platform usage, allowing them to scale their digital operations without paralyzing upfront financial friction.³

Table N°16: Comparison of SaaS Pricing Models for Retail Systems

Pricing Model	Description	Benefit for SMEs
Fixed Pricing	A straightforward, set fee for a specific level of service or product .	Predictability makes it easier to budget expenses .
Usage-Based (UBP)	Charges based on actual service usage (data, time, or storage) .	Flexible "pay-as-you-go" model aligns cost with value derived .

¹ Admetrics. (2026). *CLV to CAC ratio: The ultimate 2026 guide*. Retrieved from: <https://www.admetrics.io/en/post/clv-to-cac-ratio>

² Williamson, L., Shah, I. H., Rüschenndorf, M., & Swaminathan, H. (2026), Op. cit.; Gartner. (2026). *The Future of SaaS: Subscription Fatigue and the Shift to Usage-Based Pricing*. (As cited in Flexera, 2026).

³ Williamson, L., Shah, I. H., Rüschenndorf, M., & Swaminathan, H. (2026), Op. cit.; Invesp. (2025). *The State of SaaS Pricing Strategy—Statistics and Trends 2025*. Retrieved from: <https://www.invespcro.com/blog/saas-pricing/> ; Infraon. (2025). *SaaS Subscription Management: A Detailed Guide for 2025*. Retrieved from: <https://infraon.io/blog/saas-subscription-management-a-detailed-guide/> ; Thales Group. (2025). *Software Pricing Models: Enterprise SaaS Pricing Models & Strategies*. Thales CPL. Retrieved from: <https://cpl.thalesgroup.com/software-monetization/saas-pricing-models>

Tiered Pricing	Customers choose from different service levels based on needs and budget .	Allows for scalability as the business grows .
Feature-Based	Price is determined by the number and complexity of included features .	Prevents paying for unnecessary functionalities .

(Source: Author's elaboration based on Infraon, 2025 ¹; Invesp, 2025 ;² Thales Group, 2025)³

However, the ultimate strategic longevity of a digital loyalty program depends on its ability to evolve without eroding the retailer's already thin profit margins .⁴ The primary financial risk of traditional programs is "margin drain"—providing blanket monetary discounts to customers who would have made a purchase regardless of the reward .⁵ To protect profitability, businesses must utilize predictive analytics to monitor CLV, identify early signs of churn (such as declining purchase frequency), and proactively deploy targeted retention strategies rather than reactive price slashing.⁶ Furthermore, empirical research demonstrates that retailers can drastically reduce direct financial outlays by diversifying their rewards; incorporating "soft" benefits—such as social, exploratory, and entertainment rewards—proves just as statistically effective in building emotional brand connection and long-term relationship investment as direct monetary savings .⁷

Table N°17: Strategic Objectives for Long-term Loyalty Program Profitability

Strategy	Operational Mechanism	Financial Impact
Holistic Incentives	Uniting loyalty management and personalized promotions into a single strategy.	Precision rewarding that prevents margin drain from blanket discounts.

¹ Infraon. (2025), Op. cit.

² Invesp. (2025), Op. cit.

³ Thales Group. (2025), Op. cit.

⁴ Talon.One, & Retail Dive. (2026, January). *Top loyalty trends for 2026: Driving profit, not just participation*. Retail Dive. Retrieved from: <https://www.retaildive.com/spons/top-loyalty-trends-for-2026-driving-profit-not-just-participation/809432/>

⁵ ibid

⁶ NetSuite. (2025), Op. cit.

⁷ Fourie, S., Goldman, M., & McCall, M. (2022). *Designing for loyalty programme effectiveness in the financial services industry*. *Journal of Financial Services Marketing*, Vol. 27, pp. 265–282.

CLV Monitoring	Using historical data to spot early signs of churn (declining frequency).	Adjusting pricing and upsell opportunities to stabilize revenue.
Product Portfolio Optimization	Phasing out underperforming products in favor of high-rotation items.	Reduction in inventory costs and indirect improvement of unit economics.
Experience-Led Loyalty	Shifting focus from purely points-based rewards to dynamic brand experiences.	Building emotional connection to ensure the brand stays "top of mind" without price slashing.

Source: Author's elaboration based on NetSuite, 2025;¹ Retail Dive, 2026²

Ultimately, the survival of traditional SMEs in the face of mass retail expansion dictates a strategic reconciliation between historical interpersonal trust and modern data-driven retention. Because infrastructural deficits and a cash-dominant culture inherently reject complex enterprise software, successful digitalization must manifest as lightweight, frictionless SaaS architectures. By aligning these scalable cloud models with a rigorous focus on customer lifetime value, small retailers can effectively translate their natural physical proximity into sustainable, long-term relational equity.

¹ NetSuite. (2025), Op. cit.

² Talon.One, & Retail Dive. (2026, January), Op. cit.

Chapter Conclusion:

It is evident that small retailers cannot survive by attempting to mimic the resource-heavy, price-slashing strategies of mass retail; instead, their survival depends on cultivating deep relational value. Overcoming the localized barriers of data paucity and behavioral friction requires abandoning complex enterprise software in favor of lightweight, frictionless SaaS mobile platforms. These solutions must act as hybrid extensions of physical proximity rather than disruptive replacements. Having established the theoretical necessity of e-loyalty and identified the specific socio-technical challenges hindering its adoption in this chapter, the focus must now shift toward practical application. The ensuing challenge is how to specifically design and operationalize a targeted digital loyalty model capable of bypassing these constraints, a framework that will be detailed and developed in the following chapter.

Chapter (2):
Customer Retention Strategies and the
'FIDIALY' SaaS Proposition

Chapter introduction:

Chapter One established the theoretical foundations of relational marketing, customer relationship management (CRM), and digital loyalty programs. Chapter Two transitions from these foundations to a critical strategic question: how firms can effectively retain customers over time. Within this framework, customer retention is treated not merely as an abstract marketing ideal, but as a quantifiable and scalable business capability. Retention is defined herein as the continuation of the structural and emotional affiliation between the customer and the firm, emphasizing that organizations require clear, business-model-specific metrics to measure it effectively.

This chapter is organized into three interrelated sections. The first section examines the strategic distinction between customer acquisition and retention, mapping the customer journey, identifying critical touchpoints, and discussing the primary relational drivers: satisfaction, trust, and engagement. The second section presents the essential quantitative indicators used to monitor retention performance, including customer retention rate (CRR), churn rate, customer lifetime value (CLV), and RFM (Recency, Frequency, Monetary) analysis. The third section connects these empirical concepts to digital loyalty ecosystems, demonstrating how a Software-as-a-Service (SaaS) solution like Fidialy can help agri-food small and medium enterprises (SMEs) manage customer relationships systematically. Ultimately, the objective is to bridge theoretical insights with operational relevance, turning retention into a practical, data-driven process within competitive small-business environments.

Section 1: Customer Retention: Concepts and Strategies

This section lays the conceptual groundwork for relationship marketing by exploring how businesses actively keep their customers close. It begins by unpacking the strategic balance between customer acquisition and retention, illustrating how a company's focus naturally evolves over its lifecycle. The discussion then maps out the modern customer journey, targeting the crucial touchpoints where brand perceptions are truly formed. Finally, it examines the psychological pillars of loyalty specifically satisfaction, trust, and commitment demonstrating how these human elements serve as an organization's strongest defense against competitive attrition.

1.1. Defining Retention and the Distinction: "Acquisition vs. Retention":

1.1.1. Defining Retention:

Customer retention is commonly defined as the opposite of customer defection, which implies that when a company is able to retain a high number of customers, then it has a low number of customers who have left or defected. It can also be defined as the company's ability to keep its current customers with its business on a continuing basis over time.

Retention of customers is not always an easy thing to define. According to the literature, there are a variety of ways to measure retention, depending on the type of business involved. Companies that provide the same kind of product and whose customers have similar consumption patterns (such as electricity companies), can measure retention using the number of customers that are still purchasing from the company. Conversely, companies that provide unique or specialized products can use different retention indicators. These reflect how well customers are spending, saving, or buying from them, rather than simply counting the number of customers who continue to purchase.

Additionally, measuring retention based on aggregated totals can be misleading because customers may be in different levels of profitability and purchasing power. Typically, there are a small number of customers that generate the majority of revenue for the company. Many times, companies can experience hidden defections, where a customer continues to remain in good standing with the business but has reduced their purchases or has moved some of their purchases to a competing business¹. Therefore, in order to manage customer retention

¹ Reichheld, F. F. (1996). *The loyalty effect*. Harvard Business School Press.

effectively, companies must have a clear and specific definition of retention that is accompanied by measuring tools that are designed specifically for their company's business model.¹

Customer retention has usually been defined in the Ginn et al. definition of "the continuation of an affiliation between the customer and the company" as an opportunity of a company to receive a repurchase of the current clients². Different studies estimate varying ratios. Jobber and Fahy reported that acquisition marketing was six times more expensive, while Reichheld and Sasser estimated the cost at 5 to 25 times higher, depending on the industry.³ Hwang et al. indicates that retention is a successful technique because of the understanding of its clients by the company and the ability to customize market targeting.

In other words, customer retention is the ability of a company to keep its customers over time and encourage them to continue buying from it instead of switching to competitors. It is not only about keeping customers in the database, but also about maintaining an active and valuable relationship with them. Because some customers are more profitable than others, retention should be measured with indicators that fit the business model, not only with simple customer counts.

1.1.2. Defining acquisition:

"Acquiring correct customers is a first step in Customer Relationship Management. It can be used to identify potential profitable, loyal new customers."⁴

The way in which the customer acquisition fits into an organization's positioning and the value of a client will depend on the circumstances surrounding that organization. For example, a new market entry would place an emphasis on attracting customers while an existing company would put emphasis on the retention of customers. For new products and new companies, customer acquisition is usually a primary goal. For a smaller company that wants to grow its base⁵, customer acquisition is just as important as customer retention, because acquiring an additional customer will double the company's customer base, but losing one customer represents the potential bankruptcy of a company. Customer buyback is also typically important

¹ Ahmad, R., & Buttle, F. (2001). Customer retention: A potentially potent marketing management strategy. *Journal of Strategic Marketing*, 9(1), 29–45.

² Ginn, J., Stone, M., & Ekinci, Y. (2010). Customer retention management in the recession. *Journal of Direct, Data and Digital Marketing Practice*, 12(2), 115–127. <https://doi.org/10.1057/dddmp.2010.27>

³ Reichheld, F. F., & Sasser, W. E. (1990). Zero defections: Quality comes to services. *Harvard Business Review*, 68(5), 105–111.

⁴ Verhoef, P. C. (2003). *Understanding the effect of customer relationship management efforts on customer retention and customer share development*. *Journal of Marketing*, 67(4), 30–45. <https://doi.org/10.1509/jmkg.67.4.30.18685>

⁵ Ang, L., & Buttle, F. (2006). Customer retention management processes: A quantitative study. *European Journal of Marketing*, 40(1/2), 83–99.

to reduce the impact of natural attrition. Replacing a customer typically costs far more than retaining an existing customer. Acquiring new customers involves strategic operational activities designed to identify, attract and convert potential customers into new ones. To sustain their market position and grow, organizations must replace all lost customers consistently due to high levels of competition and ongoing migration of customers between firms within a highly competitive environment¹.

The first step in the acquisition process is to identify prospective buyers through market segmentation and targeting strategies. Companies need to evaluate their customers based on who fits into their ideal customer profile, what they want to purchase, how much money they can spend, and how profitable they will be for the company. Once the potential buyer has been identified, the company will select communication methods (directly such as a sales force or a call center, or indirectly such as through advertising) in order to make contact with the individual or organization and create interest.

Acquiring customers also includes developing promotional activities to encourage a purchase transaction. In consumer markets, advertising and promotions tend to be used primarily to acquire new customers, while in B2B markets, personal sales, negotiations, trade shows or other means of establishing a relationship with a prospective buyer tend to be the primary method of acquiring new customers².

Acquiring customers is not solely about increasing numbers of customers. The literature suggests that companies should also consider the long-term quality and value of newly-acquired customers.

In the agro-food retail sector, acquisition often happens organically through local visibility and word-of-mouth, making the quality of each customer interaction critical for both attracting and retaining customers.

In simple terms, customer acquisition is about finding and winning new customers through segmentation, communication, and promotional activities. However, it is not only about increasing numbers; companies should also pay attention to the quality and long-term value of the customers they acquire. In agro-food retail, acquisition often happens through visibility and word of mouth, so every customer interaction matters.

¹ Filip, A., & Voinea, L. (2012). Customer behavior and its implications for marketing strategies. *International Journal of Economic Practices and Theories*, 2(2), 164–175.

² Kotler, P., & Armstrong, G. (2018). *Principles of marketing* (17e éd.). Pearson Education, p. 120.

1.1.3. Acquisition vs Retention:

The two components of customer relationship management-- acquisition and retention-- complement one another but are strategically independent from each other. Acquisition is about obtaining new customers through one-time transactions; whereas retention is about building long-term relationships with customers through ongoing interactions. When leveraged together as a whole, the two components form a complete customer relationship management strategy. Acquisition focuses primarily on growth acquiring new customers through segmentation, targeting and communication to find new prospects and to grow the company's customer base. However, businesses are finding it increasingly difficult to acquire new customers due to shrinking profit margins and greater competitiveness among companies within their industry¹. For instance, acquisition costs can be quite high when firms attempt to acquire customers from their competition because of the growing complexity, competition and expense involved in attracting customers. According to Zhang et al, the level of competitive density that exists in a given market area greatly impacts the effectiveness of an organization's acquisition efforts as companies have to increase their efforts and differentiate themselves more than they would if there was no competition.²

In contrast, retention is more about developing and maintaining profitable relationships with customers over time. As noted by Ahmed and Buttle, retention can be defined as "the opposite of defection" as retention is just as important to the company's strategic position as reducing defection.³ To effectively manage retention, an organization has to accurately measure retention; that is, an organization needs to decide whether retention will be based on the total number of customers who continue to purchase from the organization or the percentage of customers who continue to purchase from the organization. Furthermore, an organization should not rely on aggregate retention rates alone because the retention rate of only a small percentage of an organization's customers may represent a significant amount of the organization's overall profit.

This table helps us to see the differences between customer acquisition and customer retention across several strategic dimensions.

¹ Kotler, P., & Keller, K. L. (2016). Marketing management (15th ed.). Pearson.

² Zhang, J., Farris, P. W., Irvin, J. W., Kushwaha, T., Steenburgh, T. J., & Weitz, B. A. (2016). Competitive density and its impact on customer acquisition. *Journal of Marketing*, 80(4), 1–20.

³ Ahmad, R., & Buttle, F. (2001). Customer retention: A potentially potent marketing management strategy. *Journal of Strategic Marketing*, 9(1), 29–45.

Table N°1: Differences between Customer Acquisition and Customer Retention

Dimension	Customer acquisition	Customer retention
Objective	Attract new customers	Maintain existing customers
Cost level	5 to 25 times higher	Significantly lower
Time horizon	Short to medium term	Long-term orientation
Selling probability	5% to 20%	60% to 70%
Profitability	Often delayed payback	Often faster payback / higher long-term value
Key tools	Advertising , promotions, local visibility, referrals, SEO, paid search	Email marketing, loyalty programs, CRM, personalization

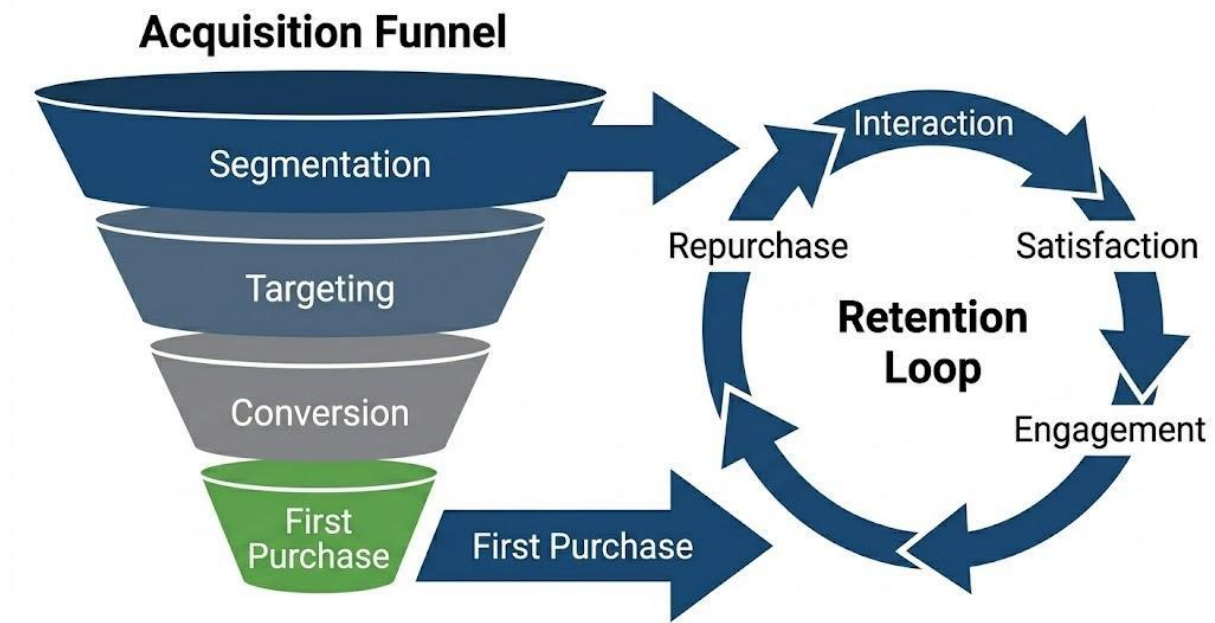
Source: Prepared by the author based on Reichheld & Sasser (1990)¹ and InvespCRO (2024)²

As illustrated in this Table, retention presents clear advantages in terms of cost, profitability, and selling probability. These differences explain why an increasing number of businesses are shifting their focus toward retention-oriented strategies, particularly SMEs with limited marketing budgets.

¹ Reichheld, F. F., & Sasser, W. E. (1990). *Op. cit.*

² InvespCRO. (2024). Customer acquisition vs. retention costs: Statistics and trends. *Invesp Blog*. Retrieved from: <https://www.invespcro.com/blog/customer-acquisition-retention/>

Figure N°01: Transition from a transactional model to a relational retention loop



Source: Author's elaboration, adapted from Kotler, Kartajaya, & Setiawan (2017)¹

As shown in this Figure long-term enterprise viability depends on seamlessly transitioning consumers from the linear acquisition funnel into a continuous retention loop. While the traditional funnel drives the critical first purchase, sustainable profitability is co-created within the post-purchase cycle. Here, meaningful interaction builds genuine satisfaction and emotional engagement, naturally fostering routine repurchasing. By shifting focus from isolated transactions to human-centric relationships, this framework operationalizes the loop to mitigate competitive attrition and secure enduring lifetime value.

1.1.4. Strategic Drivers and Mechanisms of Customer Retention:

Customer retention is not driven by a single factor but rather by a combination of interconnected strategic mechanisms that shape customer behavior over time. Recent literature highlights that retention is influenced by both relational and technological dimensions, where firms seek not only to satisfy customers but also to actively engage them and build long-term value.

One of the most significant drivers of retention is customer engagement. According to Ali et al. , timely and proactive engagement through personalized interactions and responsive communication acts as a bridge between customer satisfaction and loyalty.² This suggests that firms must go beyond reactive strategies and anticipate customer needs in order to reduce churn.

¹ Kotler, P., Kartajaya, H., & Setiawan, I. (2017). *Marketing 4.0: Moving from Traditional to Digital*. Wiley.

² Ali, N., Bakar, S. A., & Lestari, R. (2025). From responsiveness to retention: Unpacking the role of timely engagement in customer loyalty. *International Journal of Research and Innovation in Social Science*.

Closely related to engagement is personalization, which has become a central component of modern retention strategies. Research indicates that personalized experiences, supported by data analytics and digital tools, significantly enhance customer satisfaction and strengthen emotional connections with the brand ¹by tailoring offers, messages, and services to individual preferences, firms can increase both perceived value and switching costs.

In this context, Customer Relationship Management (CRM) systems play a critical role. CRM technologies enable firms to collect, analyze, and utilize customer data to improve decision-making and relationship management. As highlighted by Rainy and Goswami , AI-enabled CRM systems enhance retention through personalization, predictive analytics, and proactive churn management. Similarly, Mittal emphasizes that effective CRM practices contribute to higher levels of trust, satisfaction, and long-term loyalty.

Another important mechanism is the use of loyalty programs, particularly digital ones. These programs provide structured incentives that encourage repeat purchases while strengthening the emotional bond between customers and firms. However, their effectiveness depends on design quality and alignment with customer expectations². When combined with personalized offers and engagement strategies, loyalty programs can significantly enhance retention outcomes³.

Moreover, Omnichannel communication strategies have emerged as a key factor in customer retention. Firms that integrate multiple communication channels such as email, social media, and mobile platforms are better able to maintain continuous interaction with customers and deliver consistent experiences ⁴Effective communication not only improves satisfaction but also reinforces trust and relationship continuity.

Finally, digital marketing and social media engagement contribute significantly to retention by fostering interaction and community building. Studies show that interactive content, real-time communication, and targeted campaigns positively influence customer satisfaction and loyalty ⁵these tools allow SMEs, in particular, to compete more effectively despite limited resources.

¹ Liu, H., & Gumban, S. E. (2025). Customer engagement, satisfaction, retention, and repurchase intentions as mediated by marketing strategies. *Psychology and Education: A Multidisciplinary Journal*, 49(3), 382–387. <https://doi.org/10.70838/pemj.490308>

²¹⁷ Mishra, S., & Siddharth, B. (2025). Bank loyalty programs and customer retention: Effectiveness, barriers, and future pathways. *International Journal of Research in Commerce and Management Studies*, 7(5), 187-194

³ Pandirkar, S., & D'Souza, R. (2025). Navigating customer retention in competitive markets: The impact of strategic loyalty initiatives. *Journal of Business and Retail Management Research*, 19(2), 45–58.

⁴ Butt, A., et al. (2023). Changing market dynamics and consumer expectations: Re-evaluating customer loyalty and brand switching in the digital retail ecosystem. *International Journal of Retail & Distribution Management*, 51(4), 412–429.

⁵ Vijaya, T., & Durai, K. M. (2025). Influence of digital marketing strategies on customer satisfaction and retention in e-commerce. *International Journal of Research in Commerce and Management Studies*, 7(6), 458–466; Pathak, R. (2025). Fostering customer loyalty through personalized digital engagement and brand positioning. *Journal of Marketing Theory and Practice*, 33(1), 89–104.

Overall, these strategic drivers demonstrate that customer retention is a dynamic and multi-dimensional process. It requires the integration of engagement, personalization, technological tools, and communication strategies to create sustainable and profitable customer relationships.

1.2. The Customer Journey and Touchpoints:

1.2.1. The customer journey:

The customer journey refers to the sequence of phases and experiences consumers navigate when interacting with a company during the purchase of a product or service. As Bajak and Spendel notes, it extends beyond the purchase moment to encompass decision-making stages before, during, and after the transaction.¹ These stages reveal how consumers reflect on choices, explore market options, and select the solution best suited to their needs.

Traditionally, businesses focused on the purchase instant as the core of consumer decision-making. Contemporary research, however, emphasizes that customer behavior stems from interconnected experiences across the entire journey. Viewed as a dynamic process, it involves ongoing brand interactions across channels and contexts. Recent studies, such as those from McKinsey & Company, advocate treating the journey as a holistic experience rather than isolated touchpoints like sales, service calls, or website visits ². It is the cumulative effect of these interactions that shapes satisfaction and loyalty.

Modern marketing frameworks model the journey through structured stages. The 5A model by Kotler, Kartajaya, and Setiawan (Aware, Appeal, Ask, Act, and Advocate) exemplifies this: consumer's progress from brand awareness to interest, information-seeking, purchase, and advocacy³.

Amid market complexity and digital evolution, customer-company interactions proliferate. Firms thus employ customer journey mapping to visualize and analyze these exchanges, identify key stages, anticipate expectations, and detect friction points.

In SMEs within the agro-food sector, the journey may appear shorter due to repeat purchases. Yet, each stage remains strategically vital: minor experience enhancements yield substantial gains in satisfaction and long-term loyalty. Understanding the journey is crucial for retention strategies, particularly by embedding digital loyalty programs across its phases. These tools

¹ Bajak, M., & Spendel, Ł. (2022). Building consumer engagement and loyalty while traversing the customer journey in the online space. *Scientific Papers of Silesian University of Technology. Organization and Management Series*, 2019(139).

² Maechler, N., Neher, K., & Park, R. (2016). From touchpoints to journeys: Seeing the world as customers do. McKinsey & Company.

³ Kotler, P., Kartajaya, H., & Setiawan, I. (2017)., op. cit., p. 58.

boost engagement, personalize interactions, and drive repeat buys, enhancing SMEs' competitiveness.

Table N°2:Generic Customer Journey Model

Stages	Description	Agri-food examples
Aware	Customer becomes aware of the brand	Sees the mini-market while walking by or hears about it from a neighbor
Appeal	Customer is attracted to the brand	Notices fresh products displayed and a clean storefront
Ask	Customer seeks more information	Asks about prices, checks if they have specific products
Act	Customer makes a purchase	Buys daily groceries from the store
Advocate	Customer recommends the brand	Tells friends and family , leaves a positive review online

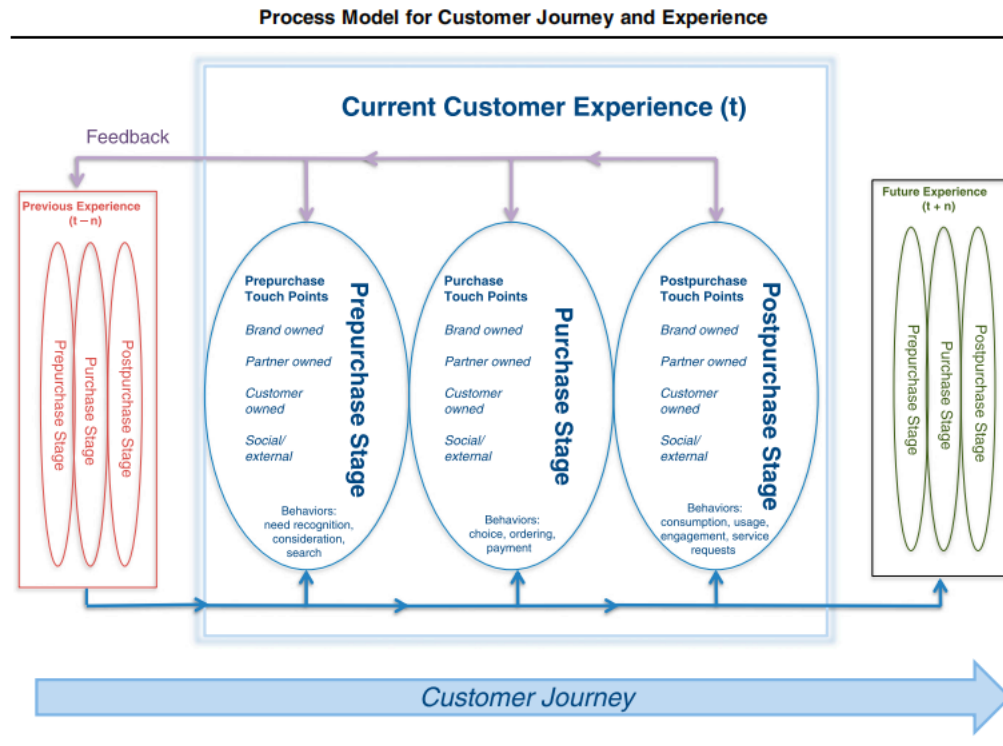
Source: Adapted from Kotler, Kartajaya & Setiawan (2017)¹

Adapting Kotler et al.'s 5As framework, this model traces how a passerby becomes a brand champion. Drawn in by immediate sensory cues like fresh produce or a clean storefront the consumer moves from curiosity to a routine purchase.

However, the leap from a routine purchase to active advocacy (Advocate) is fragile. To secure this connection, implementing mobile CRM applications is essential. These digital tools transform a linear, one-time transaction into an ongoing relationship loop, effectively turning everyday shoppers into long-term brand partners.

¹ Ibid.

Figure N°02: Model for Customer journey and Experience



Source: Process Model for Customer Journey and Experience (Lemon & Verhoef, 2016).¹

As shown in this Figure, Lemon and Verhoef model customer experience as a continuous process across three stages: prepurchase, purchase, and postpurchase. A customer's current reality is never an isolated event; it is shaped by past interactions and directly creates future expectations through a strategic feedback loop.

Across this path, consumers encounter a mix of brand, partner, customer, and social touchpoints. For digital loyalty platforms, mapping these interactions smoothly is essential to guide a user from their initial search straight into long-term, postpurchase engagement.

1.2.2. Touchpoints:

Customer touchpoints represent any moment when a consumer connects with a brand, its products, services, employees, or communication channels whether online or offline. These encounters generate impressions that profoundly influence customer perceptions.² For instance, a touchpoint might involve browsing a website, interacting with a salesperson in-store,

¹ Lemon, K. N., & Verhoef, P. C. (2016). Understanding customer experience throughout the customer journey. *Journal of Marketing*, 80(6), 69–96.

² Groissberger, M. (2017). Customer touchpoints. Retrieved May 2026, from <https://www.groissberger.at/customer-touchpoints>

receiving an email promotion, or using a mobile app for support. As defined by Maechler, Neher, and Park, touchpoints are discrete interactions with organizational elements such as marketing communications, service encounters, digital platforms, or physical retail spaces.¹ Each one contributes cumulatively to shaping satisfaction, trust, and brand loyalty.

More formally, Homburg et al. define touchpoints as the various interactions between the brand and customers throughout the customer journey, designed for different activities along the journey.² Lemon and Verhoef further classify touchpoints into four categories summarized in this table³:

Table N°3:Categories of touchpoints:

Category	Definition	Examples
Brand-owned	Interactions that the firm designs and manages.	Advertisements, website, campaigns, productization of service, pricing
Partner-owned	Interactions jointly managed and controlled by the firm and a partner of the firm.	Interactions with distribution partners, marketing agencies, communication channel partners
Customer-owned	Customer actions that are not controlled by any external actors.	Requirement elicitations, budgeting
Social/external	Interactions caused by other external actors that affect the customer experience.	Interactions with other customers, peer reviews, independent information sources

Source: Lemon, K. N., & Verhoef, P. C. (2016). "Understanding customer experience throughout the customer journey." *Journal of Marketing*, 80(6), 69–96.⁴

The digital transformation of markets has dramatically expanded the scope and number of touchpoints. Customers now navigate hybrid journeys blending physical and digital channels, including websites, mobile applications, social media, and traditional outlets like stores or call centers.⁵ This Omnichannel fluidity means consumers fluidly switch between environments for

¹ Maechler, N., et al. (2016), op. cit., p. 9

² Homburg, C., Jozić, D., & Kuehn, C. (2017). Customer experience management: Toward a novel research agenda. *Journal of the Academy of Marketing Science*, 45(3), 377–401.

³ Lemon, K. N., & Verhoef, P. C. (2016), op. cit., p. 82.

⁴ Ibid.

⁵ Kruse, L., Brandão, M. M., & Wolfram, P. (2018). Customer Journey Touchpoints und Content-Arten. In *Digitales Dialogmarketing* (pp. 327–380). Springer Gabler. https://doi.org/10.1007/978-3-658-22192-6_12

example, researching online before buying in-store creating an intricate web of interactions that collectively define their brand experience.

However, many organizations err by optimizing touchpoints in isolation, such as refining website usability or streamlining service calls, without considering the broader journey¹. Such fragmented efforts rarely yield holistic improvements. Instead, customer satisfaction and loyalty emerge from the synergistic effect of multiple touchpoints interconnected across the entire journey.

To excel in CTM, companies must systematically map, prioritize, and manage key touchpoints. This involves analyzing interaction patterns to uncover pain points, ensure message consistency, and personalize experiences. For SMEs in competitive sectors like agro-food, effective CTM can differentiate through targeted enhancements, such as integrating loyalty apps at checkout or post-purchase follow-ups via SMS. Ultimately, proactive touchpoint management reduces friction, elevates service quality, and cultivates enduring customer relationships.

Figure N°03: the touchpoints at each stage



Source: Adapted from Philip Kotler et al. (2017).²

As shown in this Figure, the customer journey is a chronological path across four phases: Awareness, Consideration, Purchase, and Service & Loyalty. Along this timeline, a shopper moves from initial product research and store visits to the actual transaction and post-purchase feedback. This model maps how micro-touchpoints drive each phase shifting from discovery tools like online ads and reviews to direct sales channels, and finally to relationship-building

¹Maechler, N., Neher, k., & Park, R. (2016)., op. cit., p. 8

² Kotler, P., Kartajaya, H., & Setiawan, I. (2017)., op. cit., p. 58.

mechanisms like customer support and surveys. For digital platforms, seamlessly linking these milestones is essential to eliminate friction and successfully convert a one-time buyer into an active brand advocate.

1.2.3. The Customer Journey and Touchpoints:

The concepts of customer journey and touchpoints are interrelated because every touchpoint is a specific point where customers interacted with the brand, collectively contributing to the total experience customers have with that brand throughout their entire journey. While customer journey is a sequence of the different stages that customers go through when they interact with brands or their representatives, touchpoints are the actual moments that occur at each stage of the customer journey.

According to Groissberger, each interaction creates an impression, impacting how the customer perceives the brand.¹ All of these interactions take place across a variety of communication channels and settings, including both physical and digital. Together, these interactions combine to create the complete customer experience that all customers will ultimately say they associate with that brand as they complete their journey.

Research conducted by McKinsey & Company indicates that touchpoints should not be analyzed individually but examined for how they interconnect throughout the customer journey²

One individual interaction will affect how customers perceive the brand, but their overall experience will be determined by the sum of the specific touchpoints and their continuity. Businesses need to focus their efforts on managing the customer's entire journey, not just optimally managing each individual touching moment.

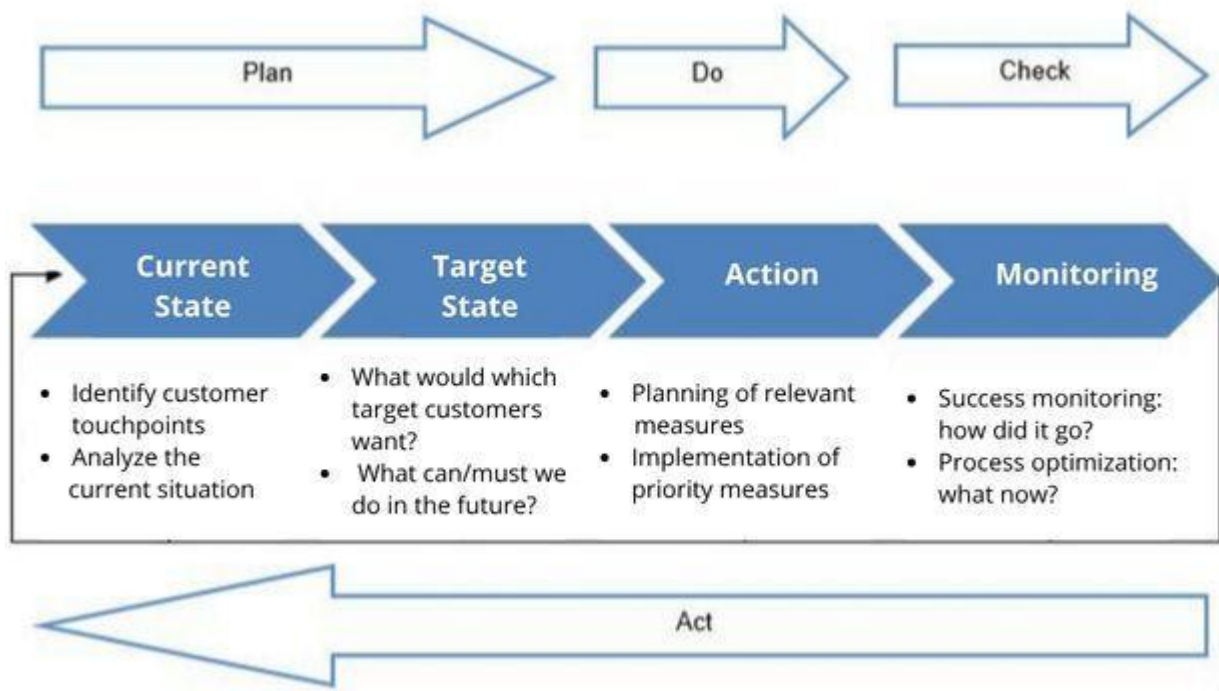
As a result of the explosive growth of the number of digital channels in the last few years, customer journeys have become very complex. Before, during and after making a purchase, customers may interact with a company in a wide array of digital channels including its website, an app on a smartphone or tablet, through social media channels, and/or in a physical store.

Understanding the relationship between the customer journey and touchpoints is therefore essential for businesses seeking to improve customer satisfaction, strengthen engagement, and build long-term loyalty.

¹ Groissberger, M. (2017). Customer touchpoint management: Connecting the digital and physical worlds. Springer. <https://doi.org/10.1007/978-3-658-16057-9>

² Macchler, N., et al. (2016), op. cit., p. 5.

Figure N°04:overview of the Customer Touchpoint Management process



Source: Adapted from Groissberger (2017), Customer Touchpoint Management.¹

As shown in this Figure, touchpoint optimization is structured around the classic PDCA cycle (Plan-Do-Check-Act). The framework begins by mapping the Current State and defining a Target State (Plan) based on customer expectations.

This transitions into Action (Do) to implement targeted changes, followed by Monitoring (Check) to evaluate performance. The loop completes and restarts with the Act phase, turning data into continuous optimization. For digital platforms, this iterative loop is essential to keep customer engagement strategies dynamically aligned with shifting user behaviors.

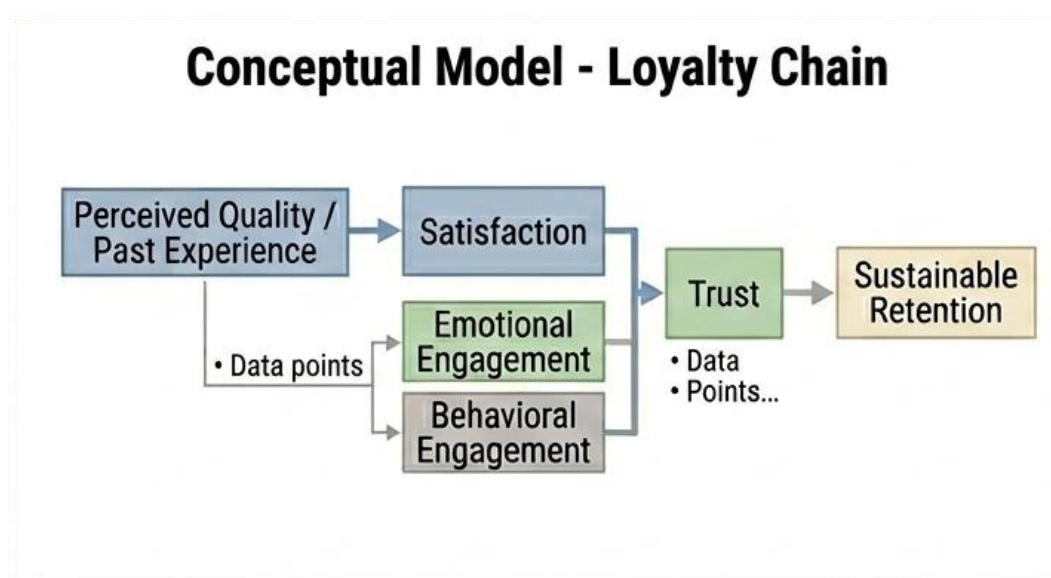
1.3. Retention Strategies: Satisfaction, Trust, and Engagement:

Customer retention is not driven by a single factor. In this chapter, three variables were selected because they capture the main dimensions of a lasting customer relationship: satisfaction reflects the customer's evaluation of past experience, trust reflects confidence in the firm's future behavior, and engagement reflects the customer's active involvement with the brand. Together, these three variables provide a more complete explanation of retention than any one of them alone. The literature shows that satisfaction and trust both have strong effects on retention, and that their combination is more effective than satisfaction by itself. Engagement then adds the behavioral and interactive dimension that is

¹ Groissberger, M. (2017), op. cit., p. 89.

especially relevant in digital loyalty settings and in agri-food SMEs, where repeated contact, personalization, and participation can strengthen customer loyalty over time. ¹

Figure N°05: Conceptual model of the customer engagement causal chain



Source: Author's elaboration, based on Morgan & Hunt (1994) and Hollebeek (2011)²

As shown in this figure, customer loyalty is modeled as a structured causal chain. The process begins with Perceived Quality and Past Experience, which directly drives customer Satisfaction while generating data points that fuel both Emotional and Behavioral Engagement.

Together, these factors converge to build Trust a state reinforced through data tracking and reward points. Ultimately, this trust acts as the critical bridge transforming basic satisfaction into Sustainable Retention. For digital applications, this framework underscores the importance of leveraging transactional data to turn a one-time user into a long-term, loyal customer.

1.3.1.Satisfaction:

Customer satisfaction is considered the most fundamental factor influencing whether a customer stays with a brand or switches to a competitor. It refers to the customer's overall evaluation of how well a product or service has met their needs and expectations over time ³the most widely used framework for understanding satisfaction is Oliver's Expectancy-

¹ Ranaweera, C., & Prabhu, J. (2003). On the relative importance of customer satisfaction and trust as determinants of customer retention and positive word of mouth. *Journal of Targeting, Measurement and Analysis for Marketing*, 12(1), 82–90. <https://doi.org/10.1057/palgrave.jt.5740100>

² Hollebeek, L. D. (2011). Demystifying customer brand engagement: Exploring the loyalty nexus. *Journal of Marketing Management*, 27(7-8), 785-807.

³ Oliver, R. L. (1997). *Satisfaction: A behavioral perspective on the consumer*. McGraw-Hill.

Disconfirmation Theory.¹ According to this theory, customers form expectations before using a product or service, and after the experience, they compare what they received with what they expected. If the performance exceeds expectations, positive disconfirmation occurs and satisfaction results. If it falls short, dissatisfaction follows.

Multiple large-scale studies confirm that satisfaction is the strongest predictor of loyalty across industries. Chi and Phan conducted a meta-analysis synthesizing 123 studies published between 2004 and 2024 and found that service quality and perceived value are the most effective paths to customer satisfaction, which then serves as the key variable driving loyalty. Schirmer et al. also confirmed that satisfaction has the strongest direct effect on loyalty, although its strength varies depending on customer characteristics.²

Satisfaction works as a retention strategy because satisfied customers develop positive attitudes that reduce their motivation to search for alternatives.³

In the agri-food retail context, this is particularly relevant: when a customer is consistently satisfied with the product quality, freshness, pricing, and service they receive at a local mini-market or retailer, they are far less likely to shift their purchases to a competing store or a large supermarket chain. The repeated nature of grocery shopping means that each positive experience reinforces the customer's habit of returning to the same point of sale.

However, satisfaction alone does not guarantee retention.⁴ Schirmer et al. demonstrated that the satisfaction-loyalty link varies across customer segments, and that trust and commitment play an important mediating role in this relationship.⁵ This means that some customers may be satisfied but still leave if they do not trust the brand or feel committed to it. In the agri-food sector, where consumers often have multiple nearby options for purchasing similar everyday products, a satisfied customer can still be easily attracted by a competitor's promotion or convenience unless deeper relational bonds exist.

¹ Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17(4), 460–469.

² Schirmer, N., Ringle, C. M., Gudergan, S. P., & Fechtel, M. J. (2018). Linkages between customer satisfaction and loyalty: A multi-group analysis. *Journal of Business Research*, 84, 119–133.

³ Ranaweera, C., & Prabhu, J. (2003), op. cit., p. 88.

⁴ Chi, H.-K., & Phan, H.-T. (2025). Revealing the role of corporate social responsibility, service quality, and perceived value in determining customer loyalty: A meta-analysis study. *Sustainability*, 17(10), 4304.

⁵ Schirmer, N., Ringle, C. M., Gudergan, S. P., & Fechtel, M. J. (2016). The link between customer satisfaction and loyalty: The moderating role of customer characteristics. *Journal of Business Research*, 69(10), 4310–4317.

1.3.2. Trust:

While satisfaction reflects a customer's evaluation of past experiences, trust is a forward-looking construct. It can be defined as the customer's confident belief that the firm will act reliably, honestly, and in the customer's best interest in future interactions.¹

The most influential framework for understanding trust in marketing is the Commitment-Trust Theory developed by Robert M. Morgan and Shelby D. Hunt.² According to this theory, trust is the central variable in relationship marketing because it reduces perceived risk, encourages a long-term orientation, and motivates cooperative behavior between the customer and the firm. Ranaweera and Prabhu confirmed empirically that trust not only directly influences retention but also amplifies the effect of satisfaction, when both are present; the likelihood of retaining the customer is significantly higher than with satisfaction alone.³

Trust essentially acts as a safety net: customers who trust a brand are more likely to stay even after an occasional negative experience, giving the company a chance to recover.

In the agri-food retail context, this trust is built through personal relationships between the shop owner and regular customers, consistent product quality, and transparent pricing. When a customer trusts that their local retailer always provides fresh products at fair prices, they develop a strong preference for that store, even when larger competitors offer occasional discounts.

Beyond its direct role in retention, trust also enables value co-creation between the customer and the firm. When customers trust a business, they are more willing to share information about their needs and preferences, which allows the firm to adapt its offerings and strengthen the relationship.⁴ In a local mini-market, for example, a trusted relationship allows the shop owner to anticipate what regular customers need, adjust stock accordingly, and offer personalized suggestions — interactions that would not occur without mutual trust.

However, the trust-commitment relationship is more complex than it first appears. Brown, Crosno, and Tong found that while trust enhances commitment, excessive commitment without genuine reciprocity can actually erode trust over time.⁵ This is an important consideration for loyalty programs in the agri-food sector: if a program locks customers in through restrictive

¹ Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20–38.

² Ibid .

³ Ranaweera and Prabhu (2003), op. cit., pp. 374–395.

⁴ Grönroos, C. (2008). Service logic revisited: Who creates value? And who co-creates? *European Business Review*, 20(4), 298–314. <https://doi.org/10.1108/09555340810886585>

⁵ Brown, J. R., Crosno, J. L., & Tong, P. Y. (2019). Is the theory of trust and commitment in marketing relationships incomplete? *Industrial Marketing Management*, 77, 155–169.

conditions without delivering real value, it risks damaging the trust that personal relationships and consistent service have built.

1.3.3. Engagement:

Customer engagement is the most recent of the three retention constructs and goes beyond both satisfaction and trust. It can be defined as the customer's psychological state that occurs through interactive, co-creative experiences with a brand or firm ¹unlike satisfaction, which is evaluative, and trust, which is belief-based, engagement is characterized by its active and participatory nature.

According to Roderick J. Brodie and colleagues, engagement is manifested through behaviors that go beyond the fundamental purchase, including word-of-mouth recommendations, social media interactions, and active participation in brand-related activities.² Linda D. Hollebeek further conceptualized engagement through three dimensions: cognitive engagement (the mental attention invested in the brand), affective engagement (the emotional connection), and behavioral engagement (the actions taken beyond purchasing, such as referrals and reviews).³

The link between engagement and retention has been confirmed empirically. Torkzadeh et al. demonstrated, using both perceptual and behavioral data that customer readiness leads to psychological engagement, which leads to behavioral engagement, which then drives satisfaction and retention.⁴ This shows that engagement is not simply a correlate of retention but operates through a structured causal pathway where each stage builds on the previous one. In the agri-food retail context, engagement can take forms that are specific to this sector. A customer who actively recommends their local mini-market to neighbors, who follows the store's social media page, or who participates in a points-based loyalty program is displaying engagement behaviors that go well beyond simple repeat purchasing. For SMEs competing against large supermarket chains, fostering this type of active customer involvement can be a powerful differentiator, because engaged customers are not only more loyal themselves but also bring in new customers through their recommendations and social interactions.

¹ Brodie, R. J., Hollebeek, L. D., Jurić, B., & Ilić, A. (2011). Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research*, 14(3), 252–271. <https://doi.org/10.1177/1094670511411703>

² Ibid.

³ Hollebeek, L. D. (2011). Demystifying customer brand engagement: Exploring the loyalty nexus. *Journal of Marketing Management*, 27(7-8), 785–807.

⁴ Torkzadeh, S., Zolfagharian, M., & Yazdanparast, A. (2022). From customer readiness to customer retention: The mediating role of customer psychological and behavioral engagement. *European Journal of Marketing*, 56(7), 1799–1829.

However, achieving engagement requires more than just offering rewards. Customers need to feel genuinely connected to the brand through meaningful interactions, personalized communication, and a sense of belonging to a community ¹In the agri-food sector, where purchase frequency is high and products are similar across competitors, the businesses that succeed in creating real engagement will be the ones that retain their customers over the long term.

These three variables are closely interconnected and together form the basis of long-term customer retention. Satisfaction often represents the starting point, as positive experiences encourage customers to continue purchasing from the same business. Over time, repeated satisfaction contributes to the development of trust, since customers begin to perceive the firm as reliable and consistent in meeting their expectations.

