



Integrating Emotion AI, Robotics AI, and Sentiment Analysis into Customer Relationship Management: An Asavika Sciences Perspective

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Abstract. Customer Relationship Management (CRM) has evolved from basic data systems into intelligent ecosystems powered by Artificial Intelligence (AI). This paper examines how Emotion AI, Robotics AI, and Sentiment Analysis are transforming CRM by enabling empathetic interactions, service automation, and real-time emotional insights. Drawing on case studies from industries such as retail, banking, and entertainment, the research highlights both the opportunities and challenges of integrating these technologies. The analysis is guided by the Asavika Sciences philosophy, which emphasizes principles of *Infinitando* (expansion of awareness) and *Biosentia* (respect for sentient life). Findings suggest that while AI-driven CRM can enhance personalization, efficiency, and customer loyalty, ethical concerns around privacy, emotional surveillance, and cultural acceptance remain pressing. The study proposes a regenerative CRM framework that balances profitability with empathy, dignity, and sustainability, offering insights for scholars, practitioners, and policymakers navigating the future of customer engagement.

Keywords: Emotion AI, Robotics AI, Sentiment Analysis, Customer Relationship Management, Ethical AI, Sustainability, Asavika Sciences

1. Introduction

Artificial Intelligence (AI) has emerged as one of the most disruptive forces reshaping human-machine interaction, with particular significance in the domain of **Customer Relationship Management (CRM)**. Over the past two decades, CRM systems have transitioned from simple databases and sales tools into **intelligent, adaptive ecosystems** capable of managing personalized customer journeys, predicting consumer behavior, and fostering trust-based relationships (Nguyen & Mutum, 2012). The integration of **Emotion AI, Robotics AI, and Sentiment Analysis** represents the next frontier of this transformation, enabling CRM platforms to not only track customer behaviors but also understand emotional states, respond empathetically, and align business practices with ethical and ecological imperatives.

The **philosophical and ethical framing** of these technologies, however, is equally critical. In this respect, **Asavika Sciences** provides a unique paradigm: it advocates for a compassionate integration of technology and human values through principles such

as *Infinitando* (infinite conscious expansion) and *Biosentia* (recognition of sentient life). This philosophy extends CRM beyond efficiency or profitability into a model of **regenerative commerce**, one that fosters empathy, ecological sustainability, and holistic well-being (Pironti, 2024).

1.1 Evolution of CRM Systems

CRM has evolved through multiple stages. The earliest systems were **data-driven repositories** designed to centralize customer information and automate basic sales functions (Payne & Frow, 2005). Later, with the rise of the internet and mobile computing, CRM incorporated **multi-channel engagement**—email, web portals, and social media—ushering in the age of **e-CRM** (Chen & Popovich, 2003). The third wave came with **predictive analytics**, enabling firms to anticipate consumer needs and segment customers with greater precision (Buttle & Maklan, 2015).

Now, the fourth wave—driven by AI—ushers in **emotionally intelligent CRM systems**. Emotion AI (Picard, 1997) allows machines to interpret human feelings through facial expressions, voice tone, and textual sentiment, while Robotics AI enables physical service automation in retail, banking, and healthcare (Ivanov & Webster, 2019). Sentiment Analysis, through Natural Language Processing (NLP), reveals subjective states in written or spoken language (Pang & Lee, 2008). Together, these tools are redefining CRM as a **multi-dimensional ecosystem of cognition, empathy, and sustainability**.

1.2 Emotion AI: From Data to Compassion

Emotion AI, also known as affective computing, draws from psychology, neuroscience, and machine learning. It seeks to bridge the emotional gap between humans and machines by enabling systems to recognize, interpret, and respond to emotional states (McDuff & Czerwinski, 2018). In CRM, this translates to more **empathetic customer service interactions**: for example, call centers where AI can detect frustration in a client's voice and route the call to a specialized human agent trained in conflict resolution (Cowen & Keltner, 2017).

