Published by :
http://www.ijert.org

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 14 Issue 06, June - 2025

Leveraging Salesforce.com to Quantify the ROI of Robotic Surgery Versus Open and Laparoscopic Procedures: A CRM-Driven Frame Work for Sales Enablement

Tejas Gohel,
Intuitive Surgical

Abstract
The medical device industry, particularly in robotic-assisted surgery, increasingly demands quantifiable proof of value to support hospital purchasing decisions. Sales teams must demonstrate the clinical, operational, and economic advantages of robotic procedures over traditional open and laparoscopic surgeries. This paper presents a Salesforce.com-based solution architecture that enables sales representatives to generate ROI models, benchmark metrics, and customer-specific insights in real time. We detail the technical architecture, business process integration, and analytical workflows that power this capability, using Data Cloud, CRM Analytics, and custom Salesforce Lightning components.

I. INTRODUCTION

Hospitals and Integrated Delivery Networks (IDNs) require clear, data-backed justifications when investing in high-cost surgical robotics. Sales teams for medical device companies must shift from product promotion to value storytelling — quantifying outcomes, recovery time, resource utilization, and long-term cost savings. This paper proposes a solution architecture on the Salesforce platform that enables sales professionals to dynamically compare robotic, laparoscopic, and open surgeries across clinical and financial dimensions. The goal is to empower consultative selling, backed by evidence-based ROI models built into the CRM workflow.

II. INDUSTRY CHALLENGES AND MOTIVATION

Key challenges that inhibit effective sales enablement in the current environment include:

- Lack of integrated outcome and cost data across surgical modalities
- Manual, non-repeatable ROI calculations performed in spreadsheets
- Limited personalization in sales presentations to specific hospital use cases
- Siloed clinical, operational, and economic datasets

These gaps result in missed opportunities to demonstrate the broader value of robotic-assisted surgery, especially when influencing non-clinical stakeholders like CFOs or operations leads.

III. SALESFORCE-BASED SOLUTION OVERVIEW

The proposed solution architecture consists of four major building blocks:

A. Data Foundation (Salesforce Data Cloud)

- Ingests internal benchmarks, customer-specific cost and clinical data, and third-party databases like IQVIA.
- Builds a Unified Health System Profile with metadata on volume, outcomes, and financials by procedure type.

B. ROI Engine (Custom Apex + Flow + Analytics)

- Uses customizable models to compare:
  - Length of stay (LOS)
  - Surgical time
  - ICU Admissions

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 14 Issue 06, June - 2025

- Readmission rates
- Complication rates
- Total cost of care

- Models are built using Einstein Discovery or Tableau CRM logic layers.

C. User Interface (Salesforce Lightning)

- Sales reps interact with dynamic dashboards and ROI wizards via:
  - Custom object
  - Surgeon view
  - Hospital View

D. Output & Engagement

- Generates executive-level PDF reports, presentation decks, and value calculators.
- Results are auto-logged into the custom object

III-A. ARCHITECTURE REFERENCE

To operationalize ROI modeling within the Salesforce ecosystem, we propose a modular, scalable enterprise architecture composed of the following integrated layers:

1. Data Integration Layer

- Salesforce Data Cloud (Genie): Centralizes data ingestion from EHR systems, hospital cost accounting databases, Salesforce CRM objects, and third-party sources like IQVIA.
- APIs and Connectors: Uses CRM Analytics connectors / Amazon S3 to retrieve surgeon-level, and procedure-specific clinical and financial data.

2. AI/Analytics Layer

- Einstein Discovery: Applies machine learning to predict cost savings, length of stay improvements, and readmission probabilities based on historical data.
- Tableau CRM (CRM Analytics): Generates interactive dashboards and what-if scenario tools for sales representatives to visualize ROI metrics by hospital and procedure type.

3. CRM Experience Layer

- Salesforce Lightning Components:
  - ROI Calculator: Interactive interface embedded in Opportunity or Account records.
  - ROI Summary Generator: Outputs PDF and PPTX files tailored to CFOs or Clinical Ops.
- CPQ Extension: Integrates ROI models into pricing workflows to support value-based selling.