Both satisfaction and trust also strengthen customer engagement. Customers who are satisfied and trust a brand are more likely to interact actively with it, participate in loyalty programs, respond to communications, and recommend the business to others. In this sense, engagement represents the behavioral expression of a strong customer relationship.

In the context of agri-food SMEs, the interaction between these variables becomes particularly important because customer relationships are often built through frequent purchases, proximity, and repeated interactions. Satisfaction encourages customers to return, trust reinforces their confidence in the business, and engagement transforms them from passive buyers into active and loyal participants in the relationship. Together, these dimensions create a more sustainable form of retention that goes beyond simple transactional loyalty.

As conceptualized in the literature and structured below, these three variables do not operate in isolation; they function as a progressive psychological funnel. This matrix (Table 4) systematically organizes these core constructs by aligning their foundational marketing theories with their operational relevance within the agri-food SME retail sector:

¹ Abboud, L., Bruce, H. L., & Burton, J. (2020). A customer engagement literature review and research directions: An abstract. In *Developments in Marketing Science: Proceedings of the Academy of Marketing Science* (pp. 427–428). Springer. https://doi.org/10.1007/978-3-030-42545-6_173

Table N°4: Synthetic Framework of Core Customer Retention Pillars in Agri-Food Retail

Relational Pillar	Foundational Theory & Core Concept	Empirical Trajectory & Key Literature Insights	Specific Agri-Food SME Context & Proximity Dynamics	Strategic Role in the Digital Ecosystem
Satisfaction <i>(Evaluative Component)</i>	Expectancy-Disconfirmation Theory The subjective, historical evaluation of how past experiences match or exceed pre-purchase expectations.	• Strongest direct predictor of aggregate loyalty • Driven heavily by service quality and perceived value • Lower motivation to search for alternatives	• Rooted in consistency of sensory attributes: product freshness, stock availability, fair pricing, and neighborhood convenience. • High purchase frequency means every grocery trip reinforces the transactional loop.	The Baseline Gatekeeper: Prevents early churn. The digital platform registers immediate transactions and monitors consistency, but satisfaction alone is vulnerable to competitive local promotions.
Trust <i>(Credibility Component)</i>	Commitment-Trust Theory	• Amplifies satisfaction: retains	• Historically built via interpersonal	The Risk Mitigator:

Relational Pillar	Foundational Theory & Core Concept	Empirical Trajectory & Key Literature Insights	Specific Agri-Food SME Context & Proximity Dynamics	Strategic Role in the Digital Ecosystem
	A forward-looking psychological safety net based on the confident belief that the firm will act honestly and reliably.	customers far more effectively than satisfaction alone • Direct driver of value co-creation • Risk of erosion if programs use forced, non-reciprocal lock-ins	relationships between the local shopkeeper and the consumer. • Absorbs occasional negative encounters (e.g., a stockout or a single bad item) via the Service Recovery Paradox.	Converts cold transactions into cooperative data sharing. Customers who trust the shop willingly share demographic/preference data through the app in exchange for personalized treatment.
Engagement <i>(Participatory Component)</i>	Multidimensional Engagement Theory An active psychological state comprising Cognitive (attention), Affective (emotion), and	• Follows a structured causal pathway: Customer Readiness → Psychological Engagement →	• Represents the shift from a passive shopper to a community advocate. • Evidenced when a customer follows the	The Behavioral Engine: Driven directly by the gamification layer. It moves the user from 'consuming a discount' to

Relational Pillar	Foundational Theory & Core Concept	Empirical Trajectory & Key Literature Insights	Specific Agri-Food SME Context & Proximity Dynamics	Strategic Role in the Digital Ecosystem
	Behavioral (actions) dimensions.	Behavioral Actions • Promotes behaviors that extend far beyond regular buying (WOM, reviews)	mini-market's updates, tracks personal milestones, and refers neighbors.	'optimizing a progress path,' forming concrete shopping habits and active brand advocacy.

Source: Author's elaboration based on Oliver (1997)¹, Morgan and Hunt (1994)², Brodie et al. (2011)³, and Chi and Phan (2025)⁴

1.4. Customer Retention and Acquisition as Complementary Investments:

One of the most well-established principles in marketing is that retaining existing customers is significantly less expensive than acquiring new ones. Understanding the cost dynamics between retention and acquisition is essential for any business seeking to allocate its marketing budget effectively, and this is especially true for SMEs with limited financial resources.

1.4.1. Retention Cost:

Retention cost refers to the total amount of resources a company invests in keeping its existing customers over a given period. This includes expenses related to loyalty programs, personalized

¹ Oliver (1997)., op. cit., p. 135.

² Morgan & Hunt(1994), op. cit., p. 20–38.

³ Brodie et al.(2011), op. cit., p. 256.

⁴ Chi, H.-K., & Phan, H.-T. (2025). Revealing the role of corporate social responsibility, service quality, and perceived value in determining customer loyalty: A meta-analysis study. *Sustainability*, 17(10), 4304. <https://doi.org/10.3390/su17104304>

offers, customer service, communication, and any other activities designed to maintain the customer relationship and prevent churn.

The widely cited principle that retaining a customer costs five to seven times less than acquiring a new one has been a foundational argument in relationship marketing since the work of Reichheld and Sasser.¹ Clapham reaffirmed this ratio, noting that winning a new customer costs five times more than retaining an existing one, and that a 5% improvement in customer retention can lead to profit improvements of over 25%.² This finding has been influential in shifting marketing thinking from a purely acquisition-focused approach to one that gives equal or greater importance to retention.

Reinartz, Thomas, and Kumar, in a highly cited study (775 citations), developed a modeling framework for balancing resources between customer acquisition and customer retention efforts.³ Their key finding was that most firms over-invest in acquisition and under-invest in retention, and that rebalancing toward retention can significantly improve overall customer profitability.

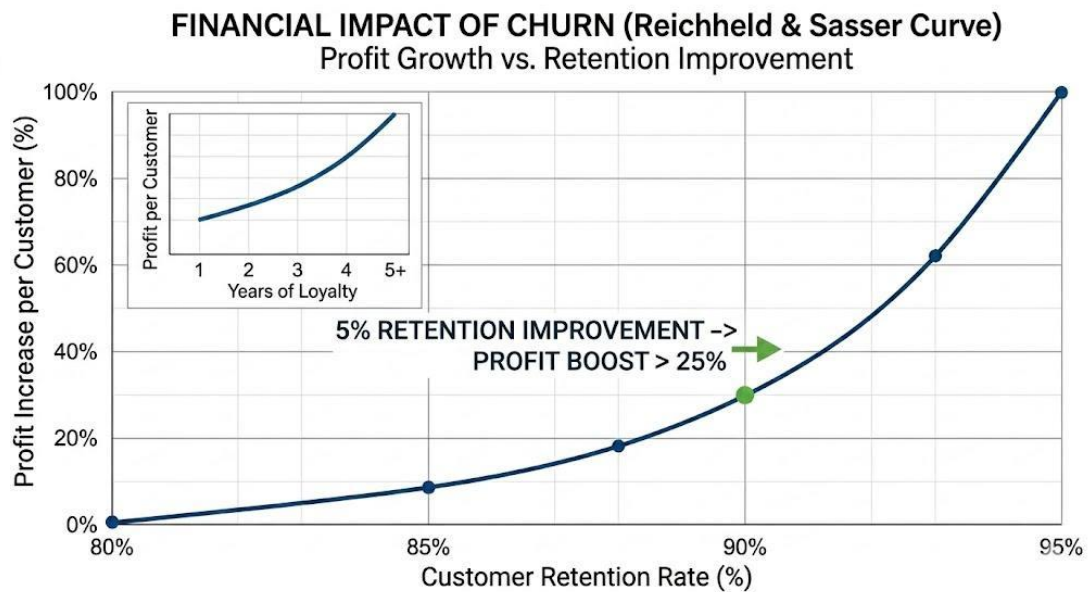
In the agri-food retail context, retention costs for SMEs tend to be relatively low compared to other industries. A local mini-market or retailer does not need expensive advertising campaigns to retain customers. Instead, retention is achieved through consistent product quality, fair pricing, personal relationships, and small gestures of appreciation such as occasional discounts for regular customers or remembering their preferences. Digital loyalty programs can formalize these practices at a low cost, turning informal retention habits into structured, measurable strategies.

¹ Reichheld, F. F., & Sasser, W. E. (1990). *Op. cit.*, p. 106.

² Clapham, P. (2003). Keep that customer. *Engineering Management*, 13(1), 16–19.

³ Reinartz, W., Thomas, J. S., & Kumar, V. (2005). Balancing resources between customer acquisition and retention. *Journal of Marketing*, 69(1), 63–79.

Figure N°06: Impact of retention on profitability (Reichheld & Sasser curve):



Source: Adapted from Reichheld & Sasser (1990)¹

As illustrated by the Reichheld and Sasser curve in this figure, a mere 5% improvement in customer retention can catalyze an exponential profit boost exceeding 25%. This asymmetrical growth occurs because prolonged consumer loyalty systematically lowers marginal costs while accelerating lifetime value. Beyond corporate mathematics, this phenomenon underscores that sustainable financial health is built on relational equity, proving that nurturing an enduring user community is far more lucrative than continuous, transactional acquisition.

1.4.2. Customer Acquisition Cost (CAC):

Customer acquisition cost (CAC) refers to the total cost a business incurs to attract and convert a new customer, including advertising, promotions, sales efforts, and any introductory offers. For most businesses, CAC represents the largest portion of marketing expenditure, particularly in competitive markets where multiple firms are fighting for the same customers.

Min et al. studied firms' investments in acquisition and retention in the wireless telecommunications market and found that as customer bases grow and markets mature, the efficiency of acquisition spending decreases while the return on retention investment increases.²

This pattern is relevant beyond telecommunications: in any market where the total pool of

¹ Reichheld, F. F., & Sasser, W. E. (1990). *Op. cit.*, pp. 105–111.

² Min, S., Kim, J. H., & Kim, S. E. (2016). Customer acquisition and retention spending cycles. *Journal of Marketing Research*, 53(5), 728–744.

potential customers is limited, the cost of acquiring each additional new customer rises over time, making retention an increasingly attractive alternative.

Tatikonda highlighted the hidden costs of customer dissatisfaction, arguing that the financial impact of customer defection is often underestimated.¹ When a dissatisfied customer leaves, the company loses not only that customer's future purchases but also the acquisition cost already invested in them, plus any potential referrals they would have generated. The total cost of losing a customer is therefore much higher than it appears on the surface.

For SMEs in the agri-food sector, CAC is a particularly critical concern. These businesses typically operate with limited marketing budgets and cannot afford large-scale advertising campaigns to attract new customers. They rely heavily on word-of-mouth, local reputation, and foot traffic. In this context, every lost customer represents a significant cost, because replacing that customer through acquisition efforts is disproportionately expensive relative to the business's revenue. This is precisely why investing in retention through loyalty programs, consistent service quality, and trust-building is not just a strategic preference but an economic necessity for agri-food SMEs.

1.4.3. Retention Cost vs. Customer Acquisition Cost (CAC):

Retention cost refers to the resources a firm spends to keep its existing customers active and satisfied over time. It includes actions such as loyalty incentives, personalized communication, customer service, and other relational efforts designed to prevent churn. Customer acquisition cost, by contrast, refers to the amount a firm spends to attract and convert new customers. In practical terms, acquisition is usually more expensive because it requires advertising, promotional offers, sales efforts, and onboarding activities, whereas retention relies more on maintaining an already established relationship.

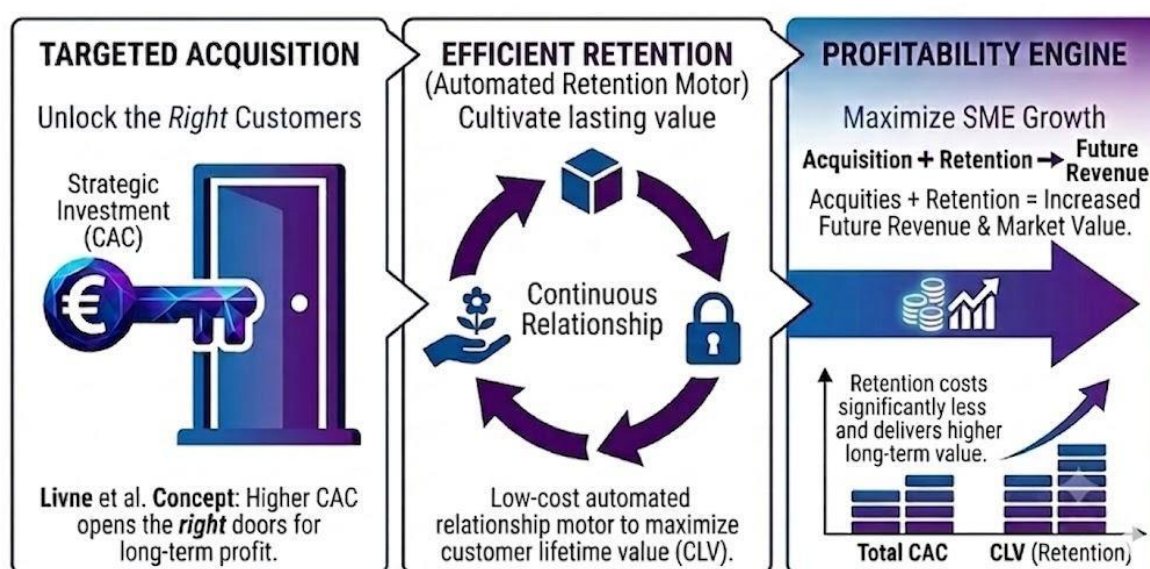
The article by Livne, Simpson, and Talmor shows that CAC should not be viewed only as a cost item. Their results indicate that acquisition cost is positively associated with customer retention, future profits, and market value, which means that investing in customer acquisition, can reduce future expenses and support profitability over time.² The study also shows that retention plays a mediating role between acquisition and financial performance, since stronger retention is linked to higher future revenues. In other words, acquisition becomes valuable when it helps build a customer base that stays longer and generates more value.

¹Tatikonda, L. U. (2013). The Hidden Costs of Customer Dissatisfaction. *Management Accounting Quarterly*, 14(3), 34–41.

² Livne, G., Simpson, A., & Talmor, E. (2011). Do customer acquisition cost, retention and usage matter to firm performance and valuation? *Journal of Business Finance & Accounting*, 38(3-4), 334–363. <https://doi.org/10.1111/j.1468-5957.2011.02234.x>

For agri-food SMEs, this distinction is especially important. Because budgets are limited, firms cannot rely on continuous acquisition campaigns to replace lost customers. A more efficient strategy is to balance acquisition and retention, using acquisition to bring in the right customers and retention tools to keep them active. This is why a digital loyalty solution can be useful: it helps reduce hidden churn, strengthen repeat purchasing, and make retention more visible and measurable.

Figure N°07: A Simplified Framework for Balancing Customer Acquisition and Retention in Agri-Food SMEs:



Source: Adapted from "A Framework for Analyzing Customer Acquisition and Retention Costs," by E. Livne, A. Simpson, and I. Talmor, 2011, Journal of Financial and Quantitative Analysis, 46(2), pp. 425–451.¹

Livne, Simpson, and Talmor demonstrate that upfront CAC should be treated as a capitalized asset rather than an immediate expense item, as initial acquisition quality is a strong predictor of downstream retention and firm valuation. Retention functions as a key mediator between initial marketing investments and long-term financial performance. Independent retailers must manage this balance carefully, avoiding expensive, untargeted acquisition campaigns and instead utilizing lightweight digital loyalty networks to optimize retention spend and capture recurring revenue.

¹ Livne, E., Simpson, A., & Talmor, I. (2011). A framework for analyzing customer acquisition and retention costs. Journal of Financial and Quantitative Analysis, 46(2), 425–451. <https://doi.org/10.1017/S002210901100007X>

1.5. Customer Loyalty: Concepts, Characteristics, and Dimensions:

1.5.1 Concept of customer loyalty:

Customer loyalty is considered one of the most important determinants of long-term business success. In increasingly competitive markets, retaining existing customers has become a strategic priority for organizations because acquiring new customers is generally more expensive than maintaining existing ones. Customer loyalty reflects the strength of the relationship between a customer and a company, resulting in repeated purchases and a preference for the firm's products or services over those of competitors.¹

According to Oliver, customer loyalty is defined as "a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future despite situational influences and marketing efforts having the potential to cause switching behavior."² This definition highlights that loyalty goes beyond mere repeat purchases and includes a psychological commitment toward a brand, product, or organization.

Researchers have emphasized that customer loyalty contributes significantly to profitability. Loyal customers tend to make more frequent purchases, are less sensitive to price changes, and often engage in positive word-of-mouth communication. As a result, they become valuable assets for organizations seeking sustainable growth and competitive advantage.³

1.5.2. Characteristics of Customer Loyalty:

1. Repeat Purchase Behavior:

One of the most visible characteristics of customer loyalty is the tendency to repeatedly purchase products or services from the same company over time. Loyal customers consistently choose the same provider despite the availability of alternative options in the market.⁴

2. Positive Attitude and Commitment:

Loyal customers develop favorable attitudes toward a brand and demonstrate a strong emotional commitment. This commitment influences their purchasing decisions and reduces their likelihood of switching to competitors. According to Jacoby and Chestnut, loyalty involves both

¹ Uncles, M. D., Dowling, G. R., & Hammond, K. (2003). Customer loyalty and customer loyalty programs. *Journal of Consumer Marketing*, 20(4), 294–316.

² Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, 63(4_suppl1), 33–44. <https://doi.org/10.1177/00222429990634s105>

³ Reinartz, W. J., & Kumar, V. (2002). The mismanagement of customer loyalty. *Harvard Business Review*, 80(7), 86–95.

⁴ Ishak, F., & Ghani, N. H. A. (2013). A review of the literature on brand loyalty and customer loyalty. *Journal of Business and Retail Management Research*, 7(2), 187–194.

behavioral and attitudinal dimensions, making commitment a fundamental element of genuine loyalty.¹

3. Resistance to Competitive Offers:

Another characteristic of loyalty is resistance to competitors' marketing efforts. Loyal customers are less likely to be influenced by promotional campaigns, discounts, or alternative offers because they trust the value and quality provided by their preferred brand.²

4. Positive Word-of-Mouth:

Loyal customers frequently recommend products and services to friends, relatives, and colleagues. Such recommendations contribute to the acquisition of new customers and strengthen the company's reputation in the marketplace.³

5. Lower Price Sensitivity:

Customer loyalty often reduces sensitivity to price fluctuations. Customers who perceive high value and satisfaction are generally willing to continue purchasing even when prices increase moderately. This characteristic enables firms to maintain profitability while reducing dependence on price-based competition.⁴

1.5.3. Dimensions of Customer Loyalty:

- Behavioral Loyalty:

Behavioral loyalty refers to observable purchasing actions, including purchase frequency, repurchase intentions, and customer retention rates. This approach evaluates loyalty based on actual customer behavior over time.⁵

- Attitudinal Loyalty:

Attitudinal loyalty focuses on customers' psychological attachment, commitment, trust, and preference toward a particular brand. It reflects the emotional bond that motivates customers to maintain a relationship with the organization.⁶

Many scholars argue that true loyalty exists only when both behavioral and attitudinal loyalty are present simultaneously. A customer who repeatedly purchases a product without any emotional attachment may simply be exhibiting habitual behavior rather than genuine loyalty.⁷

¹ Jacoby, J., & Chestnut, R. W. (1978). *Brand loyalty: Measurement and management*. Wiley.

² Oliver (1999), *op. cit.*, pp. 33–44.

³ Reinartz and Kumar (2002), *op. cit.*, pp. 86–95.

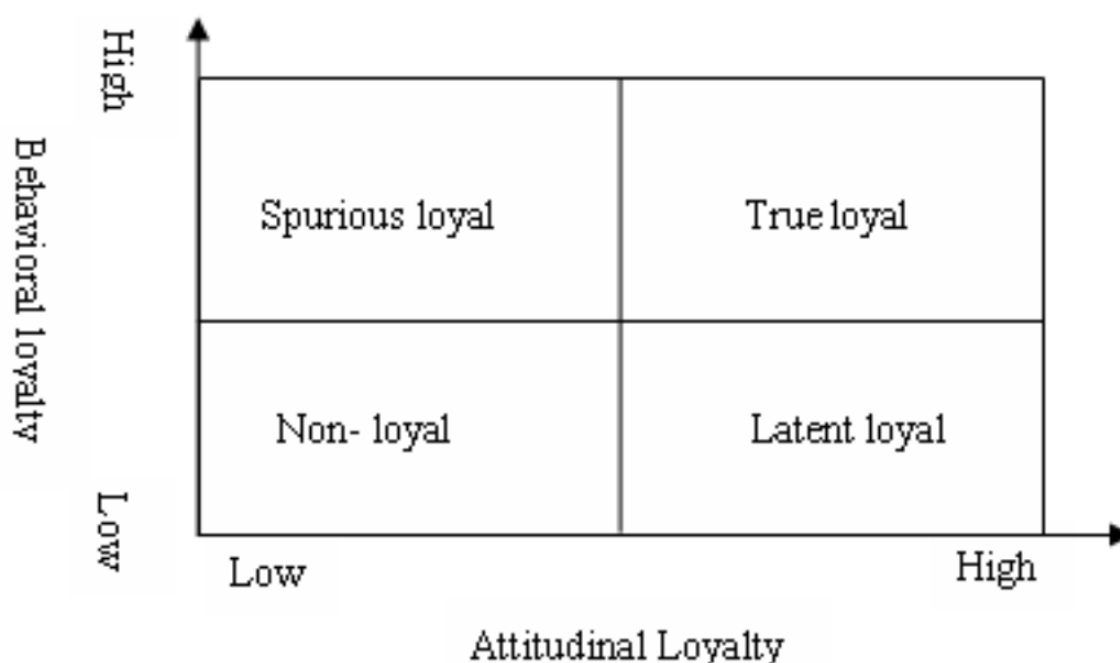
⁴ Mellens, M., Dekimpe, M. G., & Steenkamp, J. E. (1996). A review of brand-loyalty measures in marketing. *Tijdschrift voor Economie en Management*, 41(4), 507-533.

⁵ Uncles et al. (2003), *op. cit.*, pp. 294–316.

⁶ Dick, A. S., & Basu, K. (1994). Customer loyalty: Toward an integrated conceptual framework. *Journal of the Academy of Marketing Science*, 22(2), 99-113.

⁷ Ibid.

Figure N°08: The Customer Loyalty Matrix



Source: Adapted from Dick, A. S., & Basu, K. (1994).¹

1.5.4. Importance of Customer Loyalty:

Customer loyalty offers numerous benefits to organizations. First, it reduces marketing and acquisition costs because retaining existing customers is generally less expensive than attracting new ones. Second, loyal customers tend to purchase more frequently and generate higher lifetime value. Third, they contribute to positive word-of-mouth communication, enhancing the company's reputation and attracting new customers.²

Furthermore, customer loyalty creates a competitive advantage by establishing long-term relationships that are difficult for competitors to imitate. Organizations with a loyal customer base are better positioned to withstand market fluctuations and maintain stable revenue streams.³

Consequently, modern businesses increasingly invest in customer relationship management (CRM), personalized marketing, loyalty programs, and customer experience strategies to strengthen loyalty and maximize customer lifetime value.⁴

¹ Dick, A. S., & Basu, K. (1994). *Op. cit.*, p. 102.

² Reinartz, W. J., & Kumar, V. (2002). *Op. cit.*, pp. 86–95.

³ Oliver, R. L. (1999). *Op. cit.*, pp. 33–44 ; Uncles, M. D., et al. (2003). *Op. cit.*, p. 305.

⁴ Kotler, P., & Keller, K. L. (2016). *Op. cit.*, p. 145.

Customer loyalty can therefore be viewed as the outcome of effective customer retention strategies, reflecting both behavioral commitment and psychological attachment toward the company. While Section 1 highlighted the role of satisfaction, trust, and engagement in building lasting customer relationships, measuring the effectiveness of these efforts remains essential. This section examines key indicators such as retention rate, churn rate, customer lifetime value, and segmentation methods to evaluate retention performance and support targeted strategies.

Section 2: Metrics and Measuring Retention Performance:

2.1. Key Performance Indicators (KPIs): Retention Rate and Churn Rate:

Key performance indicator (KPI) is defined as quantitative or qualitative measures used by organizations to assess their success in reaching strategic and operational objectives¹Managers and executives utilize KPIs to monitor and act on organizational performance and verify absorption to the strategic plan Key characteristics of KPIs are shown in this figure:

Figure N°09:Characteristics of a KPI



Source : Kankaanpää, K. (2024). Key performance indicators to enhance customer success management in IT service delivery [Master's thesis, Lappeenranta–Lahti University of Technology LUT]. LUTPub.²

In the context of customer retention, two KPIs are particularly important: the retention rate and the churn rate. (Retention and Attrition Indicators (Behavioral Loyalty))

2.1.1. Retention Rate:

CRR is a Key Performance Indicator (KPI) that measures a company's ability to retain its customer base over a specific period. It reflects customer satisfaction, loyalty, and the

¹ Kankaanpää, K. (2024). Key performance indicators to enhance customer success management in IT service delivery [Master's thesis, Lappeenranta–Lahti University of Technology LUT]. LUTPub Institutional Repository. <https://lutpub.lut.fi/handle/10024/167816>

²Ibid

effectiveness of customer relationship management strategies. A high CRR indicates strong customer loyalty and stable revenue, while a declining CRR suggests the need for improved retention strategies.

The formula for CRR is:

- **E = Number of customers at the end of the period**
- **N = Number of new customers acquired during the period**
- **S = Number of customers at the start of the period**

$$CRR = \left(\frac{E - N}{S} \right) \times 100$$

This formula provides a percentage-based understanding of how well a business retains its customers.

Customer Retention Rate (CRR) is a critical metric for businesses aiming for sustainable growth in competitive markets. A high CRR signifies revenue stability, cost-effectiveness, and strong customer satisfaction, which are essential for long-term success. Retained customers contribute to predictable income, reduce acquisition costs, and foster brand loyalty, providing a competitive edge. To enhance CRR, businesses must adopt customer-centric strategies such as delivering exceptional customer service, personalizing experiences, maintaining consistent communication, and actively utilizing customer feedback to improve offerings. Additionally, implementing loyalty programs and surprising customers with unexpected perks can strengthen emotional connections and encourage repeat business. By prioritizing customer satisfaction and loyalty, businesses can not only preserve existing relationships but also create a solid foundation for future growth and resilience in the market.

According to the churn rate literature, high retention is not merely desirable but economically essential, since the cost of replacing lost customers through acquisition is typically five to seven times higher than the cost of retaining them.¹

For agri-food SMEs, the retention rate provides a simple yet powerful tool for assessing whether efforts to build satisfaction, trust, and engagement (as discussed in Section 1) are translating into actual customer loyalty. A digital loyalty platform can automate the calculation of this metric by tracking the number of active customers over defined periods.

¹ Reichheld, F. F., & Sasser, W. E. (1990). *Op. cit.*, pp. 105–111.

2.1.2. Churn Rate:

Churn rate measures the percentage of customers who stop using a company's products or services within a given time frame. Kamakura et al. define churn as the likelihood of customers discontinuing their business relationship with a company.¹ This metric is particularly vital for subscription-based businesses like Software-as-a-Service (SaaS) companies, telecom providers, and fitness clubs, but it is also relevant for any business that relies on repeat customers. A high churn rate often signals underlying problems such as poor customer service, inadequate product quality, or competitive pressures, all of which need to be addressed to ensure business growth and profitability.

The churn rate is typically expressed as a percentage and is calculated using the following formula:

$$\text{Churn Rate} = \frac{\text{Number of customers lost during period}}{\text{Number of customers at start of period}} \times 100$$

The term "churn" combines the words "change" and "turn," referring to the switching of a customer in favor of a competitor. The churn rate refers to the number of customer losses in relation to the total customer base. Churn can be classified into two main categories: voluntary churn, where the customer actively decides to leave, and involuntary churn, where the relationship ends due to external circumstances such as relocation or financial constraints. Within voluntary churn, the most strategically significant type is deliberate churn, where the customer consciously switches to a competitor due to dissatisfaction, better offers, or disengagement.

Jiang notes that understanding churn behavior is critical for businesses to identify the patterns, factors, and metrics that lead to customer departure, enabling companies to develop proactive strategies to retain at-risk customers.² The churn rate directly impacts Customer Lifetime Value (CLV): a lower churn rate means customers stay longer, increasing their lifetime value and contributing more to the company's bottom line.

In the online food delivery industry, the analysis of churn has become a central concern. A thesis conducted on a major food delivery platform in Argentina defined "valuable customers" as those who placed at least 8 orders in the last 12 months, and classified as churners those who did not order again within a 60-day window. This approach demonstrates that churn detection requires context-specific definitions adapted to the purchasing frequency of the sector a

¹ Kamakura, W. A., et al. (2005). Choice models and customer relationship management. *Marketing Letters*, 16(3-4), 279–291.

² Jiang, X. (2024). Customer churn data analysis using data mining. *Applied and Computational Engineering*, 77, 17–24.

principle that applies equally to agri-food retail, where a customer who normally visits three times a week but has not returned in two weeks is clearly signaling potential defection.

For subscription-based businesses like SaaS platforms, churn rate is particularly vital because recurring revenue depends entirely on the continued presence of existing customers. But even in non-subscription contexts such as local retail, digital loyalty programs can help make churn visible by tracking purchase frequency and identifying customers whose activity has decreased, enabling proactive re-engagement before the customer is completely lost.

2.1.3. Complementary Customer Loyalty Metrics: Voice of the Customer and Advocacy:

While retention and churn rates provide essential baseline quantitative data regarding customer movement, a comprehensive loyalty framework requires metrics that capture both the attitudinal perspective (how customers feel) and the viral perspective (how customers act as brand advocates). In the evaluation of e-loyalty programs and digital ecosystems, four additional metrics are vital to maintaining a strategic focus on sustainable retention:

1. Transactional and Program Engagement Indicators:

These KPIs monitor the recurrence of purchasing behavior and the actual adoption rate of your digital loyalty ecosystem.

- **Repeat Purchase Rate (RPR):**

This evaluates the percentage of customers who made at least two distinct purchases within a specific timeframe. It serves as an excellent behavioral predictor for Customer Lifetime Value.

$$RPR = \left(\frac{C_r}{C_t} \right) \times 100$$

- C_r : Number of customers who made two or more purchases during the period.
- C_t : Total number of unique active customers during the same period.

- **Redemption Rate:**

Specific to loyalty programs, it measures customer engagement with the rewards provided. A low redemption rate indicates that rewards lack perceived value, or that the process of claiming them is too friction-heavy.

$$\text{Redemption Rate} = \left(\frac{R_E}{R_G} \right) \times 100$$

- R_E : Number of rewards (or points) effectively redeemed/claimed by customers.
- R_G : Total number of rewards (or points) generated/issued during the period.

2. Voice of the Customer Indicators (Attitudinal Loyalty):

These qualitative metrics help evaluate how consumers emotionally and cognitively perceive your brand.

• **Net Promoter Score (NPS):**

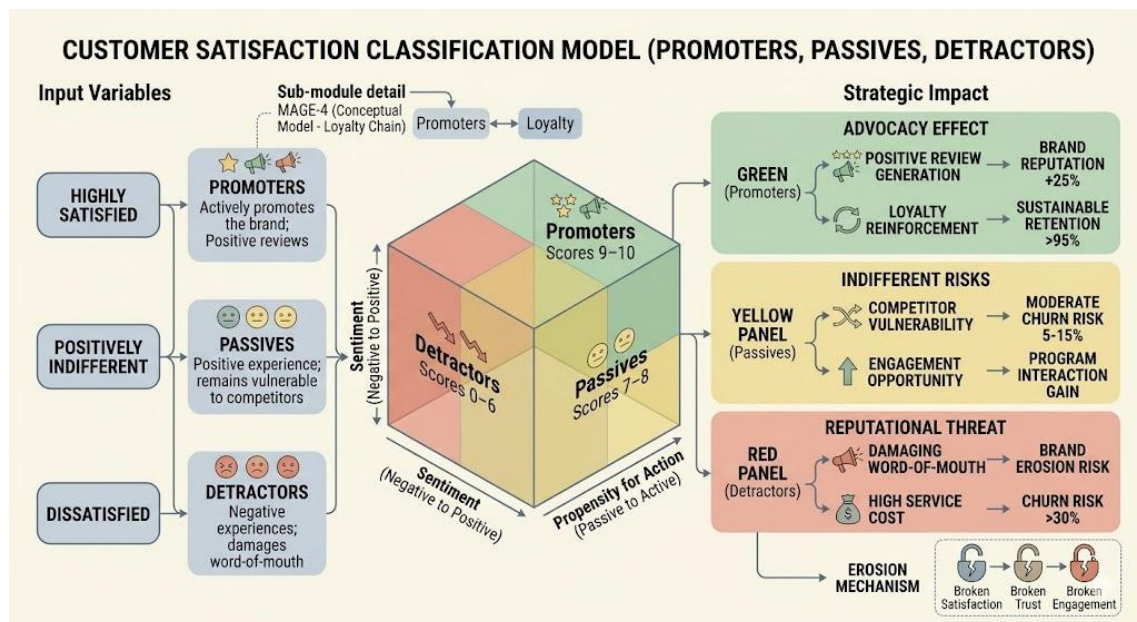
Developed originally by Fred Reichheld, the Net Promoter Score (NPS) is an index used to measure customer recommendation, serving as a powerful proxy for brand loyalty and customer satisfaction. It relies on a single, straightforward question: "How likely are you to recommend our company to a friend or colleague?" evaluated on an 11-point scale from 0 to 10. Respondents are categorized into three distinct groups¹:

- **Promoters (Scores 9–10):** Highly satisfied customers who actively promote the brand and issue positive reviews.
- **Passives (Scores 7–8):** Customers who had a positive experience but remain indifferent and vulnerable to competitor offerings.
- **Detractors (Scores 0–6):** Dissatisfied consumers who have had negative experiences and are likely to spread damaging word-of-mouth.

$$NPS = \frac{\text{Promoters} - \text{Detractors}}{\text{Total number of respondents}} \times 100$$

The metric is reported as an absolute integer ranging from -100 to +100. Any score above 0 is considered good, while a score above 50 is excellent.

Figure 10: Customer Satisfaction Classification Model (Promoters, Passives, Detractors)



Source: Author's elaboration (2026), based on Reichheld (2003)² and Morgan & Hunt (1994)³.

¹ Reichheld, F. F. (2003). The one number you need to grow. Harvard Business Review, 81(12), 46–55.

² Ibid.

³ Morgan, R. M., & Hunt, S. D. (1994). *Op. cit.*, p. 25.

As illustrated in this Figure, classifying customers into promoters, passives, and detractors serves as a vital diagnostic tool for managing customer sentiment. While promoters actively build brand reputation and long-term retention through advocacy, detractors trigger an erosion mechanism that undermines satisfaction, trust, and engagement, severely increasing churn risks. By integrating this model, digital loyalty platforms can identify these segments in real-time, allowing managers to deploy targeted interventions that mitigate risks and capitalize on positive engagement.

- **Feedback Response Rate:**

This tracks interactional engagement. A high response rate demonstrates an active community that is invested in co-creating value and improving the business.

$$\text{Feedback Response Rate} = \left(\frac{Q_R}{Q_E} \right) \times 100$$

- Q_R : Number of completed questionnaires or feedback submissions received.
- Q_E : Total number of survey invitations sent out.

- **Complaint Resolution Rate:**

This KPI monitors customer service efficiency. Resolving an issue quickly and effectively can turn an unhappy customer into a loyal advocate—a marketing phenomenon widely known as the *Service Recovery Paradox*.

$$\text{Complaint Resolution Rate} = \left(\frac{C_C}{C_T} \right) \times 100$$

- C_C : Number of complaints successfully resolved to the customer's satisfaction within target timeframes.
- C_T : Total number of documented complaints received.

3. Advocacy and Word-of-Mouth Indicators:

- **Referral Rate:**

This quantifies the success of word-of-mouth marketing stimulated by your loyalty initiative. It represents the ultimate milestone of loyalty: converting a standard customer into a brand ambassador.

$$\text{Referral Rate} = \left(\frac{A_p}{A_T} \right) \times 100$$

- A_p : Number of purchases (or sign-ups) completed via a referral link/code.
- A_T : Total number of purchases (or sign-ups) across the same timeframe.

To translate these theoretical metrics into an operational roadmap for agri-food SMEs, Table 05 synthesizes the essential Key Performance Indicators (KPIs) required to monitor digital loyalty ecosystems:

Table N°5: Operational Synthesis of Loyalty KPIs for Digital Ecosystems

Loyalty Dimension	KPI Name	Managerial Recommended	Recommended Tracking Frequency
Behavioral	Retention Rate (RR)	Assess the long-term stability of the customer base.	Monthly / Quarterly
Behavioral	Churn Rate (CR)	Detect early warning signs of customer attrition.	Monthly
Transactional	Repeat Purchase Rate (RPR)	Measure purchase frequency and routine building.	Monthly
Digital Engagement	Redemption Rate	Evaluate the attractiveness and ease of use of the platform's digital rewards.	Weekly / Monthly
Attitudinal	Net Promoter Score (NPS)	Monitor overall relational health and brand health.	Bi-Annually / Annually
Relational	Complaint Resolution Rate	Mitigate negative experiences and secure second-chance loyalty.	Ongoing
Advocacy / Viral	Referral Rate	Gauge organic, low-cost growth driven by loyal users.	Monthly

Source : Compiled by the author, adapted from Kankaanpää (2024) and Baquero (2022).¹

This KPI framework demonstrates that tracking customer loyalty within digital platforms requires a multi-dimensional approach. While transactional metrics like the Repeat Purchase Rate capture immediate behavioral patterns, attitudinal indicators such as the Net Promoter Score (NPS) provide a deeper look into long-term customer advocacy and brand health. For agri-food SMEs, integrating these varied tracking frequencies allows managers to optimize limited resources, automate data collection, and proactively protect their customer base against attrition.²

2.2. Customer Lifetime Value (CLV):

2.2.1. Customer value:

The customer value was defined as "a customer's perceived preference for, and evaluation of, those product attributes, attribute performances, and consequences arising from use that facilitate (or blocks) achieving the customer's goals and purposes in use situations"³ and defined also as "a ratio of benefits received versus burdens endured by the customer"⁴. The customer value can be viewed into the relation buyer seller as the an ability to deliver a fundamental value to a customer by a firm⁵, and can be viewed also as benefits perceived and received by the customer from the firm in relation to the cost to get those benefits⁶. The customer value can be grouped into three models: value components, utilitarian or benefits/cost ratio and means-ends models⁷

Many authors have been trying to describe and make a typology of customer value; we have tried to summarize the most important in the following table:

¹ Baquero, A. (2022). Net Promoter Score (NPS) and customer loyalty in the hospitality sector: A fuzzy-set qualitative comparative analysis (fsQCA). *Current Research in Behavioral Sciences*, 3, 100086. Baquero, A. (2022). Net Promoter Score (NPS) and customer loyalty in the hospitality sector: A fuzzy-set qualitative comparative analysis (fsQCA). *Current Research in Behavioral Sciences*, 3, 100086.

² Ibid.

³ Woodruff, R. B. (1997). Customer value: The next source for competitive advantage. *Journal of the Academy of Marketing Science*, 25(2), 139–153.

⁴ Ulaga, W. (2001). Customer perceived value in business markets: An agenda for inquiry. *Industrial Marketing Management*, 30(4), 315–319.

⁵ Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*, 67(4), 420–450.

⁶ Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(3), 2–22.

⁷ Khalifa, A. S. (2004). Customer value: A review of recent literature and an integrative configuration. *Management Decision*, 42(5), 645–666 <https://doi.org/10.1108/00251740410538497>

Table N°06: Type of value by authors

Authors	Type of value
Park Jawarski and Gross (1986)	Functional value ;symbolic value ;experiential value
Sheth ;Newman and Gross (1991)	Functional value ;social value; emotional value; epistemic value; conditional value
Ulaga (2003)	Product quality; delivery; time to market; direct product cost(price); process costs; personal interaction; supplier know-how; and service support
Woodall (2003)	Net VC (balance of benefits and sacrifices);derived VC (use /experience outcomes);marketing VC (perceived product attributes);sale VC (value as a reduction in sacrifice or cost);rational (assessment of fairness in the benefit-sacrifice relative comparison)
Holbrook	Efficiency ; excellence ; status; esteem; play; aesthetics; ethics; and spirituality
Heard (1993)	Product characteristics; delivered orders ;and transaction experiences

Source: Adapted from (Smith & Colgate, 2007)¹

We can understand that the customer value is about what the customer receives and perceive From aside, and about what he spends and pay from the other side, and the value for him is a mix of tangible (functional value, product characteristic value...) and intangible benefits (social value, Symbolic value...). For this reason, the "customer value is created when the perceptions of benefits received from a transaction exceed the costs of ownership"².

This idea can formulate as Christopher concluded by this ratio:

$$\text{Customer value} = \frac{\text{perceptions of benefits}}{\text{total cost of ownership}}$$

¹ Holbrook, M. B. (1999). Consumer value: A framework for analysis and research. Routledge;

² Christopher, M. (1996). From brand values to customer value. Journal of Marketing Practice: Applied Marketing Science, 2(1), 55–66.

2.2.2. Customer Lifetime Value (CLV):

The term customer lifetime value is defined as the "net present value of a single customer's value"¹, and as "The present value of all future profits generated from a customer"², and as "the sum of the revenues gained from a company's customers over the lifetime of transactions after the deduction of the total cost of attracting, selling, and servicing customers, taking into account the time value of money"³.

Customer Lifetime Value (CLV) is a key metric used to evaluate the long-term value of a customer to a company. It is defined as the net present value of all future profits generated by a customer throughout their relationship with the firm⁴. This metric places the customer at the center of analysis, unlike traditional product-based measures which focus only on individual transactions.

CLV is considered a forward-looking indicator, as it emphasizes predicting future customer behavior rather than relying solely on past data⁵. This makes it particularly useful for strategic decision-making, allowing companies to identify high-value customers and allocate resources more effectively.

Moreover, CLV is especially relevant in contexts where customer behavior is complex, such as variations in purchase frequency, transaction size, or cross-buying patterns⁶. Since each customer contributes differently to profitability, CLV helps firms better understand and manage these differences.

At a broader level, the concept of customer equity defined as the total sum of all individual customer lifetime values provides an overall measure of the company's customer base value and long-term performance⁷.

¹ Richards, K. A., & Jones, E. (2008). Customer relationship management: Finding value drivers. *Industrial Marketing Management*, 37(2), 120–130. <https://doi.org/10.1016/j.indmarman.2006.08.005>

² Gupta, S., & Lehmann, D. R. (2003). Customers as assets. *Journal of Interactive Marketing*, 17(1), 9–24. <https://doi.org/10.1002/dir.10045>

³ Sohrabi, M., & Khanlari, M. (2007). Customer lifetime value (CLV) measurement based on customer relationship management. *Journal of Business & Industrial Marketing*, 22(5), 332–345.

⁴ Verhoef, P. C., & Lemon, K. N. (2013). Successful customer value management: Key lessons and emerging trends. *European Management Journal*, 31(1), 1–15.

⁵ Kumar, V., & Reinartz, W. (2016). Creating enduring customer value. *Journal of Marketing*, 80(6), 36–68. <https://doi.org/10.1509/jm.15.0414>

⁶ Holm, O., Kumar, V., & Rohm, A. J. (2012). Customer value and customer lifetime value: Managing heterogeneous customer behavior. *Journal of Interaction Marketing*, 26(3), 157–168.

⁷ Rust, R. T., Lemon, K. N., & Zeithaml, V. A. (2004). Return on marketing: Using customer equity to focus marketing strategy. *Journal of Marketing*, 68(1), 109–127.

However, calculating CLV can be challenging, particularly in subscription-based models, due to limited historical data and changes in customer behavior over time¹. In such cases, CLV can be estimated using recurring revenue models, where future revenues are discounted over time to reflect their present value.

$$CLV = \sum_{t=1}^T \frac{R_t - C_t}{(1 + d)^t}$$

- **R_t = Revenue from the customer in period t**
- **C_t = Cost of serving the customer in period t**
- **d = Discount rate**
- **T = Expected duration of the relationship**

A simplified version frequently used in practice is:

$$CLV = \text{Average purchase value} \times \text{purchase frequency} \times \text{average customer lifespan}$$

Gupta et al., in a highly cited review article in the Journal of Service Research, examined multiple implementable CLV models and concluded that CLV is useful not only for market segmentation but also for allocating marketing resources across acquisition, retention, and cross-selling activities.² Venkatesan and Kumar demonstrated empirically that customers selected on the basis of their lifetime value provide higher profits in future periods than customers selected on the basis of other metrics such as past revenue or purchase frequency.³ Blattberg, Malthouse, and Neslin identified four empirical generalizations from the CLV literature: customer satisfaction, marketing efforts, cross-buying, and multichannel purchasing all have positive relationships with CLV.⁴ This confirms that the retention strategies discussed in Section 1 (satisfaction, trust, engagement) are not only theoretically linked to retention but also quantitatively linked to customer value.

Pfeifer and Haskins raised an important distinction between CLV and customer profitability. CLV is forward-looking (the present value of future profits), while customer profitability is

¹ Curiskis, S., Dong, X., Jiang, F., & Scarr, M. (2023). A novel approach to predicting customer lifetime value in B2B SaaS companies. Journal of Marketing Analytics, 11, 587–601. <https://doi.org/10.1057/s41270-023-00234-6>

² Gupta, S., Hanssens, D. M., Hardie, B. G. S., Kahn, W., Kumar, V., Lin, N., Ravishanker, N., & Sriram, S. (2006). Modeling customer lifetime value. Journal of Service Research, 9(2), 139–155.

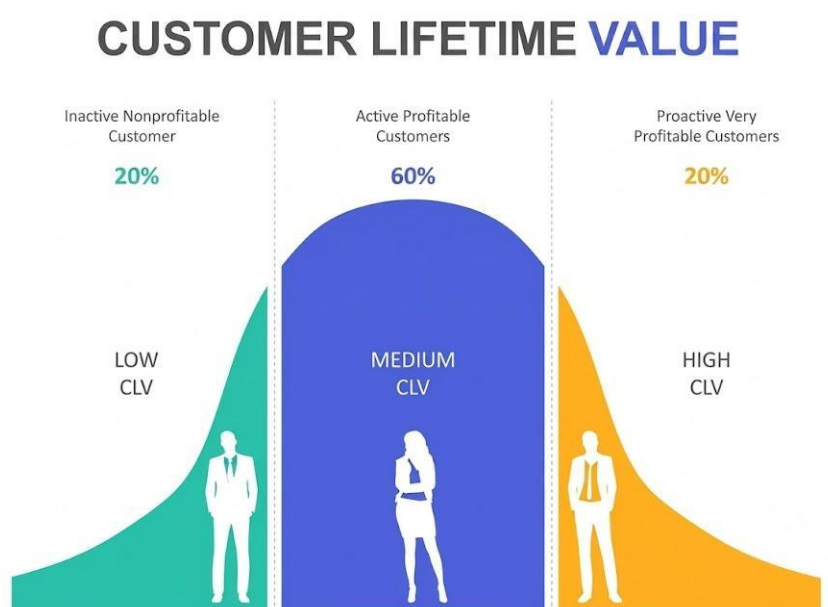
³ Venkatesan, R., & Kumar, V. (2004). A Customer Lifetime Value Framework for Customer Selection and Resource Allocation Strategy. Journal of Marketing, 68(4), 106–125.

⁴ Blattberg, R. C., Malthouse, E. C., & Neslin, S. A. (2009). Customer lifetime value: Empirical generalizations and conceptual questions. Journal of Interactive Marketing, 23(2), 157–168.

backward-looking (profits already generated). Both are useful, but they serve different strategic purposes.

For PME's in particular, as the literature on satisfaction and SME performance confirms, loyal customers cost less to serve, purchase more over time, generate positive word-of-mouth, and are sometimes willing to pay a premium. A digital loyalty platform, by capturing transaction data systematically, enables even small businesses to estimate and track CLV for their customer base.

Figure N°11: Gaussian Distribution Framework for Customer Value Segmentation based on Projected CLV



Source: Adapted from Gül (2023) regarding predictive CRM analytics, aligned with the parametric distribution of active profitable customer cohorts.¹

As illustrated in this Figure, calculating Customer Lifetime Value (CLV) transforms raw store data into an actionable, parametric distribution curve. This framework segments consumers into three distinct cohorts Inactive/Nonprofitable (20%), Active/Profitable (60%), and Proactive/Very Profitable (20%) vividly highlighting the deep customer heterogeneity of retail environments. Rather than relying on static, historical records, digital systems can dynamically forecast future purchasing patterns by executing a dual probabilistic architecture. This approach combines the BG/NBD model (to evaluate transaction frequency and dropout trends) with a Gamma-Gamma submodel (to determine conditional expected average profit). For agri-food

¹ Gül, V. (2023, March 15). CRM analytics — CLTV prediction: Capturing consumer behavior through BG/NBD and Gamma-Gamma submodels. Medium: Towards Data Science. <https://medium.com/@veribilimi35/crm-analytics-cltv-prediction-33a41ab469af>

SMEs deploying automated loyalty platforms, this predictive curve serves a vital strategic purpose. Instead of diluting narrow marketing margins on indifferent buyers, merchants can automatically isolate their top-tier, proactive brand ambassadors. This intelligence empowers businesses to target the dominant middle tier with tailored, gamified challenges to boost purchase frequency, while systematically minimizing customer churn before it occurs.

