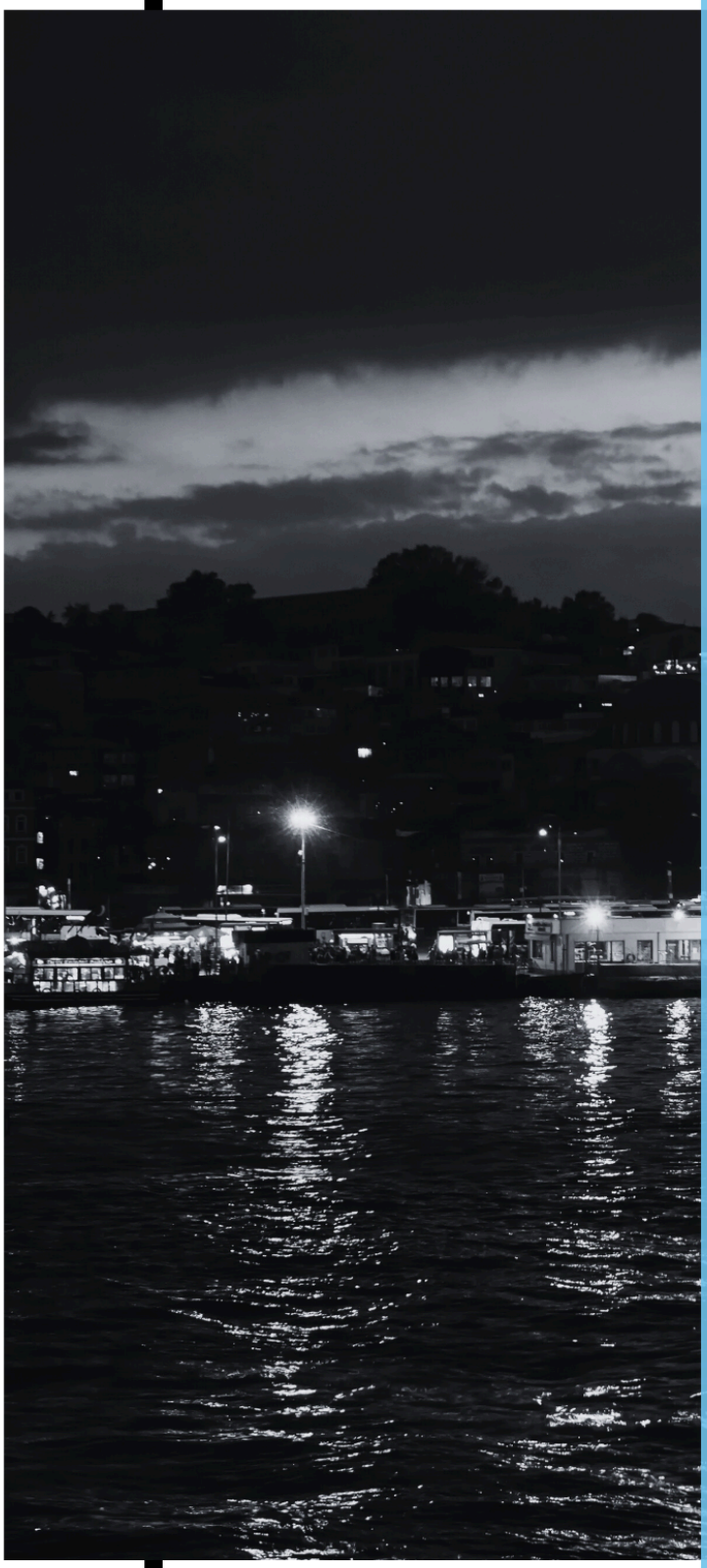

GITMA

GLOBAL INFORMATION TECHNOLOGY MANAGEMENT REVIEW

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GITMA

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Introduction

Artificial intelligence is no longer a concept confined to research papers or technology conferences; it is actively reshaping how organizations across industries serve their customers, manage their operations, and compete in an increasingly digital marketplace. Understanding how these transformations happen in practice, and what drives their success, is essential knowledge for IT educators, researchers, and business leaders alike.

This document presents a series of real-world business cases drawn from the work of NDS Cognitive Labs, reinterpreted through a strategic analytical lens to serve as a learning resource for the GITMA community. Each case examines how AI-powered solutions, specifically intelligent virtual agents and chatbots, were designed, implemented, and scaled within organizations operating in three distinct sectors: banking and financial services, manufacturing, and retail. Together, they offer a grounded, cross-industry view of how technology strategy translates into measurable business outcomes.

Rather than focusing solely on the technical architecture behind these solutions, the analysis is structured around four dimensions of modern customer experience management: omnichannel integration, personalization, intelligent automation, and exponential scalability. This framework is intended to help readers move beyond the surface of what AI does, toward a deeper understanding of why certain implementations succeed, what risks they carry, and how organizations can evaluate their strategic readiness to adopt similar models.