4. Governance & Security

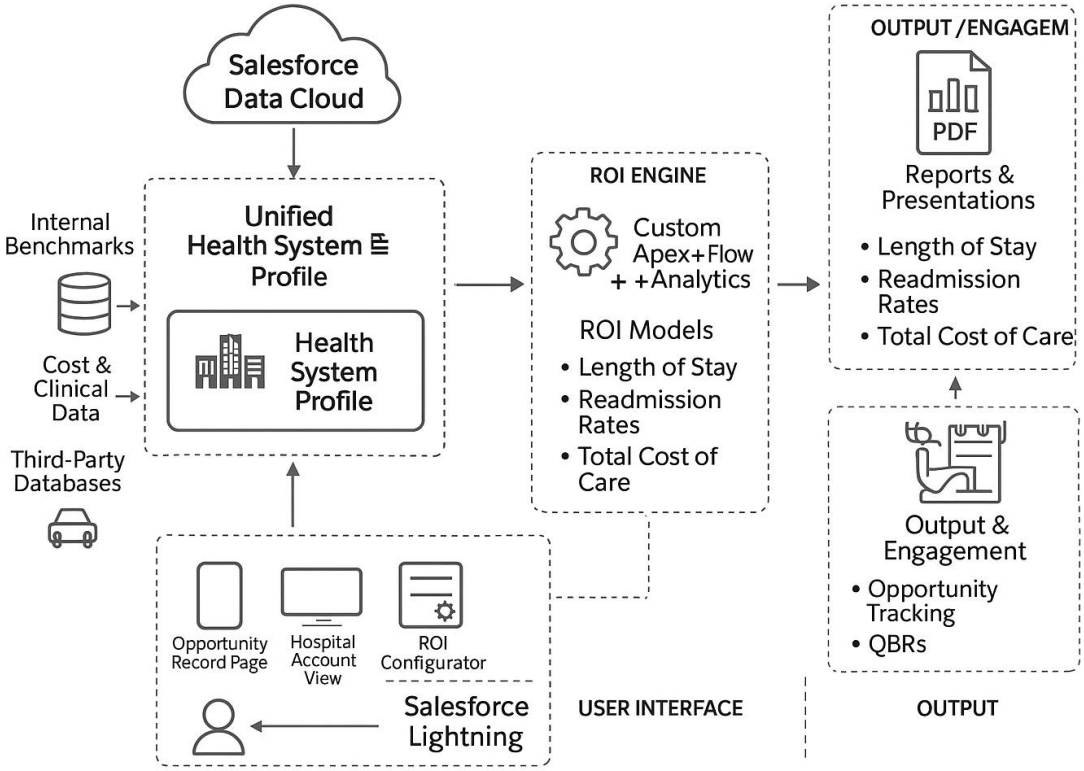
- HIPAA & SOC 2 Compliance: Ensured using Salesforce Shield, field-level encryption, and audit logs.
- Role-Based Access Controls: Different views for sales reps, clinical consultants, and management.

5. Feedback Loop

- ROI outcomes and closed-won deals feed into Einstein and CRM Analytics for continuous model refinement and sales intelligence.

Published by :
http://www.ijert.org

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 14 Issue 06, June - 2025



IV. SAMPLE USE CASE: COMPARING SURGERY MODALITIES

A sales rep visits a hospital evaluating robotic systems. Using Salesforce:

(1) Selects procedure: e.g., prostatectomy

(2) Inputs hospital-specific factors: current LOS, average annual cases, complication rate

(3) System fetches:
- National robotic benchmarks
- Historical robotic performance data (if available)
- Open/lap surgery data for same procedure

(4) ROI engine returns:
- Estimated annual cost savings from reduced readmissions
- Improved OR utilization
- Faster return to baseline for patients
- Breakeven analysis on system purchase

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 14 Issue 06, June - 2025

V. MEASURABLE OUTCOMES

Metric	Before Implementation	After Salesforce ROI Solution
Sales cycle duration	9 months	5.5 months
Proposal personalization rate	~20%	>90%
Sales team productivity (leads touched/week)	8	14
Deal size uplift with ROI proof included	+0%	+11%

VI. TECHNICAL CONSIDERATIONS

- Data Normalization: Ensure clinical inputs are standardized across hospitals and procedure types.
- Security & Compliance: Protect PHI using Salesforce Shield and HIPAA-compliant encryption.
- Model Governance: Einstein Discovery models must be monitored for drift and regularly recalibrated.
- Integration: Link with EMR, ERP, and cost accounting systems via MuleSoft or HL7 connectors.

VII. FUTURE ENHANCEMENTS

- Incorporate generative AI for automatic narrative generation on ROI models.
- Extend to support patient-level simulation models.
- Integrate with Health Cloud for end-to-end post-op outcome tracking.

VIII. CONCLUSION

Salesforce.com can be strategically extended to help medical device companies not only manage leads and accounts but also quantify and communicate the ROI of robotic surgery over open and laparoscopic methods. By building clinical-economic storytelling into CRM workflows, sales teams are better equipped to navigate complex buying groups and drive adoption of surgical robotics.

REFERENCESSS

1. Salesforce. “Using CRM to Drive Consultative MedTech Sales.” 2024.
2. Becker’s Hospital Review. “Comparing Cost of Care in Robotic vs Open Surgery.” 2023.
3. Tableau CRM. “Outcome-Based Sales Enablement Dashboards.” Salesforce, 2024.
4. Premier Healthcare Database. “Clinical and Operational Benchmarks.”
5. IEEE Transactions on Biomedical Engineering, Vol. 71, No. 2, 2023.