2.3.RFM Analysis (Recency , Frequency, Monetary) Applied to the Agri-food Sector:

RFM analysis is one of the most widely used techniques for customer segmentation in marketing. RFM stands for Recency (how recently a customer has purchased), Frequency (how often the customer purchases), and Monetary value (how much the customer spends).

Birant describes RFM as a marketing technique used to analyze customer behavior and improve customer segmentation by dividing customers into various groups for future personalization services.¹ The method is based on the principle that past customer behavior is the best predictor of future behavior. Christy et al. demonstrated that RFM ranking provides an effective approach to customer segmentation. Their study confirmed that retaining customers is more important than finding new ones, and that RFM-based segmentation enables companies to deploy marketing strategies specific to individual customer segments.²

A particularly relevant study for the agri-food sector is that of Peker K , and Eren , who proposed an extended model called LRFMP (Length, Recency, Frequency, Monetary, Periodicity) specifically for the grocery retail industry.³ Their study, conducted on real data from a grocery chain, identified five customer segments: "high-contribution loyal customers," "low-contribution loyal customers," "uncertain customers," "high-spending lost customers," and "low-spending lost customers." More recently, a study on customer segmentation in a small food retail store in Cuenca, Ecuador, applied the RFM approach combined with the CLARA algorithm and Random Forest to identify eight customer segments: "Champions," "Loyal Customers," "Potential Loyalist," "New Customers," "Promising," "Need Attention," "About to sleep," and "At Risk." The study found that Champions customers spend the most and return the most frequently, while a majority of customers are inactive a common pattern in small retailers where only about 6.76% of transactions were made by registered returning

¹ Birant, D. (2011). Data mining using RFM analysis. In K. Funatsu (Ed.), Knowledge-oriented applications in data mining (pp. 91–108). InTech.

² Christy, A. J., Umamakeswari, A., Priyatharsini, L., & Neyaa, A. (2018). RFM ranking - An effective approach to customer segmentation. *Physica A: Statistical Mechanics and its Applications*, 500, 1–14.

³ Peker, S., Kocyigit, A., & Eren, P. E. (2017). LRFMP model for customer segmentation in the grocery retail industry: a case study. *Marketing Intelligence & Planning*, 35(4), 544–559.

customers. This finding directly demonstrates the critical importance of customer registration and data capture for effective segmentation in small food retail businesses.

The same study also used the A priori algorithm to discover product association rules within each segment, showing which products tend to be purchased together. This type of analysis can help agri-food SMEs optimize product placement and design segment-specific promotions.

In practice, RFM analysis works by scoring each customer on the three dimensions:

- **Recency:** A customer who purchased yesterday receives a higher score than one who last purchased three months ago.
- **Frequency:** A customer who purchases 10 times per month scores higher than one who purchases once.
- **Monetary:** A customer who spends 5,000 DZD per visit scores higher than one who spends 500 DZD.

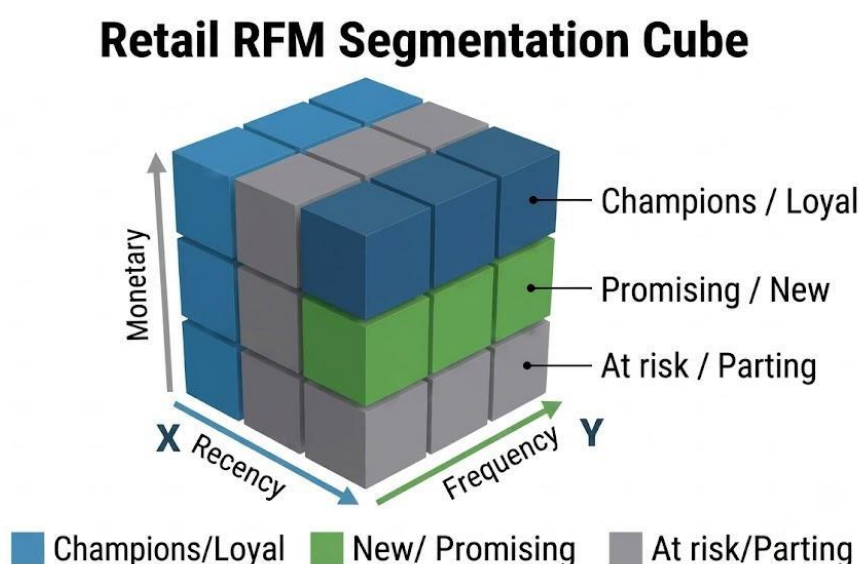
The RFM value for each customer can be calculated using the weighted formula:

$$RFM = (rs \times rw) + (fs \times fw) + (ms \times mw)$$

Where rs (Recency score (how recently a customer made a purchase), fs (frequency score (how often they purchase), ms (monetary score (how much they spend) are the recency, frequency, and monetary scores respectively, and rw, fw, mw are the corresponding weights.

Customers are then grouped into segments based on their combined RFM scores. High-RFM customers are the most valuable and should be targeted with exclusive rewards and retention efforts. Low-Recency customers (who have not purchased recently) are at risk of churning and should be targeted with re-engagement campaigns.

For agri-food SMEs, RFM analysis is particularly relevant because the purchase cycle is short and repetitive. A customer who normally visits three times a week but has not been seen in two weeks is clearly signaling a potential defection. A digital loyalty platform can automatically detect these patterns through transaction data and trigger personalized SMS or offer campaigns to bring the customer back something that would be impossible to do systematically without digital tools.

Figure N°12:RFM segmentation matrix applied to the agri-food retail sector

Source: Author's elaboration, based on Blattberg, Kim, & Neslin (2008)¹

To operationalize retention, modern digital ecosystems integrate the RFM (Recency, Frequency, Monetary) segmentation model illustrated in this Figure. This three-dimensional matrix classifies customers based on their historical purchasing activity, enabling the real-time identification of key strategic segments. This allows managers to easily distinguish 'Champions' who need to be nurtured, 'Promising' customers to be developed, and 'At-risk' segments requiring immediate re-engagement efforts.

2.4. Leveraging Customer Data for Personalized Retention Strategies:

The metrics and models discussed above retention rate, churn rate, CLV, and RFM all depend on one critical input: customer data. Without systematic data collection, none of these tools can be applied effectively. This subsection examines how businesses, particularly SMEs, can leverage customer data to design personalized retention strategies.

Gafarov explores how predictive analytics and behavioral data enable businesses to implement personalized marketing campaigns, loyalty programs, and product recommendations, while identifying at-risk customers through real-time data processing.² Dorgbefu further demonstrates that predictive personalization when guided by relevance, timing, and context plays a pivotal role in building trust, minimizing churn, and enhancing lifetime value.³

¹ Blattberg, R. C., Kim, B.-D., & Neslin, S. A. (2008). Database Marketing: Analyzing and Managing Customers. Springer Science & Business Media.

² Gafarov, N. (2024). Data-driven strategies for customer retention in e-commerce. Next Generation Journal for The Young Researchers, 8(1), 101–110.

³ Dorgbefu, E. A. (2021). Enhancing customer retention using predictive analytics and personalization. International Journal of Science and Research Archive, 4(1), 403–423.

In the food delivery industry, the integration of data analytics with retention strategies has proven particularly effective. The Alpha Corporation case study demonstrated that combining behavioral data (order frequency, session activity, and delivery satisfaction metrics) with machine learning models enables the identification of customers likely to churn before they actually leave. The study proposed tailored retention interventions: offering vouchers, discounts, order replacements, or refunds based on each customer's profile and spending history. The key data-driven retention strategies include:

Churn prediction models: Using purchase history and behavioral data to identify customers who are likely to defect, enabling proactive interventions such as targeted offers or personalized communication before the customer leaves. As demonstrated by the RFM-based churn prediction literature, even simple behavioral metrics (recency of last purchase, frequency decline) can serve as effective early warning indicators.

Personalized communication: Sending tailored messages based on customer preferences, purchase history, and RFM segment. For instance, a high-value "Champion" customer might receive an exclusive offer, while a customer classified as "About to Sleep" might receive a reminder with an incentive to return.

Dynamic segmentation: Continuously updating customer segments based on real-time behavioral data rather than static demographic profiles. This ensures that retention efforts are always directed at the right customers with the right message. The food retail segmentation study showed that combining RFM with product association rules provides deeper insights than demographic segmentation alone.

Loyalty program optimization: Using data to evaluate which program features (points, tiers, rewards) drive the most engagement and retention, and adjusting the program accordingly.

For agri-food SMEs, the challenge is not a lack of customer interactions these businesses often have daily contact with their customers

But rather a lack of systems to capture and analyze these interactions. As Torres noted, SMEs are characterized by direct contact with clients, centralized management, and simple information systems. This informality, while creating personal relationships, also means that valuable customer data is lost.¹ A digital platform that records transactions, tracks loyalty points, and provides analytics dashboards transforms informal customer knowledge into actionable intelligence. This is precisely the gap that specialized SaaS solutions aim to fill. By digitizing the customer relationship, these cloud-based tools enable even small neighborhood

¹ Torrès, O. (2004). The SME concept of Pierre-André Julien: An analysis in terms of proximity. *Piccola Impresa / Small Business*, 17(2), 51–62.

retailers to measure retention, calculate lifetime value, and segment their base using RFM logic. This democratizes personalized relationship marketing, offering independent businesses advanced capabilities that were previously available only to large retail chains with dedicated CRM systems.

Section 3: Correlative Impact of E-Loyalty Programs on Customer Retention and the Prospective Feasibility of the 'Fidialy' Project

Building on the theoretical foundations of customer retention and its measurement established in Sections 1 and 2, this final section bridges theory and practice. It examines how electronic loyalty programs (E-LPs) influence retention, the role of gamification in creating switching costs, the operational challenges facing agri-food SMEs, and introduces the conceptual framework of the Fidialy SaaS platform as a proposed solution.

3.1. Theoretical Impact of Digital Rewards on Repurchase Behavior:

3.1.1. Digital Rewards:

Digital rewards represent the core incentive mechanisms embedded within electronic loyalty programs (E-LPs), designed to stimulate continuous customer engagement and reinforce purchasing behavior. According to Bijmolt and Verhoef, loyalty programs operate through three main mechanisms: points pressure (the motivation to accumulate points toward a reward), rewarded behavior (the reinforcement effect following reward redemption), and personalized marketing enabled by customer data. The digitalization of these programs has significantly transformed their effectiveness by allowing real-time, data-driven, and highly personalized reward delivery.¹

The literature identifies several major forms of digital rewards. First, points-based systems remain the most widespread format, where customers accumulate points with each transaction that can later be redeemed for various benefits. Ozcelik highlights that such systems dominate e-loyalty programs due to their simplicity and scalability.² Second, cashback rewards have gained increasing attention; Vieira et al. demonstrate that both cashback accumulation and retention positively influence program loyalty, ultimately increasing purchase volumes and retailer revenues.³ Third, discount vouchers and coupons are widely used to incentivize repeat

¹ Bijmolt, T. H. A., & Verhoef, P. C. (2017). Loyalty programs: Current insights, research challenges, and emerging trends. In B. Wierenga & R. van der Lans (Eds.), *Handbook of Marketing Decision Models* (2nd ed., pp. 143–165). Springer. https://doi.org/10.1007/978-3-319-56941-3_5

² Ozcelik, Y. (2009). A comparative survey of electronic loyalty programs. *Journal of Electronic Commerce Research*, 10(2), 78–92.

³ Vieira, V. A., Rodrigues de Almeida, S., & Agnihotri, R. (2022). The impact of cashback reward programs on consumer loyalty. *Journal of Business Research*, 142, 620–634.

purchases. Mukhtar et al. found that such incentives, when combined with interaction and customization, play a critical role in maintaining long-term customer relationships.¹

Another important distinction concerns immediate versus delayed rewards. Empirical evidence suggests that while both forms positively influence customer retention, early-stage rewards have a particularly strong effect on shaping long-term loyalty, especially in fast-moving consumer goods (FMCG) contexts. However, digital reward systems are not without challenges. Son and Oh reveal that while mobile reward applications increase average engagement levels, they also introduce engagement volatility some users become highly active while others disengage rapidly, which may increase churn risk.

Additionally, Shiliashki emphasizes that the effectiveness of digital rewards depends heavily on their seamless integration into digital payment ecosystems. The more naturally customers can access and redeem rewards during the purchase process, the higher their satisfaction and continued participation.²

Overall, these studies highlight that digital rewards are not merely transactional incentives but strategic tools that combine behavioral reinforcement, personalization, and technological integration to sustain customer engagement over time.

The main types of digital rewards documented in the literature include:

- **Points-based systems:** Customers accumulate points per transaction, redeemable for rewards. Ozcelik provides a comparative survey of e-loyalty programs categorizing them into points programs, tier-based systems, and coalition programs, noting that points programs remain the most common format online.³
- **Cashback rewards:** Vieira et al, published in Journal of Business Research, used time-series data from a cashback program and found that both cashback generation and cashback retention significantly increase consumer program loyalty, which in turn boosts average purchase amounts and retailer revenues.⁴
- **Discount vouchers and coupons:** Mukhtar et al, surveying 200 respondents, found that discounts, rewards, and coupons motivate consumers to return, with interaction and customization being pivotal drivers for sustaining long-term relationships.⁵

¹ Mukhtar, M., Mukhtar, S., & Shiliashki, M. (2023). Evaluating promotional incentives on e-commerce platforms. *Journal of Consumer Marketing*, 40(4), 512–525.

² Shiliashki, M. (2013). Comment: The untapped potential of digital loyalty programmes. *Journal of Payments Strategy & Systems*, 7(2), 116–118.

³ Ozcelik, Y. (2009). *Op. cit.*

⁴ Vieira, V. A., et al. (2022). *Op. cit.*

⁵ Mukhtar, M., et al. (2023). *Op. cit.*

- **Immediate vs. delayed rewards:** A study on an FMCG brick-and-mortar retailer found that both immediate and delayed reward forms influence retention, but early-stage reward activities have an outsized impact on long-term loyalty

3.1.2. Repurchase Behavior:

Repurchase behavior refers to the consumer's decision to repeatedly buy from the same provider. The theoretical foundations draw on several models:

Chen, in a well-cited study (80 citations) in *Journal of Organizational Computing and Electronic Commerce*, integrated Social Cognitive Theory (SCT), the IS Continuance Model, and TAM to test repurchase intention among 444 online shoppers.¹ Satisfaction, perceived usefulness, perceived ease of use, and Internet shopping self-efficacy all emerged as significant determinants. Satisfaction itself was influenced by perceived usefulness, ease of use, confirmation, and positive past experience.

Chatzoglou et al, published in *Heliyon*, developed and tested a three-dimensional model of repurchase intention with 618 retail customers using SEM.² They identified six antecedents (physical environment, shop layout, staff interaction, customer interaction, merchandise value, merchandise variety) whose effects on repurchase are mediated through customer experience, in-shop emotions, perceived value, satisfaction, and loyalty. Customer loyalty and satisfaction were the strongest direct predictors.

Zamzuri et al reviewed four theoretical frameworks commonly used to explain repurchase: Expectation Confirmation Theory (ECT), Expectancy Disconfirmation Theory (EDT), TAM, and SERVQUAL. Malik & Bhat, using PLS-SEM with 200 online shoppers, found that both affective commitment (emotional attachment) and continuance commitment (calculative dependence) significantly influence repurchase intentions, though affective commitment has the stronger effect.³

Dash et al, published in *European Journal of Management and Business Economics*, surveyed 504 online shoppers from two emerging economies and confirmed that customer experience and online purchase behavior positively influence repurchase intention, but financial risk

¹ Chen, J. S. (2012). Repurchase intention models in e-commerce frameworks. *Journal of Organizational Computing and Electronic Commerce*, 22(4), 312–330.

² Chatzoglou, P., Chatzoudes, D., Savvidou, A., Fotiadis, T., & Delias, P. (2022). Factors affecting repurchase intentions in retail shopping: An empirical study. *Heliyon*, 8(9), e10619. <https://doi.org/10.1016/j.heliyon.2022.e10619>

³ Zamzuri, N. H., Ahmad, R., & Salleh, M. H. (2019). Theoretical frameworks explaining repurchase intention in electronic commerce: A review. *International Journal of Academic Research in Business and Social Sciences*, 9(11), 123–135.

dampens this relationship a particularly relevant finding in emerging-market contexts where trust in digital transactions may be lower..¹

3.1.3. The Impact of Digital Rewards on Repurchase Behavior

The link between digital reward programs and repurchase behavior is supported by several empirical studies, though with important nuances:

Among the foundational empirical literature, a key study by Lewis² in the *Journal of Marketing Research* provides significant insights into this dynamic. Utilizing a discrete-choice dynamic programming model with real transaction data from an online grocery and drugstore merchant, Lewis demonstrated that loyalty programs shift consumers from myopic (single-purchase) to dynamic (multi-period) decision-making. Policy experiments showed that the program successfully increased annual purchasing for a substantial proportion of customers, outperforming short-term instruments like e-mail coupons in long-term retention effects.

Hoseong Jeon used Kaplan-Meier survival analysis and Cox proportional hazard models on real transaction data (n=2,892) from an education service provider. The study found that average retention period increased significantly after loyalty program introduction, and that the program served as an exit barrier particularly for customers with negative service experiences suggesting loyalty programs can buffer dissatisfaction.³

Hossain et al surveyed 178 customers across different loyalty programs and confirmed that loyalty program attractiveness, reward value perception, personalization level, customer engagement, and customer satisfaction all significantly affect long-term customer retention.⁴

However, the evidence is not uniformly positive. Wijaya conducted a meta-analysis of nine empirical studies in the hospitality industry and found that loyalty programs did not significantly increase customer loyalty.⁵

The programs encouraged repeat purchase but without emotional attachment or genuine relationship-building. The loyalty formed was behavioral (transactional) rather than attitudinal. This echoes the calculative vs. affective distinction noted in the switching costs literature (see 3.2).

¹ Dash, S., Sharma, P., & Gupta, S. (2025). Fostering customer loyalty in emerging markets. *European Journal of Management and Business Economics*, 34(1), 45–62.

² Lewis, M. (2004). The effect of loyalty programs and short-term promotional incentives on customer retention. *Journal of Marketing Research*, 41(3), 281–292.

³ Jeon, H. (2011). The influence of loyalty program on the effect of customer retention: Focused on education service industry. *Asia Marketing Journal*, 13(3), 25–53.

⁴ Hossain, M. A., Jahan, N., & Kim, Y. (2026). Attractiveness vectors in loyalty ecosystems. *Journal of Relationship Marketing*.

⁵ Wijaya, S. (2005). The effect of loyalty programs on customer loyalty in the hospitality industry. *Jurnal Manajemen Perhotelan*, 1(1), 1–10. <https://doi.org/10.9744/jmp.1.1>

Niros specifically examined digital loyalty strategies during COVID-19 (n=235 Greek consumers) and found that digital adoption moderates the effectiveness of loyalty strategies on repurchase intentions.¹

The same program works differently depending on the customer's digital fluency a critical dimension in contexts where digital literacy levels remain uneven across customer segments.

3.2.Digital vs. Traditional: Gamification as a Driver of High Switching Costs:

3.2.1. From traditional to digital loyalty programs:

Traditional loyalty programs are primarily based on transactional incentives such as discounts, coupons, and point accumulation systems. While these mechanisms can effectively stimulate repeat purchases, they mainly generate behavioral (transactional) loyalty, where customers remain only as long as financial benefits are attractive². As a result, such programs often fail to create strong emotional bonds, making customers more likely to switch when better offers are available.

In contrast, digital loyalty programs extend beyond this transactional logic by embedding rewards within a broader and more dynamic customer experience. These systems integrate personalized offers, mobile applications, and real-time interaction, transforming loyalty into an ongoing relationship rather than a one-time incentive³. This shift allows firms not only to reward purchases but also to influence how customers perceive and evaluate their overall experience.

Empirical evidence supports this evolution. Studies show that the effectiveness of digital loyalty programs is enhanced when they combine perceived benefits with engagement mechanisms such as gamification, as these factors positively influence customer attitudes and repurchase intention. This indicates that loyalty is no longer driven solely by financial incentives, but also by how engaging and interactive the experience is another key advantage of digital programs lies in their ability to make customer retention more measurable. Unlike traditional tools, digital systems allow firms to track customer interactions, frequency of engagement, and behavioral

¹ Niros, M. (2022). Digital loyalty response during macro-environmental disruptions. *Journal of Retailing and Consumer Services*, 68, 103–115.

² Dowling, G. R., & Uncles, M. (1997). Do customer loyalty programs really work? *Sloan Management Review*, 38(4), 71–82.

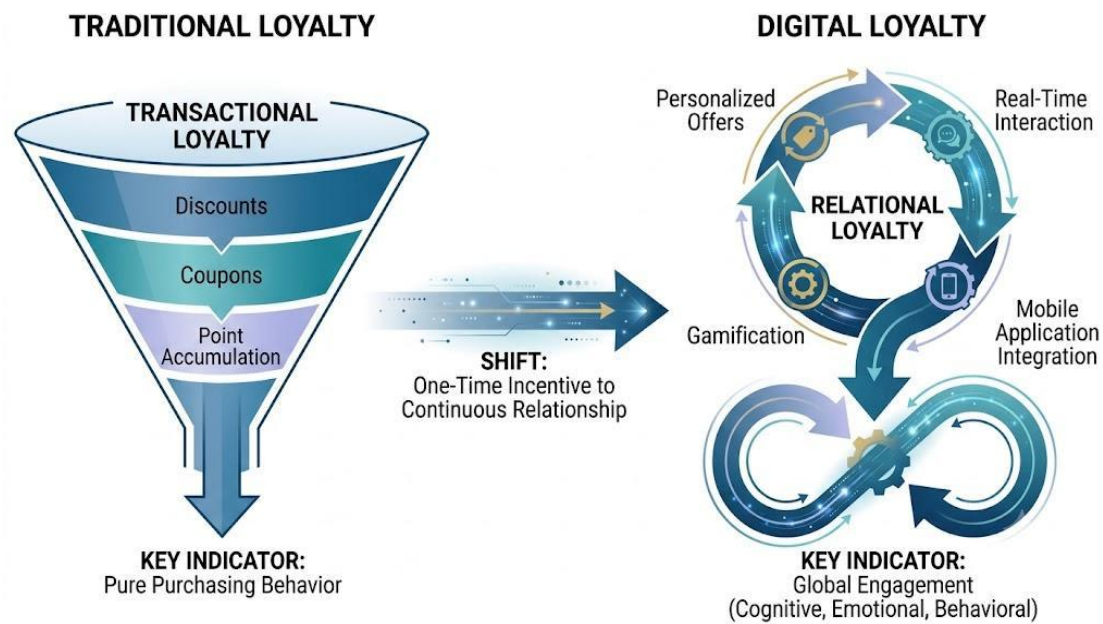
Yi, Y., & Jeon, H. (2003). Effects of loyalty programs on value perception, program loyalty, and brand loyalty. *Journal of the Academy of Marketing Science*, 31(3), 229–240. <https://doi.org/10.1177/0092070303031003002>

³ Bijmolt, T. H. A., et al. (2010). Loyalty programs: General findings and future research directions. *Journal of Service Research*, 13(3), 319–327. <https://doi.org/10.1177/1094670510362537>

Dorotic, B., Bijmolt, T. H. A., & Verhoef, P. C. (2012). Loyalty programmes: Current knowledge and research directions. *International Journal of Management Reviews*, 14(3), 217–237. <https://doi.org/10.1111/j.1468-2370.2011.00314.x>

patterns over time. In mobile commerce contexts, gamification has been shown to increase engagement while reducing switching behavior, highlighting the strategic role of data-driven loyalty systems.

Figure N°13: The Evolution of Loyalty Programs: From Traditional Transactional Mechanisms to Digital Relational Ecosystems



Source: Adapted from Dowling & Uncles (1997)¹, Bijmolt et al. (2010)², and Dorotic et al. (2012)³.

As shown in this figure, modern retention shifts away from linear transactional funnels. Traditional systems rely on static incentives like generic coupons and point collection that merely drive superficial purchase habits and temporary retention.

Digital loyalty ecosystems reshape this dynamic into an ongoing relational loop. Supported by mobile applications, gamification, and real-time data, this approach fosters deep cognitive, emotional, and behavioral connections. Ultimately, this transforms routine, detached transactions into an active, community-driven partnership.

3.2.2. Gamification as a behavioral engagement tool:

Gamification refers to the use of game-like elements in a non-game context in order to stimulate participation, attention, and repeat interaction. In digital loyalty programs, these elements typically include points, levels, badges, challenges, progress indicators, and reward milestones.

¹ Dowling & Uncles, 1997, op. cit., p. 75.

² Bijmolt, T. H. A., Leeflang, P. S. H., Blockhuys, F., Brandsma, M. H., Constantinescu, A. O., & Verhoef, P. C. (2010). Loyalty programs: General findings and future research directions. *Journal of Service Research*, 13(3), 319–327. <https://doi.org/10.1177/1094670510362537>

³ Dorotic, B., et al. (2012). *Op. cit.*, p. 220.

Their purpose is not simply to entertain the customer, but to make engagement more active, more visible, and more habit-forming. In that sense, gamification functions as a behavioral tool: it encourages customers to return, interact, and progress within the loyalty system rather than treating each purchase as an isolated event.

The studies reviewed here show that this mechanism has a real effect on customer behavior. In the Traveloka study, gamification significantly influenced repurchase intention and increased perceived enjoyment, while reward satisfaction moderated the relationship.¹ This means that the effect of gamification depends not only on the presence of game-like features, but also on whether customers find the experience genuinely rewarding. When the program is satisfying, customers are more willing to continue using it; when the reward feels weak, the motivational effect becomes less stable.

The same pattern appears in m-commerce research, where gamification positively influenced customer engagement and negatively affected switching behavior. Customer engagement also served as a significant mediator between gamification and switching behavior. This is important because it shows that gamification does not work only through direct persuasion. It works by changing the customer's level of involvement. Once the customer is more engaged, the relationship with the platform becomes harder to break and easier to continue.

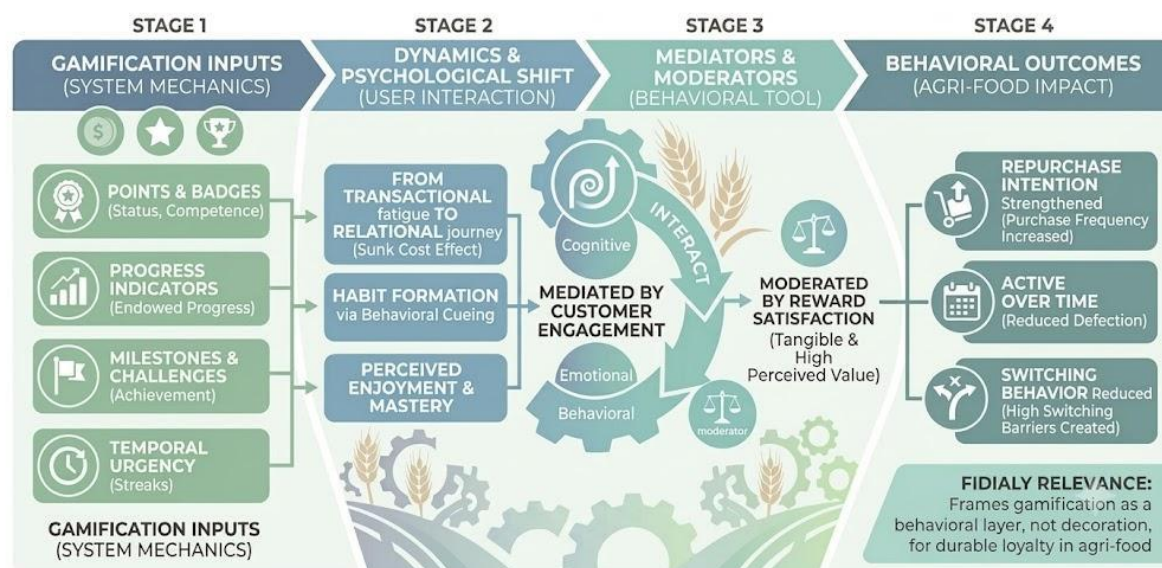
A useful way to understand this is that gamification changes the nature of participation. Instead of merely consuming a discount, the customer follows a path: earning points, reaching a threshold, unlocking a benefit, and returning to continue progress. That sequence creates momentum. It also gives the customer a sense of achievement, which helps explain why gamified programs often strengthen repurchase intention more effectively than static reward systems.

For agri-food SMEs, the implication is direct. A digital loyalty platform should not present gamification as mere decoration. It must be framed as a behavioral engagement layer that keeps customers active over time. In contexts where purchase frequency is high but attention is

¹ Natalia, E. D., Gabriella, A., & Oktavio, A. (2025). The impact of gamification on repurchase intention: Mediating role of perceived enjoyment and moderating role of reward satisfaction. *Business and Finance Journal*, 10(1), 45–58. <https://doi.org/10.33086/bfj.v10i1.6851>

limited, a well-designed gamified structure makes the loyalty program more visible, more motivating, and more durable.

Figure N°14: The Elaborated Behavioral Engagement Framework of Gamification in Agri-Food Retail



Source: Author's elaboration based on Natalia et al. (2025)¹

As shown in this Figure, a gamification-based behavioral framework can build durable loyalty in the agri-food sector. The model moves from initial mechanics (Stage 1) and user interaction (Stage 2) to engagement-driven satisfaction (Stage 3), ultimately resulting in higher repurchase rates and reduced churn (Stage 4).

3.2.3. Switching costs as a retention mechanism:

Switching costs represent a key mechanism through which digital loyalty programs enhance customer retention. In traditional loyalty schemes, switching costs are mainly economic, as customers risk losing accumulated points or unused rewards. However, in digital environments, these costs become more complex and multidimensional, including financial, procedural, and psychological components². Customers may lose not only rewards, but also their progress, status, familiarity with the platform, and established usage habits.

¹ Ibid., pp. 1–17.

² Burnham, T. A., Frels, J. K., & Mahajan, V. (2003). Consumer switching costs: A typology, antecedents, and consequences. *Journal of the Academy of Marketing Science*, 31(2), 109–126. <https://doi.org/10.1177/0092070302250897>

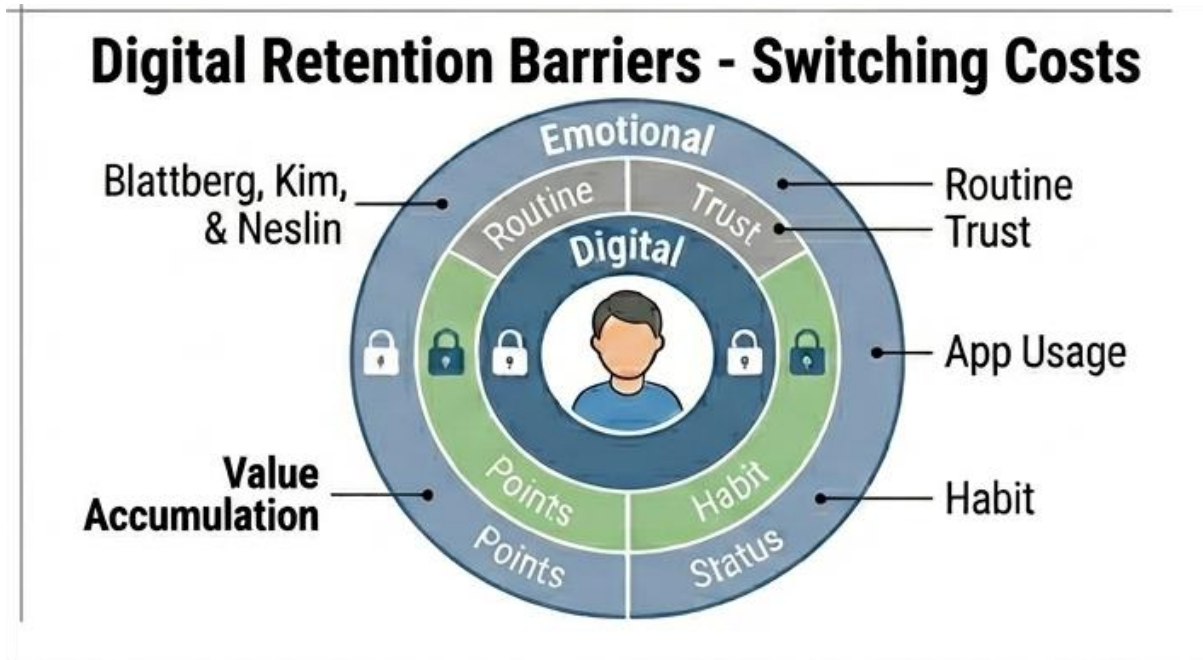
This transformation is largely driven by the integration of gamification and continuous interaction. As customers engage with gamified systems progressing through levels, completing challenges, and receiving personalized rewards they develop a sense of accumulated involvement that extends beyond simple transactions. Consequently, switching to another platform becomes less attractive, not only due to economic loss, but also because of the disruption of experience and habit.

Empirical evidence supports this interpretation. Research in mobile commerce shows that gamification positively influences customer engagement and negatively affects switching behavior, with customer engagement acting as a mediator and switching costs as a moderator. This indicates that retention is not achieved solely through rewards, but through the level of involvement that customers build over time. The more engaged the customer becomes, the stronger the perceived cost of switching.

For agri-food SMEs adopting digital loyalty systems, this insight is particularly important. Switching costs should not be created through complexity or constraints, but rather through value accumulation, repeated interaction, and continuity. When customers earn progress, receive personalized offers, and integrate the platform into their routine, leaving becomes less convenient and less appealing. Therefore, switching costs should be understood as a complementary retention mechanism that reinforces satisfaction and engagement rather than replacing them¹. The most sustainable form of loyalty does not result from forcing customers to stay, but from creating a relationship that is sufficiently rewarding, familiar, and valuable that switching no longer feels worthwhile.

¹ Jones, M. A., Mothersbaugh, D. L., & Beatty, S. E. (2000). Switching barriers and repurchase intentions in services. *Journal of Retailing*, 76(2), 259–274. [https://doi.org/10.1016/S0022-4359\(00\)00024-5](https://doi.org/10.1016/S0022-4359(00)00024-5)

Figure N°15: Multidimensional mechanism of switching barriers (Switching Costs)



Source: Author's elaboration, based on Burnham, Frels, and Mahajan (2003).¹

As illustrated in this **Figure**, this model demonstrates how a digital ecosystem converts user interactions into structural switching costs. Grounded in the frameworks of **Blattberg, Kim, and Neslin**, the system secures customer retention through continuous **value accumulation**:

- **The Digital Core:** The mobile application interface acts as the central relational hub, capturing behavioral data and tracking user progression.
- **The Behavioral Loop (Inner Ring):** Repeated app interactions transform basic satisfaction into trust, establishing automated shopping habits and daily routines.
- **The Structural Barriers (Outer Ring):** These elements create high exit penalties, making brand switching irrational for the consumer through four distinct blocks:
 - **Emotional:** Psychological attachment and brand identification.
 - **App Usage:** Cognitive familiarity with the UI, creating learning costs if the user switches to a competitor.
 - **Status:** The loss of tier-based privileges, milestone progression, and customer prestige.

¹ Burnham, T. A., et al. (2003). *Op. cit.*, pp. 109–126.

- **Points:** The direct financial risk of forfeiting unredeemed rewards and accumulated loyalty points.

3.3. Operational and Structural Retention Challenges in Agri-food SMEs:

3.3.1. Supply Chain and Operational Challenges

Operational inefficiencies represent one of the most immediate obstacles facing agri-food SMEs. A considerable number of small-scale food enterprises lack specialized supply chain expertise, limiting their ability to manage sourcing, production, and distribution effectively. As a result, firms frequently encounter high input costs, storage constraints, and logistical difficulties that disrupt service continuity and product availability¹.

These vulnerabilities are further amplified by demand fluctuations and unstable access to raw materials. In many cases, SMEs operate without formal risk management frameworks, making them particularly sensitive to external shocks such as economic disruptions or global crises².

Moreover, weak coordination across the value chain reduces operational consistency. This lack of integration often results in variability in product quality and delivery reliability two key determinants of customer satisfaction and retention. Consequently, operational instability directly increases the likelihood of customer dissatisfaction and switching behavior.

3.3.2. Structural and Resource Constraints:

Beyond operational inefficiencies, structural limitations represent deeper and more persistent constraints on SME performance. Limited access to financial and human resources restricts firms' ability to invest in employee training and organizational development, despite their well-established impact on productivity and service quality³.

Inventory management challenges further illustrate these structural weaknesses. Many SMEs continue to rely on manual tracking systems, leading to stock discrepancies and frequent stock outs⁴. Such disruptions directly affect customer experience, as product unavailability remains one of the primary triggers of customer defection.

In addition, the adoption of formal management systems such as ISO standards or HACCP frameworks remains limited. While these systems enhance efficiency, ensure compliance, and

¹ Sallwa, A. A., & Kabelele, D. P. (2024). "Supply chain risk management strategies and the performance of food processing companies." *Supply Chain Forum: An International Journal*.

² Mohezar, S., Nasir, N. M., & Ismail, N. A. (2023). Supply chain risk and SME continuity. *Continuity & Resilience Review*.

³ Beck, T., & Demirgüç-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance*, 30(11), 2931–2943.

⁴ Chimbuto, Christopher. (2026). Enhancing Inventory Optimization Strategies for SMEs: Addressing Key Challenges in Mzuzu, Malawi. *International Journal of Innovative Science and Research Technology*,

strengthen customer trust, their implementation requires financial resources, organizational discipline, and technical expertise that many SMEs lack. As a result, firms often struggle to deliver consistent quality, undermining long-term customer retention.¹

3.3.3. Technological and Infrastructure Barriers:

Technological constraints further reinforce these challenges. Although digital solutions such as Customer Relationship Management (CRM) systems offer significant potential to improve customer retention through personalization and data-driven insights, their adoption among agri-food SMEs remains uneven².

This gap is largely explained by financial limitations, lack of technical expertise, and inadequate digital infrastructure. In many cases, poor connectivity and low levels of digital literacy limit the effective use of such technologies, particularly in rural areas³.

Even when digital tools are implemented, concerns related to cybersecurity and system reliability may negatively affect customer experience. Furthermore, the absence of structured customer support and feedback systems prevents SMEs from maintaining continuous engagement with their customers, which is essential for building strong and lasting relationships.

3.3.4. Quality and Compliance Challenges:

In the agri-food sector, quality assurance and regulatory compliance play a critical role in shaping customer trust. However, many SMEs face difficulties in maintaining consistent standards due to structural weaknesses such as limited transparency, inefficient inventory systems, and exposure to food safety risks⁴.

The implementation of structured food safety systems requires clearly defined processes, documentation, and accountability across the supply chain. Yet, SMEs often lack the organizational capacity to effectively implement frameworks such as HACCP or ISO standards⁵. This results in inconsistent quality and reduced reliability, both of which negatively impact customer confidence and long-term loyalty.

¹ Andari, L. A., & Kurniyanto, I. R. (2025). Implementation and enhancement of risk management in frozen food processing at UD FFI Driyorejo Gresik. *Agromix*, 16(1).

² Purnama, C., & Manalu, D. (2024). CRM implementation and operational constraints in micro-businesses. *Agribusiness Management Journal*, 12(2), 144–156.

³ Lububu, S., & Darko, M. T. (2025). Digital transformation in South Africa's agri-business sector: Opportunities and challenges. *International Journal of Business Ecosystem & Strategy*, 7(5). <https://doi.org/10.36096/ijbes.v7i5.858>

⁴ Andari, L. A., & Kurniyanto, I. R. (2025). *Op. cit.*

⁵ Krasnorutskyi, O., & Podsokha, A. (2025). Ринкові стимули в системі управління якістю агропродовольчої продукції [Market incentives in the quality management system of agri-food products]. *Economy and Society*. <https://doi.org/10.32782/ecovis/2025-2-13>

3.3.5. Market and Financial Pressures:

In addition to internal challenges, agri-food SMEs operate under significant external pressures. Regulatory complexity, logistical constraints, and seasonal demand variability create an unstable business environment that is difficult to manage¹.

For export-oriented firms, these challenges are further intensified by high transportation costs, customs regulations, and product perishability². At the same time, limited branding capabilities and weak differentiation strategies make it difficult for SMEs to retain customers in increasingly competitive markets.

Financial constraints remain a central issue, limiting investment in technology, infrastructure, and customer relationship management systems³. Combined with shortages in skilled human capital, these limitations reduce SMEs' ability to implement effective retention strategies. As a result, customer data often remains fragmented, restricting personalization and weakening customer engagement.

3.4.Fidialy: A Digital Framework for Enhancing Customer Retention in Agri-food SMEs:

Building upon the challenges identified in agri-food SMEs, particularly those related to limited customer data management, weak engagement strategies, and low technological adoption, the Fidialy project is proposed as a digital solution aimed at improving customer retention. As demonstrated in previous sections, electronic loyalty programs and CRM systems play a significant role in enhancing customer satisfaction, engagement, and repurchase behavior. In this context, Fidialy represents a practical application of these theoretical concepts.

Fidialy is designed as a Software-as-a-Service (SaaS) platform that enables SMEs to manage customer relationships and implement structured loyalty strategies through an integrated digital system. Unlike traditional loyalty programs, which are often limited to basic rewards, Fidialy combines multiple functionalities within a single platform, including customer data management, digital rewards, communication tools, and gamification mechanisms.

¹ Kumar, R., Samadhiya, A., Kumar, A., Luthra, S., & El Jaouhari, A. (2025). Implementing AI in agri-food supply chain security from the multi-stakeholder perspective: An exploratory review and future directions. *International Journal of Industrial Engineering and Operations Management*. <https://doi.org/10.1108/IJIEOM-01-2025-0011>

² R. S. & Manoj, P. (2025). Export-oriented logistics and financial choke points in food SMEs. *Journal of Small Business Economics*, 44(3), 310–328.

³ Nwinyi, I. P., Amoakoh, C. K., Twum, P. G., & Yeboah, M. M. (2026). Small business financial compliance analytics: Reducing regulatory burden while maintaining oversight through data-driven solutions. *International Journal for Multidisciplinary Research*, 8(1). <https://www.ijfmr.com/papers/2026/1/68761.pdf>

One of the core components of Fidialy is its CRM functionality, which allows businesses to collect and analyze customer data in order to better understand purchasing behavior and preferences. This

capability supports personalization, which has been identified in the literature as a key driver of customer satisfaction and retention. In addition, the platform integrates digital reward systems such as points, discounts, and incentives, which encourage repeat purchases and reinforce customer loyalty.

Furthermore, Fidialy incorporates gamification elements, including progress tracking and reward milestones, to enhance customer engagement. As discussed in Section 3.2, gamification transforms customer interaction into a more dynamic and motivating experience, thereby increasing switching costs and reducing the likelihood of customer defection. The platform also enables businesses to maintain continuous communication with their customers through SMS and email campaigns, ensuring sustained engagement over time.

The relevance of Fidialy lies in its ability to address the structural and operational limitations faced by SMEs. By offering an accessible and scalable solution, it reduces the need for significant financial and technical resources while providing tools that are typically unavailable to small businesses. In this sense, Fidialy responds directly to the gaps identified in Section 3.3 by improving customer data management, enhancing interaction, and supporting more effective retention strategies.

Overall, Fidialy can be considered a comprehensive framework that bridges the gap between theoretical insights on customer retention and practical implementation in SMEs. It translates the principles of digital loyalty programs, CRM, and engagement-driven strategies into a concrete solution adapted to the constraints and needs of the agri-food sector. The following chapter will provide a detailed presentation of the platform, its business model, and its operational design.

Chapter conclusion:

This chapter has shown that customer retention depends on more than repeat transactions. It is the result of a broader relational process built on satisfaction, trust, and engagement, all of which work together to reduce defection and sustain profitable relationships. The literature reviewed in the chapter also shows that satisfaction and trust are complementary rather than interchangeable, and that retention improves when firms combine relational quality with active engagement and personalized interaction.

The chapter has also clarified the strategic difference between acquisition and retention. Acquisition remains necessary for growth, but it is more costly and less stable than keeping existing customers, especially for SMEs with limited marketing budgets. The measurement tools presented in Section 2, including retention rate, churn rate, CLV, and RFM, provide the analytical basis needed to monitor customer behavior rather than relying on intuition alone. In the agri-food retail sector, where customer relationships are local, frequent, and highly sensitive to service quality, these tools are particularly useful for detecting weak signals of defection and identifying valuable customers.

Finally, Chapter Two provides the conceptual bridge to the Fidialy proposition. It shows why a digital loyalty platform is relevant not only as a reward mechanism, but as a retention system that can support tracking, segmentation, personalization, and timely intervention. In that sense, the chapter prepares the ground for the next stage of the thesis by linking the theory of retention to a practical SaaS solution adapted to the constraints of agri-food SMEs.

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Part II:

Practical Framework

Chapter (1):
General Presentation and Strategy of the
'FIDIALY' Project

Chapter introduction:

The preceding chapters of this thesis established a rigorous theoretical progression. Chapter I laid the conceptual foundations by exploring the evolution of Relationship Marketing (RM), Customer Relationship Management (CRM) architectures, and the strategic mechanics of loyalty programmes. Building on this, Chapter II narrowed the analytical focus to the primary economic imperative of these systems: Customer Retention. Having synthesised these academic frameworks, the present chapter marks the transition from theoretical inquiry to applied entrepreneurial practice.

This third chapter is dedicated to the operational culmination of this research: the Fidialy project. Developed within the ESMT Tlemcen incubator and governed by Ministerial Decree No. 1275 on the 'University Diploma (Startup)' programme,¹ Fidialy addresses the specific structural contradiction defining the contemporary Algerian retail economy, namely the gap between a digitally connected consumer base² and operationally analogue merchants. By positioning this venture as a tailored, SaaS-based ecosystem, the analysis demonstrates how theoretical retention mechanisms can be re-engineered into a tangible, market-ready business model.

The chapter is structured across three interconnected sections.

- **Section 1** establishes the identity of the project, progressing from a market diagnosis to the project's genesis, value proposition, and strategic objectives.
- **Section 2** analyses the innovative substance of the venture through established academic typologies and details the operational execution roadmap.
- **Section 3** presents a comprehensive strategic analysis and commercial framework.

Together, these sections form a complete entrepreneurial dossier, fully aligned with academic requirements and the commercial dynamics of the Algerian digital economy.

¹ Ministry of Higher Education and Scientific Research (MESRS), *Arrêté n° 1275 du 27 septembre 2022 fixant les modalités de préparation du projet de fin d'études pour l'obtention du diplôme universitaire "Un diplôme... Une Start-up"*, Algeria, 2022.

² Autorité de Régulation de la Poste et des Communications Électroniques (ARPCE), *Observatoire du marché de la téléphonie mobile et de l'internet en Algérie*, Algiers, Algeria, 2023.

Section 1: general presentation and value proposition

A rigorous entrepreneurial analysis begins with a systematic diagnosis of the structural market failures a product is designed to resolve. This section accordingly establishes the context necessitating the Fidelity platform, proceeding sequentially from a macro-level market diagnosis and the identification of unmet needs to the genesis of the solution, its value proposition, and the team and strategic objectives driving its realisation.

1.1. Market Context, Structural Challenges, and the Necessity of Fidelity

1.1.1. The Algerian Retail Sector: A Structural Overview

Algeria's retail ecosystem, one of Africa's largest, counts over 2 million registered business activities and approximately 500,000 actively operating consumer-facing points of sale, including supermarkets, cafés, boutiques, pharmacies, clothing retailers, and food and beverage establishments.¹ Urban smartphone penetration exceeds 60% in major centres and 4G coverage spans 85% of the national territory,² yet the vast majority of SME merchants continue to operate through legacy manual practices: paper receipts, memory-based stock control, and physical loyalty cards. This structural contradiction, whereby digitally connected consumers are served by operationally analogue merchants, defines the commercial necessity of Fidelity.