In the spirit of GITMA's mission to bridge academic inquiry with professional practice, these cases are presented not as prescriptions, but as evidence-based learning opportunities, inviting reflection, critical analysis, and informed dialogue about the future of AI-driven service delivery in global organizations.

The Moment We Are In

The cases presented in this document did not emerge in a vacuum. They reflect a broader and accelerating shift in how organizations relate to their customers and manage their internal processes. Over the past several years, advances in natural language processing, machine learning, and cloud-based integration have made AI-powered customer service not only technically viable, but economically compelling for organizations of all sizes. At the same time, customer expectations have risen sharply: people now expect immediate, accurate, and personalized responses regardless of the time of day, the channel they use, or the complexity of their inquiry.

For organizations in Latin America and across the globe, this convergence creates both urgency and opportunity. The urgency comes from competitive pressure, fintech challengers, e-commerce platforms, and digitally native companies are raising the service bar in every sector. The opportunity comes from the fact that AI implementation, when approached strategically, can simultaneously improve customer experience, reduce operational costs, and generate organizational intelligence that compounds in value over time. The cases in this document illustrate precisely this dynamic, making them particularly relevant for professionals and researchers seeking to understand not just what AI can do, but what conditions make it work in practice.

A Framework for Strategic Analysis

To ensure consistency and analytical depth across each case, this document applies a four-lens framework designed to evaluate AI implementations from a customer experience and business strategy perspective. Each lens captures a distinct dimension of value creation.

The first lens, omnichannel, examines how a solution integrates across the multiple touchpoints through which customers and organizations interact, websites, messaging platforms, phone channels, physical locations, and internal systems. A strong omnichannel implementation ensures that the customer experience is seamless and consistent regardless of where or how the interaction begins.

The second lens, customized, evaluates the degree to which a solution adapts to the individual customer, their identity, history, intent, and emotional state. Personalization at scale is one of the defining promises of AI, and this lens assesses how well each implementation delivers on that promise, and where gaps remain.

The third lens, automated, focuses on which tasks, decisions, and workflows have been removed from human hands entirely, which have been augmented by AI support, and which still require human judgment. This distinction matters enormously for evaluating operational impact, cost efficiency, and the realistic limits of any given solution.

The fourth lens, exponential, asks whether the solution is capable of growing in value over time, not linearly, but in ways that compound as data accumulates, usage increases, and the system learns. This is the lens through which AI's long-term strategic potential is most clearly visible, and it is often the dimension most underestimated during initial implementation planning.

Applied together, these four lenses provide a structured way to move from observation to insight, helping readers not just understand what happened in each case, but draw transferable lessons applicable to their own organizational contexts.

A Resource for the GITMA Community

GITMA, the Global Information Technology Management Association, has spent more than two decades creating a space where IT educators, researchers, and practitioners come together to advance knowledge, share experience, and build the professional relationships that carry ideas from conference rooms into classrooms and boardrooms. This document is offered in that same spirit.

The cases presented here are not hypothetical. They are grounded in real organizational challenges, real implementation decisions, and real outcomes, both the successes and the limitations. They are offered as learning material precisely because the most durable knowledge in our field comes not from theory alone, but from the disciplined examination of practice. By analyzing what worked, what fell short, and what questions remain unanswered, readers are invited to contribute their own expertise to an ongoing conversation about the responsible, strategic, and human-centered deployment of artificial intelligence in organizations.

It is this conversation, across borders, disciplines, and sectors, that defines GITMA's contribution to the field, and it is the conversation this document is designed to advance.

GITMA

Business Case: Banking and Finances

Executive Summary

One of Mexico's largest banks partnered with NDS Cognitive Labs to deploy an AI-powered chatbot across its customer service operation, replacing a heavily strained 50 agent contact center model. The initiative was driven by mounting operational costs, unsustainable call volumes, and chronic employee attrition. The solution dramatically transformed service capacity, speed, and consistency at scale. Within months, it became a mission critical tool not just for customers, but for internal agent training and operational intelligence. This case represents a textbook example of how AI can shift a cost center into a strategic customer experience asset.

Business Problem

The bank's contact center, staffed by approximately 50 agents, was structurally incapable of meeting demand. Thousands of monthly calls resulted in average wait times that frustrated customers and burned out agents, who faced a 40% attrition rate, a well-documented industry average. Each phone interaction cost between USD 35 and USD 50, making scale through headcount economically indefensible. The bank also lacked 24/7 service capability, meaning roughly one in five customer inquiries went unanswered outside business hours. The cost of inaction was compounding: declining customer satisfaction, rising operational spend, and an increasingly competitive fintech landscape eroding the bank's service differentiation.

Proposed Solution

NDS Cognitive Labs designed and deployed a Financial Contact Center Chatbot, an AI-powered virtual agent capable of handling customer inquiries end-to-end across the bank's digital touchpoints. The solution was built after analyzing over 150,000 historical customer interactions spanning calls, emails, and chat messages. Three primary use cases anchored the design: product information, platform troubleshooting, and ATM/branch location. The chatbot integrates machine learning, big data analytics, sentiment analysis, and geolocation capabilities. It was embedded into the bank's website via a chat interface, responds in under two seconds, and escalates to human agents when complexity or customer frustration is detected. A continuous improvement loop, driven by automated reporting and ongoing training cycles, allows the system to expand its knowledge base over time.

