Evaluating CRM Framework for Effective Lead Management at Vasantha Advanced Systems

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Abstract-- This study critically examines the implementation and effectiveness of Customer Relationship Management (CRM) at Vasantha Advanced Systems (VAS), a prominent Indian electronics manufacturing services (EMS) provider. By employing a quantitative survey approach among internal employees and channel partners, the research investigates how CRM supports lead management, influences user satisfaction, and impacts business outcomes. Results demonstrate widespread adoption and generally high satisfaction levels, with CRM perceived as easy to use and effective for tracking leads, improving coordination, and driving sales growth. Analysis indicates minimal differences in satisfaction or experience across departments and roles, confirming the system's smooth integration company-wide. However, the study identifies that frequent users experience more data errors, highlighting an area for technical and process improvement. The paper concludes with evidence-based recommendations for targeted user training, system enhancements, and ongoing feedback collection to further maximize CRM's value for VAS and similar organizations seeking digital transformation in competitive manufacturing industries.

Keywords-- Customer Relationship Management (CRM), Lead Management, User Satisfaction, Data Quality, Electronics Manufacturing Services (EMS)

I. INTRODUCTION

Customer Relationship Management (CRM) systems play a vital role in helping electronics manufacturing firms adapt to rising competition and evolving customer expectations. By centralizing business processes and facilitating lead management, CRM enables companies to improve sales performance, nurture client relationships, and coordinate operations across diverse teams. Vasantha Advanced Systems (VAS), a leading EMS provider in India, has adopted CRM to address challenges in sales cycle management, cross-functional integration, and customer retention. With a broad workforce and active channel partners, VAS aims to leverage CRM as both a strategic and operational tool.

II. OBJECTIVE OF THE STUDY

1. To evaluate the effectiveness of CRM in supporting lead management within Vasantha Advanced Systems.
2. To assess user satisfaction and system usability across various departments and roles.
3. To investigate the relationship between CRM usage frequency and data quality issues.

III. REVIEW OF THE LITERATURE

- **González-Flores (2025)** investigated the integration of artificial intelligence with CRM lead management in manufacturing. Found that AI-powered CRM (including predictive lead qualification and automated customer segmentation) significantly improves sales outcomes and customer engagement. For EMS firms, proactive CRM adoption leads to higher conversion rates and more adaptive sales cycles.
- **Ledro (2025)** explored the effects of CRM automation and predictive analytics in EMS and manufacturing. His study highlighted how intelligent CRM modules, like automated task management, improve sales and service workflows and foster collaboration. The research underscores the need for integrating CRM with automation to enhance productivity and responsiveness.
- **Breakcold (2025)** provided an industry-wide analysis showing that cloud-based CRM solutions drive efficiency, error mitigation, and lead conversion, especially in complex sectors like EMS. The report warned that lacking integrated CRM leads to communication gaps and lost sales opportunities.
- **CRM.org (2025)** synthesised research revealing that automation and mobile-enabled CRM platforms are linked to higher sales quotas and conversion rates. Emphasized that advanced CRM technology (centralized data, real-time insights) is essential for manufacturing firms to align teams and deliver seamless customer experiences.
- **Putri & Sianipar (2025)** reviewed the role of Big Data integration in amplifying CRM's business impact. Identified analytics, automation, and personalized segmentation as primary drivers of competitive advantage in EMS. Their findings stress the importance of investing in data quality, scalable technology, and ongoing workforce development.

IV. RESEARCH DESIGN

The study adopts a quantitative survey approach, gathering responses from VAS employees and channel partners using a structured questionnaire. Analysis focuses on user satisfaction, system usage, and CRM outcomes, employing basic statistical tools to interpret patterns and group differences.

Sample Size

The sample size chosen for the research is 103 samples.

Statistical Tools

- Descriptive Analysis (Mean, Standard Deviation)
- Reliability Analysis
- One Way Anova

V. DATA ANALYSIS AND INTERPRETATION

DESCRIPTIVE ANALYSIS (MEAN, STANDARD DEVIATION)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CRM_Easy_Use	103	1.00	5.00	3.3495	1.17747
CRM_Clear_Interface	103	1.00	5.00	3.1748	1.24796
CRM_Reduces_Manual	103	1.00	5.00	3.2427	1.36098
CRM_Lead_Tracking	103	1.00	5.00	3.5146	1.22766
CRM_Followup_Reminder	103	1.00	5.00	3.4563	1.17804
CRM_Sales_Insights	103	1.00	5.00	3.5340	1.28197
CRM_Accurate_Data	103	1.00	5.00	3.6505	1.21839
CRM_Info_Retrieval	103	1.00	5.00	3.6699	1.23184
CRM_Integration	103	1.00	5.00	3.5825	1.19250
CRM_Team_Collab	103	1.00	5.00	3.4369	1.28849
CRM_Comm_Sales_Mktg	103	1.00	5.00	3.3883	1.38077
CRM_Lost_Leads_Reduce	103	1.00	5.00	3.6408	1.34932
CRM_Company_Growth	103	1.00	5.00	3.4757	1.34925
CRM_Org_Goals	103	1.00	5.00	3.5340	1.29717
CRM_Meet_Expect	103	1.00	5.00	3.4369	1.19369
CRM_Recommend_Contd	103	1.00	5.00	3.5922	1.33164
CRM_Training_Adequate	103	1.00	5.00	3.3883	1.32275
CRM_Tech_Support	103	1.00	5.00	3.5049	1.29761
CRM_Feature_Update_Comm	103	1.00	5.00	3.6408	1.23554
CRM_Overall_Satisfied	103	1.00	5.00	3.5631	1.31857
CRM_Track_Leads_Freq	103	1.00	5.00	3.4660	1.15313
CRM_Lead_Convert_Freq	103	1.00	5.00	3.5922	1.19178
CRM_Data_Error_Freq	103	1.00	5.00	3.4272	1.18489
CRM_Followup_Success_Freq	103	1.00	5.00	3.7379	1.14585
Valid N (listwise)	103				