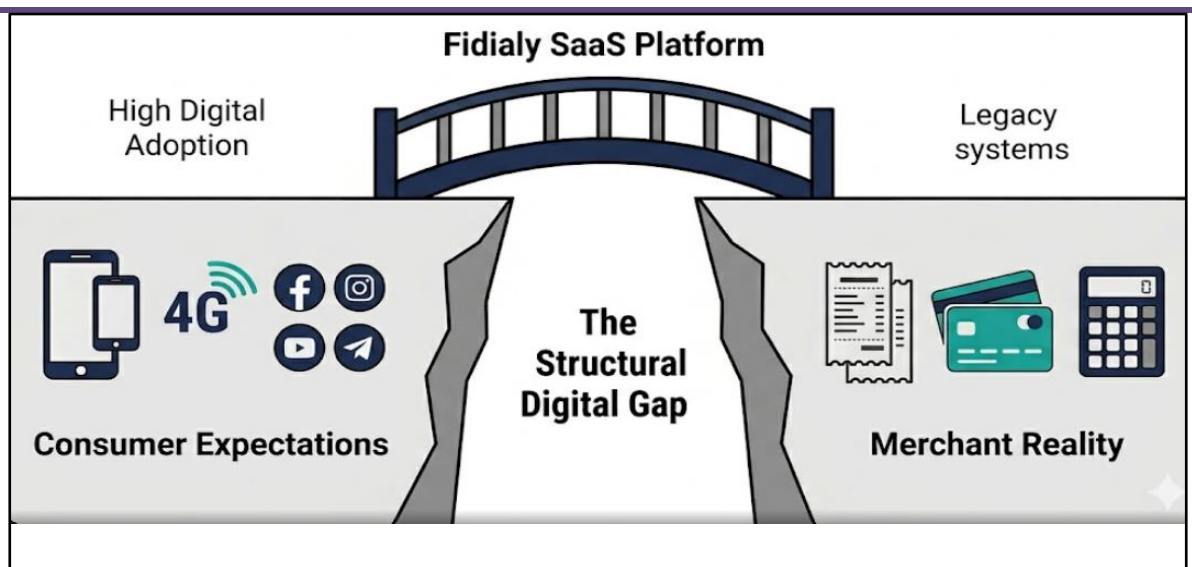
This gap does not result from merchant indifference; rather, it reflects a global SaaS market failure. No existing solution simultaneously delivers enterprise-grade customer intelligence, plug-and-play simplicity, and DZD-denominated affordability. Addressing this tripartite requirement is Fidelity's core commercial logic.

Figure N°01: The Algerian Retail Digital Gap.

A visual representation contrasting digital consumer expectations vs. merchant operational reality

¹ Centre National du Registre du Commerce (CNRC), *Statistiques globales du registre du commerce*, Algiers, Algeria, 2023.

² ARPCE, *Op. cit.*



Source: Author's elaboration

1.1.2. The Merchant's Pain: Three Systemic Commercial Failures

- **"Pareto Blindness."** According to Reichheld, retaining just 5% more customers increases profits by 25–95%,¹ yet the typical Algerian merchant has no mechanism to identify high-value patrons. The 20% of customers generating approximately 80% of revenue² remain commercially invisible: unidentifiable, unrewardable, and unreachable.
- **"Wasted Marketing."** In the absence of customer data, merchants resort to undifferentiated WhatsApp broadcasts and blanket discounts applied equally to loyal patrons and one-time visitors alike. Without behavioural segmentation, this approach erodes margins without generating proportional loyalty.
- **"Blind Decision-Making."** Inventory, promotions, and staffing decisions are made by intuition rather than data. Merchants cannot identify highest-margin SKUs, peak-value shopping windows, or promotional ROI, placing them at a significant disadvantage in Algeria's increasingly competitive retail environment.

1.1.3. The Consumer's Pain: Three Frictions Undermining Loyalty Engagement

- **"Wallet Clutter."** Physical punch cards are lost, forgotten, and abandoned at scale. Managing separate cards across multiple retailers creates what practitioners term

¹ Reichheld, F. F. (1996). *The Loyalty Effect: The Hidden Force Behind Growth, Profits, and Lasting Value*. Harvard Business School Press, Boston

² Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15th ed.). Pearson Education.

'loyalty fatigue', namely the progressive disengagement that no existing Algerian solution has yet resolved digitally.

- **"Reward Paralysis."** Existing programmes set reward thresholds at distances so remote that the psychological association between purchase behaviour and reward, which is central to operant conditioning theory¹, is effectively broken. Rewards that are neither immediate nor visible generate frustration rather than loyalty.
- **"Blind Shopping."** In an inflationary economy, Algerian consumers have no tool through which to discover which nearby stores offer personalised, real-time loyalty rewards. This information gap represents lost consumer purchasing power and a missed commercial opportunity for merchants alike.

1.1.4. Market Quantification: TAM / SAM / SOM

The market opportunity is quantified using the TAM/SAM/SOM framework,² applying an ARPU of 3,000 DZD per month, representing the midpoint of Fidialy's Solo (1,900 DZD) and Plus (3,900 DZD) tiers:

Table N°01: Market Sizing (TAM/SAM/SOM): Fidialy.

Market Layer	Volume (POS)	Annual Value (DZD)	Strategic Interpretation
TAM : All consumer-facing POS in Algeria (CNRC)	~500,000	~18 billion	Confirms macro-scale national opportunity
SAM : Digitally ready merchants (smartphone + connectivity + social media) $\approx$ 30% of TAM, major urban centres	~150,000	~5.4 billion	Realistic near-term competitive arena; no digital literacy investment required
SOM : 1% of SAM within 24 months; validated PMF & Seed/Series A positioning	~1,500 (Yr 1–2)	~54 million ARR	Conservative, attainable; confirms break-even viability

Source: Author's elaboration, based on CNRC data ³

¹ Solomon, M. R. (2019). *Consumer Behavior: Buying, Having, and Being* (12th ed.). Pearson.

² Blank, S., & Dorf, B. (2012). *The Startup Owner's Manual: The Step-By-Step Guide for Building a Great Company*. K&S Ranch Publishing, Pescadero, California.

³ CNRC, *Op. cit*

1.2. Project Genesis, Originality, and Brand Identity

1.2.1. Genesis and the "Aha! Moment"

The Fidialy concept emerged from structured field observation of customer-merchant interactions in Algerian supermarkets, cafés, and boutiques. The founding team's insight was this: the checkout counter, potentially the most data-rich interface in any retail environment, was functioning as a data black hole. Every transaction contained rich actionable intelligence, including purchase frequency, basket composition, and temporal patterns, yet this information was discarded the instant the receipt was printed. Fidialy was designed to transform this data destruction into a data flywheel: converting the routine act of payment into the moment of a data-informed, mutually rewarding commercial relationship.

1.2.2. Three Dimensions of Commercial Originality

Table N°2: Three Dimensions of Commercial Originality.

Dimension	What Makes It Original	Why No Competitor Has Achieved This
B2B2C Architecture	Every POS transaction is simultaneously a B2B management event and a B2C loyalty trigger, a single real-time data pipeline serving both sides.	Global CRM tools serve B2B or B2C in isolation. Local POS systems have no consumer-facing interface.
Hyper-Local Cultural Fit	100% DZD-denominated; Arabic/French interface; designed for cash-dominant, variable-connectivity, privacy-sensitive Algerian commerce.	Global solutions cannot adapt pricing, language, or compliance to Algeria. Local solutions lack the marketing intelligence layer.
Radical Accessibility Without Capability Sacrifice	Enterprise-grade CRM analytics + gamified loyalty, deployable in under 5 minutes by an untrained cashier.	The CRM industry has historically treated capability and accessibility as inversely proportional. Fidialy's UX architecture breaks this trade-off.

Source: Author's elaboration

1.2.3. Brand Name Etymology

"Fidialy" fuses Fidélité (French: loyalty/fidelity) and Dially (Algerian Darija: "mine" or "my own"), producing the composite meaning "My Loyalty Programme." This fusion of formal Romance-language precision and vernacular Algerian ownership is a deliberate example of what Kapferer terms "glocal brand architecture"¹: global commercial ambition rooted in local cultural codes.

1.2.4. Visual Identity and Colour Psychology

Fidialy's "Dual-Accent Colour Architecture" addresses two psychologically distinct audiences: B2B merchants, who require signals of security, authority, and reliability, and B2C consumers, who require signals of reward, excitement, and instant gratification.²

Table N°03: Dual-Accent Colour Architecture and Applied Psychology.

Colour	Hex	Psychological Function	Application
Majorelle Blue	#6344FF	Innovation & Trust: technological competence and financial security ³	Primary brand touchpoints; logo, nav bars, headings (B2B + B2C)
Dark Amethyst	#1A1140	Security & Authority: enterprise-grade stability for financial data handling	Background architecture; structural UI elements (B2B)
Rosy Copper	#DB504A	Action & Motivation: warm urgency activating FOMO for limited reward offers	B2C consumer app CTAs exclusively: "Redeem Now" buttons, loyalty alerts
Tropical Mint	#00F5A0	Growth & Success: financial approval and forward momentum	B2B merchant dashboard: transaction confirmations, profit metrics

¹ Kapferer, J.-N. (2012). *The New Strategic Brand Management: Advanced Insights and Strategic Thinking* (5th ed.). Kogan Page..

² Singh, S. (2006). Impact of color on marketing. *Management Decision*, 44(1).

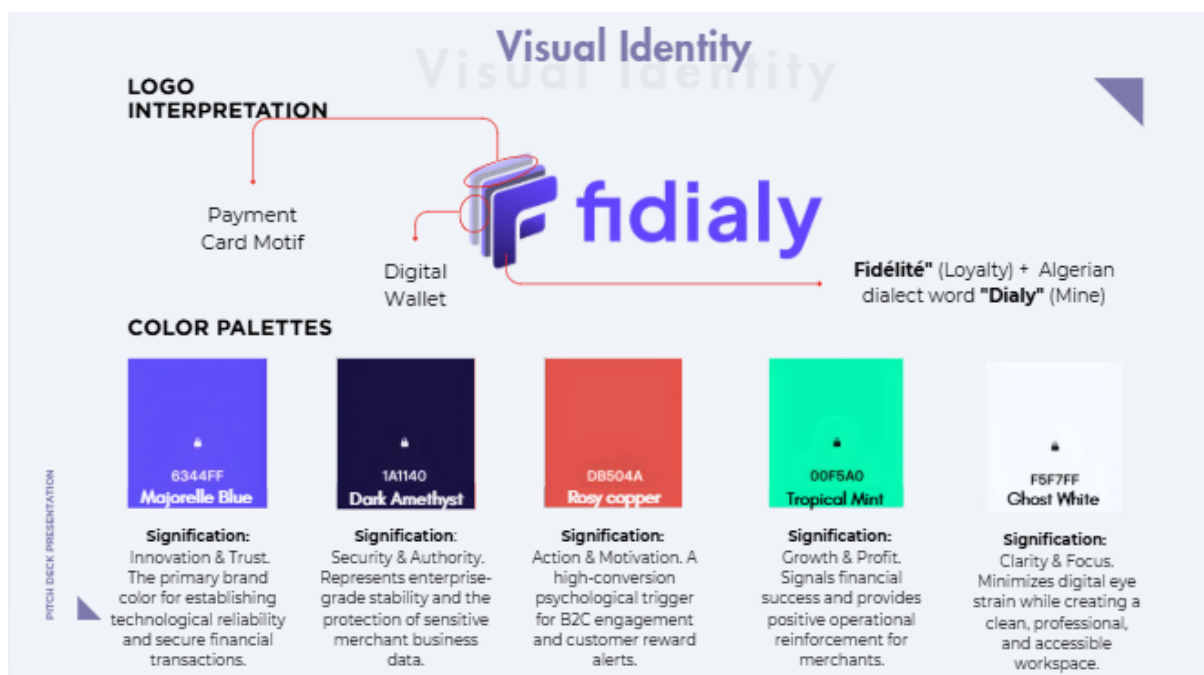
³ Elliot, A. J., & Maier, M. A. (2014). Color Psychology: Effects of Perceiving Color on Psychological Functioning in Humans. *Annual Review of Psychology*, 65.

Ghost White	#F5F7FF	Clarity & Ergonomics: minimises cognitive load over extended daily use ¹	Background canvas across all interfaces
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Source: Author's elaboration

The layered "F" logo evokes analytical data stratification from the merchant's perspective and a stacked digital wallet from the consumer's perspective: a single icon that communicates meaningfully to two distinct audiences.

Figure N°03: Fidelity Visual Identity



Source: Author's elaboration

1.3. The Value Proposition

Following Osterwalder and Pigneur's² framework, Fidelity's value proposition is a bi-directional, mutually reinforcing system. Its competitive power derives not from either side in isolation but from the synergistic data flywheel created by their combined operation.

¹ Johnson, J. (2014). *Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Guidelines* (2nd ed.). Morgan Kaufmann.

² Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. John Wiley & Sons.

1.3.1. B2B Value Proposition: "Enterprise-Grade Intelligence at SME Accessibility"

- **Operational Control & Financial Security:** Automated inventory tracking, real-time net profit calculation, and Role-Based Access Control (RBAC) preventing cashiers from viewing profit data, reducing daily administrative overhead by an estimated 40–60%. Financial data protection is a first-principle design requirement.
- **Customer Insight & Automated CRM:** Every transaction populates a merchant customer knowledge base, identifying top patrons, decoding purchasing clusters, and triggering automated win-back campaigns for lapsed customers. Directly addresses "Pareto Blindness."
- **Revenue Growth via LTV Amplification:** Loyalty triggers, segmented push-notification campaigns, and tiered reward mechanics increase repeat purchase frequency without new acquisition spend. Retaining an existing customer costs 5–7× less than acquiring a new one.¹
- **The DZD Economic Shield:** 100% DZD-denominated subscription pricing eliminates the currency exchange barrier that renders every global competitor (Salesforce, HubSpot, Smile.io) commercially inoperative for Algerian SMEs, a structural competitive moat no international player can neutralise.

1.3.2. B2C Value Proposition: "Digital Purchasing Power Through Gamified Loyalty"

- **Universal Frictionless Wallet:** A single QR code grants access to all Fidelity-partner loyalty programmes. Physical card management (with its losses, damage, and "loyalty fatigue") is eliminated entirely.
- **Gamified Instant Gratification:** Real-time progress bars, tier escalations (Silver → Gold), badges, and personalised notifications transform checkout from a transactional obligation into an engaging ritual, directly counteracting "Reward Paralysis".²
- **Hyper-Local Discovery:** Geolocation surfaces live, personalised offers from nearby Fidelity-partner stores in real time, providing Algerian households under inflationary purchasing power pressure with actionable commercial intelligence unavailable from any existing local tool.

¹ Reichheld, F. F. (1996), *Op. cit.*

² Huotari, K., & Hamari, J. (2012). A definition for gamification: Anchoring gamification in the service marketing perspective. *Proceedings of the 16th International Academic MindTrek Conference*. ACM.

1.3.3. The Unique Value Proposition (UVP)

"FIDIALY is the intuitive, operational loyalty partner that transforms daily POS transactions into frictionless, gamified shopping experiences, empowering Algerian retailers to know, retain, and grow their customer base with a seamless DZD-based SaaS solution, devoid of the complexity and prohibitive cost of global enterprise systems."

1.3.4. The "Phygital" Competitive Advantage: The Network Effect Flywheel

Fidialy's deepest competitive moat is structural: the more merchants join the platform, the richer the consumer experience (network effect);¹ the more consumers generate data, the higher the merchant's retention and intelligence value (data flywheel). This closed loop creates three reinforcing barriers: **(1)** hyper-local fit foreign competitors cannot replicate without multi-year localisation investments; **(2)** the DZD shield eliminating price competition from global SaaS; and **(3)** a progressive data lock-in, months of accumulated customer behavioural data make migration prohibitively costly, as the merchant's database is their most valuable commercial asset.

1.4. The Founding Team and Organisational Structure

1.4.1. Executive Founding Team

Table N°04: Executive Founding Team.

Founder	Role	Domain	Core Responsibilities
Bennaoum Zine El Abidine	President & CTO	Technical & R&D	• Ideation, Initial Concept Development, and Introduction of the Idea • Branding & Visual Identity • User Interface (UI/UX) Design & Prototyping • Technical & SaaS Development (Front-end, Back-end, Database, MVP)

¹ Parker, G. G., Van Alstyne, M. W., & Choudary, S. P. (2016). Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You. W. W. Norton & Company.

			• Business Development, Landing Page & SaaS Pricing
Berroussi Meriem	CMO & Customer Experience Lead	Strategy, Quality & Marketing	• Strategic & Market Analysis • Competitive Analysis & Positioning (Benchmarking, Gap Analysis) • Marketing & GTM Strategy (STP, Marketing Mix, Acquisition Strategy) • Financial Planning, SaaS Pricing & Operations Control (Risk Plan, KPI Analysis, Scheduling) • Project Oversight & Quality Control
Mekemmeche Chahrazed	COO & Business Developer	Planning & Operations	• Drafted the initial Business Model Canvas (BMC). • Prepared the preliminary financial plan and projections. • Designed and developed the project's landing page. • Produced a project concept video. • Established a project schedule and task timeline.

Source: Author's elaboration

1.4.2. Academic Supervisory Board (ESMT Tlemcen Incubator)

- **Professor Iznasni Ali, Professor of Higher Education in Marketing (Principal Supervisor):** Provides strategic guidance; validates core academic and commercial milestones; ensures alignment between marketing principles and Fidialy's business strategy.
- **Dr. Hellabi Zoubeyda, Associate Professor Class B in International Marketing (Co-Supervisor):** Oversees market research and data collection methodology; refines customer targeting strategies; validates the overall business and operational framework.

1.5. Strategic Objectives: The SMART Framework

Strategic objectives are structured under the SMART methodology¹, governed by one foundational principle: Fidialy's strategy is **exclusively B2B-first**. Consumer adoption is an emergent property of merchant density, not an independent variable.

1.5.1. Short-Term Objectives (Year 1 : Validation Phase)

Table N°05: Short-Term SMART Objectives: Year 1.

Objective	Target KPI
Institutional Validation: Obtain "Innovative Project" Label (Decree 1275)	Official Startup Label attributed by CNCSIU
MVP Deployment: Offline-First POS + B2B dashboard + B2C wallet, zero sync errors	100% offline sync reliability in QA
Product-Market Fit: Acquire paying B2B merchant cohort (Algiers + Oran)	600 active paying B2B merchants
Financial Viability: Positive operating cash flow from subscription revenue	ARR $\geq$ 16,586,640 DZD
Security: RBAC protecting profit data; zero internal data exposure incidents	100% RBAC compliance; 0 incidents

Source: Author's elaboration

¹ Doran, G.T. (1981). *There's a S.M.A.R.T. Way to Write Management's Goals and Objectives*. *Management Review*, 70(11), 35–36. ; Locke, E.A. & Latham, G.P. (2002). *Building a Practically Useful Theory of Goal Setting*. *American Psychologist*, 57(9), 705–717.

1.5.2. Medium-Term Objectives (Years 2–5: Scaling Phase)

Table N°06: Medium-Term SMART Objectives: Years 2–5.

Year	Strategic Priority	Target POS
Year 2	SOM realisation; automated reporting; national expansion	1,500 active POS
Year 3	Regional penetration; hardware distribution launch; SMS add-on revenue	15,000 active POS
Year 4	Mass penetration; pre-installed Fidialy OS on distributed hardware; first FMCG data partnership	75,000 active POS
Year 5	National dominance: default retail OS for Algerian SMEs	150,000 active POS

Source: *Author's elaboration*

1.5.3. Long-Term Vision (Post-Year 5: Dominance Phase)

AI Platform: Machine learning engine predicting inventory depletion and generating hyper-personalised customer offer recommendations from behavioural cluster analysis.¹

MENA Regional Expansion: Platform adaptation for Tunisia and Egypt, markets sharing comparable retail informality, digital adoption trajectories, and DZD-equivalent pricing sensitivities.²

Big Data Monetisation: Anonymised, aggregated consumer purchasing trend reports commercialised to FMCG manufacturers operating in Algeria and MENA, transforming Fidialy's data asset into an independent, recurring revenue stream.³

Regional Dominance: Establish Fidialy as the default retail operating system for informal-economy-adjacent SME markets across MENA.

¹ Davenport, T. H., Grewal, D., Bletz, T., & Bradlow, P. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 48(1).

² GSMA. (2023). *The Mobile Economy Middle East and North Africa*. London, UK.

³ Wixom, B. H., & Ross, J. W. (2017). How to monetize your data. *MIT Sloan Management Review*, 58(3).

Section 2: innovative aspects and project planning

This section transitions from the conceptual framework of the Fidelity platform to its practical and theoretical execution. It begins by positioning the project within established academic models to clearly define its innovative and disruptive characteristics. Following this theoretical foundation, the analysis outlines the operational roadmap for market entry, culminating in a structured implementation schedule and a strategic risk management plan to ensure a secure and sustainable launch.

2.1. The Nature of Innovation: Theoretical Positioning

2.1.1. Innovation Framework

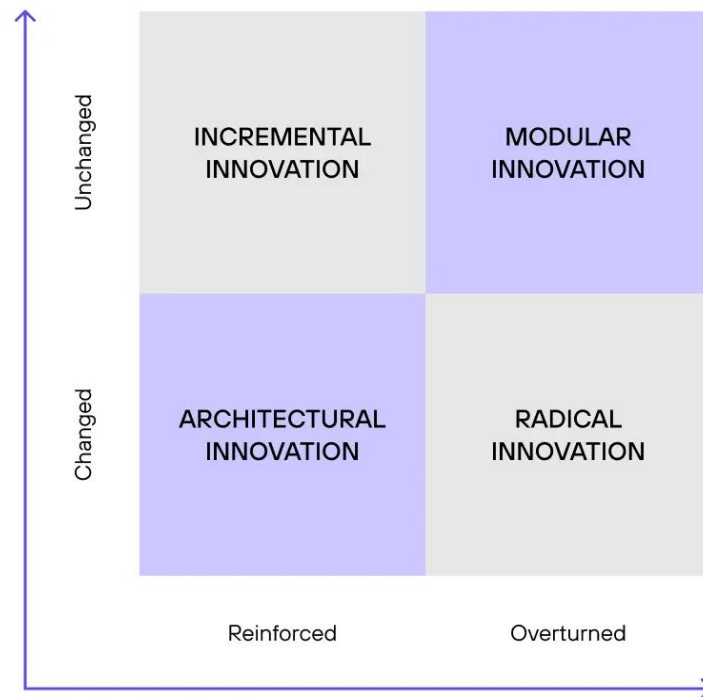
Innovation is formally defined as the successful implementation of a new or significantly improved product, process, marketing method, or organisational approach (OECD Oslo Manual, 2018)¹. Christensen's (1997)² foundational distinction between *sustaining innovations* (performance improvements valued by existing customers) and *disruptive innovations* (new value propositions targeting underserved or non-consuming segments) is the primary analytical lens applied here. The Henderson-Clark (1990)³ Innovation Matrix provides the positioning tool:

Figure N°03 : Henderson-Clark Innovation Matrix.

¹ OECD/Eurostat. (2018). *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation (4th ed.)*. Paris: OECD Publishing.

² Christensen, C.M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston: Harvard Business School Press.

³ Henderson, R.M. & Clark, K.B. (1990). *Architectural Innovation: The Reconfiguration of Existing Product Technologies*. *Administrative Science Quarterly*, 35(1), 9–30.



Source: Adapted from Henderson & Clark (1990).

Market Effect :

Incremental Innovation: Minor product improvements within existing systems

Modular Innovation : Core component replaced; overall architecture unchanged

Architectural Innovation : Existing components reconfigured in a fundamentally new system architecture.

Radical Innovation : Both components and architecture are entirely new; creates new markets

2.1.2. Positioning Fidialy on the Innovation Matrix

Fidialy occupies the intersection of architectural and disruptive innovation:

Component Knowledge, Partially Overturned: The platform's individual components, cloud infrastructure, mobile apps, QR codes, push notifications, POS software, are mature technologies. The innovation is their *combination and local deployment*: no existing player in Algeria has assembled them into a unified, DZD-denominated, POS-anchored loyalty ecosystem.

Architectural Knowledge, Substantially Overturned: Legacy Algerian retail architecture consists of isolated, non-communicating components. Fidialy rewrites this architecture entirely: every POS transaction becomes simultaneously a data capture event, a loyalty trigger, a CRM

update, and a potential marketing activation. The checkout counter is transformed from a *data endpoint* into a *data origin point*, the platform's deepest and most defensible innovation.

In Christensen's framework, Fidialy is a **new-market disruptive innovation**: it targets the 150,000 Algerian SME retailers who are complete non-consumers of any loyalty or CRM technology, creating a new competitive space rather than competing for existing market share.

2.2. Six Domains of Innovation

Table N°07: Six Domains of Innovation: Fidialy's Multi-Domain Disruption.

Domain	Core Innovation	Competitive Defensibility
1. User Experience	Consumer: physical cards → unified digital wallet. Merchant: manual reporting → psychologically optimised dashboard. One-scan onboarding.	High: 18–24 months to replicate; protected by learning curve and daily operational habituation.
2. Technical Architecture	"Offline-First" POS: continuous sales processing and receipt printing during total internet disconnection; auto background sync upon reconnection. RBAC cashier controls.	Very High: architecture-level decision requiring complete backend redesign; creates reliability-based switching costs critical in Algeria's variable-connectivity environment.
3. Operational Processes	Automation of: loyalty attribution, stock alerts, profit calculation, segmented campaign dispatch, cashier performance tracking, replacing manual stamping and gut-feel management.	Medium: process automation replicable over time; moat maintained through continuous feature development and data lock-in.
4. Market Segments	Democratisation of enterprise-grade retail intelligence for 150,000 Algerian SME POS, a segment structurally excluded from global SaaS by currency, complexity, and cost barriers.	Very High: first-mover in virgin market creates compounding brand recognition, data accumulation, and network density.
5. Commercial Offers	SMS credit add-on packs: purchasable, data-targeted campaigns reaching	Medium: SMS is a mature channel; defensibility lies in the

	specific behavioural segments (e.g., "all customers inactive for 30+ days") with measurable ROI.	data segmentation intelligence layer, not delivery mechanism.
6. Business Model	B2B2C collaborative platform: merchant subscriptions fund a consumer app that generates data and retention value justifying the subscription, a self-reinforcing commercial flywheel with network effects.	Very High: network effects are among the most defensible platform moats. Merchant density creates consumer value; consumer engagement reinforces merchant retention.

Source: Author's elaboration

2.3. Implementation Schedule and Risk Management

2.3.1. Six-Phase Implementation Roadmap (2025–2026)

The six-phase execution roadmap for 2026–2027 is structured in accordance with the Lean Startup methodology, enabling iterative development, continuous market feedback, and milestone-based resource deployment:

Phase	Period	Duration	Key Deliverables & Milestones
Phase 1: Market Diagnosis & Strategy	Jan – Mar 2026	3 months	Field research & interviews; operational pain-point validation; definition of technical specifications; finalization of B2B/B2C pricing structures.
Phase 2: MVP Development & Field Testing	Apr – Jun 2026	3 months	Coding core POS & inventory modules; applying "Dual-Accent Colour Architecture"; closed cohort pilot testing for offline-sync validation.
Phase 3: Final Product Architecture & Core Development	Jul – Sep 2026	3 months	Scaling MVP to enterprise-grade SaaS; expanding cloud infrastructure; finalizing backend for 4-tier subscription model (SOLO to ULTIMATE); SMS/email pack integration.
Phase 4: QA, Security & Legal Finalization	Oct – Dec 2026	3 months	CNRC registration & legal structuring; rigorous data sync stress testing; hardware logistics finalization; sales/CSM team training to optimize CAC.
Phase 5: Official Market Launch & Seeding	Jan 2027	1 month	Official go-to-market execution; 14-day free trial deployment; target acquisition of 600 active clients; hardware setup and training initiation.
Phase 6: Post-Launch Scaling & Optimization	Feb 2027 – Onwards	Ongoing	Live usage data analysis; upselling to premium tiers; strict cloud cost management to preserve EBITDA margins.

Table N°08: Six-Phase Implementation Roadmap (2026-2027).Source: Author's elaboration

2.3.2. Risk Management Matrix

Each risk is assessed on a 3-level Impact × Probability matrix¹ and paired with a specific mitigation strategy:

Table N°09: Risk Management Matrix.

Risk Category	Risk Description	Impact	Probability	Mitigation Strategy
Tech: Connectivity	Internet outages causing real-time sync failures	High	Medium	"Offline-First" architecture: all transactions cached locally; auto-sync on reconnection. Zero revenue loss guaranteed.
Tech: Hardware	Software incompatibility with diverse legacy POS terminals and printers	High	High	Hardware-agnostic APIs. Phase 2 hardware distribution: pre-configured POS with Fidialy OS pre-installed eliminates compatibility uncertainty.
Security: Data Breach	Unauthorised access to merchant financial/customer PII data	Very High	Low	End-to-end encryption; RBAC; automated threat monitoring; 30-day encrypted backups; 4-hour critical Incident Response Protocol (IRP).
Commercial: Cultural Resistance	Traditional merchants resistant to abandoning paper-based practices	Medium	High	"One-Scan Onboarding"; 14-day free trial; concierge onboarding; peer referral-driven adoption.

¹ Kaplan, R.S. & Mikes, A. (2012). Managing Risks: A New Framework. Harvard Business Review, 90(6), 48–60.

Commercial: Tax Exposure Fear	Informal-economy merchants refusing cloud adoption over fiscal surveillance fears	High	High	Fidialy positioned as "your private encrypted business journal." No government API connections; merchant data is encrypted and merchant-owned. Communicated at first sales contact.
Commercial: B2C Adoption Lag	Consumers not downloading consumer wallet app, breaking the data capture loop	High	Medium	SMS fallback: consumers registered via phone number at POS without app install. First-visit reward (50 pts) delivered via SMS with deep link. Web-app alternative available.
Competitive: Imitation	Local POS vendors (SmartCom, DELTA) bolting on basic loyalty features	Medium	Medium	Sustainable moat is the integrated architecture + accumulated data + network density, not any single copyable feature.
Competitive: Super App Entry	Yassir or Jumia pivoting toward physical POS loyalty	High	Low	Philosophical differentiation: unlike aggregators (15–25% commissions, platform owns customer identity), Fidialy protects merchant data sovereignty and charges zero commission; structurally opposed adoption dynamics.

Source: Author's elaboration

Section 3: strategic analysis, business model, and marketing strategy

Section Three synthesises the strategic, commercial, and marketing architecture of Fidialy into a comprehensive, academically grounded analytical framework. It proceeds sequentially: macro-environmental scanning (PESTEL), competitive diagnosis and SWOT synthesis, quantification of competitive intensity through Porter's Five Forces, Business Model Canvas formalisation, strategic STP architecture, and the operational deployment of an Extended 10P Marketing Mix across both phases of the platform's commercial lifecycle. Together, these instruments constitute the complete strategic-marketing dossier underpinning Fidialy's market entry and scale-up trajectory.¹

3.1. Macro and Micro Strategic Analysis: PESTEL and SWOT

3.1.1. PESTEL Macro-Environmental Analysis

Table N°10: PESTEL Macro-Environmental Strategic Matrix for Fidialy

Environmental Force	Key Structural Factor	Strategic Impact on Fidialy
P - Political	- Decree No. 18-176 (2018) - CNCSIU 'Innovative Project' Label	Unfair Advantage: Secures 4-year tax exemptions (IBS/TAP), incubator access, and creates a high institutional barrier to entry for foreign or unlabelled competitors.
E - Economic	CPI Inflation at +9.4% (ONS, 2023)	Dual Demand Generation: Eroded purchasing power drives B2C adoption of the savings wallet; simultaneously pressures B2B merchants to professionalize customer retention to survive.

¹ Johnson, G., Scholes, K. & Whittington, R. (2008). *Exploring Corporate Strategy: Text and Cases (8th ed.)*. Pearson Education.

S - Social	• >60% Urban Smartphone Penetration • 18–35 demographic dominance	Frictionless Adoption: High digital maturity and appetite for gamified experiences eliminate structural barriers to B2C wallet onboarding.
T - Technological	• 85%+ National 4G Coverage • Residual connectivity gaps in secondary cities	Moat Validation: General infrastructure supports the MVP, while Fidialy's <i>Offline-First</i> architecture converts local internet instability into a direct competitive differentiator.
E - Environmental	• Heavy retail reliance on paper (receipts, physical loyalty cards, flyers)	ESG Credentialing: Digitizing the checkout experience creates a quantifiable environmental impact, strengthening public-sector partnership proposals and investor appeal.
L - Legal	• Law No. 18-05 (e-commerce) • Current absence of strict local data privacy laws	Pre-emptive Compliance: Short-term compliance burden is low. Fidialy's proactive <i>GDPR-aligned architecture</i> converts inevitable future data legislation into a marketing advantage over legacy POS systems.

Source: Author's elaboration

3.1.2. SWOT Strategic Synthesis

figure N°04: SWOT Matrix: Fidialy Platform

STRENGTHS 	WEAKNESSES 
• Integrated POS and consumer loyalty platform • Instant plug-and-play technical setup • Built-in marketing and customer retention engine • Rapid one-scan QR onboarding system	• Low brand awareness in a traditional retail market • High dependency on cashier compliance at checkout • Compatibility challenges with fragmented legacy hardware • Basic MVP limitations for acquiring large retail chains
OPPORTUNITIES 	THREATS 
• Massive untapped market of retailers lacking digital retention tools • Government support and tax exemptions for innovative startups • Big data monetization potential via anonymized purchasing trends • High consumer demand for digital rewards and discounts	• Cultural resistance to altering daily checkout routines • Merchant fear of revenue exposure via cloud software • Feature imitation by existing local POS competitors • Market entry threats from established super apps

Source: Author's elaboration

Applying Weihrich's (1982) TOWS matrix framework,¹ the internal capabilities and external market conditions identified in the SWOT analysis are cross-referenced to generate four actionable strategic directives for Fidialy:

- **Strengths-Opportunities (SO) Strategy: Aggressive Market Penetration:** By leveraging Fidialy's proprietary All-in-One Platform (S1) and its turnkey Plug & Play Setup (S2) against a vast, untapped market of 150,000 retailers (O1) and the institutional advantage of Government Support (O2), the platform prioritizes rapid merchant acquisition. Operating within this startup support framework creates a localized competitive moat that foreign entrants cannot efficiently replicate.
- **Strengths-Threats (ST) Strategy: Architectural Differentiation:** To neutralize the risk of Super Apps Entry (T4) and Competitor Imitation (T3), Fidialy deploys its Built-in Marketing Engine (S3) and extremely fast One-Scan Onboarding (S4). The strategic response focuses on providing immediate, frictionless value at checkout, competing on fundamental behavioral mechanics and dedicated marketing architecture rather than just basic software features.

¹ Weihrich, H. (1982). The TOWS Matrix—A Tool for Situational Analysis. *Long Range Planning*, 15(2), 54–66.

- **Weaknesses-Opportunities (WO) Strategy: First-Mover Category Definition:** The platform's current Zero Brand Awareness (W1) is offset by the virgin nature of the Algerian digital loyalty market (O1). Because there are no entrenched incumbent loyalty platforms to unseat, this apparent weakness is structurally converted into a definitive first-mover advantage, allowing Fidialy to define the category standard.
- **Weaknesses-Threats (WT) Strategy: Managed Behavioral Change:** To mitigate the internal vulnerability of Cashier Dependency (W2) and the external threat of Merchant Digital Resistance (T1), Fidialy implements the *Concierge Onboarding* and '*Aha! Moment*' protocols. This strategy converts unpredictable human compliance risks into a managed, step-by-step behavioral change program governed by strict, measurable Day 7 activation KPIs.

3.2. Measurement of Competitive Intensity: Porter's Five Forces

The structural attractiveness of the Algerian retail SaaS market is quantified using Porter's Five Forces framework (Porter, 1979),¹ each force rated on a Low–Medium–High intensity scale and interpreted for its specific implications for Fidialy's competitive position and strategic response.

Table N°11: Porter's Five Forces Analysis: Algerian Retail SaaS Market for Fidialy

Competitive Force	Intensity	Key Structural Factors for Fidialy	Strategic Implication
Threat of New Entrants	MEDIUM	Cloud infrastructure is commoditised; however, Algerian-specific development requirements (Offline-First architecture, DZD billing, Arabic/Darija UI, SATIM API integration, accumulated merchant-behavioural data) constitute a 12–18 month barrier. The 'Innovative Project' Label provides a 4-year institutional head start that cannot be replicated	Accelerate data accumulation and merchant density before well-resourced entrants can acquire comparable datasets.

¹ Porter, M.E. (1979). *How competitive forces shape strategy*. Harvard Business Review, 57(2), 137–145.

		without an equivalent incubation pathway.	
Bargaining Power of Buyers (Merchants)	LOW– MEDIUM	Phase 1 SME merchants are price-takers with no credible substitute to negotiate against. Enterprise franchise groups (Year 3+) possess multi-branch purchasing leverage, a segment requiring dedicated pricing architecture before it reaches critical negotiating mass.	Maintain SME pricing integrity; develop enterprise tier pricing before franchise clients reach scale.
Bargaining Power of Suppliers	LOW	Cloud infrastructure (Google Cloud, AWS, Firebase), telecom APIs (Ooredoo, Djazzy, Mobilis), and POS hardware vendors all operate in competitive markets with substitutable alternatives. The singular supplier concentration risk is SATIM's monopoly authority over Algerian interbank payment infrastructure, managed through phased integration scheduling.	Maintain multi-supplier redundancy; initiate SATIM integration negotiations in Year 2 to absorb regulatory approval delays.

Threat of Substitutes	LOW–MEDIUM	Functional substitutes (paper punch cards, WhatsApp broadcast, Excel) are structurally inadequate; none addresses the B2B2C value equation simultaneously. Threat escalates if a well-resourced Super App (Yassir) launches a physical POS module, though at the structural cost of the commission-based model that is Fidialy's primary competitive argument.	Position 'zero commission, full data sovereignty' as the structural argument against super app substitution.
Competitive Rivalry (Existing Players)	LOW	No current competitor occupies Fidialy's strategic white space (High Relational/Loyalty × High Accessibility). Local POS players (SmartCom, DELTA, Fatoura) compete purely on transactional price; global loyalty platforms (Smile.io, FiveStars) do not operate in Algeria. Primary competitive risk is future feature imitation by local vendors, moderated by the architectural complexity of a full B2B2C ecosystem versus a bolt-on loyalty tab.	Build network effects aggressively while rivalry intensity remains low. Each month of data accumulation compounds the competitive position.

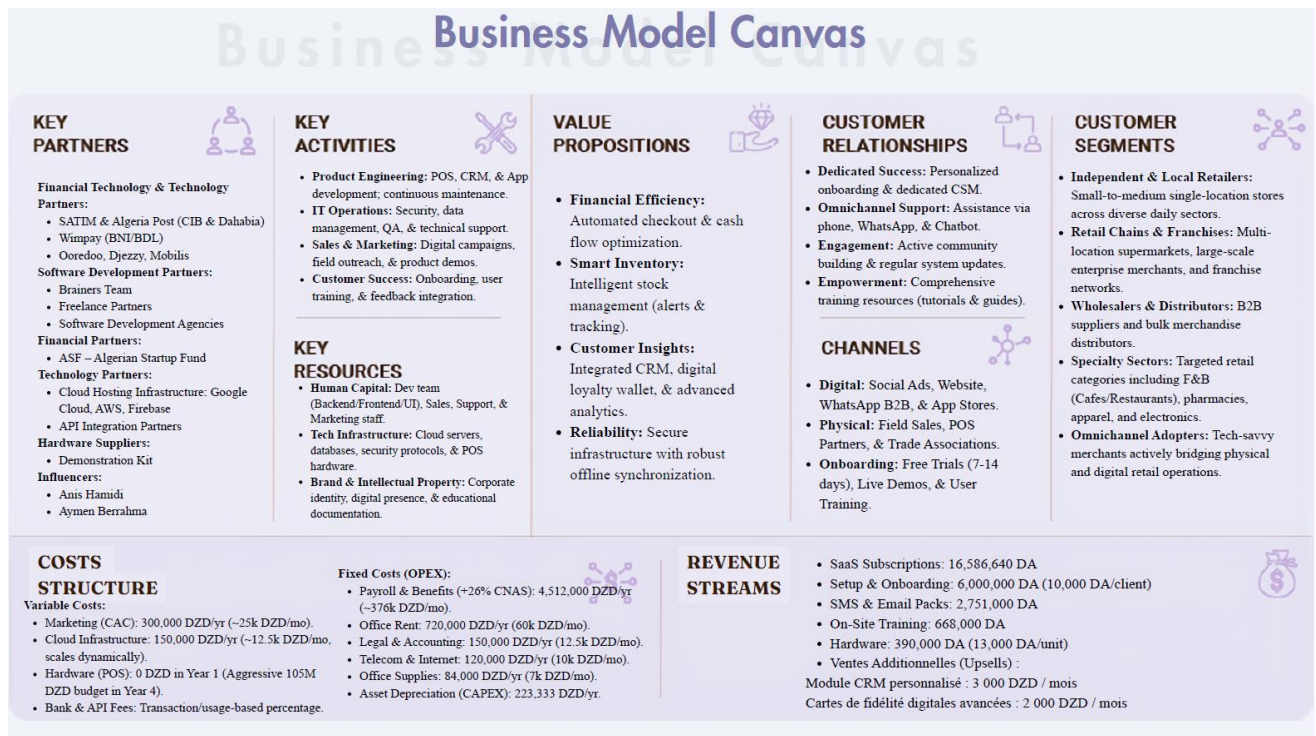
Source: Author's elaboration

The aggregate assessment confirms a structurally attractive entry window: the combination of low existing rivalry, low supplier power, and low-to-medium substitute threat characterises a market at early developmental stage, precisely the condition that first-mover advantage theory predicts is most commercially exploitable. Fidialy's 18-month roadmap is specifically architected to convert this transient structural advantage into durable competitive barriers before market maturation shifts the competitive equation.

3.3. The Business Model Canvas (BMC)

The Business Model Canvas (Osterwalder & Pigneur, 2010)¹ maps Fidialy's complete commercial logic across nine interconnected building blocks, demonstrating the internal coherence of the platform's dual B2B2C architecture and its financial sustainability at each phase of development.

FIGURE N°05: Fidialy Business Model Canvas



Source: Author's elaboration

1. Customer Segments :

- B2B (Primary): Independent SME retailers (supermarkets, cafés, pharmacies, boutiques, electronics); retail chains and franchises; wholesalers.
- B2C (Secondary): Urban Algerian consumers aged 18–40, smartphone-active, loyalty-motivated.

➤ **Strategic Rationale** : B2B-first sequencing: consumer value is an emergent property of merchant density. Phase 1 priority is singular: merchant acquisition.

2. Value Propositions :

¹ Osterwalder, A. & Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. John Wiley & Sons.

- **B2B (Merchants):** Automated checkout and cash flow optimization, Smart Real-time tracking and low-stock alerts, Integrated CRM, loyalty engine, and analytics, Offline-First architecture ensuring zero transaction loss.
 - **B2C (Consumers):** A single QR code to access all partner loyalty programs, Instant gratification and real-time progress tracking, Geolocation-based access to personalized, nearby offers.
- **Strategic Rationale :** Bi-directional value architecture: each proposition reinforces the other through the B2B2C data flywheel: merchant data informs consumer offers; consumer engagement reinforces merchant retention.

3. Channels:

- **Digital:** trilingual platform (fidialy.com), B2C mobile apps, Meta/TikTok ads, an SEO content hub, and WhatsApp Business API.
 - **Physical (B2B Sales):** Phase 1 (Year 1) utilizes direct field sales by the founders in Algiers and Oran; Phase 2 (Years 2–5) scales through a regional network of up to 35 field agents; and Phase 3 (Year 4) secures widespread distribution via POS hardware pre-installation partnerships.
- **Strategic Rationale:** Dual-mode distribution is non-negotiable: first sale in the Algerian SME market requires in-person trust-building. Digital self-service becomes the dominant channel only once brand credibility is established through Phase 1 field operations.

4. **Customer Relationships:** B2B relationships are established through a 14-day on-site concierge trial and an exclusive 'Founding Merchant' status for early adopters. Ongoing retention relies on dedicated CSMs, omnichannel support, and automated reporting, scaling in Phase 2 through AI-driven lifecycle triggers.

- **Strategic Rationale:** High-touch model in Phase 1 converts to automated lifecycle management in Phase 2, decoupling service quality from headcount growth and enabling the non-linear cost structure required for SaaS margin expansion

5. **Revenue Streams:** Primary revenue is driven by tiered monthly SaaS subscriptions (1,900 to 7,500+ DZD), a one-time 10,000 DZD setup fee, and premium add-ons (CRM, SMS packs, digital loyalty). Long-term monetization (Years 4–5+) will expand into

POS hardware margins and anonymized FMCG data sales, aiming for a Year 1 total revenue target of 26,395,640 DZD.

- **Strategic Rationale:** This multi-stream architecture ensures financial stability via MRR while non-linearly expanding ARPU through premium add-ons. Furthermore, an annual billing incentive (12 months for the price of 10) secures immediate positive cash flow, effectively driving a strategic negative working capital cycle.
6. **Key Resources:** Fidialy relies on three core resource pillars: human capital (a CTO-led development team, B2B sales, and CSM), technological infrastructure (cloud environments, offline sync engines, and cross-platform mobile codebases), and strategic intellectual property (the Fidialy trademark, Algerian-localized UX, DZD pricing architecture, and the accumulating merchant data asset).
- **Strategic Rationale:** The accumulated merchant data asset serves as Fidialy's primary appreciating resource. As the platform scales, this data compounds in value, forging a competitive moat that is simultaneously highly defensible and structurally inimitable.
7. **Key Activities:** Fidialy's core activities encompass continuous product engineering for POS, CRM, and mobile applications, supported by IT operations focused on security monitoring, database management, QA, and technical support. Commercial execution relies on sales and marketing via digital campaigns, field outreach, and live demonstrations, while customer success operations prioritize merchant onboarding, value activation, NPS tracking, and continuous feedback integration.
- **Strategic Rationale:** Sales and Customer Success are disproportionately weighted in Phase 1 relative to the technology maturity phase, reflecting the commercial reality that in traditional markets, the human experience of the product is the product
8. **Key Partners:** Fintech and payment partners include SATIM, Algérie Poste (CIB/Dahabia), and Wimpay. Telecom for SMS infrastructure is provided by Ooredoo, Djezzy, and Mobilis. Cloud and tech rely on Google Cloud, AWS, and Firebase. Development is supported by Brainers Team and freelance engineering partners. Financial backing comes from the Algerian Startup Fund (ASF), alongside influence and marketing from strategic local influencers Anis Hamidi and Aymen Berrahma.
- **Strategic Rationale:** The partnership with SATIM and Algérie Poste is the primary strategic objective for Year 2. Unlocking in-app DZD digital payments transforms

Fidialy from a standard loyalty tool into a comprehensive financial services layer, fundamentally altering its competitive positioning and ARPU trajectory.

9. **Cost Structure:** Fixed operational expenses (OPEX) primarily consist of payroll and CNAS (4,951,800 DZD), supported by rent, legal, and telecom costs. Variable expenses scale directly with platform usage, driven by cloud hosting, marketing (CAC), and SMS infrastructure. Capital expenditures (CAPEX) account for amortized development and equipment depreciation, culminating in a total Year 1 operating cost of 7,452,800 DZD.

➤ **Strategic Rationale:** The SaaS architecture achieves near-zero marginal cost per additional subscriber post-deployment. This dynamic validates the exponential scalability modeled in the financial projections and justifies the front-loaded customer acquisition investments required in Years 1 and 2.

3.4. Strategic Marketing: Segmentation, Targeting, and Positioning (STP)

The STP framework, first systematised by Smith (1956)¹ and codified as the foundational architecture of strategic marketing by Kotler and Keller (2016)², operationalises the transition from undifferentiated mass-market thinking to precision-targeted value delivery. Fidialy's dual B2B/B2C architecture necessitates parallel segmentation analyses across two distinct market populations, each governed by different decision logics and commercial criteria.

3.4.1. Market Segmentation

TABLE N°12: Fidialy Market Segmentation: B2B and B2C Parallel Analysis (2026).

Segment	Profile & Segmentation Criteria	Primary Pain Points	Fidialy Value Alignment
B2B S1: Independent SME Retailer	Urban/peri-urban, male (30–55), owner-operated, 1–5 staff, cash-dominant, no existing CRM.	• Pareto Blindness (can't identify top clients) • Wasted marketing spend	Customer visibility, targeted promotional tools, and structured transactional data tracking.

¹ Smith, W.R. (1956). *Product differentiation and market segmentation as alternative marketing strategies*. *Journal of Marketing*, 21(1), 3–8.

² Kotler, P. & Keller, K.L. (2016). *Marketing Management (15th ed.)*. Pearson Education.

		• Blind decision-making	
B2B S2: Retail Chain & Franchise	Multi-branch operations, higher management tiers.	• Multi-branch management complexity • Cross-location revenue invisibility • Inconsistent loyalty implementation	Centralized control panel, unified cross-branch ecosystem, and consolidated revenue data.
B2C S1: Digital-Native Consumer	Urban, aged 18–35, smartphone-active, highly responsive to gamification.	• Fragmented physical loyalty cards • Invisibility of local promotional offers	Universal digital wallet, gamified instant gratification, and local offer discovery.
B2C S2: Budget-Sensitive Shopper	Peri-urban, aged 35–55, motivated by concrete monetary savings over aesthetics.	• Fragmented physical loyalty cards • Invisibility of local promotional offers	Unified card management, practical discount tracking, and direct financial savings.

Source: Author's elaboration

As outlined in Table 3.5, Fidialy's B2B segmentation addresses two distinct operational realities. The Independent SME (B2B S1) is bottlenecked by "Pareto Blindness" and untargeted marketing within a cash-dominant, manual environment, while the Retail Chain (B2B S2) struggles with structural complexity, specifically cross-location revenue invisibility and

fragmented loyalty execution. Parallel to this, the B2C segmentation targets two distinct consumer profiles: gamification-driven digital natives (B2C S1) and utility-focused, budget-sensitive shoppers (B2C S2). Despite their demographic and psychological differences, both B2C cohorts are united by a shared foundational friction, the fragmentation of physical loyalty cards and the opacity of local promotions, which Fidialy resolves structurally through its universal digital wallet.