Strategic Analysis

The solution operates across the bank's primary digital channel, its web portal, while integrating multimedia, geolocation, and sentiment-driven escalation to human agents, creating a layered, multi-touchpoint experience that mirrors what a well-run omnichannel operation should deliver. Context-awareness is embedded in how the chatbot detects customer intent and emotional state, routing frustrated or complex cases to the right specialist with full interaction context already transferred, which meaningfully reduces the repetition burden on customers. Automation is the core value driver here: routine inquiries are handled end-to-end without human involvement, response times dropped 80%, concurrent capacity expanded from 50 to over 16,000 simultaneous conversations, and the system now handles more than 150,000 monthly interactions, figures that would require hundreds of additional agents to replicate manually. The exponential dimension is particularly compelling: the chatbot's knowledge base grew from 1,000 to over 14,000 questions, its monthly interaction capacity grew fivefold in under a year, and the system's data outputs are now being repurposed to train new human agents, a compounding organizational intelligence effect that increases in value as usage scales.

Strategic Value

From a customer experience standpoint, the reduction in resolution time from 10 minutes to 2 minutes, an 80% improvement, is not incremental; it is transformational. Customers receive immediate, consistent answers at any hour of the day, including the 20% of inquiries that previously went unaddressed after business hours. Operationally, the bank has fundamentally restructured its service model: agents now handle complex, high-value cases rather than repetitive queries, which improves both their job quality and the bank's cost efficiency. The chatbot's role as an internal training tool adds an underappreciated layer of organizational value. Strategically, the bank now has a differentiated, scalable service platform that can absorb fintech-level customer expectations without a proportional increase in headcount or cost.

Risks and Limitations

The case does not address data privacy or regulatory compliance considerations, a significant gap for a financial institution operating under banking secrecy laws and data protection regulations. Sentiment analysis, while powerful, carries risk of misclassification, potentially routing satisfied customers to agents unnecessarily or, worse, failing to escalate genuinely frustrated ones. The chatbot's effectiveness is contingent on the quality and completeness of its training data; gaps in historical data or atypical customer language patterns could degrade performance. The document also does not address multilingual capability, digital literacy barriers among older customer segments, or fallback protocols when the system is unavailable. Dependency on NDS Cognitive Labs for continuous improvement and reporting introduces a vendor concentration risk that executives should evaluate.

Success Metrics

The following KPIs should be tracked on an ongoing basis:

Customer-facing metrics: First-contact resolution rate, average handling time per interaction, customer satisfaction score (CSAT) post-chatbot interaction, Net Promoter Score trend, volume of escalations to human agents as a percentage of total interactions, and after-hours inquiry resolution rate.

Operational metrics: Cost per interaction (chatbot vs. human agent), concurrent conversation capacity utilization, chatbot knowledge base expansion rate, agent attrition rate (pre- and post-implementation), and monthly interaction volume growth.

Business metrics: Reduction in overall contact center operating cost, incremental revenue from after-hours inquiries converted, and training cost savings attributed to chatbot-assisted onboarding.

Final Assessment

STRONG. This business case is well-substantiated, with measurable before-and-after results across speed, scale, cost, and customer reach. The compounding intelligence model, where the system continuously learns and expands, gives this solution long-term strategic durability beyond its immediate operational gains. The primary gaps are on the compliance and risk side, which are non-trivial in financial services and should be addressed before any replication or expansion of the model.

GITMA

Business Case: Manufacturing

Executive Summary

One of Latin America's largest construction materials manufacturers identified a critical breakdown in its sales and after-sales communication pipeline, between internal vendors, external customers, and support teams. The company engaged NDS Cognitive Labs to deploy an AI-powered chatbot integrated across WhatsApp, Microsoft Teams, and its customer web portal. The solution was designed not for end consumers, but as an operational tool for vendors and B2B clients managing complex purchase orders. Today, the chatbot handles over 2,000 monthly interactions, has eight active functions, and is on a scheduled expansion roadmap. This case illustrates how AI can streamline B2B service workflows and free sales talent for higher-value activity.

Business Problem

The company's vendors managed large portfolios of B2B customers placing frequent, varied purchase orders throughout the year. Tracking these orders required routing inquiries across multiple internal departments through informal channels, primarily WhatsApp, making real-time tracking nearly impossible and leaving no auditable history. Customers frequently forgot portal credentials and were locked out, creating a loop of unnecessary contact that consumed vendor time and support team capacity. The fragmentation of communication channels meant that no single team had visibility into the full customer inquiry lifecycle. The cost of inaction was a gradual erosion of vendor productivity, customer frustration, and an inability to scale service quality as the order volume grew.