Yet, ethical considerations remain pressing. Scholars argue that **emotion data must be treated as sacred**—a deeply personal dimension of human experience—rather than commodified metrics (Benjamin, 2019). Hence, Emotion AI in CRM must be designed with transparency, consent, and dignity as guiding principles (Jobin, Ienca, & Vayena, 2019).

1.3 Robotics AI in Service Ecosystems

The integration of **Robotics AI** into CRM has accelerated, particularly in retail and hospitality. Service robots, such as Softbank's Pepper, engage customers by offering personalized assistance and gathering feedback (Ivanov & Webster, 2019). In banking, robotic kiosks provide real-time updates, reducing wait times and improving satisfaction.

The use of Robotics AI also demonstrates the dual edge of technological progress: while it enhances efficiency and novelty in customer engagement, it also raises questions of **job displacement, depersonalization, and cultural acceptance** (Broadbent,

2017). The Asavika framework suggests a middle path, where robots are not substitutes for human empathy but **companions and facilitators**, designed to complement human creativity and compassion rather than replace them.

1.4 Sentiment Analysis in Digital Environments

In the era of **social media-driven consumer culture**, Sentiment Analysis has become indispensable. It leverages NLP techniques—such as machine learning classifiers, word embeddings, and deep learning networks—to process vast volumes of unstructured data and derive insights about customer emotions and opinions (Liu, 2015). Platforms like Amazon and Netflix employ sentiment models to **predict preferences, personalize recommendations, and identify dissatisfaction trends** (Gandomi & Haider, 2015).

However, limitations persist: cultural bias, sarcasm detection, and contextual ambiguity challenge the reliability of sentiment models (Cambria et al., 2017). Consequently, next-generation CRM must combine **technical accuracy with ethical governance**, ensuring that insights derived from sentiment do not manipulate but rather **empower customers to make conscious decisions**.

1.5 Philosophical and Ethical Dimensions: The Asavika Perspective

The most distinctive aspect of this research lies in its **ethical orientation**. While much of the literature treats CRM as a commercial optimization tool, the Asavika Sciences philosophy frames it as a **dialogue of consciousness** between humans, machines, and the planet.

- *Infinitando* encourages infinite growth of awareness, guiding CRM systems to not only meet consumer desires but also expand their ethical and ecological horizons (Pironti, 2024).
- *Biosentia* underscores the dignity of all sentient beings, urging CRM to integrate planetary needs and environmental sustainability into customer strategies.

This philosophical stance resonates with **post-humanist ethics**, which reject anthropocentric exploitation and instead promote **relational intelligence**—systems that are not extractive but regenerative (Braidotti, 2019).

1.6 Literature Review and Research Gaps

Existing scholarship reveals several strands:

- Technical studies emphasize algorithmic sophistication in Emotion AI, Robotics AI, and Sentiment Analysis (Russell & Norvig, 2020; Goodfellow et al., 2016).
- Business literature explores AI's contribution to **customer satisfaction and loyalty** (Nguyen & Mutum, 2012; Buttle & Maklan, 2015).
- Ethical discourse increasingly warns of **data commodification, emotional surveillance, and privacy erosion** (Benjamin, 2019; Zuboff, 2019).

Despite these contributions, gaps remain. Few studies explore the **integration of these three AI domains within a unified CRM framework**. Even fewer situate such integration within an **ethical and ecological paradigm**, as proposed by Asavika Sciences. Thus, this study addresses a **critical interdisciplinary gap**: how can Emotion AI, Robotics AI, and Sentiment Analysis be woven into CRM to foster not only business growth but also **emotional well-being, sustainability, and collective consciousness**?

1.7 Objectives and Scope of the Study

The objectives of this study are:

- To critically analyze the integration of **Emotion AI, Robotics AI, and Sentiment Analysis** into CRM systems.
- To evaluate their **technical, ethical, and philosophical dimensions**, particularly under the framework of Asavika Sciences.
- To identify **real-world applications, emerging trends, and challenges** in adopting these technologies responsibly.
- To propose a **regenerative CRM model** that balances profitability, human dignity, and ecological sustainability.