3.4.2. Target Market Selection and Sequencing

Applying the criteria of segment size, growth potential, competitive accessibility, and strategic alignment with Phase 1 resource constraints, the following targeting hierarchy is established.

- **The Primary Target (B2B Phase 1: Beachhead)** is B2B S1 in Algiers and Oran: highest volume (150,000 merchants nationally), lowest competitive resistance, fastest field-sales conversion cycle, and highest Phase 1 data generation rate per merchant. KPI: 600 active paid subscriptions by end of Year 1.
- **The Secondary Target (B2B Phase 2: National Expansion)** scales B2B S1 acquisition to all major wilayas while initiating B2B S2 franchise pilots once product-market fit and operational scalability are validated in the beachhead market.
- **The B2C Target (Emergent: Density-Dependent)** activates B2C S1 through merchant-side QR code deployment and influencer campaigns in Phase 1, and B2C S2 through SMS-first onboarding as merchant density reaches the critical consumer-facing visibility threshold.

This targeting architecture is explicitly B2B-first: investing in consumer acquisition before sufficient merchant density is established would generate 'no partner stores near me' frustration, a reputational risk managed through geographic-density-gated B2C launch sequencing.

3.4.3. Competitive Positioning & Gap Analysis

Positioning, the act of designing the company's offering and image to occupy a distinctive place in the mind of the target market (Ries & Trout, 1981;¹ Kotler & Keller, 2016²), is constructed across three axes for Fidialy.

TableN°13: Competitive Gap Analysis.

Competitor Category	Key Players	Core Failure vs. Algerian SME
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¹ Ries, A. & Trout, J. (1981). *Positioning: The Battle for Your Mind*. McGraw-Hill.

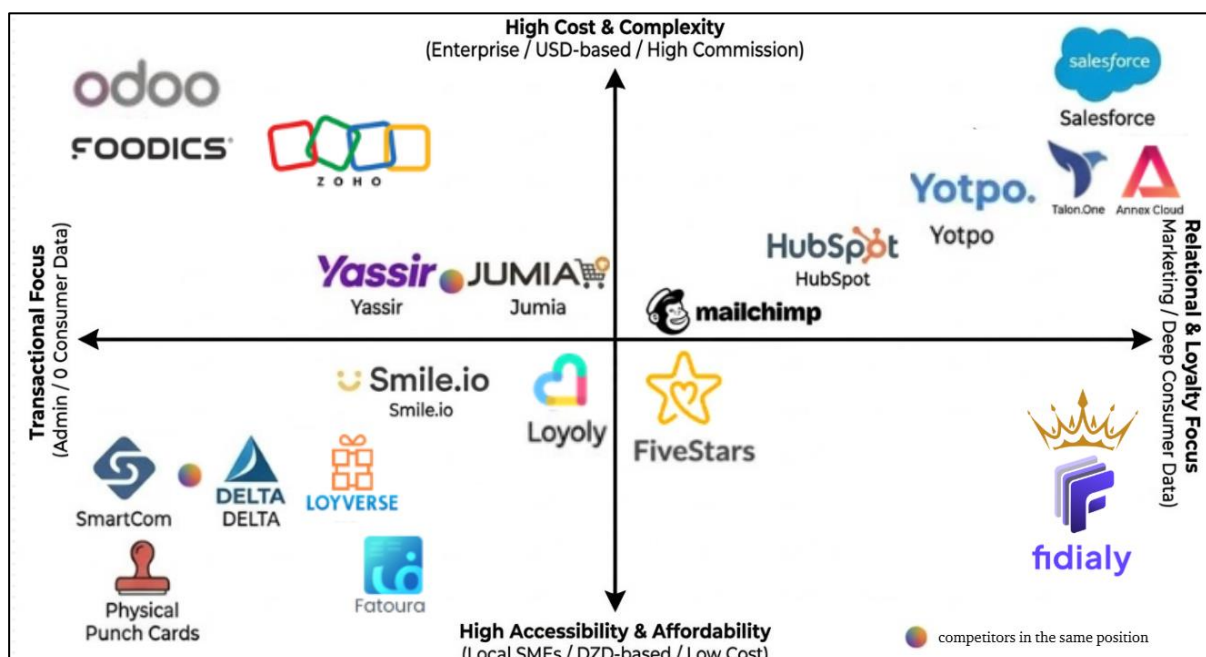
² Kotler, P., & Keller, K. L. (2016), *Op. cit.* (2016)

ERP & Legacy POS	Odoo, ZOHO, Foodics, SmartCom, DELTA, Fatoura	Admin overload; purely transactional; zero loyalty, zero customer data, zero marketing.
Loyalty & Promotion	Talon.One, Yotpo, Loyoly, Smile.io, FiveStars	E-commerce confined; offline-incompatible; lacks local market relevance.
Global CRM & Email	Salesforce, HubSpot, Mailchimp	Prohibitively expensive; USD-denominated; email-centric (low local engagement).
Super App Aggregators	Yassir, Jumia	High margin cannibalization (15-25%); data ownership loss; merchant identity suppression.

Source: Author's elaboration

This analysis reveals Fidialy's strategic **white space**: the intersection of deep relational/loyalty functionality and local DZD-denominated accessibility, a quadrant no competitor currently occupies. Fidialy is not a marginally better version of an existing product; it is the first solution to occupy a demonstrably large and entirely uncontested market position in Algeria.

Figure N°06: Competitive Positioning of Fidialy



Source: Author's elaboration

To secure this unoccupied quadrant, Fidialy's positioning is structured across the following strategic axes:

- **Frame of Reference:** Within the category of retail management solutions, Fidialy positions itself against the combined inadequacy of legacy POS systems (purely transactional) and global CRM platforms (inaccessible to SMEs).
- **Points of Difference (PODs):** 1. The only DZD-denominated, Arabic/French-native, Offline-First POS + loyalty platform built for Algerian retail. 2. A unique B2B2C architecture creating a real-time data feedback loop between merchant checkout and the consumer's digital wallet. 3. "One-Scan Onboarding": Sub-5-minute basic cashier deployment, complemented by premium, value-added training modules for advanced retail management.
- **Reasons to Believe (RTBs):** 1. A functional MVP with documented pilot merchant results. 2. The CNCSIU 'Innovative Project' Label, confirming institutional validation. 3. DZD-denominated pricing with an annual billing option, proving deep local market integration versus global competitor opportunism.

Positioning Statements

- **B2B Statement:** For the Algerian independent retailer who is commercially blind to their own best customers, Fidialy is the intuitive, all-in-one retail intelligence platform that transforms every checkout scan into a CRM event, a customer loyalty point, and a marketing trigger, unlike global tools that are too expensive, too complex, and not built for Algeria.
- **B2C Statement:** For the Algerian consumer who is tired of losing loyalty cards and missing local promotions, Fidialy is the single digital wallet that consolidates all loyalty programmes, rewards every purchase in real time, and surfaces the best deals in the immediate neighbourhood.

3.5. Operational Marketing: The Extended 10P Marketing Mix

Operational marketing translates the strategic STP architecture into deployable commercial actions. For this analysis, the framework applied is an **Extended 10P Marketing Mix**. This adapts Booms and Bitner's (1981)¹ canonical 7Ps of Service Marketing by integrating three supplementary variables: Privacy & Data Sovereignty (P8), Community & Network Effects (P9), and Customer Success Architecture (P10). In the context of an Algerian B2B2C SaaS platform, these additions elevate from mere sub-dimensions to critical strategic pillars. Each

¹ Booms, B. H., & Bitner, M. J. (1981). *Marketing Strategies and Organization Structures for Service Firms*. Marketing of Services, American Marketing Association, 47-51.

variable is analyzed through the lens of platform evolution, transitioning from Phase 1 (Founder-Led Launch) to Phase 2 (Automated Scaling).

TABLE N°14: 10P Lifecycle Matrix: Phase 1 vs. Phase 2 Transition Summary for Fidialy

Marketing Variable (P)	Phase 1: Launch & Beachhead (Founder-Led)	Phase 2: Scaling & National Expansion (Automated)
P1: Product	Offline-First POS, B2B Dashboard, B2C Digital Wallet, 4 Subscription Tiers.	AI-driven churn prediction, SATIM payment APIs, Multi-branch franchise sync, POS hardware.
P2: Price	Psychological anchoring, decoy pricing (Solo tier), Annual billing incentives (2 months free).	Value-based price increments (8–12%), Premium add-on modules (CRM, SMS packs).
P3: Place (Distribution)	Direct field sales in Algiers/Oran, Incubator warm referrals, hybrid physical-digital onboarding.	Regional Sales Agent network (35 agents), POS hardware distributors as passive SaaS channels.
P4: Promotion	Zero-jargon outcome-based messaging, Meta ads, WhatsApp voice notes, local influencer partnerships.	B2B thought leadership (SEO articles), Annual Retail Intelligence Report, Seasonal campaigns.
P5: People	4-person founding team, 'Cultural Empathy' protocols, Darija fluency prioritisation.	62-person scaled workforce, KPI-linked HR architecture, NPS-driven bonus structures.
P6: Process	Manual 5-stage B2B journey, 45-min on-site concierge setup, 'Aha! Moment' CSM engineering.	AI-triggered lifecycle nudges, self-service portals, automated billing and upgrade prompts.

P7: Physical Evidence	Bilingual intuitive UI, printed 'Welcome Kits' (stickers/cards), CNCIIIU 'Innovative Project' label.	Trustpilot reviews, App Store ratings (>4.5 stars), public data reports generating social proof.
P8: Privacy & Data	Merchant data sovereignty guarantee, explicit consent protocols, GDPR-aligned architecture.	Structurally weaponized privacy as a competitive moat against global SaaS and super-apps.
P9: Community	'Founding Merchant' inner circle, high-touch beta testing feedback loops.	Annual Merchant Summit, Consumer Loyalty Club tiers, Fidialy Merchant Academy.
P10: Customer Success	Manual proactive milestone monitoring, direct CSM escalation for low NPS scores.	Automated monthly WhatsApp ROI reports, automated churn-risk alerts, locked-in annual retention.

Source: Author's elaboration

P1: Product: Service Offering Architecture

Applying Kotler and Keller's (2016)¹ three-layer product model, Fidialy's *core product* (the fundamental benefit) is commercially actionable retail intelligence, transforming anonymous transactions into data-rich, revenue-amplifying relationships. The *actual product* (Phase 1 MVP) encompasses an Offline-First POS terminal, a comprehensive B2B Admin Dashboard (featuring RBAC, inventory management, and push-notification engines), and a consumer-facing B2C Digital Wallet ensuring sub-30-second onboarding. The *augmented product* wraps the software in premium service layers: a 14-day concierge trial, printed physical Welcome Kits, and a 4-hour critical issue response SLA. As the platform scales into Phase 2, the product architecture will evolve to include AI-driven predictive churn analytics, multi-branch franchise reconciliation, and native SATIM/Algérie Poste DZD payment integrations.

P2: Price: Architecture and Psychological Strategy

TABLE N°15: Fidialy Pricing Tier Architecture

¹ Kotler, P., & Keller, K. L. (2016), *Op. cit.* (2016)

Subscription Tier	Monthly Price (DZD)	Annual Price (10 Months Billed)	Annual Saving	Core Strategic Function & Features
Starter (Trial)	0 DZD	N/A	N/A	14-day risk-free trial, 500 SKU pre-load, concierge setup to break adoption barriers.
Solo	1,900 DZD	19,000 DZD	3,800 DZD	Basic POS capability. Functions as a psychological 'decoy' to make the Plus tier appear highly valuable.
Plus	3,900 DZD	39,000 DZD	7,800 DZD	Core Target. Full CRM, B2B Admin, B2C wallet sync. Generates primary MRR and positive working capital.
Growth	7,500 DZD	75,000 DZD	15,000 DZD	Advanced analytics. Functions as the psychological 'anchor' to justify the Plus tier pricing.
Ultimate	Custom	Custom	Custom	Enterprise-level multi-branch franchise management and custom API integrations.

Source: Author's elaboration

Fidialy's pricing architecture is engineered to fulfill three concurrent objectives: eliminating trial adoption friction, maximizing subscription revenue through psychological mechanics, and generating immediate positive cash flow. The strategy relies on three psychological levers:

1. **Anchoring:** The 'Growth' tier (7,500 DZD) establishes a high price anchor, rendering the target 'Plus' tier (3,900 DZD) proportionally affordable and highly attractive.
2. **Decoy Pricing:** The 'Solo' tier offers deliberately limited capabilities, framing the 'Plus' upgrade as the logical commercial choice.
3. **Negative Working Capital Strategy:** The annual billing incentive (12 months of service for 10 months of payment) structurally secures immediate, upfront cash flow, financing subsequent customer acquisition costs.

P3: Place: Dual-Mode Distribution Architecture

Unlike Western SaaS models that rely exclusively on digital self-service, Fidialy adapts to the Algerian market's relationship-first trust architecture via a hybrid distribution strategy. In Phase 1, distribution requires a high-touch physical presence. The founding team conducts direct field visits in high-density commercial zones across Algiers and Oran, facilitating live tablet demonstrations and immediate on-site onboarding. This is reinforced by warm institutional referrals via the ESMT Incubator. Concurrently, a frictionless digital distribution layer operates via a trilingual landing page (fidialy.com) and app store optimization (ASO) for the B2C wallet. In Phase 2, distribution scales physically through a decentralized network of Regional Sales Agents and passively through POS hardware distributors pre-installing the Fidialy OS.

P4: Promotion: Communication and Acquisition Strategy

Fidialy's promotional strategy is governed by a strict creative constraint: the absolute elimination of technical SaaS jargon (e.g., "ERP," "API") in favor of outcome-based commercial language (e.g., "protect your profits," "bring back sleeping customers"). Phase 1 B2B acquisition leverages Meta Business Suite targeting SME owners, complemented by highly effective WhatsApp voice-note outreach. Simultaneously, B2C promotion utilizes strategic partnerships with prominent local digital creators to authenticate the wallet's utility, supported by in-store QR codes to capture existing foot traffic at a zero marginal acquisition cost. Phase 2 transitions toward institutional authority, utilizing SEO-optimized thought leadership articles and an annual "Fidialy Retail Intelligence Report" to generate earned media.

P5: People: Human Capital and Service Culture

In service marketing, human actors directly dictate the buyer's perception of quality.¹ For Fidialy, the caliber of the team is the primary driver of merchant retention. Phase 1 operates on a strict "Cultural Empathy Framework," requiring staff to respect the merchant's operational legacy rather than condescending to their technological unfamiliarity. Personnel are trained on precise behavioral scripts, such as the '*Aha! Moment*' Engineering Protocol (ensuring the merchant sees financial ROI within 7 days) and the *Tax Exposure Privacy Shield* (a legally grounded script alleviating fears of fiscal surveillance). As the company transitions to Phase 2 (scaling to 62 employees), this culture is institutionalized through KPI-driven HR frameworks, including NPS-linked bonuses and quota-driven acquisition incentives.

P6: Process: Service Delivery Architecture

Process design is optimized to minimize the merchant's learning curve while guaranteeing consumer reliability. The B2B journey follows a structured five-stage funnel: (1) Lead Capture, (2) Trial Activation (pre-loaded with 500 SKUs to eliminate "empty dashboard" friction), (3) Concierge Onboarding, (4) Activation Milestone (50 transactions logged), and (5) Subscription Conversion. Conversely, the B2C process is ruthlessly simplified to three steps: QR Discovery, 30-second SMS Registration, and Immediate Reward Issuance. Crucially, Fidialy's Offline-First architecture ensures 100% operational continuity, locally caching data during internet outages and seamlessly synchronizing to the cloud upon reconnection.

Figure N°07: B2B Service Delivery Process Architecture

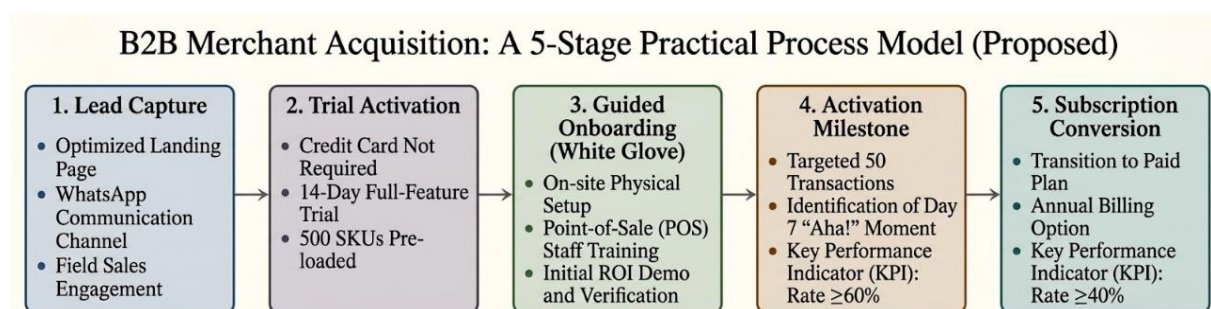


Figure 1: Proposed B2B Merchant Acquisition Process Model, detailing acquisition channels, onboarding steps, and critical success metrics (KPIs). Note: KPIs are representative and should be adapted to industry context.

Source: Author's elaboration

P7: Physical Evidence: Tangibilising the Digital Service

Because traditional merchants evaluate trustworthiness through material signals (Bitner, 1992),² physical evidence is strategically vital for software adoption. Fidialy deploys evidence across

¹ Booms, B. H., & Bitner, M. J., *Op. cit.* (1981)

² Bitner, M. J. (1992). *Servicescapes: The Impact of Physical Surroundings on Customers and Employees*. Journal of Marketing, 56(2), 57-71.

three vectors. *Interface Evidence* is established through a highly intuitive, bilingual POS UI that projects institutional competence. *Documentation Evidence* involves providing merchants with physical Welcome Kits (loyalty window stickers and quick-reference cards), converting a digital subscription into a tangible storefront asset. Finally, *Institutional Evidence* is secured via the CNCSIU 'Innovative Project' Label and ASF documentation, functioning as third-party credibility anchors to mitigate perceived startup risk.

P8: Privacy & Data Sovereignty: Competitive Moat and Adoption Enabler

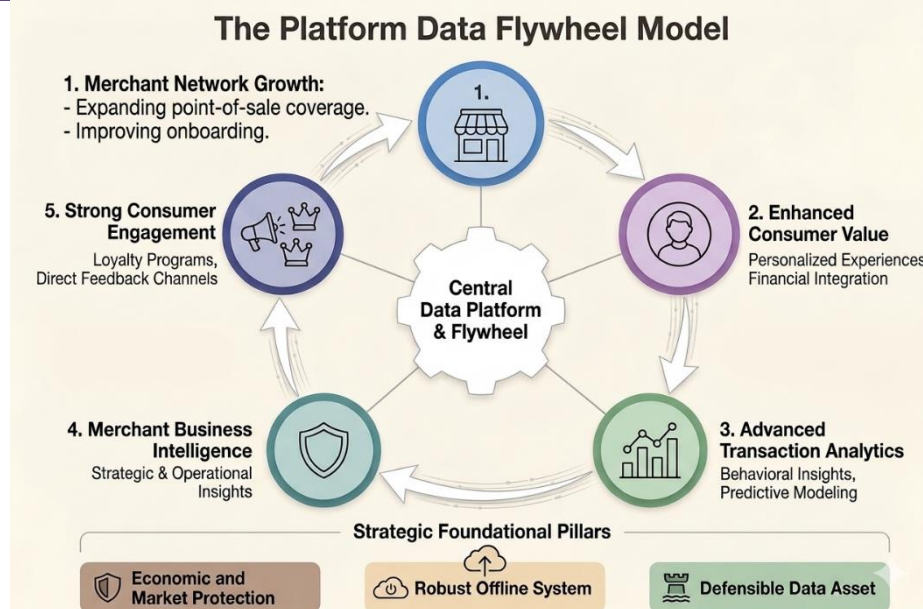
In the Algerian market, privacy is not merely a compliance metric; it is a critical adoption enabler. Field research indicates that fiscal surveillance anxiety ("Will the government see my sales?") is the primary barrier to digital POS adoption. Fidialy structurally resolves this via a strict Merchant Data Sovereignty Guarantee, assuring that no transaction data is shared with external authorities without explicit consent. By engineering a GDPR-aligned data minimization architecture ahead of local regulatory mandates, Fidialy weaponizes privacy as a distinct competitive moat against both global SaaS platforms and commission-dependent super-apps.

P9: Community and Network Effects: The B2B2C Flywheel

Fidialy's long-term defensibility rests on Metcalfe's Law and platform economics (Rochet & Tirole, 2003).¹ Operating a two-sided network creates a self-reinforcing flywheel: increased merchant density exponentially elevates the utility of the consumer wallet, which in turn drives further merchant acquisition. Phase 1 activates this community via a 'Founding Merchant' cohort, granting early adopters beta access and VIP support. In Phase 2, this expands into an Annual Merchant Summit and a tiered Consumer Loyalty Club, fostering deep-rooted social proof and organic referral velocity across both sides of the platform.

Figure N°08: The "Phygital" B2B2C Network Effect Flywheel

¹ Rochet, J. C., & Tirole, J. (2003). *Platform Competition in Two-Sided Markets*. Journal of the European Economic Association, 1(4), 990-1029.



Source: Author's elaboration

P10: Customer Success Architecture: Retention as Commercial Strategy

Because a 5% improvement in retention can increase firm value by up to 95% (Reichheld & Schefter, 2000),¹ Customer Success (CS) is treated as a primary revenue driver. Fidelity's CS architecture (Mehta, Steinman, & Murphy, 2016)² utilizes proactive milestone management, intervening *before* stagnation turns into churn. Automated monthly ROI reports delivered via WhatsApp continually reinforce the platform's financial value. Furthermore, a strict NPS-Linked Escalation Protocol ensures that any merchant submitting a satisfaction score below 7/10 receives an immediate CS intervention call within 24 hours, effectively neutralizing churn risks before they materialize.

3.6. Go-To-Market (GTM) and Digital Acquisition Strategy

A rigorous SaaS growth strategy necessitates a measurable architecture to quantify progress across the commercial funnel. This section defines Fidelity's chronological Go-To-Market (GTM) rollout, its end-to-end digital acquisition funnel, the data-driven attribution model governing marketing investments, and the specific metrics used to evaluate long-term commercial viability.

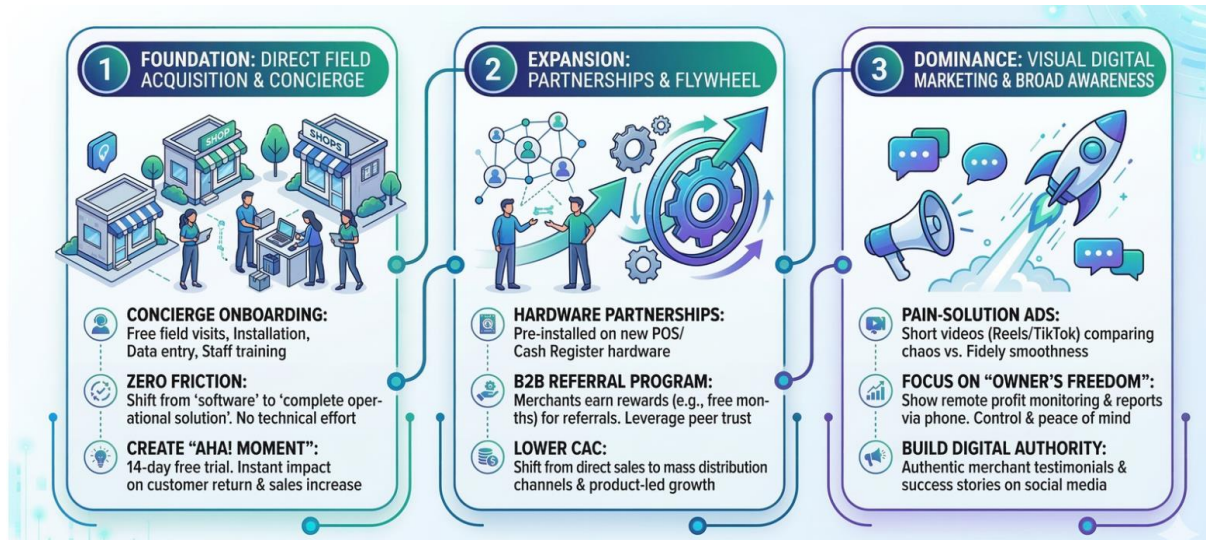
¹ Reichheld, F. F., & Schefter, P. (2000). *E-Loyalty: Your Secret Weapon on the Web*. Harvard Business Review, 78(4), 105-113.

² Mehta, A., Steinman, D., & Murphy, L. (2016). *Customer Success: How Innovative Companies Are Reducing Churn and Growing Recurring Revenue*. Wiley.

3.6.1. Go-To-Market (GTM) Rollout Strategy: Three Acquisition Phases

Fidialy's market entry is sequenced across three distinct, chronologically phased acquisition motions. This sequencing mitigates the risk of premature digital scaling and ensures product-market fit is validated through high-touch human interactions before automated digital acquisition is triggered.

Figure N°09: Fidialy Go-To-Market (GTM) Acquisition Channels and Phased Rollout



Source: Author's elaboration

- **Phase 1: Concierge Field Sales ("Zero-to-One"):** The initial 50–100 B2B merchants are acquired via intensive in-person visits within high-density commercial zones. The founding team conducts on-site system installation, inputs the first 500 SKUs, and trains cashier staff. This high-touch intervention eliminates initial adoption friction and generates the critical "Success Story" testimonials required to fuel subsequent digital campaigns.
- **Phase 2: B2B Referral Flywheel:** Once the initial merchant base is established, growth transitions to a peer-to-peer acquisition model. Existing merchants earn two free subscription months per successful peer referral. This leverages the high-trust dynamics of the Algerian retail community, where professional peer recommendations carry substantially greater commercial weight than paid advertising, progressively driving down the Customer Acquisition Cost (CAC).
- **Phase 3: Targeted Digital Acquisition:** With a baseline of active merchants and proven testimonials, acquisition scales via Instagram, Facebook, and TikTok campaigns. Utilizing short-form video adapted to the specific visual language of Algerian retail, all

content deliberately avoids technical vocabulary (e.g., SaaS, CRM, ERP). Instead, messaging centers entirely on tangible business outcomes: "know your best customers," "bring back sleeping customers," and "protect your profits from your cashiers."

3.6.2. Digital Acquisition Funnel Architecture

Fidialy's B2B acquisition funnel operationalizes the transition from the GTM rollout into recurring revenue generation across six distinct, measurable stages:

- **Stage 1: Awareness (Top of Funnel):** Traffic is generated through hybrid channels. Digitally, this relies on Meta and TikTok paid advertising targeting Algerian male business owners (aged 25–45) and organic social content. Physically, awareness is driven by institutional referral networks (ESMT/CNCSIU) and WhatsApp Business broadcasts targeting pre-qualified merchant lists acquired during Phase 1 field operations.
- **Stage 2: Interest (Lead Capture):** Prospects are captured via fidialy.com landing page visits, demo video engagements, and WhatsApp Business API inquiries. Each interaction constitutes a Qualified Lead (QL) and enters the CRM nurturing sequence.
- **Stage 3: Consideration (Evaluation):** The primary friction-elimination mechanism is deployed: a 14-day free trial requiring no credit card. This is supported by a live product demonstration (Zoom or on-site) where Sales Agents present a personalized ROI calculation, establishing the concrete financial impact of deploying the platform.
- **Stage 4: Conversion (Revenue Activation):** This stage marks the critical transition from trial user to paid subscriber. The primary performance metric is the Trial-to-Paid Conversion Rate, with a strict Year 1 baseline target of $\geq 40\%$.
- **Stage 5: Retention (Lifecycle Management):** Governed by the Customer Success Architecture (defined in Section 3.5.10), retention ensures sustainable unit economics. The fundamental guardrail KPI for this stage is maintaining a Monthly Churn Rate of $\leq 2\%$.
- **Stage 6: Referral (Viral Expansion):** Operationalizing the Phase 2 GTM strategy, subscribers who successfully refer a new qualifying merchant receive subscription credits. As network density increases, this mechanism becomes the platform's optimal growth lever, operating at a CAC of zero.

3.6.3. Channel Attribution and Budget Allocation

Marketing investment is governed by a progressive, data-driven attribution model. In Phase 1 (Year 1), allocation relies on estimated CAC benchmarks derived from comparable MENA-region SaaS deployments. From Phase 2 (Year 2) onward, actual CAC data by channel will

drive quarterly budgetary reallocations, systematically shifting investment toward the highest-performing acquisition sources.

As outlined in Table 3.9, the Year 1 marketing budget (480,000 DZD) is strategically distributed to balance high-intent B2B acquisition with broad B2C wallet awareness.

Table N°16: Year 1 Channel Attribution and Budget Allocation

Acquisition Channel	Allocation (%)	Budget (DZD)	Strategic Rationale & Expected Outcome
Meta Business Suite Ads	40%	192,000 DZD	Highest intent-signal channel for precise demographic targeting of B2B SME owners.
Content & Influencer Pacts	25%	120,000 DZD	Primary driver for B2C digital wallet awareness; establishes social proof and utility.
WhatsApp Business API	15%	72,000 DZD	Capitalizes on the 95%+ open rate within the Algerian B2B context for deep lead nurturing.
SEO & fidialy.com Optimization	10%	48,000 DZD	Builds a compounding, long-term organic traffic asset to sustainably lower blended CAC over time.
Institutional & Trade Events	10%	48,000 DZD	Generates critical trust-signals and warm referrals among highly conservative merchant segments.
Total Year 1 Investment	100%	480,000 DZD	Baseline validation of CAC across channels.

Source: Author's elaboration

As proven CAC data validates the channel matrix and geographic expansion multiplies the addressable audience, the annual marketing budget is modeled to scale aggressively, reaching approximately 10,800,000 DZD by Year 3 to fund national deployment.

3.6.4. KPI Dashboard and Performance Measurement Framework

To operationalize the acquisition strategy, Fidialy's performance measurement is theoretically anchored in the AARRR "Pirate Metrics" framework (McClure, 2007).¹ Strategically adapted to accommodate the dual-sided (B2B2C) reality of the Algerian market, this dashboard translates broad strategic objectives into trackable, quantifiable targets across the Acquisition, Activation, Retention, Revenue, and Referral phases.

Table N°17: Fidialy KPI Dashboard: Performance Measurement Framework (Phase 1 and Phase 2 Targets).

KPI Category & Metric	Definition	Phase 1 Target (Year 1)	Phase 2 Target (Year 3)	Measurement Frequency
ACQUISITION				
Active Paid Subscribers (B2B)	Total merchants on a paid subscription tier	600	5,000+	Monthly
Customer Acquisition Cost (CAC)	Total marketing + sales spend ÷ new paid subscribers acquired	≤800 DZD/subscriber	≤400 DZD/subscriber	Monthly
Trial-to-Paid Conversion Rate	Paid conversions ÷ total 14-day free trial activations	≥40%	≥50%	Monthly
ACTIVATION				
Day 7 'Aha! Moment' Achievement Rate	% of trials reaching 50 loyalty transactions within 7 days	≥60%	≥75%	Weekly during trial period

¹ McClure, D. (2007). *Startup Metrics for Pirates: AARRR (Acquisition, Activation, Retention, Referral, Revenue)*. Presentation at Mashup Camp 5, Mountain View, CA.

B2C Active (MAU)	Wallet Users	Monthly Active Users of the B2C consumer wallet app	5,000 MAU	100,000+ MAU	Monthly
RETENTION					
Monthly Churn Rate (B2B)		Subscribers cancelling in a given month ÷ total subscribers at month start	≤2%	≤1%	Monthly
Net Promoter Score (NPS)	Promoter	% Promoters – % Detractors among surveyed merchant subscribers	≥50	≥65	Quarterly
REVENUE					
Monthly Recurring Revenue (MRR)		Total active subscription revenue per month (all tiers)	2,199,637 DZD (Year 1 avg.)	15,000,000+ DZD	Monthly
Net Dollar Retention (NDR)		MRR from existing cohort at month 12 ÷ MRR from same cohort at month 1 (includes upsells, excludes churn)	≥100%	≥110%	Monthly
LTV:CAC Ratio		Customer Lifetime Value ÷ Customer Acquisition Cost	≥3:1	≥5:1	Quarterly
REFERRAL					

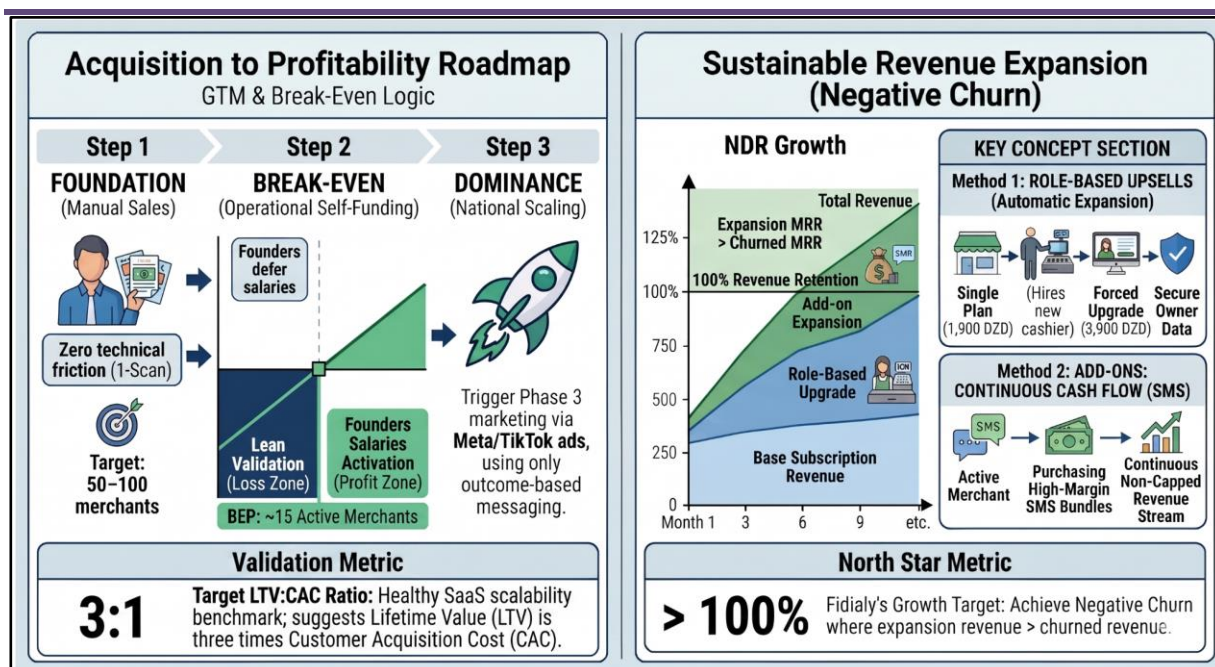
Referral Acquisition Rate	% of new paid subscribers acquired through the 'Refer a Merchant' programme	≥10%	≥25%	Monthly
App Store Rating (B2C Wallet)	Average star rating across Google Play and Apple App Store	≥4.3 stars at M6	≥4.6 stars	Monthly monitoring

Source: Author's elaboration, based on McClure (2007) AARRR model.

Operationally, this KPI framework is governed by a strict performance review cycle. During Phase 1, the founding team conducts structured end-of-month reviews, generating written variance analyses for any metric deviating from its target. Transitioning into Phase 2, this manual process will be replaced by an automated Business Intelligence (BI) dashboard built on Google Looker Studio. By integrating directly with Fidelity's PostgreSQL database and marketing platform APIs, this BI infrastructure provides real-time KPI monitoring, effectively eliminating the reporting lag that frequently causes performance management failures in early-stage SaaS ventures.

Within this dashboard, the LTV:CAC ratio operates as the platform's most strategically significant composite metric. It simultaneously measures acquisition efficiency, product retention quality (inherent in the Lifetime Value calculation), and pricing power (reflected in ARPU growth). Maintaining a sustained LTV:CAC ratio above 3:1 empirically confirms that Fidelity's commercial model generates sufficient long-term value to justify accelerated acquisition investment, satisfying the foundational financial prerequisite for Series A fundraising eligibility within the MENA SaaS investment ecosystem.

Figure N°10: Fidelity Strategic Growth Roadmap: From Market Entry to Negative Churn



Source: Author's elaboration

This figure synthesizes Fidelity's strategic growth trajectory, illustrating the operational transition from founder-led acquisition to automated, compounding revenue expansion (Negative Churn). This framework serves as the project's strategic North Star, ensuring that all acquisition efforts are tethered to long-term unit economic sustainability.

Chapter conclusion:

Fidialy is not a solution searching for a problem. It is a precisely calibrated answer to a structurally proven market failure, governed by a commercially coherent model, and protected by competitive moats that compound in strength with every transaction processed.

What emerges from this analysis is a platform whose deepest advantages are architectural, not cosmetic. The accumulating merchant data asset grows more valuable with scale. The network effect flywheel becomes harder to reverse as merchant density increases. The DZD-denominated sovereignty model structurally excludes every global competitor without a single defensive manoeuvre required. These are not features. They are barriers.

The strategic entry window is finite. Low rivalry, an uncontested white space, and a digitally maturing consumer base converge at a moment that rewards speed and penalises hesitation. Fidialy's phased execution strategy is specifically architected to convert this transient advantage into durable market leadership before conditions shift.

Ultimately, this project demonstrates that the theoretical frameworks examined in the preceding chapters are not academic abstractions. They are actionable blueprints. Relationship marketing, customer retention mechanics, and loyalty programme design find their most tangible expression here: in a platform that transforms the routine act of payment into the foundation of a data-informed, mutually rewarding commercial relationship. That transformation, scaled across Algeria's 150,000 digitally ready merchants, is Fidialy's defining commercial ambition.

Chapter (2):
Operational and Financial Organization,
and Project Validation

Chapter introduction:

This chapter puts the Fidialy project into concrete terms. After establishing the strategic vision in earlier chapters, this one is about the actual systems, numbers, and evidence behind it. It is organized into three parts.

The first part covers the technical architecture and how users experience the platform, explaining how the B2B2C system works and what it means for both merchants and consumers in practice. The second part lays out a five-year financial plan with startup costs, revenue projections, profitability indicators, and return on investment. The third part brings in real market data from two field surveys: one with fifty Algerian merchants and another with 215 consumers, plus an overview of the legal framework the platform operates within.

Taken together, these three parts make the case that Fidialy is built on solid ground: technically coherent, financially sound, and backed by evidence from the actual market it intends to serve.

Section 1: The Platform in Practice, Architecture, Customer Journey and HR Plan

The Fidelity MVP is more than an application. It is an interconnected system of digital interfaces, a cloud backend, and a physical transaction layer, built around a single strategic goal: turning ordinary purchases into durable customer relationships.

This section examines how the platform is built (the "how") and why that architecture directly shapes every user's experience (the "why it matters"). Four sub-sections structure the analysis: the overall system architecture, the role design, the end-to-end customer journey and CX principles, and the technology and human resources that make it all possible.

Understanding these dimensions together is essential. Architecture is rarely discussed in marketing strategy papers, it is left to engineers. But in Fidelity's case, the two are inseparable. Every data flow, every interface decision, every security layer has a direct consequence on what the customer feels and does. That connection is the central argument of this section.

1.1 Technical Architecture

1.1.1 The B2B2C Platform Architecture

Fidelity serves two different groups at the same time: merchants who run the program and customers who benefit from it. This is what makes the platform a B2B2C system. To make that work, the platform gives each group its own app, but connects them through one shared backend. The next part looks at the five user roles and what each one does inside that system.

The B2B2C Model

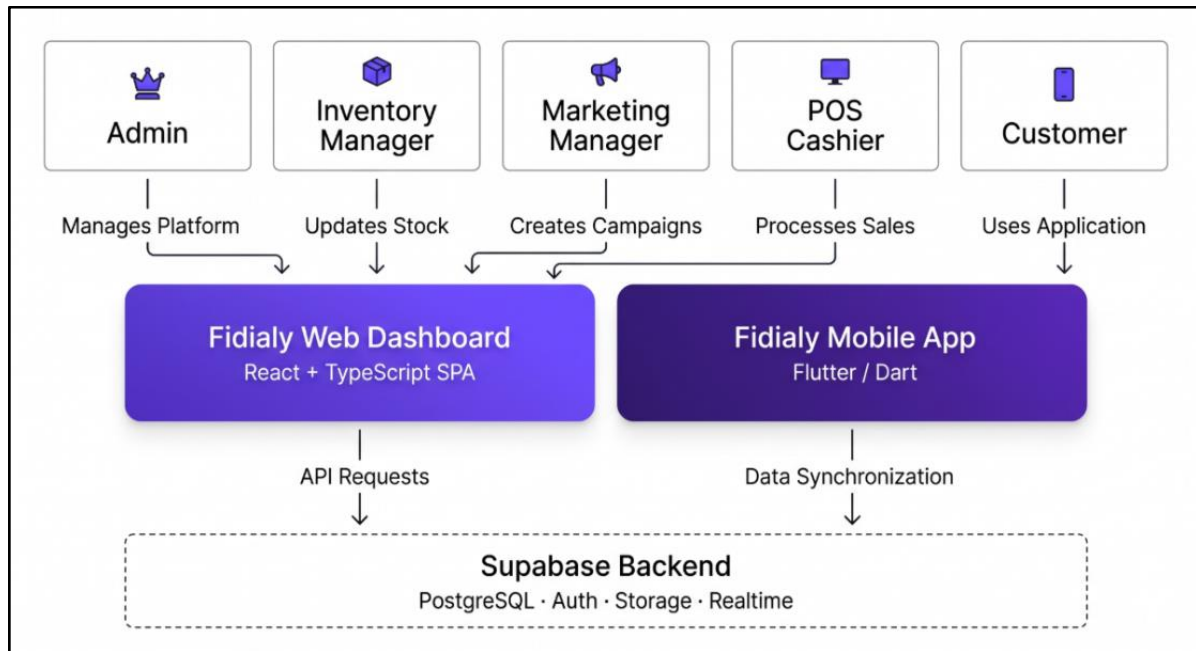
Fidelity works on a B2B2C model. It sells to merchants first, businesses that pay to run a loyalty program, and those merchants then deliver the benefits to their customers. Two different groups, with different needs, different interfaces, and different ideas of what success looks like.¹

This dual structure is not a side effect. It is the whole point. A merchant cannot keep customers without giving them something worth coming back for. And a customer cannot enjoy rewards if the merchant has not set the program up properly. The platform has to serve both at the same time, with no shortcuts taken for either side.

¹ Hagiu, A., & Wright, J. (2015). Multi-sided platforms. *International Journal of Industrial Organization*, 43, 162–74. <https://doi.org/10.1016/j.ijindorg.2015.09.011>

That is not a simple problem to solve. Most software is built for one type of user. Fidelity is built for two, and that choice shows up everywhere in the system: two separate client apps, one shared backend, and access controls that keep each side's responsibilities clearly separated.

Figure N°01 - General System Context: A B2B2C Loyalty-as-a-Service Platform



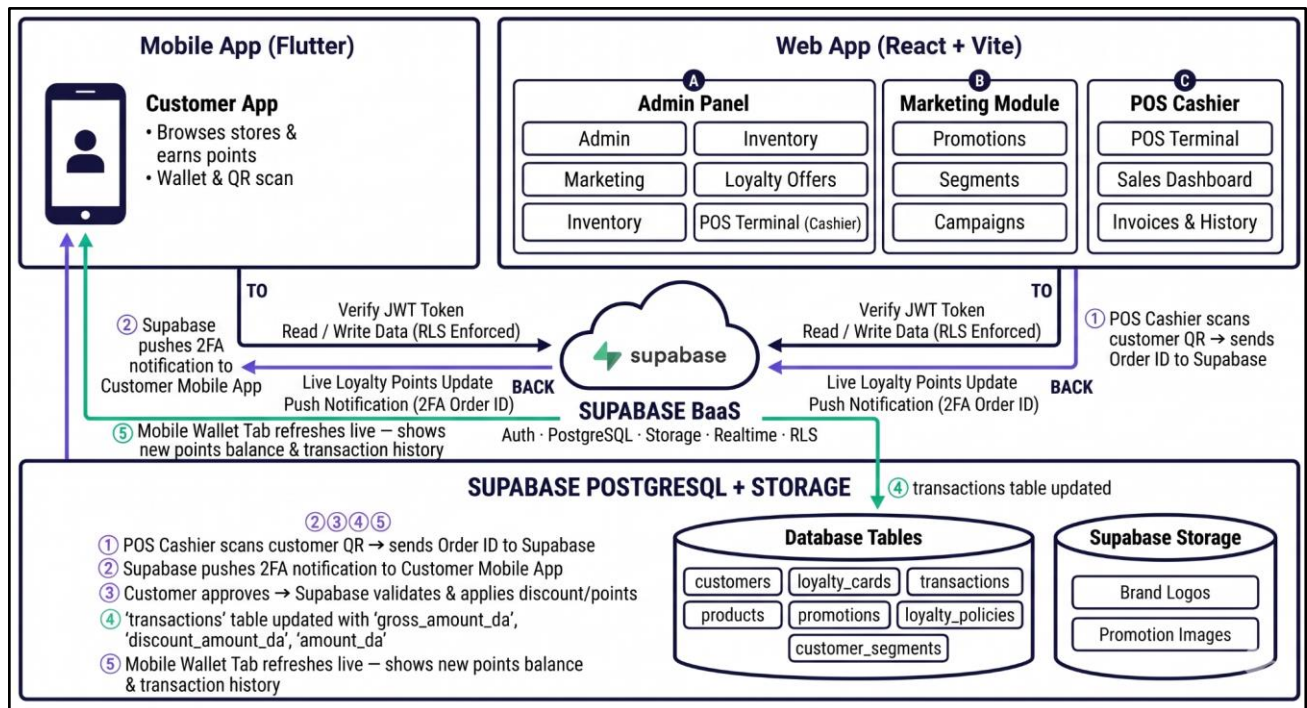
source : Author's elaboration

The **General System Context** diagram places five actors around the Fidelity platform: the Admin who manages the platform, the Inventory Manager who updates stock, the Marketing Manager who creates campaigns and builds the loyalty engine logic, the POS Cashier who processes in-store sales, and the Customer who uses the mobile app to earn and redeem rewards. All five connect to the system through two interfaces, the Fidelity Web Dashboard for the merchant side and the Fidelity Mobile App for customers, both powered by a single Supabase backend.

The Three-Layer Architecture

The platform rests on a three-layer structure. Each layer has a distinct responsibility, and keeping those responsibilities separate is what makes the system scalable, maintainable, and safe.

Figure N°02 Three-Layer Platform Architecture



source : Author's elaboration

➤ Layer 1, The Presentation Layer

This is what users see and interact with. It splits into two separate client applications:

- **Web Dashboard** (React + TypeScript), built for business users: the merchant's internal team. Accessed from a desktop browser, it handles product management, loyalty rule configuration, analytics tracking, and transaction processing.
- **Mobile App** (Flutter), built for the end customer. Runs natively on Android and iOS, providing a consumer-grade experience for browsing partner stores, scanning QR codes, tracking points, and redeeming rewards.

The two interfaces are kept separate on purpose. A marketing manager setting up a campaign needs something very different from a customer checking their points. Putting them in the same place would make the experience worse for both sides and would also make the product harder to update as each group's needs change over time.

➤ Layer 2, The Backend-as-a-Service Layer (Supabase BaaS)

This is the intelligence layer, the central hub connecting both client applications. It handles four critical functions:

- **Authentication (JWT):** Every user, whether a cashier logging into the dashboard or a customer opening the app, is authenticated through JSON Web Tokens. Access is verified before any data is touched.
- **REST API:** The backend automatically exposes the database as an API. Both client applications send requests to read or write data through a consistent, documented interface.
- **Realtime Engine:** Through WebSocket connections, database changes are pushed instantly to connected clients. The customer's wallet updates the moment a POS transaction is confirmed, no manual refresh, no waiting.
- **Row-Level Security (RLS):** A data security layer that ensures each user only accesses data they are permitted to see. A cashier at Merchant A cannot view the customer data of Merchant B. This is enforced at the database level, not just the application level.

➤ **Layer 3, The Data Persistence Layer**

This is the platform's memory. It consists of two components:

- **PostgreSQL Database:** relational database storing all structured data, merchants, customers, loyalty cards, transactions, products, and policies. All data relationships are enforced here, ensuring integrity across the system.
- **Supabase Storage:** A file storage system for images, brand logos, product photos, and promotional banners, delivered to both the web and mobile apps on demand.

The defining architectural choice here is that both client applications share a single database. There is no synchronization problem, no data duplication, and no risk of inconsistency between what the cashier sees and what the customer sees. One action in the system is immediately visible to all relevant parties, a property that becomes critical when real-time reward confirmation is a core part of the customer experience.

1.1.2 User Roles & System Interactions

Now after we understand how the platform is built, we need to look at who operates it. This subsection introduces the five user roles that run the system, explains what each one can do, and shows how they all connect through the web dashboard and the mobile app.