Proposed Solution

NDS Cognitive Labs designed a virtual sales and after-sales assistant that acts as a centralized inquiry resolution layer for both vendors and B2B customers. The chatbot was built around eight core functions: purchase order status, entry profile (delivery dashboard), real-time order geolocation via map, production cycle tracking, dispatched unit details, customer credit information, billing particulars, and escalation to human agents for complex cases. It also includes a self-service security protocol that allows users to recover locked accounts or forgotten credentials without agent involvement. The solution integrates natively with WhatsApp and Microsoft Teams, the channels already in use, as well as the company's existing customer web portal, minimizing adoption friction.

Strategic Analysis

The solution directly addresses channel fragmentation by consolidating inquiries that previously traveled across WhatsApp, Microsoft Teams, email, and the web portal into a single, connected virtual agent that operates consistently across all three platforms, a meaningful omnichannel achievement in a B2B context where channel discipline is typically poor. Personalization is present at the account level: customers access their own order data, credit lines, and billing history, and the chatbot adapts its responses based on the specific inquiry type and user identity, which is particularly important for B2B relationships where context continuity matters. The automation impact is operational rather than volume-driven, the primary gain is the elimination of multi-step, multi-department routing for queries that are now resolved instantly, freeing vendors to focus exclusively on sales rather than acting as informal support intermediaries. The exponential value comes from the structured expansion roadmap: a new function is added approximately every two months, and the transition plan calls for customers to take over all after-sales interactions from vendors entirely, which would allow the sales force to operate at full commercial capacity, a compounding productivity gain as the tool matures.

Strategic Value

For customer experience, the most immediate gain is speed and reliability: customers no longer wait for inquiries to travel through multiple people and departments. Real-time order tracking, geolocation maps, and instant billing visibility give B2B clients the operational transparency they need to manage their own businesses effectively. For operational efficiency, the reduction in vendor time spent on after-sales inquiries is the headline benefit, vendors are repositioned as revenue generators rather than support agents. For business growth, the chatbot creates a scalable after-sales infrastructure that can absorb increasing order volumes without adding headcount, and the structured expansion roadmap suggests the company views this as a long-term platform investment rather than a one-time fix.

Risks and Limitations

The 2,000 monthly interactions figure, while directionally positive, is modest compared to the banking case, and the document does not provide pre-implementation baseline volumes, making it difficult to quantify the true operational improvement. The case relies heavily on WhatsApp as a business communication channel, which introduces dependency on Meta's platform policies and potential reliability or compliance risks, particularly for a company operating across Latin America where data residency and privacy regulations vary. The document does not address how the chatbot handles inquiry escalation quality, specifically, whether the handoff to human agents preserves full context or resets the customer experience. The transition plan that moves all customer interactions from vendors to the chatbot assumes high adoption rates among B2B customers who may have established, relationship-based preferences for direct vendor contact, an assumption that may not hold uniformly across the customer base.

Success Metrics

Customer-facing metrics: Order inquiry resolution rate without human escalation, average time from inquiry to resolution, credential recovery success rate (self-service), and customer satisfaction score for chatbot-resolved interactions.

Operational metrics: Reduction in vendor time spent on after-sales inquiries (hours per week), volume of inquiries routed to human agents as a percentage of total, number of active chatbot functions deployed versus planned, and monthly interaction volume growth.

Business metrics: Incremental sales activity generated by vendors freed from after-sales tasks, cost per after-sales interaction (chatbot vs. manual routing), and time-to-resolution improvement versus baseline.

Final Assessment

MODERATE TO STRONG. The solution addresses a genuine and structurally important operational problem, B2B communication fragmentation, with a well-designed, channel-native approach. The expansion roadmap and vendor productivity repositioning give it strong long-term potential. However, the relatively modest current interaction volume, the absence of clear baseline metrics, and the untested assumption of full customer adoption temper the immediate impact assessment. The case becomes significantly stronger if the vendor-to-chatbot transition executes as planned over the next 12 to 18 months.

GITMA

Business Case: Retail

Executive Summary

One of Mexico's largest retail companies faced a structurally expensive and operationally fragile contact center model, one that was particularly vulnerable during high-demand sales events. The company partnered with NDS Cognitive Labs to deploy an AI-powered chatbot on its website, capable of handling the full range of customer service inquiries including order tracking, returns, product search, billing, and special promotions. Within three months of launch, the chatbot handled over 690,000 inquiries, reduced resolution time by 70%, and enabled the company to absorb peak demand events like El Buen Fin and Cyber Monday without hiring or training new staff. This case demonstrates the most direct and quantifiable return on investment of the three cases presented.