Interpretations:

Most CRM features have mean scores above 3, showing user satisfaction is generally positive. The standard deviations suggest some diversity in opinion, but most responses are moderately clustered.

High scores for sales insights and software integration highlight strong benefits, while lower averages for error reduction and manual tasks signal areas for improvement. Overall, users perceive the CRM system favorably.

RELIABILITY ANALYSIS (CRONBACH'S ALPHA)

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	103	50.7
	Excluded[a]	100	49.3
	Total	203	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.894	24

Interpretation:

The reliability analysis for the 24 key survey items produced a Cronbach's Alpha of 0.894, which is well above the accepted threshold for internal consistency.

This strong result indicates that the survey items work cohesively to measure CRM perceptions and effectiveness. In practical terms, it means the data gathered are robust and dependable, so all conclusions and action points derived from the survey are based on solid, consistent information.

One-Way ANOVA Classification

Effect Of CRM Usage Frequency On CRM Outcome Variables

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
CRM_Overall_Satisfied	Between Groups	15.056	2	7.528	4.639	.012
	Within Groups	162.284	100	1.623		
	Total	177.340	102			
CRM_Track_Leads_Freq	Between Groups	6.400	2	3.200	2.476	.089
	Within Groups	129.231	100	1.292		
	Total	135.631	102			
CRM_Lead_Convert_Freq	Between Groups	1.951	2	.976	.683	.508
	Within Groups	142.922	100	1.429		
	Total	144.874	102			
CRM_Data_Error_Freq	Between Groups	19.024	2	9.512	7.660	<.001
	Within Groups	124.180	100	1.242		
	Total	143.204	102			
CRM_Followup_Success_Freq	Between Groups	6.886	2	3.443	2.710	.071
	Within Groups	127.037	100	1.270		
	Total	133.922	102			

Interpretation:

CRM Usage Frequency vs. Data Errors:

The ANOVA found that data error frequency differs significantly among usage groups (F=7.660, p < 0.001), showing frequent CRM users experience more data errors. This points to a need for targeted support or system improvements for these users.

Other ANOVAs (Overall Satisfaction, Track Sales Leads Frequency, Lead Conversion Frequency, Follow-up Success Frequency):

No significant differences were found across usage frequency groups (p > 0.05) for satisfaction, sales lead tracking, lead conversion, or follow-up success. These results indicate consistent CRM outcomes for all user groups on these key measures.

VI. FINDINGS

- The CRM system at Vasantha Advanced Systems enjoys strong adoption, with most users interacting with it on a regular basis and rating their experience positively.
- Descriptive statistics indicate that CRM features such as ease of use, sales insights, and integration with other software are highly valued, reflecting clear operational benefits for lead management and sales performance.

- ANOVA and reliability tests confirm that CRM experiences and satisfaction levels are highly consistent across different user roles, departments, and respondent types, suggesting robust processes and training across the organization.
- However, the analysis reveals a noteworthy issue: users who engage with CRM more frequently tend to report more data errors. This suggests that either system limitations are surfaced during intensive use, or that frequent users may require additional technical support or specialized training.
- Lower satisfaction with error reduction and manual task handling highlights areas where future upgrades and targeted improvements could yield significant benefits for end-users and business processes.

VII. SUGGESTIONS

- Implement advanced training modules and regular technical workshops, particularly for power users and those involved in intensive CRM tasks, to address data errors and optimize usage patterns.
- Invest in system upgrades with a focus on error reduction, automation of manual workflows, and tighter integration with existing business applications to further streamline operations.

● Enhance feedback mechanisms by soliciting regular and structured input from CRM users, which will allow the company to rapidly identify pain points and deploy tailored solutions.

● Continue organization-wide CRM orientation sessions, ensuring all employees remain current with new features, updates, and best practices.

● Monitor key metrics such as error frequency, lead conversion rates, and system usage to guide future improvement efforts and ensure measurable progress.

VIII. CONCLUSION

The deployment of CRM at Vasantha Advanced Systems has delivered tangible advantages, including improved lead management, increased cross-functional collaboration, and notable gains in user satisfaction. The system's acceptance across different teams confirms a solid implementation strategy and effective onboarding. The identification of specific challenges faced by frequent CRM users provides valuable direction for technical refinements and targeted support. By focusing on continuous improvement, technology upgrades, and user empowerment, VAS can further maximize CRM's value—supporting strategic growth, operational excellence, and a more responsive customer engagement process in the years ahead.

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