A Role-Based Platform Design

One of the most consequential design decisions in Fidialy is the explicit separation of user roles. Rather than a single monolithic application that every user navigates differently, the platform assigns each actor a clearly scoped set of actions and responsibilities. This is not purely a technical feature, it reflects a marketing-informed design philosophy: the right tool, for the right person, at the right moment.

Role-based design also removes cognitive load. A cashier at a POS terminal does not need to see campaign configuration options. A marketing manager does not need access to employee payroll settings. Reducing each interface to only what is relevant makes users faster, reduces errors, and makes training far simpler.¹

The platform currently supports five roles, each mapped to a specific part of the system and a specific contribution to the overall customer experience.

Table N°01: Platform Roles & Responsibility Matrix

Permission	Admin	Marketing	Inventory	POS Cashier
Manage branches & employees	✓	X	X	X
Configure POS terminals	✓	X	X	X
Add / edit products (draft)	X	X	✓	X
Set retail price, publish to POS	X	✓	X	X
Design loyalty policy & offers	X	✓	X	X
Create promotions & campaigns	X	✓	X	X
Operate POS terminal	X	X	X	✓
Enroll & manage customers	X	X	X	✓
View all modules (read-only)	✓	X	X	X
Impersonate other roles	✓	X	X	X

Source : Author's elaboration

The table makes clear that the platform is designed around contributions to CX, not just task completion. Each role exists because a gap in its function would directly degrade the customer

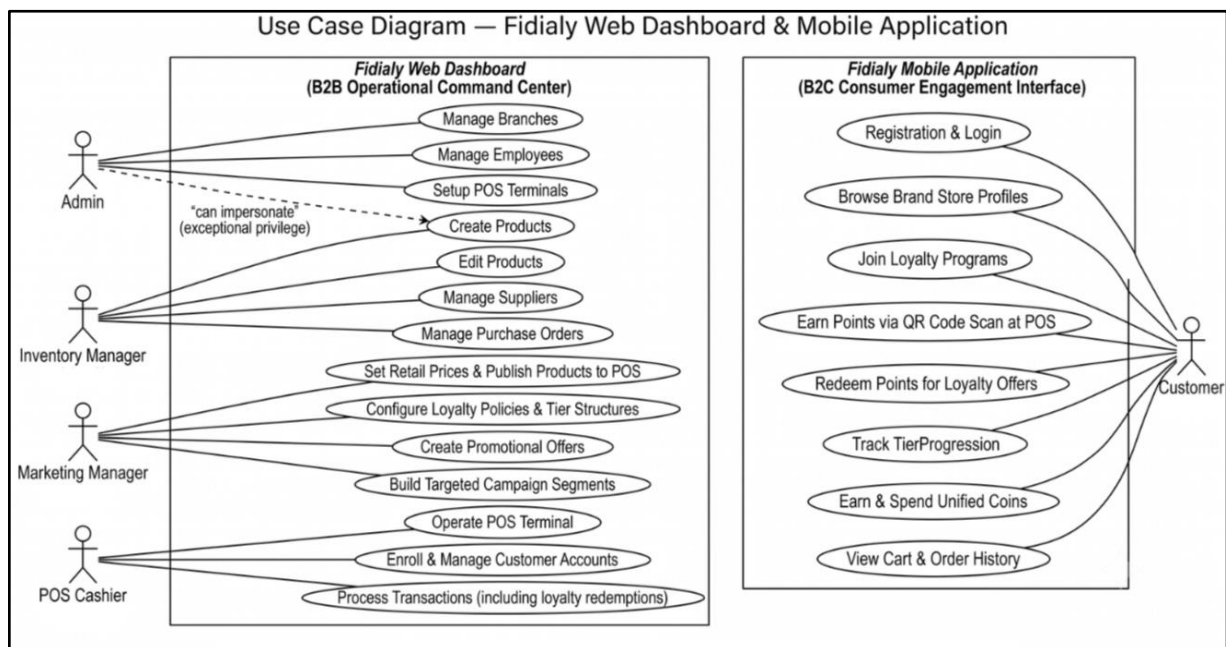
¹ Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63(2), 81–97. <https://doi.org/10.1037/h0043158>. The application to interface design is discussed in: Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12(2), 257–285.

experience. If the inventory manager neglects product updates, customers browse empty catalogs. If the marketing manager creates no offers, customers have nothing to redeem. If the cashier mishandles a QR scan, the entire loyalty transaction falls apart.

System Interactions

The use case diagram maps the concrete actions each actor can perform within the system. The two bounding boxes, the Web Dashboard and the Mobile App, cleanly separate the B2B and B2C surfaces of the platform.

Figure N°03 UML Use Case Diagram: Web Dashboard & Mobile Application



Source : Author's elaboration

Several interactions deserve specific attention from a CX perspective:

- **The Admin** holds the broadest access on the Web Dashboard, managing branches, employees, POS terminals, products, and suppliers. The "can impersonate" privilege also allows the Admin to step into any other role when needed, acting as an operational backup without disrupting anything on the customer side.
- **The Inventory Manager** handles the supply and product side, managing suppliers, purchase orders, and pushing retail products to POS. Their work stays behind the scenes but directly affects what customers can interact with in store.
- **The Marketing Manager** owns the loyalty experience from the business side. This includes setting loyalty policies and tier structures, creating promotional offers, and

building targeted campaign segments. These decisions shape everything the customer receives through the program.

- **The POS Cashier** operates at the physical touchpoint, running the terminal, enrolling customers, and processing transactions including loyalty redemptions. They are the only actor who interacts with the customer in person, making their role critical at the moment that matters most.
- **The Customer's** side is kept intentionally simple. Through the mobile app they can register, browse brand profiles, join programs, earn points via QR scan, redeem rewards, track their tier, use Unified Coins, and view their order history. They configure nothing. Value just builds naturally with each purchase, which is what keeps the loyalty loop going.

The Shared Data Connection

The Web Dashboard and Mobile App appear as two separate systems, but they are unified by the shared Supabase backend. An action taken by the marketing manager, publishing a new promotion, is immediately visible to the customer in the mobile app. A transaction processed by the cashier at the POS is immediately reflected in the customer's wallet. This real-time synchronization is what turns a collection of separate tools into a coherent, living platform.

This also has important implications for trust. When a customer earns points at checkout, they expect to see those points in their wallet before they leave the store. Any delay breaks the connection between action and reward, the psychological moment that reinforces the behavior. Real-time synchronization is not a technical luxury; it is a behavioral requirement.¹

1.2 CX Design & End-to-End Customer Journey

1.2.1 Overview: From Anonymous Visitor to Loyal Member

The customer journey does not begin when someone downloads the app. It begins before the app is ever mentioned, at the moment of a customer's very first purchase at a partner store. This

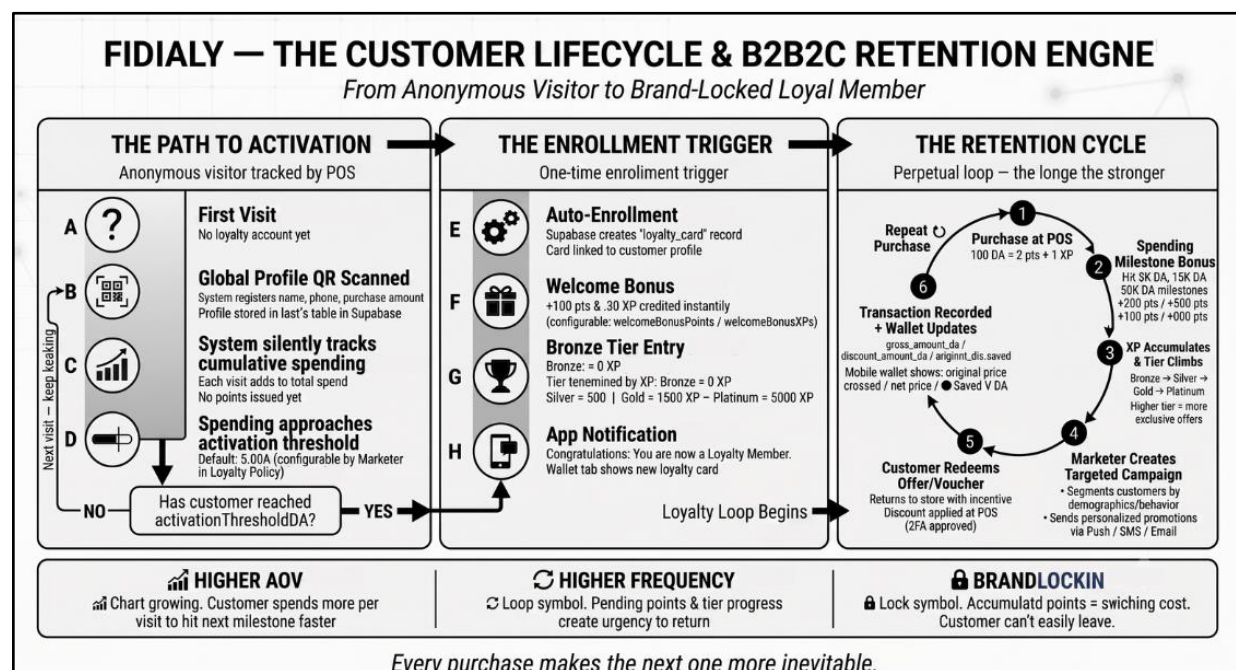
¹ Skinner, B. F. (1938). *The Behavior of Organisms: An Experimental Analysis*. Appleton-Century-Crofts; Yi, Y., & Jeon, H. (2003). Effects of loyalty programs on value perception, program loyalty, and brand loyalty. *Journal of the Academy of Marketing Science*, 31(3), 229–240.

design choice is one of the platform's most distinctive features: onboarding is passive and invisible, which reduces friction to zero.

Most loyalty programs ask customers to register before they receive any value. Fidialy inverts this. The customer receives value first, the enrollment follows. By the time the customer is formally welcomed into the loyalty program, they have already demonstrated purchasing behavior and accumulated spending history. The relationship starts from a position of genuine mutual investment, not cold sign-up forms.¹

The journey unfolds across three distinct phases, each serving a different strategic purpose.

Figure N°4 The Customer Lifecycle & B2B2C Retention Engine



Source : Author's elaboration

➤ Phase 1: The Prospect Phase, Silent Tracking

When a customer visits a partner store for the first time, the system does not know them. No account, no loyalty card, no awareness of the Fidialy platform on either side. The POS Cashier registers a basic profile, name and phone number, and records the purchase amount. From that point, the system begins silently accumulating the customer's total spending across visits. No points are issued yet. No prompts appear. The customer simply shops as they normally would, unaware that their path to loyalty membership has already started. This continues until cumulative spending crosses a

¹ Lemon, K. N., & Verhoef, P. C. (2016). Understanding customer experience throughout the customer journey. *Journal of Marketing*, 80(6), 69–96. <https://doi.org/10.1509/jm.15.0420>

configurable threshold, for example, 5,000 DA. This number is set by the merchant through their loyalty policy and can be adjusted based on the merchant's average transaction value and retention goals.

CX Insight: The prospect phase eliminates the most common failure point in loyalty program adoption, the requirement to register before receiving any value. By the time the customer is enrolled, they have already demonstrated commitment through actual spending behavior.

➤ **Phase 2: The Activation Phase, The Enrollment Trigger**

When the spending threshold is crossed, the system triggers automatic enrollment:

- A loyalty_card record is created in the database, linking the customer to the merchant.
- A welcome bonus is applied immediately: for example, +100 loyalty points and +50 XP.
- The customer receives a notification through the mobile app, officially welcoming them as a loyalty member.
- Their wallet tab becomes active, displaying their Bronze tier status and starting balance.

This moment, the transition from anonymous visitor to named loyalty member, is the first major emotional peak of the customer experience. The customer receives unexpected value for behavior they were already engaged in. This creates a sense of recognition rather than obligation, which is the difference between a customer who feels rewarded and a customer who feels manipulated into a program.¹

The mobile notification at this moment is deliberate. It arrives on the customer's personal device, in a private context, with a personalized message. It is not a generic marketing blast, it is an acknowledgment: "We noticed. You matter."

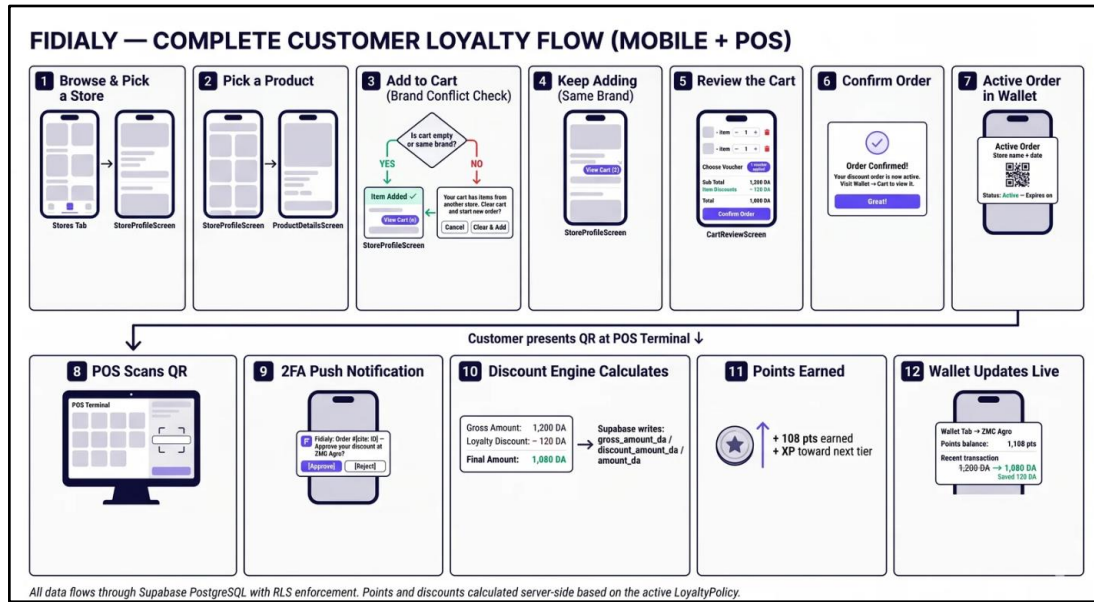
➤ **Phase 3: The Retention Phase, The Loyalty Loop**

Once enrolled, the customer enters a self-reinforcing loop that runs perpetually. Each purchase generates points and XP. Each points milestone unlocks rewards. Each tier

¹ Melancon, J. P., Noble, S. M., & Noble, C. H. (2011). Managing rewards to enhance relational worth. *Journal of the Academy of Marketing Science*, 39(3), 341–362.

promotion creates a new motivation to spend. The loop does not require external intervention to sustain, it runs on the customer's own behavior.

Figure N°05 Complete Customer Loyalty Flow (Mobile + POS)



Source : Author's elaboration

This section provides an in-depth, step-by-step analysis of the integrated digital-physical loyalty cycle. It traces a single transaction from the user's initial interaction with the "Fidelity" mobile application to the final live update of points, with a specific focus on system validations and technical integrations that ensure a seamless experience.

The following twelve steps trace this cycle from store discovery to live wallet update:

- 1. Finding a store:** The user opens the app, which shows nearby partner merchants based on their location. Tapping a store opens its page, where they can see current deals, discounts, and loyalty rewards available.
- 2. Picking offers:** Instead of buying products directly through the app, the user browses the store's offer catalog and selects the deals or discounts they want to use when they visit in person.
- 3. Adding offers to the cart:** When the user selects an offer, the app checks that all chosen offers are from the same store. Mixing offers from different stores is not allowed.
- 4. Building the reservation:** The user keeps adding offers. The cart icon updates in real time to show how many are selected.

5. **Reviewing the benefits:** Before confirming, the user sees a summary of all selected offers, the loyalty discounts that will apply, and how much they are expected to save at checkout.
6. **Confirming the reservation:** The user confirms their selection. The app saves it to the database, locking in the offers for use at the store.
7. **QR code generation:** Once the reservation is confirmed, the app generates a QR code that holds all the selected offers. It is saved in the user's in-app wallet.
8. **Scanning at the register:** When the user is at the store and ready to pay, the cashier scans the QR code. This instantly pulls up the reserved offers and the user's loyalty profile.
9. **Approving the transaction:** The app sends a push notification to the user's phone asking them to confirm the purchase. One tap approves it. This adds a simple but important security check before any discount is applied.
10. **Calculating the discount:** The system automatically checks the scanned offers against the store's loyalty rules and works out the exact discount to apply at the register.
11. **Earning points:** After the final amount is settled, the user earns loyalty points and XP based on what they spent. These are added to their account immediately.
12. **Updating the wallet:** The app refreshes in real time. The user can see their new points balance, a record of the redemption, and a clear breakdown of how much they saved.

1.2.2 The Physical-Digital Bridge: The QR Code

The touchpoint map shows something worth paying attention to: the customer journey moves back and forth between physical and digital moments. Fidelity is not built around online shopping. It is built around real retail, the store visit, the cashier, the in-person transaction. Those moments are the heart of the experience, not an add-on.

The QR code is what connects both worlds. It is not just a convenient feature. It is the main identity token the entire system runs on. The customer does not need a physical card, a membership number, or a form to fill out. They just show their phone. That simplicity is

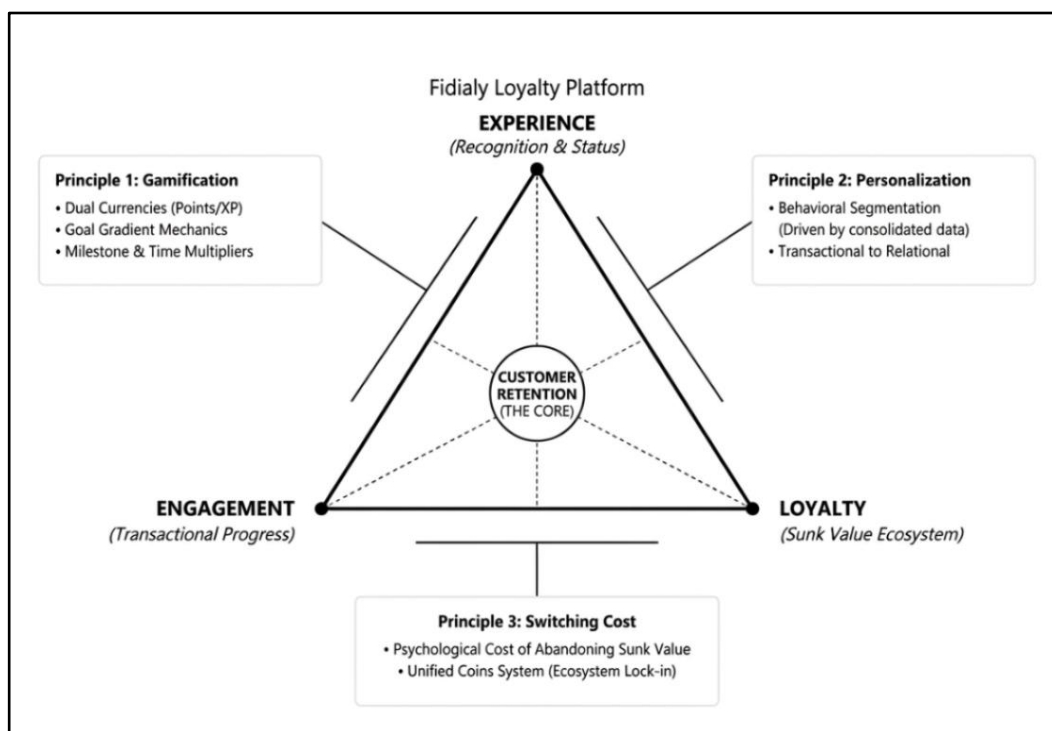
intentional. The less friction there is at the moment of payment, the more likely the loyalty interaction actually happens.¹

1.2.3 From Architecture to Behavior

The platform's architecture was not designed simply to store data and process transactions. Every structural choice, the tier system, the real-time wallet, the push notifications, the unified coins, was made with a behavioral objective in mind: to make every purchase feel like progress, and every reward feel like recognition.

This sub-section examines the three core CX design principles that govern the Fidialy retention engine, and how they translate into measurable behavioral outcomes. These principles did not emerge from the technology, they shaped it.

Figure N°06 Fidialy CX Retention Triangle Engine



Source : Author's elaboration

The diagram summarizes three forces that, in combination, produce customer retention. None works in isolation, they reinforce each other in a continuous cycle. Remove one, and the others weaken.

Principle 1: Gamification, Making Loyalty Feel Like a Game

The Fidialy loyalty system runs on two parallel currencies, and that distinction is deliberate:

¹ Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predictingetail quality. *Journal of Retailing*, 79(3), 183–198.

- **Points** a transactional currency earned with every purchase and redeemable against future discounts or products. Points have immediate, tangible value.
- **XP (Experience Points)** a progression currency that determines the customer's tier. Unlike points, XP cannot be spent. It only accumulates, permanently, marking the customer's history with the brand.

Points answer the question: "What can I get today?" XP answers: "How close am I to Gold tier?" Together, they create both short-term and long-term motivation, the immediate pull of a redeemable discount and the long-term pull of a status milestone that cannot be lost. The tier system, Bronze, Silver, Gold, Platinum, is a gamification ladder built on three mechanisms:

- **Progress Visibility:** The customer always knows their current tier and how far they are from the next one. This visibility creates a psychological pull toward the next spending threshold, a well-documented phenomenon in behavioral economics called the goal gradient effect, which predicts that effort increases as the goal gets closer.¹
- **Milestone Bonuses:** When a customer reaches predefined spending levels (e.g., 5,000 DA, 15,000 DA, 50,000 DA), they receive a bonus points injection. These moments of unexpected reward reinforce the positive association with the brand and create memorable peaks in the customer experience.²
- **Weekend Multipliers:** The policy engine supports double points on weekends. By making spending more rewarding at specific times, the platform directly influences when customers choose to visit, converting loyalty mechanics into a traffic management tool for the merchant.³

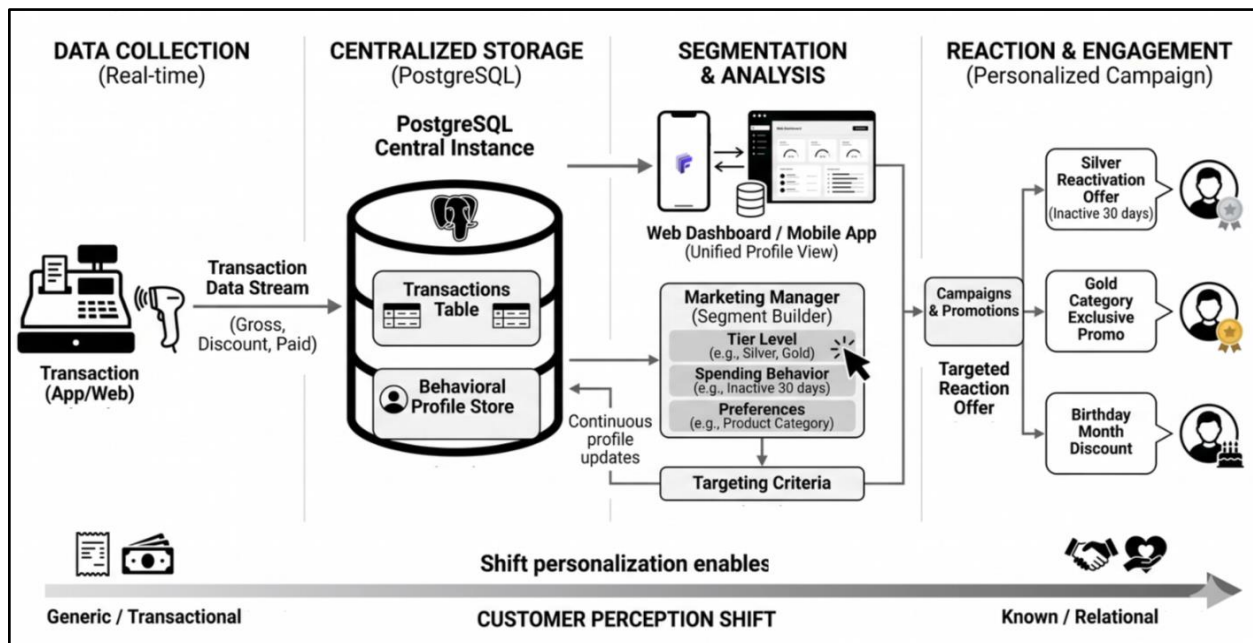
Principle 2: Personalization, The Right Offer to the Right Customer

The marketing module of the Web Dashboard allows the Marketing Manager to build customer segments, groups defined by attributes such as tier level, spending behavior, or product category preferences. These segments serve as the targeting criteria for campaigns and promotions.

¹ Kivetz, R., Urminsky, O., & Zheng, Y. (2006). The goal-gradient hypothesis resurrected: Purchase acceleration, illusionary goal progress, and customer retention. *Journal of Marketing Research*, 43(1), 39–58.

² Kahneman, D., Fredrickson, B. L., Schreiber, C. A., & Redelmeier, D. A. (1993). When more pain is preferred to less: Adding a better end. *Psychological Science*, 4(6), 401–405.

³ Drèze, X., & Nunes, J. C. (2009). Feeling superior: The impact of loyalty program structure on consumers' perceptions of status. *Journal of Consumer Research*, 35(6), 890–905.

Figure N°07 Full Data Flow & Real-Time Architecture

Source : Author's elaboration

The data flow diagram shows how the personalization engine works in practice. Every transaction produces structured data, gross amount, discount applied, final amount paid, stored in the transactions table. Over time, this builds a behavioral profile for each customer. The Marketing Manager can use that profile to :

- **Target Silver-tier customers** who have not visited in 30 days with a reactivation offer.
- **Send exclusive Gold-tier promotions** tied to a specific product category.
- **Create birthday-month discounts** for customers whose date of birth is registered in the system.

This level of segmentation is possible precisely because the platform's architecture centralizes all data in a single PostgreSQL instance. No fragmentation, no data silo between the mobile app and the web dashboard. One customer, one profile, one coherent view.

From a CX standpoint, personalization transforms the loyalty program from a generic discount mechanism into something that feels like a relationship. The customer stops feeling like “any customer” and starts feeling like a known one. That shift, from transactional to relational, is the core of modern retention marketing. Fidelity makes it structurally possible at the architecture level.¹

¹ Palmatier, R. W., Dant, R. P., Grewal, D., & Evans, K. R. (2006). Factors influencing the effectiveness of relationship marketing: A meta-analysis. *Journal of Marketing*, 70(4), 136–153.

Principle 3: Switching Cost, The Economics of Accumulated Value

The strongest reason customers stay with Fidelity is something most of them never think about: the value they have already built up.

Every point earned, every tier reached, every bonus collected only exists inside Fidelity. A customer sitting at 3,000 points and 200 XP away from Gold status has a real reason not to leave. Walking away means giving all of that up. It may not be a financial loss in the traditional sense, but it feels like one.

This is how sunk value works in loyalty programs, a concept well covered in behavioral economics. The more someone has put in, whether that is time, money, or emotional investment in their tier, the harder it is to walk away. Fidelity is built to grow that feeling over time, not through contracts or lock-in clauses, but through value that stacks naturally with every purchase.¹

Fidelity amplifies this further through the *Unified Coins system*. It is a shared currency that works across all partner brands. A customer can earn at one store and spend at another. Someone who shops across several Fidelity partners is not just tied to one merchant, they are invested in the whole network. The more brands they use, the deeper that investment gets, and the less likely they are to leave. That is switching cost working at scale.

1.3 Technology Partners & Human Resources Management

1.3.1 Technology Partners

The Fidelity technology stack was designed around one constraint above all others: the platform had to be **production-grade from day one, without spending money it did not yet have**. That constraint shaped every selection decision, from database engine to icon library.

Cloud Infrastructure Services

Supabase, Backend-as-a-Service (BaaS) , *The Intelligence Hub: Auth, API, Realtime & Storage*

¹ Burnham, T. A., Frels, J. K., & Mahajan, V. (2003). Consumer switching costs: A typology, antecedents, and consequences. *Journal of the Academy of Marketing Science*, 31(2), 109–126.; Klemperer, P. (1987). Markets with consumer switching costs. *The Quarterly Journal of Economics*, 102(2), 375–394.

Supabase is the main backend for Fidialy. It stores all the data in a PostgreSQL database, automatically builds APIs so the app can talk to that database, handles login and security through JWT, controls who can see what data with row-level security, sends live updates over WebSockets, and stores files. The live updates matter most here: when a customer pays, their loyalty wallet needs to update on screen right away, not after a refresh.

Netlify, Deployment Platform , *Continuous Deployment for the Web Dashboard*

Netlify hosts the merchant dashboard, the website business owners log into. It's built as a Single-Page App, meaning it loads once and then updates content without full page reloads. Every push to the main branch triggers an automatic deploy. Every pull request gets its own preview link so the team can test changes before merging.

Git & GitHub, Version Control & Collaboration , *Source of Truth for All Code and Configuration*

Git and GitHub hold all the project's code: the website, the mobile app, database setup scripts, and deployment configs. Developers branch off to work without breaking the main version, review each other's changes through pull requests, and keep a full history of every edit. For a product handling payments and loyalty points, that history matters when something needs to be traced back.

Antigravity (Google DeepMind), AI-Assisted Development

Antigravity, from Google DeepMind, worked almost like an extra developer on the team. It wrote frontend code for the website (over 35 pages), built screens for the mobile app (23 of them), set up database scripts, wrote security rules, and helped draft the documentation describing the whole project.

Core Development Frameworks

Eight open-source frameworks make up the backbone of the platform. Each one was picked using the same criteria: an active community behind it, performance strong enough for a live SaaS product, and a good fit with what the founding team already knows how to use.

Table N°02: Core Development Frameworks and System Specifications

Framework	Version	Role
React	19.2.0	Web dashboard UI: 35+ routes, 5 Context providers, role-based access control
Flutter	SDK 3.10.3+	Cross-platform mobile app : 23 screens, Android + iOS native performance
TypeScript	5.9.3	Static type system across the entire web codebase
Dart	3.10.3+	Mobile programming language: null-safe, AOT-compiled
Vite	7.2.4 / 5.2.0	Build tool and dev server: instant HMR, optimized bundles
Tailwind CSS	3.4.17	Utility-first styling with custom design tokens
PostgreSQL	15+	Relational database engine: ACID, RLS, JSON, full-text search
Node.js / npm	LTS	JavaScript runtime and package manager for the dev environment

Source : Author's elaboration

- **React** was chosen over Angular and Vue.js for three concrete reasons. First, its component composition model aligns naturally with the role-gated dashboard architecture, where each user role receives a distinct UI constructed from shared building blocks. Second, the Context API covers Fidialy's state management needs (Auth, Inventory, Loyalty, Branch, Settings) without adding Redux overhead. Third,

React's ecosystem dominance in Algeria means the largest available talent pool for future engineering hires.¹

- **Flutter** won the mobile framework decision over React Native and native Kotlin/Swift development for equally specific reasons: a single codebase compiling to both Android and iOS reduced development time by roughly 40 percent; the widget-based architecture enabled pixel-perfect custom UI critical for the loyalty card carousel and QR identity screen; and Dart's ahead-of-time compilation produces native ARM binaries without the JavaScript bridge latency that affects React Native.²

Technology Cost Summary

The stack was picked to keep costs flat during the initial development phase. Supabase handles the backend and Netlify handles web hosting, both on free tiers. Every framework is open-source. Since a custom domain was not purchased and the application is deployed using Netlify's provided subdomain, there are zero infrastructure costs. Strip out the Antigravity subscription, and the entire infrastructure bill is completely free.

Table N°03: Breakdown of MVP Technology Stack and Infrastructure Costs

¹ Stack Overflow. (2024). *Developer survey 2024: Most popular web frameworks and technologies*. <https://survey.stackoverflow.co/2024/technology#most-popular-technologies-webframe>

² Nawrocki, P., Wrona, K., Marczak, M., & Gdowska, K. (2021). A comparison of native and cross-platform frameworks for mobile applications. In *Computer Information Systems and Industrial Management* (pp. 3–15). Springer.

Technology Partner	Type	MVP Monthly Cost	MVP Annual Cost
Supabase	Cloud BaaS	\$0 (Free Tier)	\$0
Netlify	Web Hosting	\$0 (Hobby Plan)	\$0
Antigravity	AI Dev Partner	Subscription	Subscription
Domain (fidially.com)	DNS (Netlify subdomain)	\$0	\$0
React, Flutter, TS, etc.	Open-Source Frameworks	\$0	\$0
All npm + pub packages	Open-Source Libraries	\$0	\$0
Git, VS Code, Android Studio	Dev Tooling	\$0	\$0
MVP TOTAL (excl. AI)		\$0	\$0

Source : Author's elaboration

It is important to note that this \$0 cost structure reflects the pre-launch MVP development phase, achieved without capital expenditure due to the founders contributing their technical labor as an equity-equivalent. Consequently, the 5-Year Financial Plan detailed in Section 2 strictly models post-launch commercial operations and scaling expenditures, marking a clear boundary between the zero-cost prototype and the commercial venture.

1.3.2 Human Resources Management

Fidially's human resources strategy starts from one honest constraint: the company needs to reach product-market fit before it can afford meaningful payroll. Every decision in this section

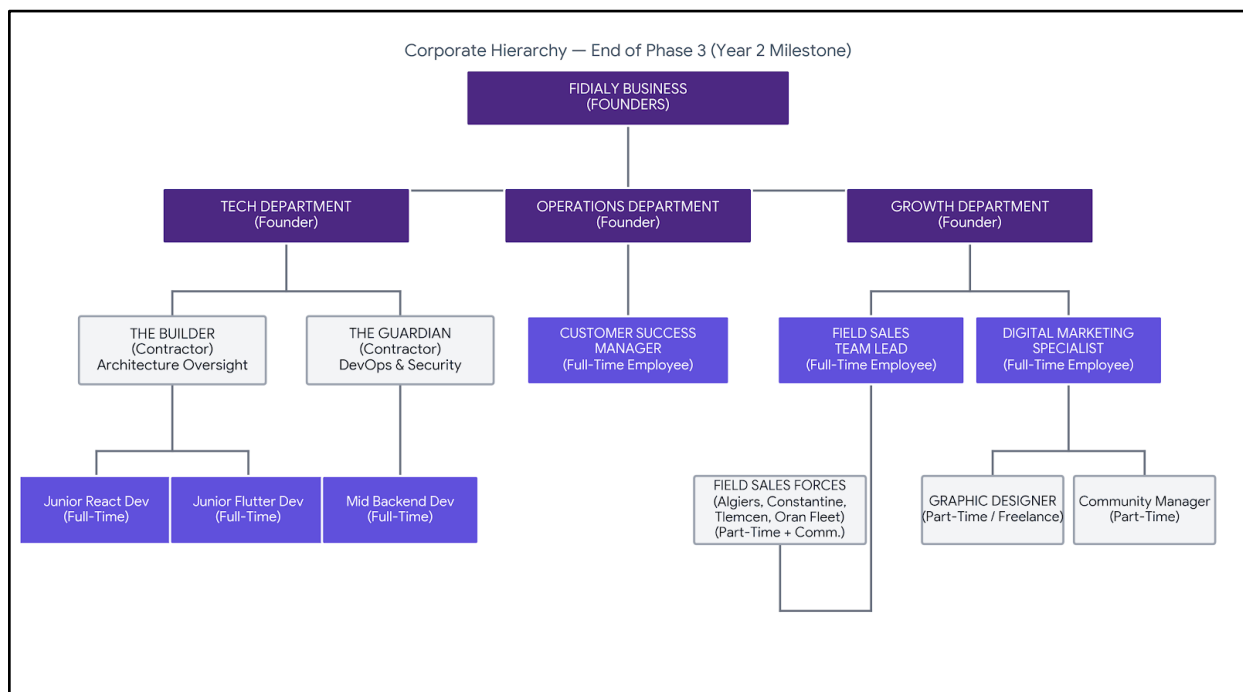
flows from that starting point, from who the founders are and what they bring, to how the platform will hire over the next two years.¹

Founding Team Composition

To move smoothly from planning into doing, Fidialy built its structure with one goal in mind: stay accountable without spending too much on overhead. The company runs on three main departments, Technology, Operations, and Growth. A founding member leads each one. This keeps decisions fast and practical while the team is still figuring out what works in the market.

The diagram below represents the target team structure by end of Year 1, spanning the Technology, Business, and Operations divisions.

Figure N°08 FIDIALY Departmental Internal Hierarchy & Organizational Structure



Source : Author's elaboration

To grow the company the right way, Fidialy organizes its team around three main areas: Technology, Operations, and Growth, all reporting directly to the founders. To keep costs manageable, the structure mixes full-time staff like developers and customer success managers

¹Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Business.

with part-time workers, commission-based salespeople, and freelance creatives. This way, hiring grows only when the business grows in a given market.

Phased Hiring Plan

The guiding principle is straightforward: hire when an operational bottleneck¹ proves a role is necessary, and never before. Fidialy's hiring plan is organized around three chronological periods, each with clearly defined team compositions and staffing objectives.

A. Year 0: Foundation Year

Year 0 is a pre-commercial period. No revenue is generated, no salaries are paid, and operating expenses are nil. The year is divided into two sequential sub-phases, each with a distinct technical objective.

- **Phase 1: Concept Development and MVP Creation.** The three co-founders work alone during this period. They define the product architecture, conduct preliminary merchant interviews to validate the market hypothesis², and build the first functional version of the platform. No external members are engaged, and no financial commitments are made beyond the initial capital equipment expenditure.
- **Phase 2: Technical Partnership and Legal Alignment.** Once the MVP is operational, two contracted technical partners and legal counsel join the founding team to bring the product from prototype to a market-ready state. Both partners work on an equity basis³. No salaries are introduced during this sub-phase, and OPEX remains at zero.

Table N°04: Phase 2: Two Technical Partners (Year 0, Months 7 to 12)

Member	Role	Status	Key Responsibilities
The Builder (Partner)	Full-Stack App Developer	Equity Contracted	Frontend & mobile (React + Flutter), UI/UX execution, database queries, bug fixes

¹ Goldratt, E. M., & Cox, J. (1984). *The Goal: A Process of Ongoing Improvement*. North River Press.

² Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Business.

³ Wasserman, N. (2012). *The Founder's Dilemmas: Anticipating and Avoiding the Pitfalls That Can Sink a Startup*. Princeton University Press.

Member	Role	Status	Key Responsibilities
The Guardian (Partner)	Security & DevOps Lead	Equity Contracted	Security audit, CI/CD pipelines ¹ , infrastructure, Edge Functions, disaster recovery
Legal Counsel	External Consultant	Advisory Equity / On-Demand	Hired strictly on-demand. Responsible for drafting T&Cs, merchant contracts, and ensuring local regulatory compliance prior to market entry. Billed as OPEX.

Source : Author's elaboration

The two technical partners were chosen because their skills do not overlap. The Builder handles everything the user sees and interacts with: the mobile app, the merchant dashboard, and the interface logic. The Guardian handles everything running in the background: server architecture, security, and deployment. Keeping these two tracks separate means neither one slows the other down.

At the same time, the Legal Counsel works to reduce legal risk by drafting the first merchant agreements and making sure the company meets local regulatory requirements. Year 0 ends when the platform works reliably under real conditions and is legally cleared to enter the market, with no outstanding financial obligations.

B. Year 1: Commercial Launch Year (Market Launch Month 1 to Month 12)

Year 1 corresponds to the first year of commercial operations and is not a continuation of the calendar timeline from Year 0. It begins at Market Launch Month 1, the date on which the platform is made available to paying merchants. This year is structured into two successive

¹ Humble, J., & Farley, D. (2010). *Continuous Delivery: Reliable Software Releases through Build, Test, and Deployment Automation*. Addison-Wesley.

phases, both working toward a single operational objective: reaching 600 active paying merchants by the end of the year.

- **Phase 1: Full-Time Core Team.** When the company starts operating, the three founders stop working for free and begin receiving salaries as full-time employees. The main founder takes on the role of CEO and CTO, handling both the company's direction and its technical side. Two other founders join as CMO and COO, one focused on bringing in users and the other on keeping daily operations running smoothly. Two technical partners also join to build and maintain the full ecosystem: a web app, a mobile app, and the Backend-as-a-Service layer that connects them. One partner leads the development and design across both platforms, while the other manages the servers, security, and infrastructure that keep everything running. To keep the company legally protected, an external lawyer handles regulatory requirements and contracts. This setup lets the core team focus on what they do best without getting pulled into legal or administrative work.

Table N°05 Phase 1: Core Team at Commercial Launch (Year 1)

Member	Role	Status	Key Responsibilities
CEO & CTO / General Manager	Strategic Lead, Product Owner & Full-Stack Architect	Full-time, salaried	Merchant partnerships, investor relations, CNRC/ANDI compliance, defining the platform's technical vision, and high-level technical decision-making.
CMO / Marketing Lead	Growth & Brand Strategy	Full-time, salaried	B2B & B2C marketing campaigns, brand positioning, user acquisition/retention, content strategy, and public relations.

Member	Role	Status	Key Responsibilities
COO / Growth Lead	Operations & Sales	Full-time, salaried	Merchant acquisition, onboarding, KPI tracking
The Builder (Partner)	Full-Stack App Developer	Equity Contracted	New features, frontend/mobile, UI/UX refinement
The Guardian (Partner)	Security & DevOps Lead	Equity Contracted	Infrastructure, security audits, CI/CD maintenance
Legal Counsel	Legal guidance and advice	External Consultant	Regulatory compliance, corporate governance, and contract advisory.

Source : Author's elaboration

This configuration reflects the minimum viable team structure¹ for a live SaaS platform. Each role addresses a function the business cannot operate without, and no position is added until the absence of that function creates a demonstrable gap in operations.

➤ **Phase 2: Part-Time and Freelance Operational Support.**

Once the core team is operational, three variable-cost roles are introduced to accelerate merchant acquisition. These are not permanent hires; their remuneration is tied to output rather than fixed headcount, which keeps the cost structure lean² during the commercial ramp-up period.

The Community Manager role is designed as a consolidated position. The same individual manages Fidialy's digital presence on a part-time basis and handles graphic design and video editing deliverables on a per-project freelance basis. This structure

¹ Mintzberg, H. (1979). *The Structuring of Organizations*. Prentice-Hall.

² Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Wiley.

ensures visual consistency across all merchant-facing and consumer-facing communications without the overhead of coordinating multiple separate vendors.

Table N°06 Phase 2: Part-Time and Freelance Roles (Year 1)

Role	Type	Source	Monthly Cost (DZD)
Field Sales Representative	Part-time freelance	University business students (UABT Algiers, USTHB Algiers)	15,000-20,000 + 2,000/merchant signed
Customer Support Agent	Part-time freelance	Bilingual student (Arabic/French), WhatsApp-native	10,000-15,000
Community Manager (+ Graphic Designer & Video Editor)	Part-time + Per-project freelance	Mostaq, Khamsat, university creative students	Graphic: 5,000-15,000/project Video: 5,000-20,000/project

Source : Author's elaboration

Phase 2 concludes when the company signs its 600 active paying merchant across Oran and Algiers, and the sales process has been sufficiently tested and documented to support national replication.

C. Year 2: Full-Time Scaling Phase

Year 2 marks the transition from a variable-cost staffing model to a stable full-time team. With recurring subscription revenue established and the business expanding into new provinces, the company has the financial basis to absorb permanent hires without placing pressure on operating margins. The hiring strategy favors internal promotion¹: most positions are filled by freelancers and interns who demonstrated performance during Year 1, reducing both recruitment costs and onboarding time.

¹ Bidwell, M. (2011). Paying More to Get Less: The Effects of External Hiring versus Internal Mobility. *Administrative Science Quarterly*, 56(3), 369–407.

Relative to the Year 1 structure, two roles are added to address scale-induced operational requirements: a DevOps and Cloud Engineer to manage infrastructure at the volume implied by 1,500 active POS terminals, and a Finance Controller to handle the accounting, reporting, and fiscal obligations associated with higher revenue volumes.

Table N°07 Full-Time Scaling Team (Year 2)

Role	Type	Monthly Cost (DZD)
Junior Flutter Developer	Full-time (promoted from intern pipeline)	40,000-60,000
Junior React Developer	Full-time (promoted from intern pipeline)	40,000-60,000
DevOps / Cloud Engineer	Full-time (open recruitment)	50,000-70,000
Field Sales Team Lead	Full-time (promoted from Phase 2 freelancer)	35,000-50,000
Additional Field Sales Reps (x2)	Part-time, commission-based	15,000-25,000 each
Finance Controller	Full-time (open recruitment)	50,000-70,000

Source : Author's elaboration

The shift to full-time employment in Year 2 is not an organizational formality. It reflects a deliberate decision to convert roles that proved operationally necessary in Year 1 into stable, accountable positions within the company's formal structure. Employees entering full-time roles in Year 2 already understand the product, the merchant base, and the internal processes, which shortens the time-to-productivity¹ for each hire.

This section made that connection concrete. The architecture is not just a technical diagram, it is the reason the customer experience works the way it does. The three-layer system,

¹ Bauer, T. N. (2010). *Onboarding New Employees: Maximizing Success*. SHRM Foundation.

the role design, the real-time data flow, the QR code at the register, the gamification logic, none of these are isolated decisions. They all point in the same direction: making every interaction feel simple for the customer while keeping full control on the merchant side. The technology stack and the hiring plan exist to keep that system running and growing. Together, these three dimensions, technical, experiential, and human, form the operational foundation of Fidialy.

Section 2: Financial Plan

A platform that is architecturally sound and operationally well-staffed must ultimately demonstrate its financial viability. This section translates the strategic, technical, and human frameworks developed in previous sections into a rigorous financial model over a five-year horizon. Importantly, while the initial Minimum Viable Product (MVP) was developed at zero capital cost through founder equity contributions, this financial plan specifically models the post-launch commercial operations and scaling expenditures. It sequentially examines the initial investment structure, operational expenditures, and revenue forecasts based on the SaaS subscription model. Furthermore, it details the projected income statements and balance sheets, ultimately evaluating key performance indicators—such as the Break-Even Point, Return on Investment, and Payback Period—to definitively assess the platform's capital efficiency and long-term sustainability.

2.1. Structure of Startup Costs and Forecasted Expenses (CAPEX & OPEX)

In financial management, Capital Expenditures (**CAPEX**) designate investments in long-lived assets capitalized on the balance sheet and systematically depreciated over their useful lives, while Operational Expenditures (**OPEX**) are recurring costs expensed in the period they are incurred.¹ For a SaaS startup, the distinction matters: CAPEX levels indicate how asset-heavy the model is, while OPEX trends reveal how efficiently operations are run. Fidialy's initial investment structure reflects both of these considerations.

Figure N°09 :Initial Investment and CAPEX Breakdown (in DZD)

¹ Brealey, R. A., Myers, S. C., & Allen, F. (2020). *Principles of Corporate Finance (13th ed.)*. McGraw-Hill Education.

FIDIALY — COST PROJECTIONS OPEX & CAPEX (DZD)					
DRIVER ASSUMPTIONS					
Server Cost / Active Client (DZD/yr)	500				
CAC — Cost / New Client (DZD)	800				
LINE ITEM	Year 1	Year 2	Year 3	Year 4	Year 5
I. PERSONNEL COSTS (→ TCR: Charges de Personnel)					
Gross Salaries	3,930,000	4,710,000	13,140,000	31,200,000	51,600,000
Employer CNAS (26%)	1,021,800	1,224,600	3,416,400	8,112,000	13,416,000
Personnel Subtotal	4,951,800	5,934,600	16,556,400	39,312,000	65,016,000
II. HARDWARE COGS (→ TCR: Achats Consommés Y4–Y5 only)					
Hardware Purchasing (35k/unit)	-	-	-	105,000,000	131,250,000
Hardware COGS Subtotal	-	-	-	105,000,000	131,250,000
III. CONSUMABLES (→ TCR: Achats Consommés +5% p.a.)					
Office Supplies	60,000	63,000	66,150	69,458	72,930
Cleaning Products	24,000	25,200	26,460	27,783	29,172
Consumables Subtotal	84,000	88,200	92,610	97,241	102,102
IV. OTHER OPERATING CHARGES (→ TCR: Autres Charges Externes +8% p.a.)					
Office Rent	240,000	259,200	279,936	302,331	326,517
Water	6,000	6,480	6,998	7,558	8,163
Gas & Electricity	20,000	21,600	23,328	25,194	27,210
Landline Phone	6,000	6,480	6,998	7,558	8,163
Internet	60,000	64,800	69,984	75,583	81,629
Software Subscriptions	60,000	64,800	69,984	75,583	81,629
Cloud Hosting (Active Clients × 500)	300,000	750,000	7,500,000	37,500,000	75,000,000
Marketing (New Clients × CAC 800)	480,000	720,000	10,800,000	48,000,000	60,000,000
SMS Provider Cost	945,000	2,512,500	23,625,000	91,875,000	157,500,000
Email Provider Cost	300,000	800,000	8,000,000	30,000,000	50,000,000
Other OpEx Subtotal	2,417,000	5,205,860	50,382,228	207,868,807	343,033,311
TOTAL OPERATING COSTS	7,452,800	11,228,660	67,031,238	352,278,048	539,401,413
V. CAPEX (Balance Sheet Only — NOT expensed through P&L)					
Development Costs Capex (3yr amort.)	-	-	-	-	-
Equipment & Furniture Capex (5yr dep.)	550,000	-	220,000	5,000,000	5,000,000
Total Capex	550,000	-	220,000	5,000,000	5,000,000

Source: Author's elaboration based on Fidelity Financial Projections (2026).