Business Problem

The retailer's contact center faced two distinct but related problems. The first was structural: agents handled a broad mix of inquiry types, order tracking, credit card support, collections, billing, warranties, and product searches, causing constant misrouting between departments and diluting specialist capacity. The second was cyclical: special sales events every two months, some lasting only a weekend, required the recruitment and training of temporary staff for a limited engagement, making the cost-per-event disproportionately high. The company's over-the-phone and online sales channels were also underperforming because agents dedicated to driving those sales were routinely pulled into general customer service tasks. There was no existing call data record or systematic needs analysis, meaning the company was managing a high-cost, high-volume operation without the intelligence infrastructure to improve it. The cost of inaction was clear: revenue lost during peak events, high recruitment and training spend for temporary staff, and customer service quality that varied with agent availability.

Proposed Solution

NDS Cognitive Labs deployed an AI-powered virtual agent integrated into the retailer's website, designed to serve as the primary point of customer contact for all routine inquiries. Given the absence of prior customer data, the team conducted field research, including agent interviews, call listening sessions, and two weeks of transcript analysis, to map the most common customer needs. The chatbot was built to handle online, in-store, and phone order tracking; returns, exchanges, and warranty requests; product searches by name, category, SKU, or description; billing inquiries; physical store locations; and automatically updated special promotions. Sentiment analysis and escalation protocols route complex or frustrated customers to human agents with full interaction context. The system was trained on natural language variations identified during fieldwork, enabling it to recognize diverse customer communication styles.

Strategic Analysis

The retail chatbot achieves the broadest channel and use-case coverage of the three cases, handling inquiries that originate from online purchases, in-store transactions, and phone orders within a single interface, and extending service availability to the 20% of customers who contact the retailer outside business hours. Personalization is functionally present through purchase tracking tied to customer or order numbers, location-aware store finding, and the chatbot's ability to recognize the same product inquiry regardless of how it is phrased, by name, category, description, or SKU, which materially improves the experience for customers who do not know standard product terminology. The automation impact is the most dramatic of the three cases: concurrent inquiry capacity shifted from an average of 11 per hour to effectively unlimited, response time dropped 70%, and the company successfully absorbed over 82,000 inquiries across two major sales events without a single incremental hire, a direct and measurable operational cost avoidance. The exponential dimension is defined by the peak-event model: as the retailer runs more frequent or larger promotions, the chatbot's value scales non-linearly because the marginal cost of handling additional inquiry volume is near zero, while the alternative, temporary staffing, scales linearly and expensively.

Strategic Value

The customer experience improvement is significant on two dimensions: speed (resolution time reduced from 5.7 to 1.7 minutes) and availability (24/7 service, including after-hours coverage that previously did not exist). For the roughly 13,000 customers who inquired about the store's credit card outside business hours, the chatbot represented the difference between a converted customer and a lost one. Operationally, the ability to absorb El Buen Fin and Cyber Monday demand without scaling headcount is a structural competitive advantage in a sector where those events are revenue-defining. Human agents, freed from routine inquiry handling, can now specialize in complex cases and sales conversion, a workforce redeployment that improves both output quality and job satisfaction, which should reduce attrition over time. The retailer is also building a customer intelligence asset through ongoing chatbot interaction data, a long-term strategic resource that informs product, promotion, and service decisions.

Risks and Limitations

The absence of a pre-existing call data record was a significant constraint that required NDS Cognitive Labs to conduct primary fieldwork, which adds time and cost to the implementation and introduces the risk that the needs mapping was incomplete or biased toward the perspectives of managers and agents rather than customers. The chatbot's effectiveness during peak sales events, its most commercially critical application, depends on real-time promotion data being accurately and automatically updated; any failure in this data pipeline during a high-traffic event could result in incorrect information being delivered at scale. The document does not specify how returns, exchanges, and warranty requests are fully resolved, whether the chatbot completes the transaction or merely initiates a process that still requires human follow-through, which is a meaningful distinction for measuring true automation depth. Additionally, while the system routes to human agents for complex cases, the case does not address capacity planning for those agents during peak events, where escalation volumes could also spike significantly.

Success Metrics

Customer-facing metrics: First-contact resolution rate by inquiry type, average resolution time (chatbot vs. agent-handled), after-hours inquiry resolution rate, customer satisfaction score post-interaction, and cart or credit application conversion rate from chatbot-assisted interactions.

Operational metrics: Inquiry volume per hour (chatbot vs. agent baseline), escalation rate to human agents, peak-event handling capacity versus demand, promotion update accuracy rate, and agent attrition rate pre- and post-implementation.

Business metrics: Cost avoidance from reduced temporary staffing at peak events, incremental after-hours revenue attributable to chatbot availability, reduction in total contact center operating cost per inquiry, and return rate or warranty claim resolution cycle time.

Final Assessment

STRONG. This is the most commercially compelling of the three business cases, with the clearest and most quantifiable return on investment. The ability to handle peak sales events without incremental staffing cost alone justifies the investment for a retailer of this scale, and the 70% reduction in resolution time alongside 690,000 inquiries handled in three months demonstrates both quality and volume impact. The primary risks, data pipeline reliability during peak events and escalation capacity planning, are manageable with proper operational discipline and should not undermine the overall assessment of strategic strength.