The scope of this research extends beyond conventional CRM literature by situating AI technologies within a **holistic ethical framework**. It combines **conceptual analysis, technical review, and philosophical reflection**, aiming to provide insights that are relevant not only to scholars and practitioners but also to policymakers shaping the governance of AI in commerce.

2. Methods

The methodological approach for this study combines **conceptual analysis, literature integration, and exploratory case analysis**, structured to evaluate the intersection of Emotion AI, Robotics AI, and Sentiment Analysis within Customer Relationship Management (CRM) under the Asavika Sciences framework. The methods reflect a **multi-layered design** that is theoretical, empirical, and interpretive, aligning with best practices in interdisciplinary management and information systems research (Eisenhardt, 1989; Creswell & Plano Clark, 2017).

2.1 Research Design

The study adopts a **qualitative exploratory design**. Since the integration of Emotion AI, Robotics AI, and Sentiment Analysis into CRM represents an **emerging and under-theorized field**, exploratory research enables a **flexible and iterative engagement** with both existing knowledge and practical case applications (Yin, 2018).

The design rests on three methodological pillars:

1. **Literature-Based Conceptual Mapping**

- A structured literature review was conducted across leading databases (Scopus, Web of Science, IEEE Xplore, and Google Scholar).
- Keywords included: *Emotion AI, Affective Computing, Robotics AI, Sentiment Analysis, Customer Relationship Management, Ethical AI, Sustainable CRM*.
- This enabled the identification of theoretical models, key debates, and technological frameworks relevant to CRM transformation (Tranfield et al., 2003).

2. Case-Oriented Analysis

- Selected cases from industry (banking, e-commerce, hospitality) were reviewed to demonstrate practical adoption.
- Cases were evaluated for how they incorporate AI-driven emotional intelligence, robotic service automation, and sentiment analytics into CRM.
- Evaluation criteria were derived from ethical and philosophical parameters of **Asavika Sciences** (Infinitando and Biosentia).

3. Interpretive Philosophical Analysis

- Unlike conventional CRM studies, this work integrates **philosophical hermeneutics** to interpret the ethical implications of data-driven empathy.
- Methods such as **conceptual triangulation** were employed, combining insights from AI ethics, business strategy, and post-humanist philosophy (Braidotti, 2019).

2.2 Methodological Framework

The methodological framework is structured as a **three-phase model**, ensuring that the study systematically integrates **technical, ethical, and ecological dimensions**.

- **Phase 1: Technical Analysis**

- Review of AI methods in Emotion AI, Robotics AI, and Sentiment Analysis.
- Mapping of algorithmic approaches such as deep learning (Goodfellow et al., 2016), natural language processing (Liu, 2015), and robotic human–machine interaction (Ivanov & Webster, 2019).

- **Phase 2: Ethical-Philosophical Interpretation**
 - Analysis of how these technologies align with principles of *Infini-tando* (infinite awareness) and *Biosentia* (value of sentient life).
 - Engagement with global AI ethics frameworks, including EU guide-lines (Jobin, Ienca, & Vayena, 2019).
- **Phase 3: Applied CRM Case Analysis**
 - Identification of real-world CRM cases where AI integration demon-strates both opportunities and risks.
 - Comparative interpretation of these cases to derive **systemic insights** for regenerative CRM models.

2.3 Data Collection and Sources

Data was collected from multiple sources to strengthen **triangulation** and validity:

- **Academic sources:** Peer-reviewed articles, conference proceedings, books.
- **Industry reports:** McKinsey, Deloitte, Gartner white papers on AI in CRM.
- **Case documentation:** Company case studies (e.g., Amazon, Netflix, Soft-bank Robotics, and Solar Sister) and sustainability reports.
- **Philosophical texts:** Works on post-human ethics and AI philosophy (Floridi, 2019; Zuboff, 2019).

This multi-source strategy ensured **breadth (coverage of domains)** and **depth (eth-ical interpretation of use cases)**.