Fidelity's total founding capital of 5,551,000 DZD covers a Year-1 CAPEX of 550,000 DZD, representing approximately 10% of equity. Crucially, capitalized software development costs are recorded at 0 DZD, as the pre-launch Minimum Viable Product (MVP) was achieved without capital expenditure due to the founders contributing their technical labor as an equity-equivalent. Consequently, the entirety of the Year-1 CAPEX is allocated to tangible equipment and office furniture, depreciated over five years. By eliminating the software capitalization, the equivalent 340,000 DZD is preserved as liquid working capital to support Year-1 commercial operations. CAPEX is minimized in Years 2 and 3 (0 DZD and 220,000 DZD, respectively) before rising to 5,000,000 DZD in Years 4 and 5, when the model shifts to direct POS hardware sales. The 5,000,000 DZD annual equipment investment is deferred until revenues can absorb it without creating liquidity pressure.¹

¹ Cooper, R. G. (2008). Perspective: The Stage-Gate® Idea-to-Launch Process. *Journal of Product Innovation Management*, 25(3), 213–232.

Year-1 OPEX totals 7,452,800 DZD, with personnel costs accounting for the largest share (4,951,800 DZD; 66.4%). The founding team consists of four employees, with total gross salaries amounting to 3,930,000 DZD, plus employer CNAS contributions at the statutory 26% rate (1,021,800 DZD). External services (2,417,000 DZD) cover cloud hosting (300,000 DZD at 500 DZD/active client), marketing CAC (480,000 DZD at 800 DZD/new client), SMS (945,000 DZD), email (300,000 DZD), and fixed overhead including rent, utilities, internet, and software subscriptions (392,000 DZD). Fixed overhead grows at 8% per year and consumables at 5%, in line with current Algerian inflation rates. With a CAC of 800 DZD per client against an average first-year revenue of approximately 43,993 DZD per client, the ratio compares favorably with international SaaS benchmarks.

2.2. Revenue Forecasts, Commercial Performance, and SaaS Scalability

2.2.1 Theoretical Framework of Scalability

Scalability refers to a business's ability to grow revenues faster than costs, producing wider margins as volume increases. Software platforms benefit most from this dynamic because the marginal cost of adding a user is near zero: the infrastructure already exists, and incremental usage adds only sub-linear cloud costs.¹ Research on platform businesses shows that this separation of revenue growth from cost growth explains the valuation premium that software companies command over traditional firms.² Near-zero marginal costs allow revenue to rise steeply while cost curves stay relatively flat, widening margins over time.³ In SaaS, the subscription model reinforces this through Annual Recurring Revenue (ARR): each retained subscriber contributes a predictable income stream without requiring further acquisition spending.⁴ When revenue from upselling existing customers exceeds losses from churn, the subscriber base compounds over time, becoming a durable source of long-term value.⁵

2.2.2 Fidialy's Scalability Architecture

Fidialy's commercial model is designed to capture this scalability within Algeria's developing retail digitization market. Cloud infrastructure, the main variable cost, is priced at a fixed 500 DZD per active client per year. As the active client base grows from 600 (Year 1) to 150,000

¹ Parker, G. G., Van Alstyne, M. W., & Choudary, S. P. (2016). *Platform Revolution*. W. W. Norton & Company.

² Eisenmann, T., Parker, G., & Van Alstyne, M. W. (2006). Strategies for Two-Sided Markets. *Harvard Business Review*, 84(10), 92–101.

³ Anderson, C. (2009). *Free: The Future of a Radical Price*. Hyperion.

⁴ Skok, D. (2013). *SaaS Metrics 2.0 - A Guide to Measuring and Improving What Matters*. For Entrepreneurs Blog.

⁵ Tunguz, T., & Bien, F. (2016). *Winning with Data*. Wiley.

(Year 5), cloud costs rise from 300,000 DZD to 75,000,000 DZD, a 250-fold increase. Over the same period, revenues grow 189-fold but also include streams such as subscriptions, setup fees, training, and SMS packs that do not scale linearly with client count, widening gross margins as the business grows. The four-tier subscription structure (SOLO, PLUS, GROWTH, and ULTIMATE) serves merchants across different sizes and stages, with entry-tier subscriptions providing volume and premium tiers generating higher ARR per client. ULTIMATE and GROWTH subscribers, projected at 30 combined in Year 1 and 3,000 by Year 3, produce outsized per-head revenue and offer a natural upselling progression as merchants expand their platform use. A CAC of 800 DZD against approximately 43,993 DZD in average first-year revenue per client reflects sound unit economics.

figureN°10: Forecasted Revenue and Active Subscribers Commercial Matrix

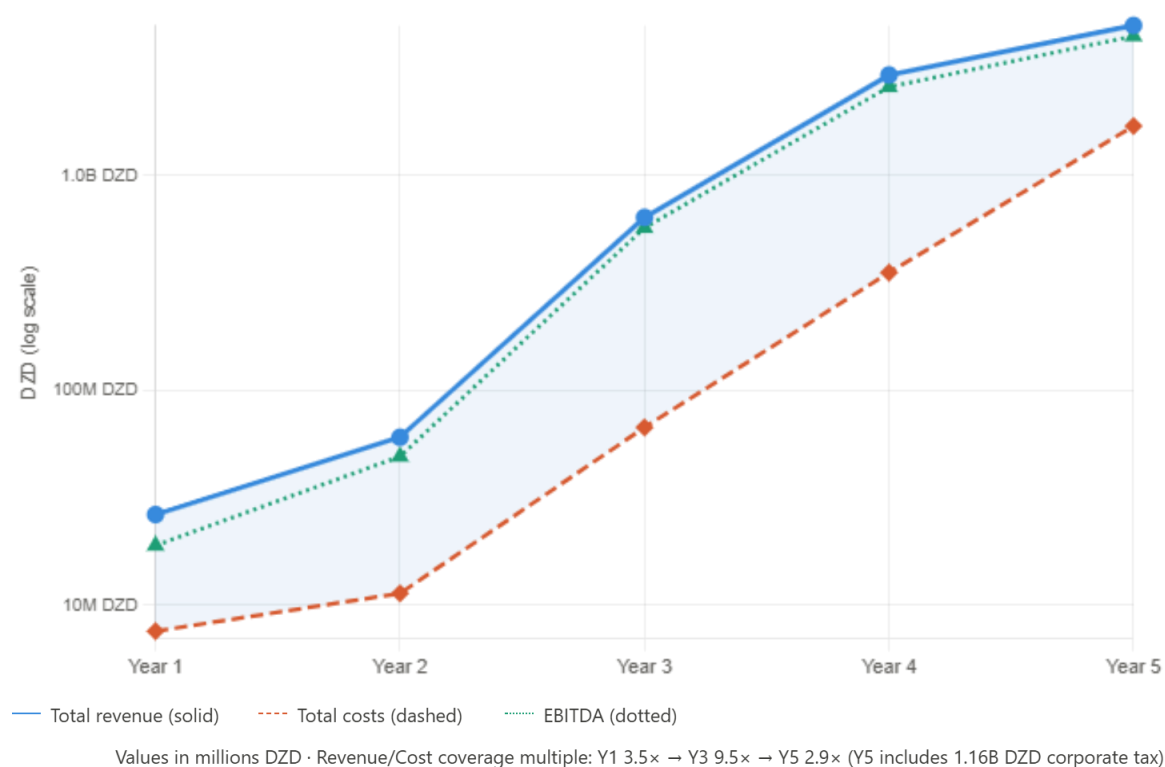
FIDIALY — REVENUE PROJECTIONS 5-Year Plan (DZD)					
LINE ITEM	Year 1	Year 2	Year 3	Year 4	Year 5
A. SAAS SUBSCRIPTIONS					
SOLO Revenue	8,043,840	20,109,600	215,460,000	1,149,120,000	2,384,424,000
└ Active Clients	420	1,050	11,250	60,000	124,500
PLUS Revenue	5,896,800	14,742,000	117,936,000	501,228,000	884,520,000
└ Active Clients	150	375	3,000	12,750	22,500
GROWTH Revenue	2,041,200	4,536,000	45,360,000	141,750,000	192,780,000
└ Active Clients	27	60	600	1,875	2,550
ULTIMATE Revenue	604,800	3,024,000	30,240,000	75,600,000	90,720,000
└ Active Clients	3	15	150	375	450
SaaS Subtotal	16,586,640	42,411,600	408,996,000	1,867,698,000	3,552,444,000
B. SETUP & ONBOARDING FEES					
Setup Fee / Client (DZD)	10,000	10,000	10,000	10,000	10,000
New Clients	600	900	13,500	60,000	75,000
Setup Revenue	6,000,000	9,000,000	135,000,000	600,000,000	750,000,000
C. ONSITE TRAINING					
SOLO Training	168,000	252,000	4,080,000	19,500,000	25,800,000
PLUS Training	240,000	360,000	4,200,000	15,600,000	15,600,000
GROWTH Training	210,000	255,000	4,050,000	9,570,000	5,070,000
ULTIMATE Training	50,000	250,000	2,700,000	4,500,000	1,500,000
Training Subtotal	668,000	1,117,000	15,030,000	49,170,000	47,970,000
D. SMS & EMAIL PACKS					
SMS Packs	1,701,000	4,522,500	42,525,000	165,375,000	283,500,000
Email Packs	1,050,000	2,800,000	28,000,000	105,000,000	175,000,000
SMS & Email Subtotal	2,751,000	7,322,500	70,525,000	270,375,000	458,500,000
E. HARDWARE					
Commission Revenue (Y1–Y3)	390,000	585,000	8,775,000	-	-
Direct Sale Revenue (Y4–Y5)	-	-	-	150,000,000	187,500,000
Hardware Subtotal	390,000	585,000	8,775,000	150,000,000	187,500,000
TOTAL REVENUE	26,395,640	60,436,100	638,326,000	2,937,243,000	4,996,414,000
KEY DRIVERS (referenced by Costs sheet)					
Total Active Clients (Cumulative)	600	1,500	15,000	75,000	150,000
Total New Clients / Year	600	900	13,500	60,000	75,000

Source: Author's elaboration based on Fidialy Financial Projections (2026).

Total revenues grow from 26,395,640 DZD (Year 1) to 60,436,100 DZD (Year 2), 638,326,000 DZD (Year 3), 2,937,243,000 DZD (Year 4), and 4,996,414,000 DZD (Year 5), a 189-fold increase over the five-year horizon. The sharpest growth occurs at Year 3 (+956.1%), where 13,500 new client onboardings push SaaS subscriptions from 42,411,600 DZD to 408,996,000 DZD, marking the shift from early market seeding to active penetration. SaaS subscriptions are

the dominant revenue stream, rising from 62.8% of total revenue in Year 1 to 71.1% in Year 5. Setup fees (22.7% of Year-1 revenue), SMS/email packs (10.4%), and training (2.5%) diversify the revenue mix. Hardware revenue shifts from a commission model in Years 1-3 to direct POS terminal sales of 150,000,000 DZD (Year 4) and 187,500,000 DZD (Year 5). Algeria's addressable retail SaaS market is estimated at 300,000 to 500,000 formally registered, digitally connected merchants, placing the Year-5 target of 150,000 clients at a 30-50% penetration rate, comparable to similar SaaS deployments in Tunisia and Egypt.

Figure N°11: Fidialy's 5-Year Financial Scalability



Source: Author's elaboration based on Fidialy Financial Projections (2026).

Revenue scales by approximately 190x over the five-year horizon, while total costs grow at a markedly slower rate, consistent with the operating leverage typical of SaaS models. The revenue-to-cost coverage ratio rises from 3.5x in Year 1 to 9.5x in Year 3, then falls to 2.9x in Year 5. This decline does not indicate a deterioration in operational efficiency. It results from the first-time application of the 26% corporate tax (IBS) in Year 5, following the expiry of the four-year startup tax exemption. Excluding this fiscal effect, EBITDA margin remains close to 89% throughout Year 5, confirming that the underlying unit economics, not the tax treatment, drive the model's scalability.

2.3. Forecasted Income Statement :

The Forecasted Income Statement (TCR) under Algeria's **Financial Accounting System (SCF)** established by Executive Decree No. 08-156 of May 2008, is the main tool for assessing long-term economic sustainability. In financial valuation,¹ a projected TCR over a multi-year horizon shows whether revenue growth translates into sustained profitability or simply into higher costs. For Fidialy, it also has direct fiscal relevance: the **Corporate Income Tax (IBS)** at 26% is calculated on the TCR's taxable result, subject to the ANDI startup exemption covering Years 1–4.

Figure N°12: Forecasted Income Statement

FIDIALY — INCOME STATEMENT (TCR — Tableau des Comptes de Résultats) (DZD)					
LINE ITEM	Year 1	Year 2	Year 3	Year 4	Year 5
I. REVENUE (Ventes et Produits Annexes)					
Sales Revenue	26,395,640	60,436,100	638,326,000	2,937,243,000	4,996,414,000
Total Production	26,395,640	60,436,100	638,326,000	2,937,243,000	4,996,414,000
II. OPERATING CONSUMPTION (Consommation de l'Exercice)					
Purchases Consumed (COGS + Consumables)	84,000	88,200	92,610	105,097,241	131,352,102
External Services & Other OpEx	2,417,000	5,205,860	50,382,228	207,868,807	343,033,311
Total Consumption	2,501,000	5,294,060	50,474,838	312,966,048	474,385,413
VALUE ADDED	23,894,640	55,142,040	587,851,162	2,624,276,952	4,522,028,587
III. PERSONNEL & TAXES (Charges de Personnel et Impôts)					
Payroll (Gross + Employer CNAS)	4,951,800	5,934,600	16,556,400	39,312,000	65,016,000
Taxes & Levies (excl. IBS)	-	-	-	-	-
EBITDA	18,942,840	49,207,440	571,294,762	2,584,964,952	4,457,012,587
IV. DEPRECIATION & AMORTISATION					
Equipment Depreciation (SL, 5yr)	110,000	110,000	154,000	1,154,000	2,154,000
Development Amortisation (SL, 3yr)	-	-	-	-	-
Total D&A	110,000	110,000	154,000	1,154,000	2,154,000
EBIT (Operating Result)	18,832,840	49,097,440	571,140,762	2,583,810,952	4,454,858,587
V. FINANCIAL RESULT (100% Equity — Zero Debt)					
Financial Income	-	-	-	-	-
Interest Expense	-	-	-	-	-
Net Financial Result	-	-	-	-	-
EBT (Result Before Tax)	18,832,840	49,097,440	571,140,762	2,583,810,952	4,454,858,587
VI. CORPORATE TAX (IBS — Impôt sur les Bénéfices des Sociétés)					
IBS Rate (0% Y1–Y4 26% Y5)	-	-	-	-	26.0%
IBS Tax	-	-	-	-	1,158,263,233
Deferred Tax	-	-	-	-	-
NET RESULT	18,832,840	49,097,440	571,140,762	2,583,810,952	3,296,595,354
KEY PERFORMANCE INDICATORS					
Net Margin %	71.3%	81.2%	89.5%	88.0%	66.0%
EBITDA Margin %	71.8%	81.4%	89.5%	88.0%	89.2%
EBIT Margin %	71.3%	81.2%	89.5%	88.0%	89.2%
Effective Tax Rate %	-	-	-	-	26.0%
Cumulative Net Profit	18,832,840	67,930,280	639,071,042	3,222,881,994	6,519,477,348

Source: Author's elaboration based on Fidialy Financial Projections (2026).

The TCR shows that Fidialy is profitable from Year 1, setting it apart from most SaaS startups that operate at a loss during the subscriber acquisition phase. Year-1 net profit of 18,832,840 DZD on revenues of 26,395,640 DZD yields a strong 71.3% net margin. This initial profitability is structurally bolstered by the zero-cost MVP strategy, which eliminates software

¹ Penman, S. H. (2013). *Financial Statement Analysis and Security Valuation* (5th ed.). McGraw-Hill Education.

amortization expenses from the Income Statement, leaving only 110,000 DZD in tangible equipment depreciation. Value Added reaches 23,894,640 DZD (90.5% of Year-1 revenue), driven by low material consumption (84,000 DZD) and modest external services costs (2,417,000 DZD), both typical of a software business where most revenue flows through to gross profit. By Year 5, Value Added reaches 4,522,028,587 DZD, with Total Consumption holding at just 9.5% of revenue.

EBITDA margins of 71.8% (Y1), 81.4% (Y2), 89.5% (Y3), 88.0% (Y4), and 89.2% (Y5) reflect growing operating leverage as fixed overhead becomes a smaller share of rising revenues. The modest Year-4 dip to 88.0% follows the introduction of approximately 105,000,000 DZD in hardware COGS after the shift to direct POS terminal sales, with margins recovering to 89.2% in Year 5. Personnel grows from 4 employees (Year 1) to 62 (Year 5), a 15.5-fold increase, while revenues grow 189-fold, improving revenue per employee from 6.6M DZD to 80.6M DZD.¹ The ANDI tax exemption for Years 1–4 retains the full 571,140,762 DZD Year-3 net profit within the company; without it, approximately 148,496,598 DZD would have gone to tax. From Year 5, IBS at 26% applies in full, producing a tax charge of 1,158,263,233 DZD and leaving a net margin of 66.0%. Cumulative five-year net profit totals 6,519,477,348 DZD, confirming the highly cash-generative nature of the platform at scale.

2.4. Projected Balance Sheet

The Projected Balance Sheet records the company's assets, liabilities, and equity at the end of each fiscal year, providing a basis for assessing solvency, capital structure, and liquidity. In corporate finance,² it shows whether assets are financed appropriately and whether the capital structure creates liquidity or leverage risk. Fidialy's opening balance sheet reflects conservative financial choices from the outset.

figureN°13 Projected Opening Balance Sheet

¹ Skok, D. (2013), *Op. cit.* (2013),

² Vernimmen, P., Quiry, P., & Le Fur, Y. (2022). *Corporate Finance: Theory and Practice* (6th ed.). Wiley.

FIDIALY — BALANCE SHEET (Bilan Prévisionnel) (DZD)					
LINE ITEM	Year 1	Year 2	Year 3	Year 4	Year 5
ASSETS (ACTIF)					
NON-CURRENT ASSETS (Actif Non Courant)					
Intangible Assets — Gross (Dev. Costs)	-	-	-	-	-
(-) Accumulated Amortisation	-	-	-	-	-
Net Intangible Assets	-	-	-	-	-
Tangible Assets — Gross (Equip. & Furniture)	550,000	550,000	770,000	5,770,000	10,770,000
(-) Accumulated Depreciation	110,000	220,000	374,000	1,528,000	3,682,000
Net Tangible Assets	440,000	330,000	396,000	4,242,000	7,088,000
Financial Assets	-	-	-	-	-
TOTAL NON-CURRENT ASSETS	440,000	330,000	396,000	4,242,000	7,088,000
CURRENT ASSETS (Actif Courant)					
Inventory — POS Hardware Stock	-	-	-	10,500,000	13,125,000
Trade Receivables (10% Revenue, ~36d DSO)	2,639,564	6,043,610	63,832,600	293,724,300	499,641,400
Other Debtors & Tax Receivables	-	-	-	-	-
Cash & Equivalents	21,581,826	67,468,593	582,331,864	2,959,966,694	7,223,437,181
TOTAL CURRENT ASSETS	24,221,390	73,512,203	646,164,464	3,264,190,994	7,736,203,581
TOTAL ASSETS	24,661,390	73,842,203	646,560,464	3,268,432,994	7,743,291,581
LIABILITIES & EQUITY (PASSIF)					
EQUITY (Capitaux Propres)					
Share Capital	5,551,000	5,551,000	5,551,000	5,551,000	5,551,000
Retained Earnings b/f	-	18,832,840	67,930,280	639,071,042	3,222,881,994
Net Profit — Current Year	18,832,840	49,097,440	571,140,762	2,583,810,952	3,296,595,354
TOTAL EQUITY	24,383,840	73,481,280	644,622,042	3,228,432,994	6,525,028,348
NON-CURRENT LIABILITIES (100% Equity — Zero Debt)					
Long-Term Borrowings	-	-	-	-	-
TOTAL NON-CURRENT LIABILITIES	-	-	-	-	-
CURRENT LIABILITIES (Passifs Courants)					
Supplier Payables	277,550	360,923	1,938,422	40,000,000	60,000,000
IBS Tax Payable	-	-	-	-	1,158,263,233
Other Current Liabilities	-	-	-	-	-
TOTAL CURRENT LIABILITIES	277,550	360,923	1,938,422	40,000,000	1,218,263,233
TOTAL LIABILITIES & EQUITY	24,661,390	73,842,203	646,560,464	3,268,432,994	7,743,291,581
BALANCE CHECK (Assets – L&E = 0)	-	-	-	-	-

Source: Author's elaboration based on Fidialy Financial Projections (2026).

The Year-1 balance sheet is financed almost entirely through equity. Total Assets of 24,661,390 DZD are covered by 24,383,840 DZD in Total Equity against only 277,550 DZD in Current Liabilities, producing a near-zero debt-to-equity ratio. Notably, the Net Intangible Assets line remains strictly at zero, a direct result of the zero-cost MVP strategy where software development was capitalized through founder equity rather than cash expenditure. The decision to rely on 100% equity financing with no long-term debt throughout the five-year plan eliminates interest expense, so EBIT equals EBT in every period, and removes debt service risk during the growth phase. Current Assets (24,221,390 DZD; 98.2% of Total Assets) are led by Cash and Equivalents of 21,581,826 DZD (87.5% of Total Assets), reflecting the highly liquid and cash-generative nature of SaaS subscription billing. Trade Receivables of 2,639,564 DZD (10% of revenues, approximately 36-day DSO) remain modest, consistent with prepayment-oriented billing practices.

Total Equity grows from 24,383,840 DZD (Year 1) to 6,525,028,348 DZD (Year 5), entirely through retained earnings, with no further equity injections beyond the initial 5,551,000 DZD

share capital. By Year 5, Cash and Equivalents reach 7,223,437,181 DZD, reflecting the platform's strong cash generation at scale.

2.5. Financial Profitability and Performance Indicators

Financial performance indicators translate multi-statement analysis into a small number of comparable metrics. The three indicators discussed below address the core questions relevant to startup evaluation: the revenue level at which the business covers its costs, how efficiently it converts invested capital into profit, and how long it takes to return the initial investment.

2.5.1 Break-Even Point

The Break-Even Point (BEP) is the revenue level at which total revenues equal total costs, producing a zero net operating result.¹ It is calculated using the contribution margin method: Fixed Costs divided by the Contribution Margin Ratio, where the Contribution Margin Ratio equals 1 minus the Variable Cost Ratio.

Table N°08 : Break-even Point and Chart

Parameter	Value (DZD / Units)	Basis
Annual Fixed Costs (Year 1)	5,427,800 DZD	Personnel + Fixed Overhead + Consumables
— Personnel Subtotal	4,951,800 DZD	Gross Salaries + Employer CNAS (26%)
— Fixed Overhead	392,000 DZD	Rent, Utilities, Internet, Software Subscriptions
— Consumables	84,000 DZD	Office Supplies & Cleaning Products
Annual Variable Costs (Year 1)	2,025,000 DZD	Cloud + Marketing CAC + SMS + Email Providers
Total Revenue (Year 1)	26,395,640 DZD	All revenue streams combined
Variable Cost Ratio (VCR)	7.67%	Variable Costs ÷ Total Revenue

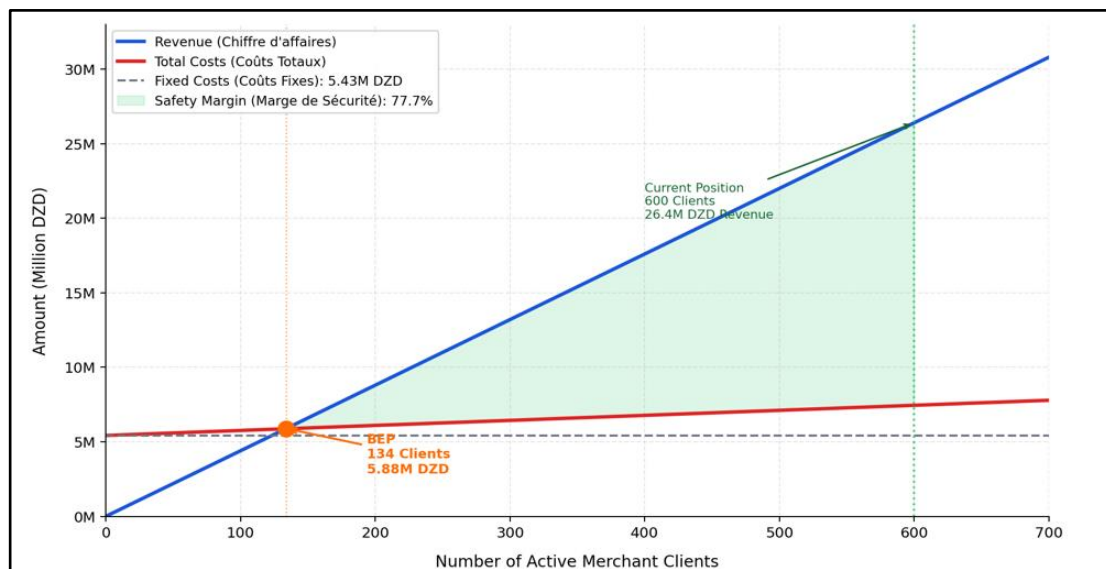
¹ Ibid.

Contribution Margin Ratio (CMR)	92.33%	$1 - \text{VCR}$
BREAK-EVEN REVENUE	$\approx 5,879,000 \text{ DZD}$	$\text{Fixed Costs} \div \text{CMR}$
Average Revenue per Active Client (Y1)	$\approx 43,993 \text{ DZD}$	$\text{Total Revenue} \div 600 \text{ Active Clients}$
BREAK-EVEN NUMBER OF CLIENTS	$\approx 134 \text{ Merchants}$	$\text{BEP Revenue} \div \text{Avg Revenue per Client}$
Safety Margin — Revenue (Year 1)	$\approx 20,516,640 \text{ DZD}$	$\text{Actual Revenue} - \text{BEP Revenue}$
Safety Margin Ratio (Year 1)	$\approx 77.7\%$	$\text{Safety Margin} \div \text{Actual Revenue}$

Source: Author's elaboration based on Fidialy Financial Projections (2026).

With annual fixed costs of 5,427,800 DZD and a Contribution Margin Ratio of 92.33%, the Break-Even Revenue is approximately 5,879,000 DZD, corresponding to around 134 active merchant subscribers. Fidialy's Year-1 subscriber base of 600 clients is 4.5 times the break-even level, producing a safety margin ratio of 77.7%. In practical terms, revenues could fall by nearly four-fifths before the business reaches its break-even point, providing a substantial buffer against delayed adoption or macroeconomic disruptions. Fidialy clears its break-even threshold efficiently in Year 1, generating a net operating result of 18,832,840 DZD.

Figure N°14 : Break-Even Chart — Revenue vs. Total Costs (Fidialy Year 1)



Source : Author's elaboration

2.5.2 Return on Investment (ROI)

The Return on Investment (ROI), or Taux de Rentabilité des Investissements, measures net profit as a percentage of total capital invested. It expresses how much return is generated for each unit of capital deployed.¹

Table N°09 : Return on Investment (ROI) Metrics

Period	Net Profit (DZD)	Initial Investment (DZD)	ROI (%)
Year 1	18,832,840	5,551,000	339.3%
Year 2 (Cumulative)	67,930,280	5,551,000	1,223.7%
Year 3 (Cumulative)	639,071,042	5,551,000	11,512.7%
Year 4 (Cumulative)	3,222,881,994	5,551,000	58,059.5%
Year 5 (Cumulative)	6,519,477,348	5,551,000	117,446.9%

Source: Author's elaboration based on Fidialy Financial Projections (2026).

The Year-1 ROI of 339.3% (18,832,840 DZD net profit divided by 5,551,000 DZD initial investment) means the business returns more than three times its founding capital in the first twelve months. This result follows from three characteristics of the SaaS model: low initial

¹ Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2019). *Fundamentals of Corporate Finance* (12th ed.). McGraw-Hill Education.

capital requirements (5,551,000 DZD, given minimal physical infrastructure), near-zero COGS, and a multi-stream subscription structure that starts generating ARR from the first onboarding cohort. By Year 2, cumulative ROI reached 1,223.7% (67,930,280 DZD), and by Year 3, 11,512.7%, driven by the +956% revenue surge. The five-year cumulative ROI of 117,447% reflects a total net profit of 6,519,477,348 DZD against the original 5,551,000 DZD. Similar ROI patterns have been documented in early-stage SaaS companies in Tunisia, Egypt, and Nigeria, where low starting capital combined with strong ARPU produces high capital efficiency in the early growth years.

2.5.3 Payback Period

The Payback Period measures how long it takes for cumulative net cash flows to recover the initial capital outlay.¹ It is particularly relevant in uncertain environments, where recovering invested capital quickly reduces financial exposure.

Table N°10 : Payback Period Timeline

Month	Cumulative Net Profit (DZD)	Status vs. Investment (DZD 5,551,000)
Month 1	≈ 1,569,403	– 3,981,597
Month 2	≈ 3,138,807	– 2,412,193
Month 3	≈ 4,708,210	– 842,790
Month ~3.5 (Payback Point)	≈ 5,551,000	Investment Fully Recovered
Month 6	≈ 9,416,420	+ 3,865,420 above investment
End Year 1 (Month 12)	18,832,840	+ 13,281,840 above investment
End Year 2	67,930,280	+ 62,379,280 above investment

Source: Author's elaboration based on Fidialy Financial Projections (2026).

The Payback Period for Fidialy is approximately 3.5 months (5,551,000 DZD divided by 18,832,840 DZD / 12 = 3.54 months). Against typical benchmarks of 3 to 5 years for

¹ Berk, J., & DeMarzo, P. (2020). *Corporate Finance* (5th ed.). Pearson Education.

technology ventures in developed markets,¹ and 2 to 3 years for emerging-market investments, this is well below the standard range. In practical terms, the founding capital is recovered before the end of the first quarter; all profits generated thereafter represent returns above the initial investment, eliminating the period of capital-at-risk that most startups face. Taken together with the 339.3% Year-1 ROI and the 77.7% break-even safety margin, the Payback Period reflects a highly capital-efficient financial structure perfectly suited to the conditions of the Algerian digital economy.

The financial projections definitively validate the economic viability and capital efficiency of the Fidialy SaaS platform. Driven by a lean "Zero-Cost MVP" strategy, the project drastically minimizes early financial risk, achieving a rapid payback period of 3.5 months and breaking even with just 134 active merchants. Furthermore, the model demonstrates true hyperscalability: as revenues grow exponentially over the five-year horizon, sub-linear operational costs ensure widening profit margins and strong, debt-free cash flows.

¹ Vernimmen, P., Quiry, P., & Le Fur, Y. (2022), *Op. cit.* (2022),.

Section 3: Field Validation of the Prototype

To empirically validate the preceding theoretical frameworks, this section evaluates the platform's viability across four core domains. First, it presents the functional architecture of the Fidialy Minimum Viable Product (MVP). Second and third, it assesses market receptivity through dual empirical surveys targeted at B2B merchants and B2C end customers. Finally, it outlines the legal and regulatory frameworks governing the platform's operational deployment.

3.1. B2B Merchant Survey

1. Field Interview Context & Methodology

Face-to-face, semi-structured interviews with fifty (50) Algerian SMEs captured nuanced operational frictions frequently obscured by standard quantitative surveys. Robust market representativeness was established through:

- **Sectoral Diversity:** Five retail and food-service classifications (supermarkets, neighborhood groceries, warehouses, fast-food, and coffee shops).
- **Geographic Scope:** Six provinces (Algiers, Oran, Tlemcen, Constantine, Setif, and El Oued), effectively bridging coastal, interior, and Saharan commercial dynamics.
- **Thematic Focus:** Three Fidialy-aligned axes: (1) Technical Infrastructure & Inventory, (2) Customer Retention Strategies, and (3) Digital Adoption Readiness & Economic Modeling.

2. Interview Analysis

Axis 1: Technical Infrastructure & Inventory Management (POS & Inventory)

Question 1: What system currently manages your sales transactions and daily inventory?

- **Objective:** Establish a technological maturity baseline to critically evaluate product-market fit for Fidialy's integrated POS and inventory module.
- **Majority Answer & Strategic Insight:** Data indicates that 78% of sampled merchants rely on analogue management techniques, including handwritten ledgers, fragmented spreadsheets, or informal memorization. While certain supermarkets utilize legacy point-of-sale terminals, these isolated infrastructures generally lack real-time supply chain integration. This technological gap frequently leads to unanticipated stockouts and unmonitored product expirations. Because these operational inefficiencies often become apparent at the point of consumer demand, they result in direct and preventable revenue losses.

Question 2: Do you experience financial losses from stockouts, expired merchandise, or inventory errors?

- **Objective:** Translate inventory mismanagement into quantifiable metrics, solidifying a Return on Investment (ROI) rationale for Fidialy's automation.
- **Majority Answer & Strategic Insight:** In the absence of robust tracking systems, the majority of surveyed merchants report recurring inventory-related losses as a de facto operational reality. Grocers experience frequent stockouts resulting in losses of 5,000–15,000 DZD per incident. Furthermore, cosmetic warehouses record quarterly losses exceeding 30,000 DZD attributed to expired goods stemming from inadequate FIFO protocols, while fast-food venues simultaneously manage ingredient waste and operational service disruptions.

Axis 2: Customer Retention & Loyalty Strategies (Loyalty & CRM)

Question 3: How are loyal patrons identified and formally rewarded?

- **Objective:** Expose the profound structural void between intuitive, memory-centric recognition and data-driven retention, empirically validating demand for Fidialy's CRM module.
- **Majority Answer & Strategic Insight:** Data indicates that 90% of surveyed respondents manage customer relations based solely on informal personal recognition, offering ad hoc benefits such as temporary credit. Without formalized loyalty frameworks, these enterprises face significant operational limitations; they are unable to proactively re-engage recurring customers, accurately quantify footfall, or preemptively identify customer churn before experiencing measurable revenue attrition.

Question 4: Is customer retention a prevailing competitive hurdle, and could a digital loyalty infrastructure serve as a strategic differentiator?

- **Objective:** Assess baseline retention awareness and platform receptivity to calibrate Fidialy's go-to-market messaging.
- **Majority Answer & Strategic Insight:** In highly competitive local markets, achieving product differentiation is increasingly difficult, establishing customer experience as the primary competitive differentiator. Notably, 70% of respondents expressed interest in the digital loyalty concept, indicating its potential to enhance the perceived professionalism of their operations. The hesitation among the remaining respondents is not primarily technological—given widespread smartphone penetration—but rather stems from cultural and infrastructural factors, specifically traditional interpersonal trust models and ongoing concerns regarding internet reliability.

Axis 3: Digital Adoption Readiness & Economic Model (Adoption & Pricing)

Question 5: What are your primary concerns regarding cloud-based platform adoption?

- **Objective:** Map friction points to guide critical product architecture and proactive go-to-market strategy.
- **Majority Answer & Strategic Insight:** Analysis revealed three primary adoption barriers. First, merchants cited technical complexity as a significant deterrent. Second, reliance on internet connectivity is perceived as a critical operational vulnerability, given that network instability could disrupt daily transactions. Finally, concerns regarding data security indicate a general skepticism of cloud infrastructure, an apprehension that appears driven more by variations in digital literacy than by objective technological risks.

Question 6: Which pricing structure is acceptable, and what is your maximum willingness to pay?

- **Objective:** Calibrate monetization strategy, psychological price ceilings, and ROI thresholds.
- **Majority Answer & Strategic Insight:** Data indicates that merchants generally oppose revenue-sharing models and ongoing administrative complexities, instead preferring transparent, annual subscription structures (24,000–60,000 DZD/year). Their willingness to invest is heavily contingent on demonstrable return on investment (ROI) and evidence of tangible loss mitigation. Furthermore, tiered pricing architectures are deemed acceptable, provided the baseline tier includes fundamental point-of-sale (POS) and inventory utilities, thereby situating the loyalty module as a value-added upgrade.

Synthesis & Final Takeaway

Pervasive analogue reliance exposes a vast strategic "white space" within the Algerian SME sector, empirically validating the necessity of the Fidialy platform across three core dimensions:

- **Operational:** Eradicates blind stockouts and financial hemorrhaging via real-time POS and inventory tracking.
- **Competitive:** Bridges the customer retention deficit through a digital loyalty program, engineering a decisive structural advantage.
- **Economic:** Endorses a tiered, annual subscription model where eliminated manual inefficiencies autonomously offset platform costs.

Final Takeaway: These merchant-validated metrics establish an unassailable empirical foundation for Fidelity's Go-To-Market strategy.

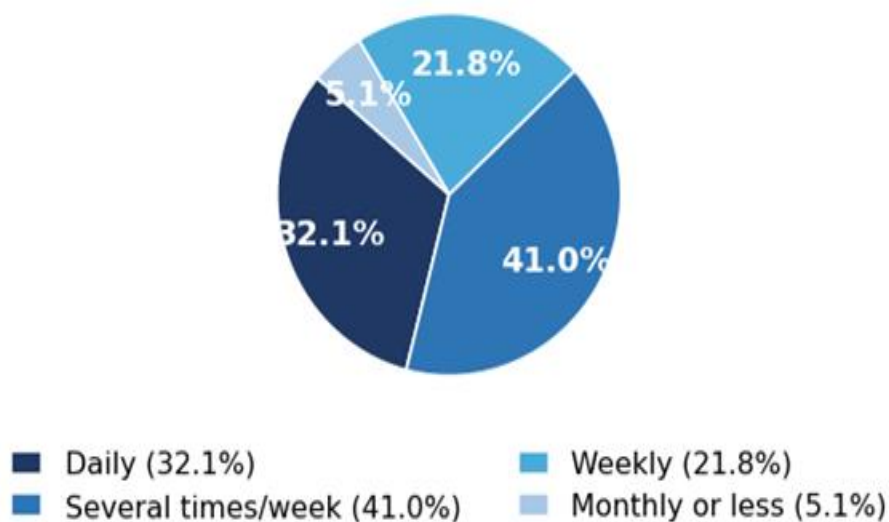
3.2. Survey/Questionnaire Targeted at "End Customers" (B2C):

Administered to a demographically diverse, statistically representative consumer cohort (N=215), this structured questionnaire isolates nine core inquiries explicitly validating Fidelity's product-market fit, digital readiness, and reward-mechanism design.

Axis 1 : Consumer Shopping Behavior & Store Selection

Q1. How frequently do you shop at the same grocery store?

Figure 15. Purchase Frequency (N=215)



Source: Author's elaboration:

Objective:

Determine baseline visit frequency to evaluate point-accumulation velocity and reward-cycle viability.

Strategic Insight :

Survey results indicate that 73.1% of respondents shop daily or multiple times per week. This high transactional frequency provides a solid foundation for points-based mechanics by naturally shortening reward redemption timelines. Concurrently, the data suggests that weekly shoppers (21.8%) can accrue actionable reward balances on a monthly basis, thereby substantiating Fidelity's earn-and-redeem framework across varying customer segments.

Q2. What criteria govern your selection of a primary grocery store?

Table N°11 : Store Selection Criteria (N=215)

Category	%
Product range	61.5%
Proximity	44.9%
Service quality	44.9%
Price / promotions	21.8%

Source: Author's elaboration

Objective:

Map the psychological levers dictating retail choice to assess loyalty consolidation potential.

Strategic Insight :

Data indicates that store preference is predominantly driven by product assortment (61.5%), proximity (44.9%), and service quality (44.9%), which notably outweigh price sensitivity (21.8%). These findings suggest that Fidialy can offer strategic differentiation without necessitating margin compression for merchants, thereby facilitating the transition of convenience-driven consumer behaviors into formalized, measurable retention structures.

Q3. What is your approximate monthly expenditure on food and consumer goods?

Table N°12.: Monthly Grocery Expenditure (N=215)

Category	%
10,000–20,000 DZD	39.7%
20,000–30,000 DZD	38.5%
Below 10,000 DZD	15.4%
Above 30,000 DZD	6.4%

Source: Author's elaboration

Objective:

quantify target retail monetary volume to establish addressable market magnitude and evaluate reward-funding feasibility.

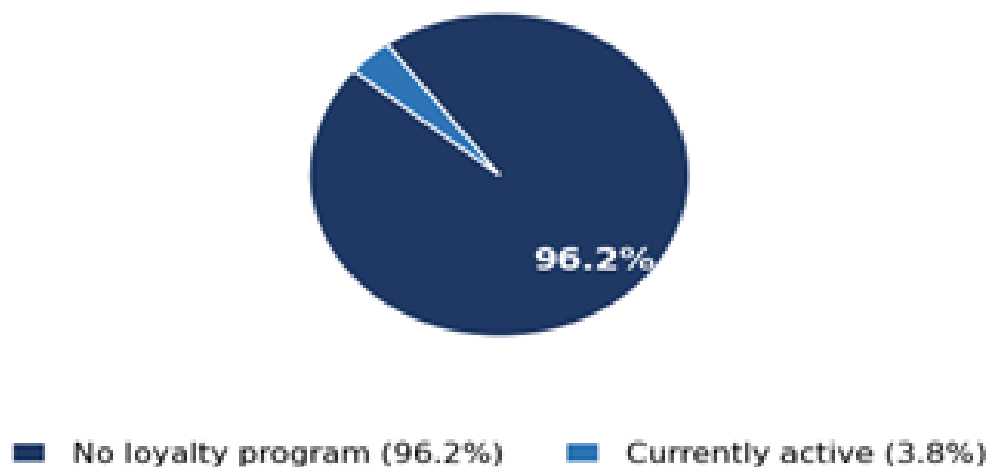
Strategic Insight :

Survey results indicate that 78.2% of consumers fall within the 10,000–30,000 DZD monthly expenditure range. This transaction volume suggests that merchants can accommodate a 1–3% cashback mechanism without experiencing significant margin compression. Concurrently, the consistent accumulation of consumer reward balances is projected to encourage regular engagement, thereby supporting the financial viability and sustainability of Fidialy's reward economics.

Axis 2 : Loyalty Program Awareness & Current Pain Points

Q4. Do you currently use a loyalty program or loyalty card at any grocery store?

Figure 16. Current Loyalty Program Usage (N=215)



Source: Author's elaboration

Objective:

Quantify existing loyalty solution penetration to definitively establish the competitive baseline.

Strategic Insight :

Data indicates a 96.2% non-adoption rate, suggesting that digital loyalty infrastructure in the Algerian grocery sector is largely undeveloped. Consequently, Fidialy enters the market primarily to address an unserved need rather than to displace existing competitors. This positioning may minimize the costs associated with consumer re-education and competitive friction.

Q5. Why have you never used a loyalty program at a grocery store? (Multiple responses)

Table N°13. Barriers to Loyalty Adoption (N=215)

Category	%
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No program was offered	89.3%
Unfamiliar with programs	18.7%
Don't understand how	12.0%
Card aversion	2.7%

Source: Author's elaboration

Objective:

Deconstruct non-adoption drivers, precisely isolating supply-side deficits from demand-side resistance

Strategic Insight :

Furthermore, 89.3% of the reported non-adoption appears to be supply-constrained; consumers are not actively resisting loyalty frameworks, but rather lack access to such offerings. This finding suggests a reduced need for extensive demand-generation campaigns. Instead, expanding the merchant network serves as a primary growth strategy, as partner acquisition is closely correlated with capturing the addressable consumer base.

Axis 3 : Loyalty Program Design Preferences

Q6. What would make a loyalty program important to you? (Multiple responses)

Table N°14: Loyalty Program Motivators (N=215)

Category	%
Save money / reduce expenditure	64.0%
Free products or gifts	48.0%
Exclusive member-only offers	44.0%
Feeling valued by the store	38.7%

Source: Author's elaboration

Objective:

Rank the motivational hierarchy of loyalty benefits to directly inform Fidialy's reward engine architecture and feature prioritization.

Strategic Insight:

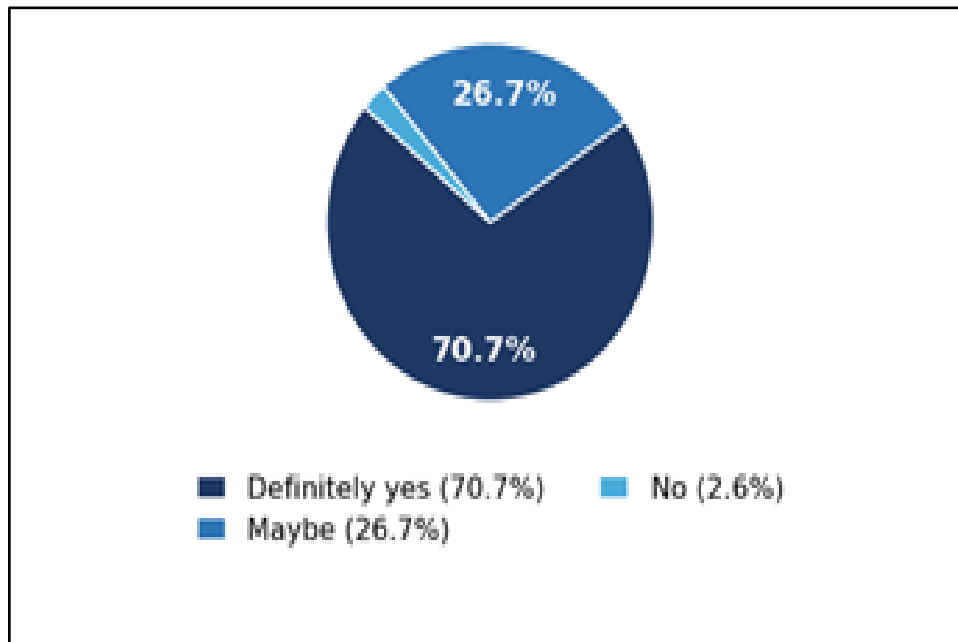
The strong preference for direct financial utility (64.0%) suggests that consumer loyalty in this context is largely transactional, which aligns well with Fidialy's core cashback mechanics.

Additionally, the interest in secondary drivers—such as free products (48.0%) and exclusive offers (44.0%)—supports the implementation of a tiered reward system where point accumulation provides access to varied benefits.

Axis 4 : Receptivity to Fidialy's Unified Digital Solution

Q7. A unified app consolidating all loyalty cards and personalized offers is proposed. Would you use it?

Figure 17. Adoption Intent — Unified Loyalty App (N=215)



Source: Author's elaboration

Objective:

Quantify adoption intent for Fidialy's core B2C value proposition: a unified, multi-merchant digital wallet.

Strategic Insight :

Survey results indicate that 74.4% of respondents expressed a clear intention to adopt a unified digital loyalty solution, while a further 23.0% remained undecided rather than explicitly opposed — yielding a combined positive receptivity rate of 97.4% (i.e., the sum of "yes" and "undecided" responses). Only 2.6% of respondents actively rejected the proposition. When contextualized against the 96.2% non-adoption baseline established in Q4, this data reveals a striking gap between existing market supply and latent consumer demand — a structural opportunity that substantially mitigates anticipated demand-side risks for Fidialy's platform launch.

Q8. Which application features would motivate consistent, regular usage? (Multiple responses)

Table N°15 : Features Driving Regular Usage (N=215)

Category	%
Personalised discount alerts	80.0%
Purchase history / budgeting	57.3%
Simple, intuitive interface	45.3%
Data privacy & protection	37.3%

Source: Author's elaboration

Objective:

Isolate specific UX and functional drivers necessary to convert initial downloads into habitual, recurring engagement

Strategic Insight :

The strong consumer preference for personalized alerts (80.0%) informs a key functional requirement: Fidialy's notification engine should prioritize delivering relevant, contextualized communications. Furthermore, the expressed interest in purchase tracking (57.3%) suggests that the application offers utility beyond standard reward aggregation, positioning it as a supportive personal financial management tool within the retail ecosystem.

Q9. What barriers would prevent you from using this application?

Table N°16 : Barriers to App Adoption (N=215)

Category	%
Perceived complexity	56.0%
Data privacy concerns	42.7%
Insufficient benefits	42.7%
Connectivity / storage	16–17%

Source: Author's elaboration

Objective:

Expose adoption friction points to proactively optimize onboarding strategies, minimize initial churn, and accelerate user activation.

Strategic Insight & Takeaway:

The reported concerns regarding technical complexity (56.0%) and data privacy (42.7%) underscore critical priorities for the user onboarding process. To facilitate adoption, the application design should prioritize intuitive navigation, clear value communication, and explicit transparency in data governance during registration. Notably, these identified barriers represent operational and UX-related challenges rather than fundamental rejections of the digital loyalty concept itself.

Synthesis & Final Takeaway

Empirical findings confirm a vast, completely unserved market optimally primed for Fidialy:

- **Operational Fit:** Intense patronage (73.1% daily/weekly) combined with personalized discount demand (80%) engineers the ideal environment for daily engagement.
- **Competitive Vacuum:** An absolute supply deficit drives 96.2% current non-adoption, yet 74.4% of consumers signal definitive adoption intent rising to 97.4% when undecided respondents are included confirming that barriers are entirely supply-side, not demand-side.
- **Economic Viability:** Dominant expenditure bands (78.2% spending 10,000–30,000 DZD) and primary savings motivations (64%) structurally sustain the proposed cashback architecture.