GITMA

Business Case: Fashion Retail

Executive Summary

The fashion retail industry has undergone a significant transformation over the last two decades, driven by economic shifts and the rapid growth of e-commerce platforms such as Amazon and eBay. Online shopping has become the preferred purchasing channel, particularly among millennials and Generation Z consumers, who expect fast, personalized, and seamless digital experiences.

One of the main challenges for retailers is replicating the personalized attention customers receive in physical stores within the online environment. To address this, one client implemented a combination of call center support and an e-commerce platform. However, evolving consumer expectations exposed several operational inefficiencies and opportunities for improvement.

Customers frequently required phone support to clarify product or purchasing questions, resulting in call durations ranging from six to 49 minutes. This created friction in the online shopping journey and negatively impacted customer experience. Additionally, maintaining call center operations proved costly due to high employee turnover, extensive training requirements, and the constant need to update agents on pricing, promotions, and inventory changes.

The human-dependent support model also presented scalability limitations, as each agent could only assist one customer at a time. These operational and customer experience challenges highlighted the need for a more efficient, scalable, and technology-driven solution capable of delivering faster and more consistent customer support in the digital retail environment.

Business Problem

The fashion retail industry has reinvented itself over the past two decades as a result of economic crises and the emergence of e-commerce competitors like Amazon and eBay. E-commerce has rapidly become the preferred channel for all generations, but especially for millennials and Gen Z, who were born into online shopping. One of the most difficult retail challenges is translating the attention a customer expects in a physical store to the online environment. One of our clients addressed this challenge by using call centers and an e-commerce platform. As consumer behavior evolved, however, opportunities to improve the customer experience emerged. One was to reduce the time a customer spent on a call, which was typically from six to 49 minutes. Even when shopping online, a call was necessary when clarification was needed. And maintaining call center service is expensive. Human agents require complicated and expensive training due to high turnover rates and constant changes in prices, clearance sales, and other offers. As a human-operated service, each agent can only serve one client at a time, making service difficult to scale.

Proposed Solution

To overcome these challenges, NDS Cognitive Labs developed and implemented a "Conversational AI “Proof of Concept” solution to show our client how the chatbot could serve all customers who visited the e-commerce site. For the Proof of Concept, we implemented a chatbot in the online store. It was capable of answering more than 200 different types of complex questions related to topics, including the retailer’s credit card promotions, location of stores, order follow-up, new product lines, and seasonal offers.

Development and Implementation

A critical challenge was AI bias, which refers to how the Conversational AI understands the ways people express themselves. For example, one person could say “I am looking for a pair of jeans for work”, while another could say “I need some pants for the office”. The AI tool must understand the variances and provide clear, updated information, which is critically important for completing a sale. To address this, our team vigorously trained the Conversational AI chatbot on the different product categories and connected it with the search function inside the e-commerce website to create a better customer experience.

Results and Continuous Improvement

The Conversational AI can find specific products, including those on clearance and seasonal products, and respond to questions about trends and brands, regardless of how the questions are asked. We added additional features based on machine learning to enable the chatbot to advise customers about products for specific occasions, such as shopping for a romantic dinner. The chatbot recommends related products such as a bottle of wine, candles, and chocolates. The AI-powered chatbot also helps clients explore product features, in-store and online availability, and even the restock date, updated in real time. Now clients learn much more without having to contact customer service, which significantly enhances the shopping experience. The chatbot is also trained to help customers learn about promotions and whether the item they were looking for is eligible for a discount. For example, a customer could ask, “Which coffee maker is on sale?”The chatbot also delivers financial products such as store credit cards, insurance, and extended guarantees. It is possible to gather the information required to qualify for these services. If customers wanted more credit, a quick digital analysis suggests personalized offerings based on the customer’s credit score and history.

The AI chatbot also lets customers trace their orders in real-time or locate the closest store based on location, ZIP code, or nearby tourist attractions.Combining AI-powered chatbots with advanced analytics enables constant learning and improvement, which is key to success. When a chatbot is programmed with technologies such as Machine Learning and Data Analytics, it constantly upgrades itself based on its experience with conversations. The result is satisfied customers, greater loyalty, and increased sales conversion, at a lower cost.

Global Overview of Chatbots

The use of chatbots has exploded worldwide as consumers flock to communicate, entertain, and shop online. Companies have rushed to adopt technologies that enable them to serve their customers more quickly, efficiently, and with increasing scale; support innovation and competitive advantage; and maintain long-term relationships with 24/7responsiveness. Artificial Intelligence has become part of everyday life, automating and revolutionizing a wide range of services and industries. In a study conducted by The Economist, 75% ofexecutives at companies said that they will implement artificial intelligence in the next three years.

Meanwhile, 46% were more concerned about competition generated by AI-based companies than by companies not using AI. According to a 2018 global survey by McKinsey & Company, 47% of companies around the world have successfully implemented at least one AI tool in their operations[1]. And that is just the start. AI technologies are everywhere: in telephones, computers, and notably, in Netflix's recommendations. According to a global survey published by HubSpot, 63% of people use AI-powered technologies without knowing it.