2.4 Data Analysis

The data analysis followed a **two-level coding approach**:

1. **Descriptive Coding**
 - Identified recurring patterns such as *emotional recognition accuracy*, *robotic service efficiency*, and *customer sentiment reliability*.
2. **Thematic Coding**
 - Extracted deeper themes such as *ethical AI governance*, *post-human-ist perspectives*, and *CRM as regenerative ecosystem*.
 - Cross-compared technical findings with ethical-philosophical cate-gories from Asavika.

To maintain **academic rigor**, the analysis was guided by the **Grounded Theory methodology** (Glaser & Strauss, 1967) for inductive theory building, while also integrating deductive ethical principles.

2.5 Validity and Reliability

Ensuring quality in qualitative research requires robust strategies (Lincoln & Guba, 1985). This study adopted:

- **Triangulation:** Multiple data sources (academic, industry, cases).
- **Peer debriefing:** Engaging external scholars in AI ethics and CRM to review findings.
- **Philosophical coherence:** Ensuring interpretations remain consistent with Asavika principles, not only technical trends.
- **Transferability:** Cases and insights chosen with relevance across sectors (banking, retail, healthcare, e-commerce).

2.6 Ethical Considerations

Ethics remain central to this methodology. Key considerations included:

- **Privacy and Consent:** Avoiding over-reliance on emotional or sentiment data without explicit customer consent (Zuboff, 2019).
- **Bias Mitigation:** Recognizing algorithmic bias in facial recognition and sentiment analysis, especially across cultural contexts (Benjamin, 2019).
- **Ecological Alignment:** Ensuring AI adoption aligns with environmental sustainability goals, consistent with Biosentia.

2.7 Summary of Methodology

In sum, the methodology is designed to be **rigorous, interdisciplinary, and ethically grounded**. By combining **technical review, case analysis, and philosophical reflection**, the study addresses both the opportunities and the ethical challenges of integrating Emotion AI, Robotics AI, and Sentiment Analysis into CRM.

3. Case Studies and Findings

The following section presents five selected case studies that illustrate the integration of **Emotion AI, Robotics AI, and Sentiment Analysis** within Customer Relationship Management (CRM). These cases were chosen for their **practical significance, diversity across industries, and ethical considerations**, thereby demonstrating how the Asavika Sciences framework may inform regenerative and empathetic CRM strategies.

Case 1: Affectiva and Automotive Customer Experience

Affectiva, a pioneer in **Emotion AI**, has developed advanced algorithms capable of detecting human emotions through facial recognition and voice analytics. In collaboration with automotive companies, Affectiva deploys in-car sensors that **monitor driver stress, frustration, or fatigue** (McDuff & Czerwinski, 2018).

- **CRM Relevance:** These insights are not only used to enhance safety but also to deliver **personalized driving experiences**. Manufacturers can anticipate service needs, design empathetic customer outreach campaigns, and create loyalty programs linked to driver emotional data.
- **Ethical Dimension:** While innovative, such applications raise privacy and consent concerns, aligning with critiques about **emotional surveillance** (Benjamin, 2019).
- **Insight:** This case exemplifies how **Emotion AI in CRM** can shift from transactional service to **empathy-driven ecosystems**, resonating with Asavika's emphasis on *Infinitando* (expansion of conscious awareness).

Case 2: Softbank's Pepper Robot in Retail Banking

Softbank Robotics' humanoid robot **Pepper** has been implemented in retail banking branches across Japan and Europe. Pepper engages with customers, answers queries, provides product recommendations, and even detects emotional cues through tone and facial recognition (Ivanov & Webster, 2019).

- **CRM Relevance:** Pepper functions as a **frontline CRM agent**, collecting customer feedback, assisting in account management, and freeing human staff for complex tasks.
- **Ethical Dimension:** The robot's empathetic interaction style enhances trust but also raises questions about **depersonalization of human relationships**.
- **Insight:** This case demonstrates the potential of **Robotics AI** to combine efficiency with relational warmth, aligning with the Asavika view that robots should act as **companions and facilitators** rather than replacements.