Ultimately, this unprecedented structural supply vacuum, paired with acute consumer readiness, empirically secures Fidialy's immediate product-market fit.

3.3. Legal Framework of the Fidialy Project

3.3.1 Company Structure and Governance

Fidialy is incorporated as a Société par Actions Simplifiée (SPAS), a corporate form introduced into Algerian commercial law through Law n° 22-09 (amending Ordinance 75-59)¹ — chosen over both the SARL (which imposes rigid capital-transfer and governance constraints) and the traditional SPA (which mandates a seven-shareholder minimum). The SPAS waives that threshold, grants full contractual freedom to embed vesting schedules, cliff periods, and good/bad leaver provisions in the Pacte d'Associés, and enables the swift issuance of distinct share categories for future investors. It directly complements Decree n° 20-254,² which confers the national Startup Label and a four-year exemption from corporate income tax (IBS) and professional activity tax (TAP), positioning Fidialy as a legally mature, investor-ready entity.

CNRC Registration Process

The incorporation process will be completed through the National Commercial Register Center (CNRC). The process followed a structured series of administrative steps involving multiple entities, from reserving the name to registering with social security, as summarized in the table below.

Table N°17: CNRC Company Incorporation Process

Step	Agency	Document Issued	Avg. Time
Name reservation	CNRC	Availability certificate	1–3 days
Draft bylaws	Notary	Certified statutes + BOAL	5–10 days
Capital deposit	Approved bank	Proof of deposit	2–5 days
Registration	CNRC	Commercial register (RC)	5–7 days
Tax ID	DGI	NIF + NIS	3–5 days
Social security	CNAS / CNR	Affiliation numbers	7–14 days

Source : Author's elaboration

The company is headquartered in **Oran**, with a statutory clause permitting future relocation as national expansion matures. Beyond the official articles of association, the three co-founders

¹ Law n° 22-09 (2022). Amends Ordinance 75-59 to introduce the Société par Actions Simplifiée (SPAS).

² Decree n° 20-254 (2020). Establishes the national Startup Label, eligibility criteria, and tax benefits.

executed a private shareholders' agreement covering equity allocation (including upfront shares recognising prior MVP contributions), vesting timelines, non-compete obligations, and exit provisions, with inter-founder disputes submitted to CIMA A arbitration.¹

3.3.2 Compliance with Algerian Digital Law

Law 18-05: E-Commerce Obligations and Data Hosting

Law n° 18-05 (10 May 2018)² imposes four operative obligations on Fidialy. First, Article 11 requires complete pre-contractual transparency on plans, pricing, and withdrawal rights before any merchant subscribes.³ Second, Article 14 grants end consumers a seven-day right of withdrawal from premium mobile subscriptions, without penalty.⁴ Third, Article 12 mandates automatic electronic confirmation of every transaction via the Supabase backend.⁵ Fourth, and most technically demanding, Article 42 requires that all personal data of Algerian users be stored exclusively on servers physically located within Algeria.⁶ As Algerian providers (CERIST, Icosnet) currently lag behind global cloud standards, Fidialy adopts a phased approach: Phase 1 (MVP) uses Supabase Cloud (AWS EU region) with AES-256 and TLS 1.3 encryption pending clearer enforcement guidance; Phase 2 (post-launch) will migrate sensitive personal data to a certified Algerian host while retaining non-sensitive assets on a global CDN.

Legal Documentation and Payment Compliance

In compliance with Law n° 91-05,⁷ which mandates bilingual (French and Arabic) consumer-facing communications, Fidialy publishes four core legal instruments:

Table N°18: Core Legal Documentation (Law n° 91-05 Compliance)

Document	Audience	Content
Terms of Use (CGU)	All users	Usage rules, IP rights, liability, disputes
Terms of Sale (CGV)	Business clients (B2B)	Pricing plans, billing, cancellation, SLA
Privacy Policy	All users	Data collected, purpose, user rights, ANPDP ⁸

¹ CIMA A. Centre International de Médiation et d'Arbitrage d'Alger. (Arbitration framework for Fidialy).

² Law n° 18-05 (2018). General rules governing electronic commerce in Algeria.

³ Law n° 18-05 (2018). Article 11 (Pre-contractual transparency).

⁴ Law n° 18-05 (2018). Article 14 (Right of withdrawal)..

⁵ Law n° 18-05 (2018). Article 12 (Electronic confirmation).

⁶ Law n° 18-05 (2018). Article 42 (Data hosting requirements)..

⁷ Law n° 91-05 (1991). Generalization of the Arabic language in commercial communications.

⁸ ANPDP. Autorité Nationale de Protection des Données à caractère Personnel (Law 18-07).

Legal Notice	All visitors	Company ID, RC, NIF, hosting provider
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Source : Author's elaboration

Payment infrastructure integrates CIB card processing via GIE Monétique (PCI-DSS v4.0,¹ 3D Secure) and BaridiMob (Algeria Post) for unbanked customers, within the SATIM national interbank framework.² AML compliance under Law n° 05-01³ is ensured through KYC verification of all paying merchants and transaction monitoring reported to the CTRF.

3.3.3 Data Protection and Cybersecurity

Law 18-07: GDPR-Equivalent Framework

Law n° 18-07 (10 June 2018)⁴ constitutes Algeria's primary data protection statute, modelled on EU GDPR principles and enforced by the ANPDP (fully operational since 2022). Each statutory requirement maps directly to Fidelity's technical architecture:

Table N°19: Law 18-07 Data Protection Principles and Fidelity's Technical Implementation

Principle	Article	Fidelity Implementation
Lawfulness & fairness	Art. 7 ⁵	Explicit opt-in consent at sign-up; no hidden data collection
Purpose limitation	Art. 8 ⁶	Data used only for loyalty and merchant services; never sold to third parties
Data minimisation	Art. 9 ⁷	Only essential data collected: name, phone number, purchase behaviour
Accuracy	Art. 10 ⁸	Users can update their data in real time via the mobile app
Retention limits	Art. 11 ⁹	Inactive accounts anonymised after 36 months; transaction records kept 10 years

¹ PCI DSS v4.0. Payment Card Industry Data Security Standard.

² SATIM. Société d'Automatisation des Transactions Interbancaires et de Monétique.

³ Law n° 05-01 (2005). Prevention and combating of money laundering and terrorism financing (AML/CFT).

⁴ Law n° 18-07 (2018). Algerian personal data protection law.

⁵ Law n° 18-07 (2018). Article 7 (Lawful processing and consent).

⁶ Law n° 18-07 (2018). Article 8 (Purpose limitation).

⁷ Law n° 18-07 (2018). Article 9 (Data minimization).

⁸ Law n° 18-07 (2018). Article 10 (Accuracy and updating).

⁹ Law n° 18-07 (2018). Article 11 (Storage and retention).

Security	Art. 12	TLS 1.3 + AES-256 encryption, role-based access control, Supabase Row Level Security
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Source : Author's elaboration

The mapping above demonstrates that Law 18-07 compliance is not addressed as a legal formality but is embedded into the platform's core architecture. Row-Level Security enforces data minimisation at the database level, real-time profile editing enables accuracy, and retention schedules are governed automatically by the system rather than relying on manual processes. This technical alignment significantly reduces Fidialy's regulatory exposure and strengthens its position in any future ANPDP audit.

ANPDP Declaration and Privacy Policy

Prior to any data processing activity, Fidialy must file a formal declaration with the ANPDP under Articles 14–18 of Law 18-07, documenting data categories, retention schedules, sub-processors (Supabase, SMS providers), and security measures. The published privacy policy covers six data categories:

Table N°20: Personal Data Categories, Collection Purpose, and Retention Schedule

Category	Data Collected	Purpose	Retention
Identity	Full name, date of birth, gender	Account management	Account duration + 36 months
Contact	Phone, email	Notifications, support	Account duration
Location	Province, city (approximate)	Local offer relevance	Account duration
Transactions	Amounts, points, timestamps	Loyalty calculation, billing	10 years (Commercial Code)
Behaviour	Usage patterns, frequency	UX improvement, analytics	3 years after last login
Device	Type, OS, app version	Debugging, compatibility	12 months

Source : Author's elaboration

The retention periods listed above are calibrated to balance regulatory compliance with operational necessity. Transaction records are retained for ten years in accordance with the Algerian Commercial Code's accounting obligations, while behavioural and device data —

which carry lower legal requirements — are capped at three years and twelve months respectively to minimise data exposure. All retention periods are enforced automatically within the Supabase backend, removing the risk of human error in data lifecycle management.

3.3.4 Contracts, Intellectual Property, and Fraud Prevention

Merchant Subscription Contracts

Each merchant executes a formal B2B agreement identifying both parties by commercial register and tax ID. The contract specifies plan-level billing cycles, auto-renewal conditions, and cancellation terms applicable to each subscription tier, as outlined in the table below.

Table N°21: Merchant Subscription Contract Terms by Plan

Plan	Commitment	Auto-Renewal	Cancellation Notice
Solo / Plus	Monthly	Yes — cancel 15 days before renewal	End of current period
Growth	Monthly or annual	Yes — 15 days (monthly) / 60 days (annual)	End of period; 30% fee if annual ended early
Ultimate	12 months minimum	Yes — negotiated terms	Specific terms + optional CIMA arbitration

Source : Author's elaboration

Intellectual Property and Dispute Resolution

Fidialy's IP is protected at three levels: (1) trademark registration of the name, logo, and slogan with INAPI¹ under Nice classes 9, 35, and 42; (2) a non-exclusive, non-transferable merchant licence, with full ownership of source code, the Unified Coins engine, database architecture, and UI/UX designs retained by Fidialy SPA; and (3) a maintained open-source dependency inventory ensuring attribution compliance under MIT, BSD, and Apache 2.0 licences. Commercial disputes follow a three-stage process under Law n° 08-09:² 30-day direct negotiation following written notice; neutral mediation; and, if necessary, Commercial Court adjudication, with CIMA arbitration available for enterprise contracts.

Fraud Prevention in the Loyalty System

¹ INAPI. Institut National Algérien de la Propriété Industrielle (Nice Classification).

² Law n° 08-09 (2008). Code of Civil and Administrative Procedure (CPCA).

To safeguard the loyalty system against abuse, Fidialy applies a combined technical and legal framework targeting the most common fraud patterns. Each fraud type is paired with a dedicated detection method and a clearly defined consequence under the platform's Terms of Use, as detailed in the table below.

Table N°22: Loyalty System Fraud Typology: Detection Methods and Legal Consequences

Fraud Type	Detection Method	Consequence (per Terms of Use)
Fake customer accounts	Device fingerprinting + phone verification	Immediate suspension + points cancelled
Fake transactions	Anomaly detection on points-to-revenue ratio	Contract terminated, no refund + legal report
Employee–customer collusion	Velocity checks + immutable audit logs	Termination + damages (Criminal Code Art. 372–382) ¹
Balance manipulation	Transactions table has no UPDATE/DELETE	Technically impossible; attempt triggers alert

Source : Author's elaboration

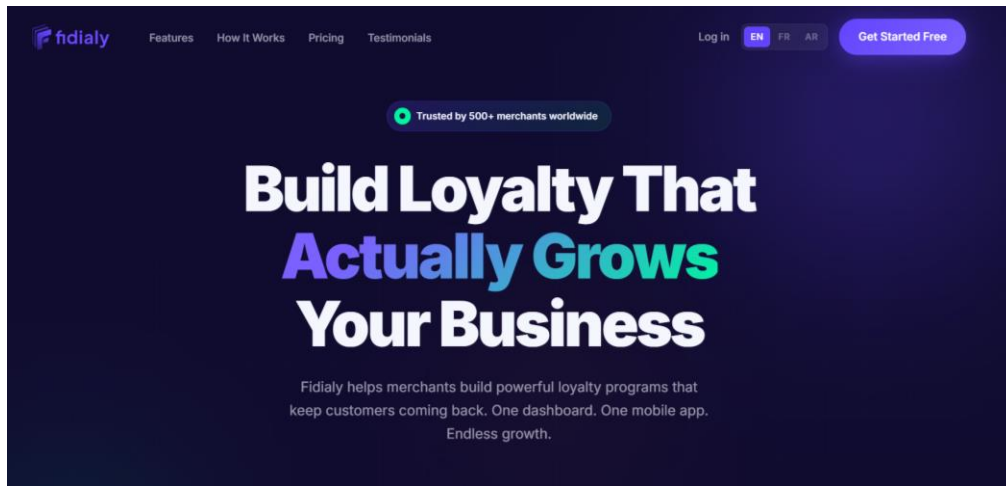
A confidential reporting channel (compliance@fidialy.com) allows merchants, customers, and employees to report suspicious activity, with a guaranteed 72-hour response and full anonymity assured.

3.4. Presentation of the Digital Prototype (MVP) of Fidialy.

The prototype's presentation begins with the public landing page, serving as the primary gateway for user onboarding, as illustrated in Figure N° 1.

Figure N° 18: Fidialy Public Landing Page

¹ *Algerian Penal Code* (2008). Articles 372–382 (Fraud and breach of trust).

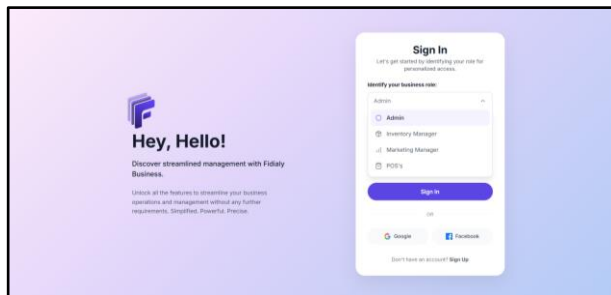


Source: Author's elaboration based on Fidelity Digital Prototype (2026).

3.4.1. The B2B Web Application (Merchant Interface)

The merchant web app (fidelity.netlify.app) employs a Role-Based Access Control (RBAC) architecture¹ featuring four profiles: Super Admin, Marketing Manager, Inventory Manager, and POS Register. This permission model directly operationalizes data privacy and security by strictly restricting visibility to authorized personnel. Key interfaces include:

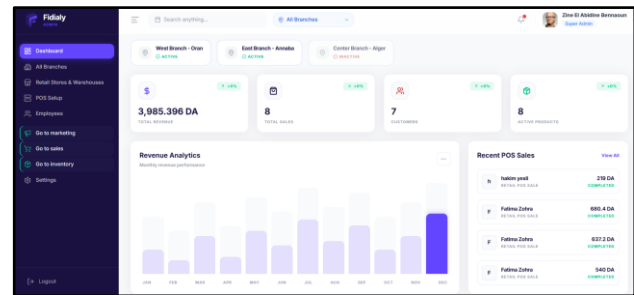
Figure N° 19: RBAC Authentication Interface



Key components include:

- Branding & Welcome Panel
- Business Role Selector
- Primary Authentication Action
- Social Login Integration
- Registration Link

Figure N° 20: Super Admin Main Dashboard



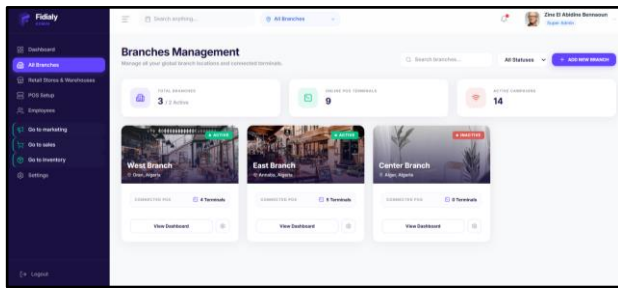
Key components include:

- Total Revenue KPI
- Total Sales and Customer counters
- Active Products counter
- Revenue Analytics chart:
- Recent POS Sales feed

Figure N°21: Multi-Branch Management Interface

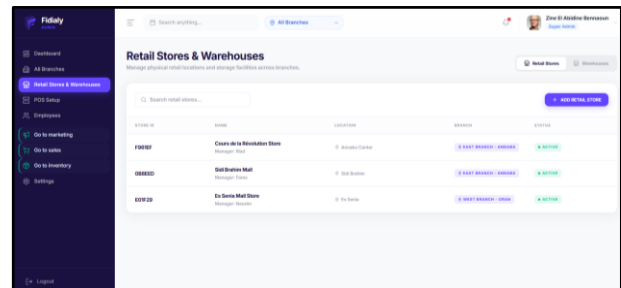
Figure N° 22: Retail Stores and Warehouses Management

¹ Ferraiolo, D.F., Sandhu, R., Gavrila, S., Kuhn, D.R. & Chandramouli, R. (2001). Proposed NIST Standard for Role-Based Access Control. ACM Transactions on Information and System Security, 4(3), 224–274.



Key components include:

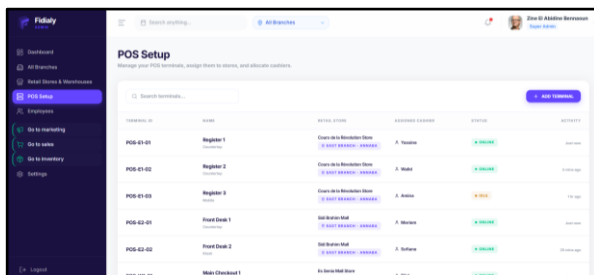
- Branch cards
- Aggregate KPIs
- Branch navigation



Key components include:

- Store registry
- Tabbed navigation
- Add Retail Store action

Figure N° 23: POS Terminal Setup and Figure N° 24: Employee and RBAC Role Assignment Interface



Key components include:

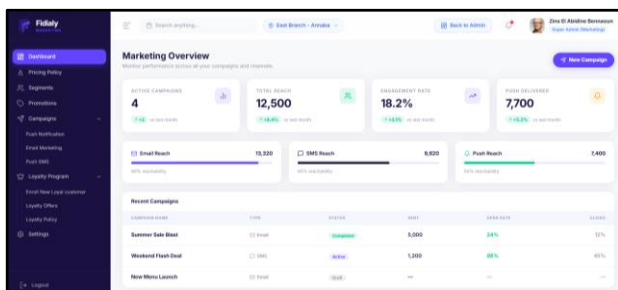
- Terminal registry
- Real-time status monitoring
- Add Terminal action



Key components include:

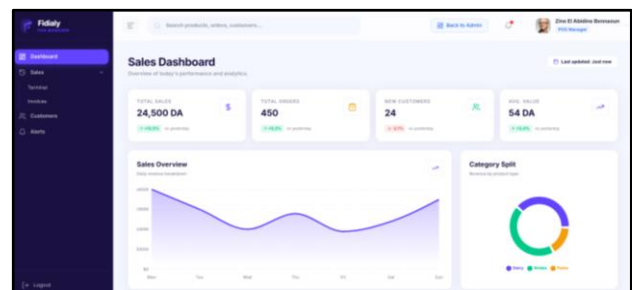
- Role assignment
- Access segregation
- Active status indicators

Figure N° 25: Marketing Overview Dashboard and Figure N° 26: POS Manager Sales Dashboard



Key components include:

- Active Campaigns KPI
- Total Reach and Engagement metrics
- Push Delivered counter

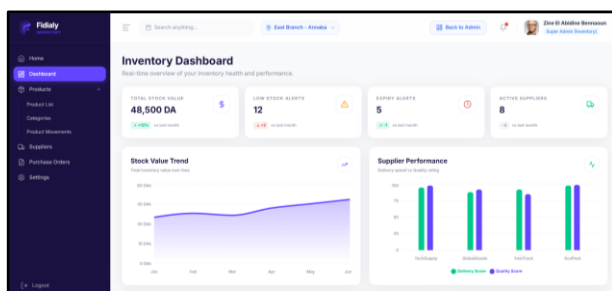


Key components include:

- Daily KPI cards
- Sales Overview chart
- Category Split donut chart
- Left navigation modules:

- Channel-specific reach breakdown ➤ Sales
- Recent Campaigns table ➤ Customers
- Left navigation modules : ➤ Alerts
 - Pricing Policy
 - Segments
 - Promotions
 - Campaigns
 - Loyalty Program

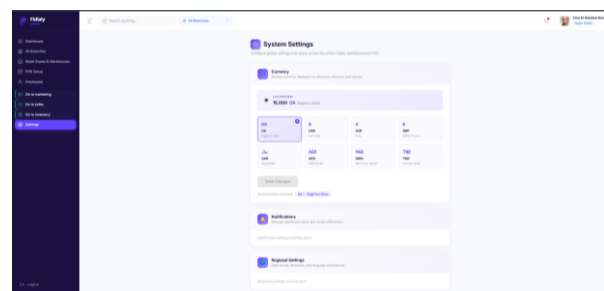
Figure N° 27: Inventory Manager Dashboard



Key components include:

- Total Stock Value KPI
- Low Stock Alerts counter
- Expiry Alerts counter
- Active Suppliers counter
- Stock Value Trend chart
- Supplier Performance chart
- Left navigation modules :
 - Products
 - Suppliers
 - Purchase orders

Figure N° 28: System settings



Key components include:

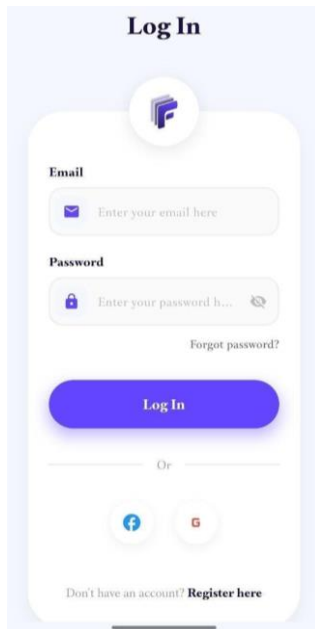
- Currency Selection Grid
- Notification Management
- Regional Settings

3.4.2. The B2C Mobile Application (Consumer Digital Wallet)

Centralizing disparate merchant loyalty programs, this unified wallet leverages frictionless onboarding,¹ and gamified rewards. Crucially, a built-in Online-to-Offline (O2O) bridge translates digital engagement directly into physical retail footfall. Core interfaces include:

¹ Shankar, V., Venkatesh, A., Hofacker, C. & Naik, P. (2010). Mobile Marketing in the Retailing Environment: Current Insights and Future Research Avenues. *Journal of Interactive Marketing*, 24(2), 111–120.

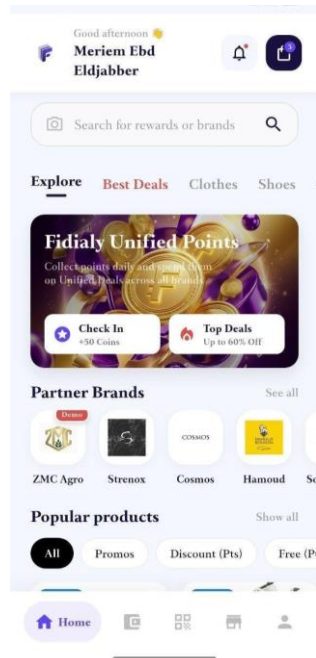
Figure N° 29: Consumer Authentication **Figure N° 30: Consumer Home Screen**



Key components include:

- Authentication
- Registration
- Security

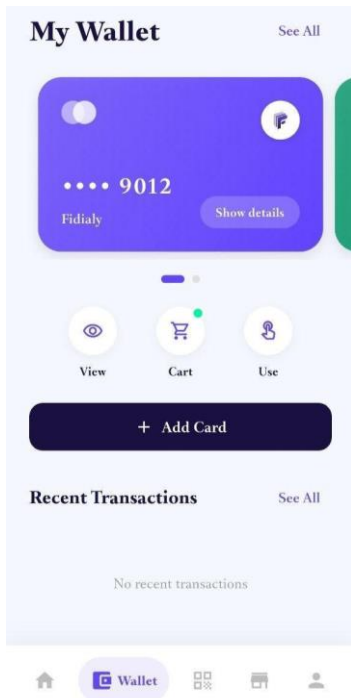
Figure N° 31: My Wallet Interface



Key components include:

- Personalised greeting
- Fidialy Unified Points banner
- Daily Check In mechanic
- Top Deals shortcut
- Partner Brands horizontal scroll
- Popular Products feed

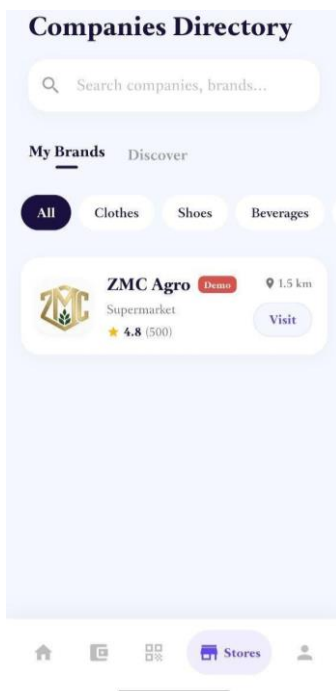
Figure N° 32: Digital QR Identity Code



Key components include:

- Virtual Card Carousel
- Quick Action Menu
- Card Integration
- Recent Transactions Log
- Bottom Navigation Bar

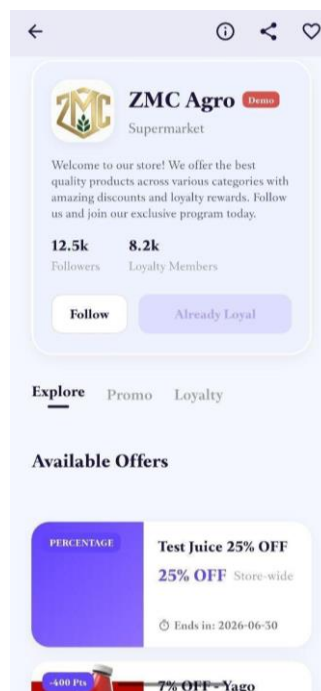
Figure N° 33: Companies Directory



Key components include:

- Consumer identity QR code
- "Share ID" action
- Persistent bottom navigation

Figure N° 34: Merchant Brand Profile M



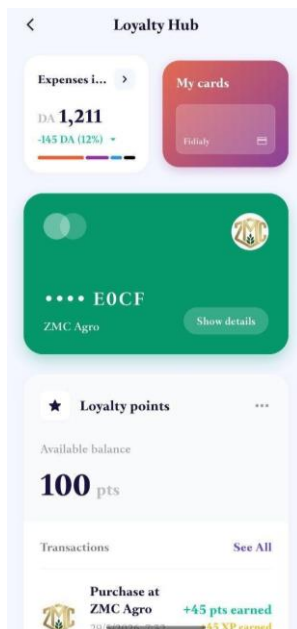
Key components include:

- **My Brands tab**
- **Discover tab:** Uses location and ratings to highlight local businesses and increase foot traffic .

Key components include:

- **Header Actions**
- **Merchant Information**
- **Engagement Controls**
- **Three-Tab Navigation :**
 - **Explore:** Browsing general offers.
 - **Promo:** Accessing limited-time promotions.
 - **Loyalty:** Earning and redeeming reward points.
- **Offers Feed**

Figure N° 35: Loyalty Hub



Key components include:

- Spending Intelligence Panel
- My Cards Carousel
- Loyalty Points Balance
- Transaction History Feed

Figure N°37: Cart Orders Interface

Figure N° 36: Loyalty Tier Programme



Key components include:

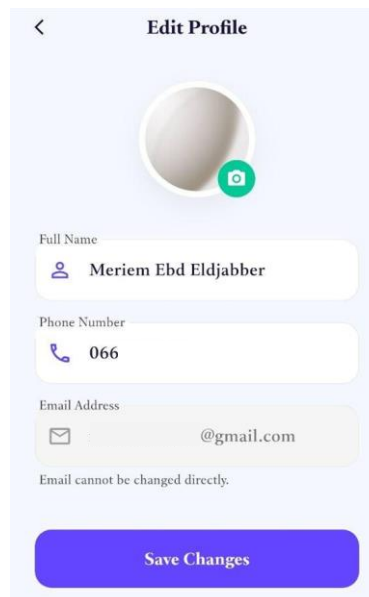
- Dual-Currency Reward Architecture
- Four-Tier Progression Ladder
- Real-Time Progress Bar
- Tier-Exclusive Reward Unlocking

Figure N°38: Edit Profile Interface



Key components include:

- *Active/Expired Tab Architecture*
- *Order Detail Card*
- *Time-Limited Expiry Enforcement*
- *"Show to Cashier" QR Button*



Key components include:

- Header Navigation
- Profile Photo Upload Tool
- Full Name Input Field
- Phone Number Input Field
- Immutable Email Field
- "Save Changes" Primary Action

O2O architecture constitutes the platform's core innovation. By tethering reward redemptions directly to physical footfall, it aggressively exploits an unoccupied strategic white space within the Algerian market.

Chapter Conclusion:

This chapter has comprehensively demonstrated that Fidialy is not merely a theoretical concept, but a highly scalable and viable enterprise grounded in operational readiness, financial efficiency, and empirical market demand.

Crucially, these projections are anchored in actual market evidence. Field surveys have exposed a profound structural gap: an overwhelming majority of merchants are still confined to paper-based systems with no retention mechanisms, while a vast, untapped consumer base is eager for digital loyalty solutions. This indicates a market that does not require heavy persuasion, but rather one that has been actively waiting for a structured solution.

Financially, the model exhibits exceptional capital efficiency. Driven by the zero-cost MVP strategy and a lean operational structure, the financial projections reveal rapid break-even milestones, highly lucrative net margins, and a remarkably short payback period. These metrics confirm the model's resilience and its perfect alignment with the pacing of Algeria's evolving digital economy.

Technically, the platform is built upon a robust B2B2C architecture that seamlessly integrates merchant utility with consumer engagement. By leveraging behavioral drivers such as gamification and switching costs, the platform transforms ordinary transactions into sustainable habits, reducing reliance on perpetual customer acquisition efforts.

Finally, supported by a secure corporate framework (SPAS), strategic tax incentives (ANDI), and strict adherence to national data protection and e-commerce laws, Fidialy establishes a legally sound foundation. Together, these elements position Fidialy as a market-ready ecosystem, fully equipped to capture and lead the digital transformation of the Algerian retail sector.

General Conclusion

General Conclusion:

This thesis examined the extent to which digital loyalty programmes, embedded in a contextually adapted SaaS platform such as Fidelity, can serve as an effective lever for customer retention within Algerian agri-food SMEs. The theoretical framework (Part I) established that relationship marketing and CRM reposition competitive advantage away from price and toward trust, continuity, and co-created value, and that gamified, data-driven loyalty mechanisms raise switching costs by embedding the customer within a relational ecosystem rather than a single transaction. Applied to the Algerian agri-food sector, this framework exposed a precise structural contradiction: a young, mobile-connected consumer base coexists with merchants who remain anchored in analogue, memory-based management, a gap attributable not to merchant indifference but to the absence of an enterprise-grade SaaS offering calibrated to a cash-dominant, resource-constrained economy.

Part II translated this theoretical scaffolding into the Fidelity venture and, in doing so, addressed the questions of measurable advantage and commercial viability. The B2B2C architecture, built on a three-layer technical stack (React/Flutter presentation layer, Supabase backend-as-a-service, PostgreSQL persistence layer), operationalizes the platform's central behavioral premise that reward confirmation must be instantaneous to reinforce loyalty-forming behavior. The strategic importance of the **Zero-Cost MVP** approach lies precisely here: by building the prototype on free-tier infrastructure and founder technical labor rather than capital expenditure, Fidelity preserved its entire founding capital for commercial execution, a sequencing that explains a 339.3% Year-1 return on investment and a payback period of roughly 3.5 months. This same near-zero marginal cost of service underpins the platform's **hyperscalability**: revenue is modeled to grow 189-fold over five years against only a 250-fold rise in variable cloud costs, a textbook signature of margin-widening platform economics.

These projections are not merely theoretical: the UI/UX prototype and the dual field validation provide the empirical answer to the research questions. The role-based web dashboard and the consumer-facing mobile wallet demonstrate that role segregation, real-time synchronization, and frictionless onboarding function as working interfaces rather than abstractions. The fifty merchant interviews confirm the diagnosed structural gap, with 78% of respondents still managing inventory by analogue means and 90% relying solely on informal customer recognition, while 70% expressed explicit interest in a digital loyalty solution. The complementary survey of 215 consumers reinforces this from the demand side: despite 96.2% reporting no current access to any structured loyalty programme, 70.7% expressed definite

General Conclusion

intent to adopt a unified digital wallet. This conjunction of intense, repeated patronage and an almost total absence of retention infrastructure constitutes exactly the market white space the research problem hypothesized.

Taken as a whole, the central research question must be answered affirmatively, with one qualification: digital loyalty programmes become an effective retention lever in this context only when their technological delivery is deliberately re-engineered around capital scarcity, cash-dominant transactional culture, and reliance on interpersonal trust. By meeting this condition, Fidialy extends rather than disrupts the Algerian merchant's existing relational capital, transforming the routine checkout scan into a structured, data-generating retention event. Beyond its immediate commercial scope, this research suggests that the binding constraint on SME digitalization in Algeria has never been demand-side reluctance but supply-side absence, positioning Fidialy as a credible catalyst for the broader digital transformation of the Algerian retail and agri-food sectors.

Appendices

Appendix A: Business Model Canva



Appendix B: Legal and Regulatory Framework

الباب الثاني المبادئ الأساسية لحماية المعطيات ذات الطابع الشخصي الفصل الأول الموافقة المسبقة ونوعية المعطيات المادة 7 : لا يمكن القيام بمعالجة المعطيات ذات الطابع الشخصي إلا بالموافقة الصريحة للشخص المعني. إذا كان الشخص المعني عديم أو ناقص الأهلية، تخضع الموافقة للقواعد المنصوص عليها في القانون العام. يمكن الشخص المعني أن يتراجع عن موافقته في أي وقت.	المادة 12 : تمر طلبية منتج أو خدمة عبر ثلاث مراحل إلزامية : - وضع الشروط التعاقدية في متناول المستهلك الإلكتروني، بحيث يتم تمكينه من التعاقد بعلم ودراسة تامة. - التحقق من تفاصيل الطلبية من طرف المستهلك الإلكتروني، لاسيما فيما يخص ماهية المنتجات أو الخدمات المطلوبة، والسعر الإجمالي والوحدوي، والكميات المطلوبة بغرض تمكينه من تعديل الطلبية، وإلغائها أو تصحيح الأخطاء المحتملة. - تأكيد الطلبية الذي يؤدي إلى تكوين العقد. يجب أن يكون الاختيار الذي يقوم به المستهلك الإلكتروني معبرا عنه بصراحة. يجب ألا تتضمن الخانات المعدة للملء من قبل المستهلك الإلكتروني، أية معطيات تهدف إلى توجيه اختياره.
الفصل الثالث المتطلبات المتعلقة بالمعاملات التجارية عن طريق الاتصال الإلكتروني المادة 10 : يجب أن تكون كل معاملة تجارية إلكترونية مسبقة بعرض تجاري إلكتروني وأن توثق بموجب عقد إلكتروني يصادق عليه المستهلك الإلكتروني. المادة 11 : يجب أن يقدم المورد الإلكتروني العرض التجاري الإلكتروني بطريقة مرئية ومقروءة ومفهومة، ويجب أن يتضمن على الأقل، ولكن ليس على سبيل الحصر، المعلومات الآتية :	المادة 13 : يجب أن يتضمن العقد الإلكتروني على الخصوص المعلومات الآتية : - الخصائص التفصيلية للسلع أو الخدمات، - شروط وكيفية التسليم، - شروط الضمان وخدمات ما بعد البيع، - شروط فسخ العقد الإلكتروني، - شروط وكيفية الدفع، - شروط وكيفية إعادة المنتج، - كيفية معالجة الشكاوى، - شروط وكيفية الطلبية المسبقة عند الاقتضاء، - الشروط والكيفيات الخاصة المتعلقة بالبيع بالتجريب عند الاقتضاء، - الجهة القضائية المختصة في حالة النزاع، طبقا لأحكام المادة 2 أعلاه، - مدة العقد حسب الحالة.

Appendix C: Company Incorporation Documents

• Certificate of Commercial Name Reservation (CNRC)

الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التجارة و ترقية الصادات

المركز الوطني للسجل التجاري

الفرع المحلي لولاية المغير

شهادة تسجيل الإسم التجاري أو العنوان الإجتماعي

إن المركز الوطني للسجل التجاري و تبعا للطلب المقدم من طرف ،

صاحب(ة) التسمية : **برومي مريم**
الممثل (ة) القانوني : **ش.م.ب.ب فيدكور**
العنوان الشخصي :
يشهد أن تسمية الشركة أو الإسم التجاري التالي :

فيدكور

قد تم تسجيله (ها) بالبطاقة الوطنية لتسميات الشركات والأسماء التجارية التي يسيرها المركز الوطني للسجل التجاري .
تعد هذه الشهادة بمثابة حجز لهذه التسمية أو الإسم التجاري ، و ذلك لمدة سنة (06) أشهر ابتداء من تاريخ تسجيلها .
هذه الشهادة صالحة للتسجيل في السجل التجاري على مستوى التراب الوطني ، و في حالة عدم استعمالها في الأجل الممنوحة سنة (06) أشهر تلغى تلقائيا.

الإسم التجاري أو العنوان الإجتماعي بالحروف الاتينية :

SPAS FIDCORE

حررت بتاريخ : 06/04/2026

حررت من طرف : بقاص الهادي

الختم و الامضاء

مأمور الفرع المحلي للمركز
الوطني للسجل التجاري ولاية المغير
بقاص الهادي



- Incubator Domiciliation Certificate



الجمهورية الجزائرية الديمقراطية الشعبية
وزارة التعليم العالي والبحث العلمي
المدرسة العليا لإدارة الأعمال تلمسان
حاضنة الأعمال



الرقم: 011/ م.ع.إ.ح.أ/ 2026

شهادة توظيف المشروع

تشهد مديرة حاضنة الأعمال للمدرسة العليا لإدارة الأعمال - تلمسان أن المشروع:

FIDIALY

للطلبة التالية أسمائهم:

الاسم واللقب	السنة	التخصص	المؤسسة
بروسي مريم	الثالثة من الطور الثاني	تسويق غذائي	المدرسة العليا لإدارة الأعمال تلمسان
بن نعوم زين العابدين	الثالثة من الطور الثاني	تسويق غذائي	المدرسة العليا لإدارة الأعمال تلمسان
مكمش شهرزاد	الثالثة من الطور الثاني	تسويق غذائي	المدرسة العليا لإدارة الأعمال تلمسان

تحت اشراف الأساتذة التالية أسمائهم:

الاسم واللقب	الرتبة	التخصص	الصفة
إزناسي علي	أستاذ التعليم العالي	تسويق	مشرف رئيسي 1
/	/	/	مشرف رئيسي 2
حلابي زبيدة	أستاذ محاضر ب	تسويق دولي	مشرف مساعد

تمتثل ومؤظن على مستوى حاضنة الاعمال للمدرسة العليا لإدارة الأعمال تلمسان للسنة الجامعية: 2026/2025 ، في إطار القرار الوزاري 1275 المؤرخ بتاريخ 27 سبتمبر 2022 المعدل و المتمم بالقرار الوزاري 008.

سلمت هذه الشهادة بطلب من المعني لإدلاء بها في حدود ما يسمح به القانون.

التاريخ: 2026/04/23

مديرة الحاضنة
د. **فانيسني سمية**
مديرة حاضنة الأعمال



Appendix D: Survey of Market Study

- **B2B Survey:**

#	Question	Answer Options	Type
Screening Question			
1	Are you:	• A store owner or employee • A regular customer	

Part A — Business Profile	
2	What is your business type?
3	How long has the business been operating?
4	Store size / annual turnover (approx.)

Part B — Sales Tracking	
5	How do you record daily sales?
6	How often do you reconcile sales at the end of the day?
7	Rate the accuracy of your current sales records.
8	What are the main causes of sales recording errors in your store?
9	Do you use sales data to make pricing or stocking decisions?

Part C — Inventory Management	
10	How do you track stock quantities?
11	Do you track expiry dates / batch information for perishable goods?
12	How often do you face stockouts / overstock?
13	How confident are you in your current stock valuation (financial value)?

Part D — Supplier / Purchase Relationships	
---	--

14	How do you place purchase orders to suppliers?
15	Do you keep records of supplier performance (delivery time, quality, prices)?
16	Would easier communication and ordering from suppliers improve operations?
17	How important is supplier price comparison and purchase history for your buying decisions?

Part E — Loyalty & Customer Management

18	Do you register customers and their purchases (phone, name, history)?
19	Which loyalty method do you currently use?
20	Rate the effectiveness of your loyalty program in increasing repeat purchases.
21	What loyalty features would most increase customer retention?
22	Do you have the ability to run targeted promotions by customer segment?

Part F — Adoption Readiness & Constraints

23	What would encourage you most to adopt a digital POS + loyalty platform?
24	What are the main barriers to adoption?
25	Would you participate in a pilot/test of such a system in your store?
26	What would make a digital POS + loyalty platform truly valuable for you?

• B2C Survey:

#	Question	Answer Options	Type
Part A — General Information			
1	Age group?	• 18–25 • 26–35 • 36–45 • 46+	<i>Single choice</i>

#	Question	Answer Options	Type
2	What is your occupation?	• Student • Employee • Freelancer • Unemployed • Other: ____	<i>Single choice</i>
Part B — Shopping Behavior			
3	How often do you shop at the same supermarket?	• Daily • Weekly • Monthly • Occasionally	<i>Single choice</i>
4	Where do you usually buy your groceries?	• Small neighborhood stores • Supermarkets • Local markets • Online grocery platforms • Other: ____	<i>Single choice</i>
5	When choosing a grocery store, what matters most to you?	• Price • Product freshness • Cleanliness • Staff behavior • Promotions and discounts	<i>Single choice</i>
6	How satisfied are you with your shopping experience at grocery stores?	• Very satisfied • Satisfied • Neutral • Dissatisfied • Very dissatisfied	<i>Single choice</i>
7	Do you use loyalty cards or apps?	• Yes • No	<i>Single choice</i>
Part C — Discounts and Loyalty			

#	Question	Answer Options	Type
8	How many loyalty cards do you currently have?	• 0 • 1–2 • 3–5 • > 5	<i>Single choice</i>
9	How frequently do you forget or lose loyalty cards?	• Never • Rarely • Sometimes • Often	<i>Single choice</i>
10	Rate your satisfaction with current loyalty benefits.	• Scale: 1 (Very unsatisfied) → 5 (Very satisfied)	<i>Rating scale (1–5)</i>
11	What problems annoy you most about loyalty cards used in stores?	• Too many different cards • Hard to check points or balance • Takes too long to get rewards • No real discounts or benefits	<i>Single choice</i>
Part C — Reaction to Proposed Digital Solution			
12	Would you use one app that stores all your loyalty points and shows offers from many stores?	• Yes • Maybe • No	<i>Single choice</i>
13	Which features would make you install and use such an app regularly?	• Real discounts / redeemable rewards • Simple QR scanning at checkout • Notifications about deals • Privacy and secure data • Multiple participating stores	<i>Single choice</i>
14	Would you be comfortable registering with phone number for secure access?	• Yes • Maybe • No	<i>Single choice</i>

ABSTRACT

ENGLISH :

This thesis investigates the extent to which digital loyalty programmes (E-LPs), delivered through a contextually adapted SaaS platform, can improve customer retention within Algerian agri-food SMEs. The research problem stems from a structural contradiction: a digitally connected consumer base coexists with merchants relying on analogue, memory-based management, a gap attributed to the absence of an accessible SaaS solution calibrated to SME budgetary constraints. Adopting a mixed-method design, the study combines a literature review of relationship marketing, CRM, and retention metrics (churn, CLV, RFM) with an entrepreneurial case study of the Fidialy project, structured around the Lean Startup methodology and a five-year financial plan. Empirical validation rests on fifty merchant interviews and a 215-respondent consumer survey. Findings show that 78% of merchants still operate analogically and 90% rely on informal recognition, while 70.7% of consumers express definite intent to adopt a unified digital loyalty wallet despite near-total current non-adoption. Financially, a zero-cost MVP strategy generates a Year-1 ROI of 339.3%, a payback period of about 3.5 months, and revenue growth of 189-fold over five years against only a 250-fold rise in variable costs, evidencing structural hyperscalability. The study concludes that digital loyalty platforms can substantially improve SME retention outcomes provided their design is adapted to capital scarcity and cash-dominant transaction culture, positioning Fidialy as a viable catalyst for retail digital transformation in Algeria.

Keywords: Digital loyalty programmes, CRM, customer retention, SaaS, SME digitalization, B2B2C, zero-cost MVP, scalability, Algeria, agri-food sector.

FRANCAIS :

Cette thèse examine dans quelle mesure les programmes de fidélité numériques (E-LP), déployés via une plateforme SaaS adaptée au contexte local, peuvent améliorer la rétention client au sein des PME agroalimentaires algériennes. La problématique découle d'une contradiction structurelle : une clientèle connectée coexiste avec des commerçants attachés à une gestion analogique, écart attribuable à l'absence d'une solution SaaS accessible et calibrée aux contraintes des PME. Mobilisant un dispositif mixte, l'étude associe une revue de littérature sur le marketing relationnel, le CRM et les indicateurs de rétention (attrition, CLV, RFM) à une étude de cas entrepreneuriale du projet Fidialy, structurée autour de la méthodologie Lean Startup et d'un plan financier quinquennal. La validation empirique repose sur cinquante

entretiens avec des commerçants et une enquête auprès de 215 consommateurs. Les résultats montrent que 78 % des commerçants opèrent encore de manière analogique et 90 % s'appuient sur une reconnaissance informelle, tandis que 70,7 % des consommateurs expriment une intention ferme d'adopter un portefeuille de fidélité numérique unifié malgré une quasi-absence d'adoption actuelle. Sur le plan financier, une stratégie de MVP à coût nul génère un retour sur investissement de 339,3 % en première année, un délai de récupération d'environ 3,5 mois, et une croissance du chiffre d'affaires multipliée par 189 sur cinq ans contre une hausse des coûts variables limitée à un facteur 250, témoignant d'une hyperscalabilité structurelle. L'étude conclut que ces plateformes peuvent sensiblement améliorer la rétention des PME, à condition d'adapter leur conception à la rareté du capital et à la prédominance des transactions en espèces, plaçant Fidialy en position de catalyseur crédible de la transformation numérique du commerce algérien.

Mots-clés : Programmes de fidélité numériques, CRM, rétention client, SaaS, digitalisation des PME, B2B2C, MVP à coût nul, scalabilité, Algérie, secteur agroalimentaire.

ملخص

تتناول هذه الأطروحة مدى إمكانية اعتماد برامج الولاء الرقمية (E-LP)، المُقدّمة عبر منصة SaaS مُكيّفة مع السياق المحلي، لتحسين الاحتفاظ بالعملاء داخل المؤسسات الصغيرة والمتوسطة الجزائرية العاملة في القطاع الفلاحي الغذائي. وتتبع المشكلة من تناقض بنيوي: تتعايش قاعدة استهلاكية متصلة رقمياً مع تجار لا يزالون يعتمدون على تسيير تناظري، وهو فارق يُعزى إلى غياب حل SaaS ميسور التكلفة ومُكيّف مع قيود المؤسسات الصغيرة. واعتماداً على منهجية مزدوجة، تجمع الدراسة بين مراجعة الأدبيات المتعلقة بالتسويق العلائقي وإدارة علاقات العملاء (CRM) ومؤشرات الاحتفاظ (التسرب، القيمة الدائمة للعميل، RFM)، وبين دراسة حالة ريادية لمشروع "فيدالي" وفق منهجية Lean Startup ومخطط مالي خماسي السنوات. وقد جرى التحقق الميداني عبر خمسين مقابلة مع تجار واستبيان شمل 215 مستهلكاً. وتُظهر النتائج أن 78% من التجار لا يزالون يعملون بطرق تناظرية وأن 90% يعتمدون على تعريف غير رسمي، في حين عبّر 70,7% من المستهلكين عن نية تبني واضحة لمحفظه ولاء رقمية موحّدة رغم الغياب التام تقريباً لأي تبني حالي. ومن الناحية المالية، تُفرز استراتيجية المنتج الأدنى القابل للتطبيق بتكلفة معدومة معدل عائد على الاستثمار بلغ 339,3% في السنة الأولى، وفترة استرداد لا تتجاوز 3,5 أشهر، ونمواً في رقم الأعمال بمعامل 189 خلال خمس سنوات مقابل ارتفاع لا يتجاوز معامل 250 في التكاليف المتغيرة، وهو ما يعكس قابلية هيكلية فائقة للتوسع. وتخلص الدراسة إلى أن هذه المنصات قادرة على تحسين الاحتفاظ بالعملاء بشكل ملموس، شريطة تكيف تصميمها مع شح رأس المال وغلبة المعاملات النقدية، مما يجعل "فيدالي" محفزاً واقعياً للتحول الرقمي في قطاع التوزيع الجزائري.

الكلمات المفتاحية: برامج الولاء الرقمية، إدارة علاقات العملاء، الاحتفاظ بالعملاء، SaaS، رقمنة المؤسسات الصغيرة والمتوسطة، نموذج B2B2C، المنتج الأدنى القابل للتطبيق بتكلفة معدومة، قابلية التوسع، الجزائر، القطاع الفلاحي الغذائي.

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