And an increasing number are more than comfortable interacting with AI, particularly in areas such as customer service or sales. Chatbots communicate with audiences in two ways: voice and text. They provide an efficient and cost-effective way for organizations to manage communications across all platforms and channels while acquiring and

aggregating data to analyze and optimize operations and communications. Thanks to the integration of chatbots with messaging apps, today users can interact with organizations just by sending a text as they would to any friend anytime, day or night, and get instant answers without using the internet or making a call. With messaging apps becoming more ubiquitous globally, chatbots are now the most common way for users to communicate and interact with companies and their customer service centers. With chatbots, companies can learn more about their visitors by aggregating and understanding responses that indicate important attitudes, behaviors, and beliefs. Chatbots can have conversations in natural language, the same one customers use, adapting and learning from the many ways people ask questions. Analyzing interactions provides the best results, enabling companies to optimize their interactions. This analysis also results in "training the chatbot" to be ever more effective. The training process helps companies improve customer experiences and offer better service. Likewise, visitor satisfaction increases when people solve problems faster as they find the right products, purchase them, and check their shipping progress. According to McKinsey & Company, an AI-powered chatbot is one of the most successful digital tools a company can use to transform its customer experience.

Clearly, companies not responding to advances in digital technology risk customer attrition, a blueprint for failure. The needs of consumers are changing quickly, with an emphasis on faster service and instant response. According to consultant Wunderman,56% of millennials have switched from one company to another because of dissatisfaction with customer service, with 52% of telephone inquiries ending in hang-ups before concerns are solved.

But there are digital solutions to these problems. Companies in the financial, retail, and customer service sectors, as well as a company's human resources department, can effectively use conversational AI to improve interactions. And diverse companies have discovered the tremendous benefits of using a virtual assistant. Chatbots can be tailored to any sector, are cost-effective, and are easy to implement. In 2016, Facebook Messenger announced that it had more than 30,000 chatbots available worldwide on its platform.

By 2018, it announced the creation of 300,000 more from the first appearance of a conventional AI bot, in 1966, chatbots have been increasingly upgraded and improved. Today, they can keep up a fluent, natural conversation and carry out a variety of tasks without human mediation. AI bots can order home-delivery food, book a hotel room, purchase movie tickets, receive invitations, do shopping, and even tell jokes, like Apple's Siri.

A Revolutionary Advancement in Business Processes

Executive Summary

Conversational AI and Messaging Apps. Platforms that enable instant messaging between users are known as “chat applications” or “social messaging apps.” The most popular apps worldwide include WhatsApp, Facebook Messenger, WeChat, Telegram, and Twitter. Integrating several functions, including audio and visual messaging, visual libraries, and contact databases, they are the evolution of SMS or Text Messaging. Messaging apps are often integrated into other applications such as Slack, Instagram, and TikTok. Messaging may not be the primary function of the application, but the message feature makes it easier for people to collaborate, schedule appointments, and share information; some messages have become one of the most important communication channels in the world. According to TechCrunch, WhatsApp delivers about 100 billion messages per day. In addition to the best-known messaging apps, many others are used worldwide, creating a challenge for companies seeking to provide consistent messaging across all channels. Not only is consistency a problem, but reliable information about sales, offers, and availability is a challenge, as is the ability to aggregate and analyze the data that results from interactions in these platforms.

Human Resources

Chatbots have revolutionized the two most important processes in Human Resources: personnel recruitment and training. When there is a need to advertise a job vacancy, a customized chatbot algorithm can be the first contact with potential candidates. It will collect information, ask further questions, process the data received, and filter the best candidates. This streamlined process reduces stress on the recruitment team without losing information that's crucial to a successful hire. As for personnel training, well-programmed chatbots can handle teaching just about any topic. A chatbot can act as a tutor to reinforce the teaching process, making any learning experience more dynamic and personalized. In fact, one of the major advantages of using a chatbot to train personnel is its ability to adapt to the specific needs of a particular user. The added benefit? A chatbot is available 24/7 to support an employee's success.

Customer Service

When a customer clicks on your website, it's as if they enter your store. For a company with an online presence, customer engagement and quick feedback are key to success. Chatbots are an ideal tool, having the ability to respond at any time to customer inquiries, particularly those which are repetitive, saving time, effort, and costs. Now, it's no wonder so many companies use chatbots on their websites and in their social networks to resolve inquiries quickly and effectively. Chatbots are also a valuable ally of contact centers, extending their capacity to serve more customers at once while driving down costs and learning more about their customers. To customers, the benefits are obvious: instant responses to their inquiries, as well as a personalized service that smooths and improves their journey. It's no surprise, then, that the growing need for chatbots is such that the research firm Gartner predicts that by the time this book is published,25% of customer service centers will be operated by AI-powered agents.