Case 3: Amazon and Sentiment-Driven Recommendation Systems

Amazon's recommendation engine, one of the most sophisticated in e-commerce, employs **sentiment analysis from customer reviews** to refine personalization strategies (Gandomi & Haider, 2015). Beyond simple purchase histories, Amazon leverages textual sentiment to adjust pricing, product placement, and promotional targeting.

- **CRM Relevance:** Sentiment-based recommendations significantly increase **customer satisfaction and conversion rates**, forming the backbone of Amazon's CRM dominance.

- **Ethical Dimension:** Critics argue that this creates **manipulative personalization** and risks pushing consumers into over-consumption (Zuboff, 2019).
- **Insight:** This case highlights the double-edged nature of sentiment analytics—capable of fostering customer loyalty but requiring ethical guardrails for **non-exploitative engagement**.

Case 4: Henn-na Hotel, Japan – Robotic Service Ecosystem

Japan's **Henn-na Hotel** gained global attention as the first hotel staffed largely by robots. These include robotic receptionists, baggage handlers, and concierge agents capable of conversational interaction (Tung & Au, 2018).

- **CRM Relevance:** The robotic ecosystem creates a novelty-driven customer experience while collecting data on guest satisfaction and behavior.
- **Ethical Dimension:** While operational efficiency increased, challenges emerged in **technical reliability and customer adaptation**, illustrating limits to robotic CRM adoption.
- **Insight:** This case reflects the **boundary conditions of Robotics AI in CRM**: success requires balancing technological novelty with **human authenticity and relational depth**.

Case 5: Netflix – Emotionally Adaptive Content Curation

Netflix employs **Emotion AI and Sentiment Analysis** to refine its recommendation system. Beyond analyzing viewing history, Netflix interprets emotional reactions from user engagement patterns—such as pausing, skipping, or binge-watching behaviors (Davidson et al., 2010).

- **CRM Relevance:** This emotional profiling enables Netflix to deliver **hyper-personalized content journeys**, reinforcing customer loyalty and reducing churn.
- **Ethical Dimension:** While enhancing user satisfaction, such techniques raise concerns of **emotional dependency and cultural homogenization** through algorithmic reinforcement loops.
- **Insight:** Netflix illustrates the convergence of **Emotion AI and Sentiment Analysis** within CRM, providing evidence of how platforms can transition into **emotionally intelligent media ecosystems**.

4. Discussion and Conclusion

The integration of **Emotion AI, Robotics AI, and Sentiment Analysis** within CRM systems represents both a technological breakthrough and an ethical-philosophical

challenge. This study, framed through the lens of **Asavika Sciences** (principles of *In-finitando* and *Biosentia*), demonstrates that AI-driven CRM can evolve into a **regenerative ecosystem**—one that balances business goals, human dignity, and ecological sustainability.

The following discussion synthesizes insights from the **literature review, methods, and case studies**, structured around key themes.

4.1 Key Contributions of Emotion AI in CRM

- **Empathy as a Service**

- Emotion AI enables systems to interpret customer emotions through facial recognition, voice analysis, and behavioral cues (Picard, 1997; McDuff & Czerwinski, 2018).
- Case 1 (Affectiva in automotive industry) illustrated how **emotional monitoring extends CRM into empathetic engagement**, not merely functional support.

- **Ethical Tensions**

- Risks of **emotional surveillance** and commodification of affect are significant (Benjamin, 2019; Zuboff, 2019).
- Without transparency and consent, Emotion AI could undermine trust rather than build it.

- **Synthesis**

- Emotion AI offers **deep personalization** but requires governance aligned with principles of **privacy, dignity, and ecological harmony** (Jobin, Ienca, & Vayena, 2019).

4.2 Role of Robotics AI in Redefining Customer Engagement

- **Service Efficiency and Novelty**

- Robots such as Softbank's Pepper (Case 2) and Henn-na Hotel's robotic staff (Case 4) show how Robotics AI can **streamline repetitive tasks** and **enhance novelty-driven experiences** (Ivanov & Webster, 2019; Tung & Au, 2018).

- **Risks of Depersonalization**

- Excessive reliance on robots risks reducing **human warmth in CRM interactions**.