Sales

In addition to improving customer service, chatbots can significantly improve sales. Achatbot uses big data and machine learning to analyze large quantities of information, expanding its ability to guide customers through the purchase of additional products or services by means of cross-selling and up-selling—similar to the technology used by Netflix to make movie recommendations based on previous choices. Some chatbots guide visitors through the entire process from recommendations to after-sales service. Chatbots also have the ability to collect data and receive payments through a conversational format. And they can be integrated with social messaging platforms to perform this crucial function, making it far easier for the customer than being referred to a third-party website. At present, Facebook already uses this solution, and PayPal has also developed a similar Slack-based chatbot for the same purpose.

Collaboration and Reporting

A majority of companies use messaging services and similar tools to facilitate collaboration among employees. A chatbot can be incorporated into these services to automate important, but time-consuming, processes. For instance, a chatbot integrated into WhatsApp can compile daily equipment upgrades, integrate them into a report, and send it to a manager. Additionally, it can send reminder notifications of meeting times or deadlines.

Data Collection and Analysis

Chatbots can efficiently identify customer behavior and needs. From conversations, they can collect significant data to drive sales: areas of opportunity, most sold products, unproductive sectors, customer demands, and even trends. With this data, cognitive systems using AI are capable of cleansing, arranging, analyzing, and cross-referencing information, making it available for different uses: optimizing corporate

websites and social networks; drafting messages, either personalized or intended for a specific sector; and even improving the chatbot itself.

AI has transformed a wide variety of industriesby providingsignificant savings of timeand money. Going forward, AI willresult ina doubling ofeconomic growth ratesintwelvedeveloped countries by 2035, boosting labor productivity by nearly 40%, according toAccenture research.

The global chatbot market, In particular, is projected to grow from $2.6B in 2019 to $9.4Bby 2024 in response to technological advances and customer demand for 24/7assistance, according to the specialized siteMarket and Markets.Businesses facing increasing competition have an urgent need for AI technology.In order to compete effectively, companies must provide top quality customerservice.More companies than ever are adopting this technology to quickly handlecomplaints, sell products and services, and provide a more personalized customerexperience.In the legal industry,for example,chatbots have been assisting in the resolution of legalissues. Docubot, for example, helps consumers generate legal documents [10]; Lexiprovides legal assistance to users; and Legalibot, developed by Legaliboo, is the firstchatbot in the world capable of generating customized contracts through FacebookMessenger.

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References:

[1]: Accenture International. (n.d.). A su servicio, El Poder Disruptivo de los Chatbots. Retrieved from *https://www.accenture.com/t00010101t000000z_w_/co-es/_acnmedia/pdf-50/accenture-pov_chatbots_pov-espanhol.pdfla=es-la*

[2]: IBM, Nearshore Delivery Solutions & NDS Cognitive Labs. (2018). Nearshore Delivery Solutions. Retrieved from https://www.ibm.com/case-studies/nearshore-delivery-solutions-cloud-ai-banking-chatbot

[3]: IBM, Nearshore Delivery Solutions & NDS Cognitive Labs. (2018). Nearshore Delivery Solutions. Retrieved from https://www.ibm.com/downloads/cas/JOEXYB08

[4]: Salesforce. (2019). State of Service. Retrieved from https://c1.sfdcstatic.com /content/dam/web/en_us/www/documents/reports/salesforce-research-third-edition-state-of-service.pdf

[5]: Redacción. "NDS Cognitive Labs Crea Asistente Virtual Con IBM Watson Para Fundación Teletón." ESemanal - Noticias Del Canal, IBM, February 13, 2020, esemanal.mx/2020/02/nds-cognitive-labs-crea-asistente-virtual-con-ibm-watson-para-fundacion-teleton/.

[6]: Machorro, Juan Carlos. "¿Cómo Es Charlar Con Yolín, El Asistente Virtual Del Teletón?" ExpokNews, IBM, 18 Feb. 2020, www.expoknews.com/como-es-charlar-con-yolin-el-asistente-virtual-del-teleton/.

[7]: Petouhoff, N. (2019, April). "State of Service" Report: The Age of AI, and Agent and Customer Empowerment. Retrieved from https://www.salesforce.com/products/service-cloud/resources/state-of-service/

[8]: Ovanessoff, A. & Plastino, E. Accenture International. Artificial Intelligence to drive South America's Growth. Retrieved from https://www.accenture.com/_acnmedia/pdf-48/accenture-ai-south-america.pdfla=es-la

[9]: Martinho-Truswell, E. & Gomez Mont, C. Oxford Insights. Mexico leads Latin America as one of the first ten countries in the world to launch an artificial intelligence strategy. Retrieved from https://www.oxfordinsights.com/insights/2018/5/24/mexico-leads-latin-america-as-one-of-the-first-ten-countries-in-the-world-to-launch-an-artificial-intelligence-strategy

[10]: Ovanessoff, A. & Abbosh, O. World Economic Forum. Artificial intelligence could help reverse Latin America's economic slowdown. Retrieved from https://www.weforum.org/agenda/2017/03/artificial-intelligence-could-help-reverse-latin-america-s-economic-slowdown/