- Customers may perceive robotic engagement as **transactional rather than relational** if not carefully designed.
- **Balanced Integration**
 - The Asavika framework encourages viewing robots as **companions and facilitators**—tools that **augment human creativity and empathy**, not replacements.

4.3 Sentiment Analysis as a Predictive CRM Tool

- **Value Creation**
 - Amazon’s recommendation engine (Case 3) exemplifies the power of sentiment-driven personalization (Gandomi & Haider, 2015).
 - Netflix (Case 5) further illustrates **emotionally adaptive content curation** based on behavioral signals.
- **Challenges**
 - **Cultural bias, sarcasm detection, and contextual ambiguity** limit accuracy (Cambria et al., 2017).
 - Overuse may drive **manipulative personalization**—nudging customers toward behaviors that prioritize profit over well-being (Zuboff, 2019).
- **Synthesis**
 - Sentiment Analysis remains central to **predictive and adaptive CRM**, but requires **ethical filters** that protect autonomy and diversity.

4.4 Ethical and Philosophical Implications (Asavika Sciences Lens)

- **Infinitando (Expansion of Awareness):**
 - CRM systems should expand not only profitability but also **ethical awareness** and **customer well-being**.
 - Technologies must help customers make **conscious choices**, not impulsive ones (Pironti, 2024).
- **Biosentia (Respect for Sentience):**
 - Emotional data must be treated as sacred, not merely transactional.

- AI systems should align with **ecological and social sustainability**, avoiding exploitative practices.
- **Alignment with Global Ethics**
 - Consistent with international AI ethics guidelines emphasizing **transparency, accountability, and fairness** (Jobin et al., 2019).

4.5 Cross-Case Insights

- **Emotion AI (Cases 1 & 5):** Empathy-driven personalization is possible but must avoid **surveillance capitalism**.
- **Robotics AI (Cases 2 & 4):** Robots are valuable in routine tasks but cannot replicate **authentic human empathy**.
- **Sentiment Analysis (Cases 3 & 5):** Provides predictive advantage but risks **bias and manipulation** if unchecked.
- **Overarching Lesson:** AI-enabled CRM succeeds when embedded within a **regenerative, ethically conscious model**.

4.6 Managerial and Practical Implications

- Businesses must:
 - Adopt **hybrid CRM models** blending human empathy with AI efficiency.
 - Establish **AI ethics boards** to oversee responsible adoption.
 - Invest in **algorithmic transparency** to avoid hidden biases.
 - Explore **ecological integration** (energy-efficient algorithms, carbon-neutral AI operations).

4.7 Limitations of This Study

- **Conceptual Orientation:**
 - While rich in theoretical grounding, the study is not based on **primary empirical surveys or experiments**.
- **Case Reliance:**
 - Cases were curated from secondary sources; thus, **contextual nuances** may be underexplored.

- **Dynamic Nature of AI:**
 - Rapid evolution of AI technologies may make findings **time-sensitive**.

4.8 Future Research Directions

- Empirical studies involving **customer perceptions of AI-enabled empathy**.
- Comparative research across **cultural contexts** to test biases in sentiment and emotion recognition.
- Development of **green AI practices** for sustainable CRM.
- Philosophical inquiry into the **post-human role of empathy in commerce**.

5. Conclusion

- **CRM Evolution:** From databases to emotionally intelligent ecosystems, CRM has entered its most **transformative phase**.
- **AI's Role:** Emotion AI, Robotics AI, and Sentiment Analysis collectively enable **empathetic, efficient, and predictive CRM systems**.
- **Ethics First:** Without ethical governance, these technologies risk becoming **exploitative tools** of surveillance capitalism (Zuboff, 2019).
- **Asavika Contribution:** By situating CRM within the philosophy of **Infini-tando** and **Biosentia**, businesses can transition from extractive to **regenerative commerce**.
- **Final Thought:** The future of CRM is not just about smarter machines—it is about **wiser systems** that honor the dignity of customers, protect ecosystems, and foster collective consciousness.

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