



Improving Licensing Support Customer Experience

Author: Hiram A. Boscio Colón
Master of Engineering Management Program

Advisor: Dr. Héctor J. Cruzado
Graduate School
Polytechnic University of Puerto Rico

Abstract

Customer satisfaction measurements were affected after a business restructuring event. The Licensing Support ticket resolution times and the number of tickets elevated to engineering teams exceeded business goals long after the event. A Licensing Support process map and the analysis of 3 months of data were studied to identify root causes. It was found that the problems impacting these metrics were directly associated with knowledge and training. The aggressive restructuring timeline and key employee attrition impacted the proper knowledge transfer of product and processes to the new teams. This poster covers findings and recommendations. These include investments in processes, tools and product specific trainings, increase interaction between cross-functional teams, improve documentation process and products knowledge base.

Introduction

Information technology companies have two main sources of revenue: selling hardware and software, which generate discrete amount of revenue; and selling “attached” support services, which generate a continuous and a higher stream of revenue. After an organizational restructure, regional offices relocation and employee attrition, two key customer support performance indicators were impacted: Licensing Support incident resolution times and the number of incidents elevated to engineering teams. The number of incidents resolved within one business day was at 87%, below its 90% business goal. The number of incidents elevated to engineering was at 14%, above its 10% business goal.

Project Objectives

- Increase the percent of tickets resolved within one business day by two points by June 1st.
- Decrease the percent of tickets elevated to Engineering (Level 3) by two points by June 1st.

Methodology

Define Phase

A SIPOC and a Process Map shown in Figures 1 and 2 were completed to study the Licensing Support Suppliers, Inputs, Processes, Outputs and Customers. The exercise revealed that Licensing Support process has 8 different types of outputs presented on Table 1.

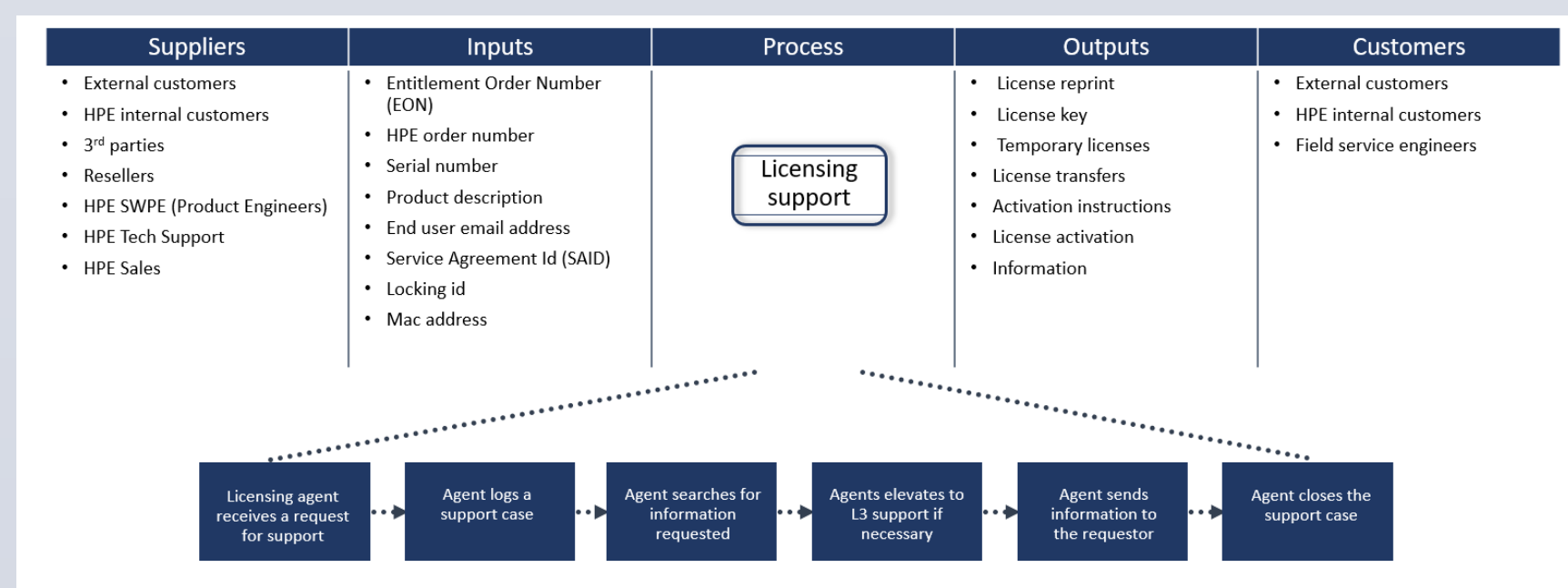


Figure 1
SIPOC – Licensing Support

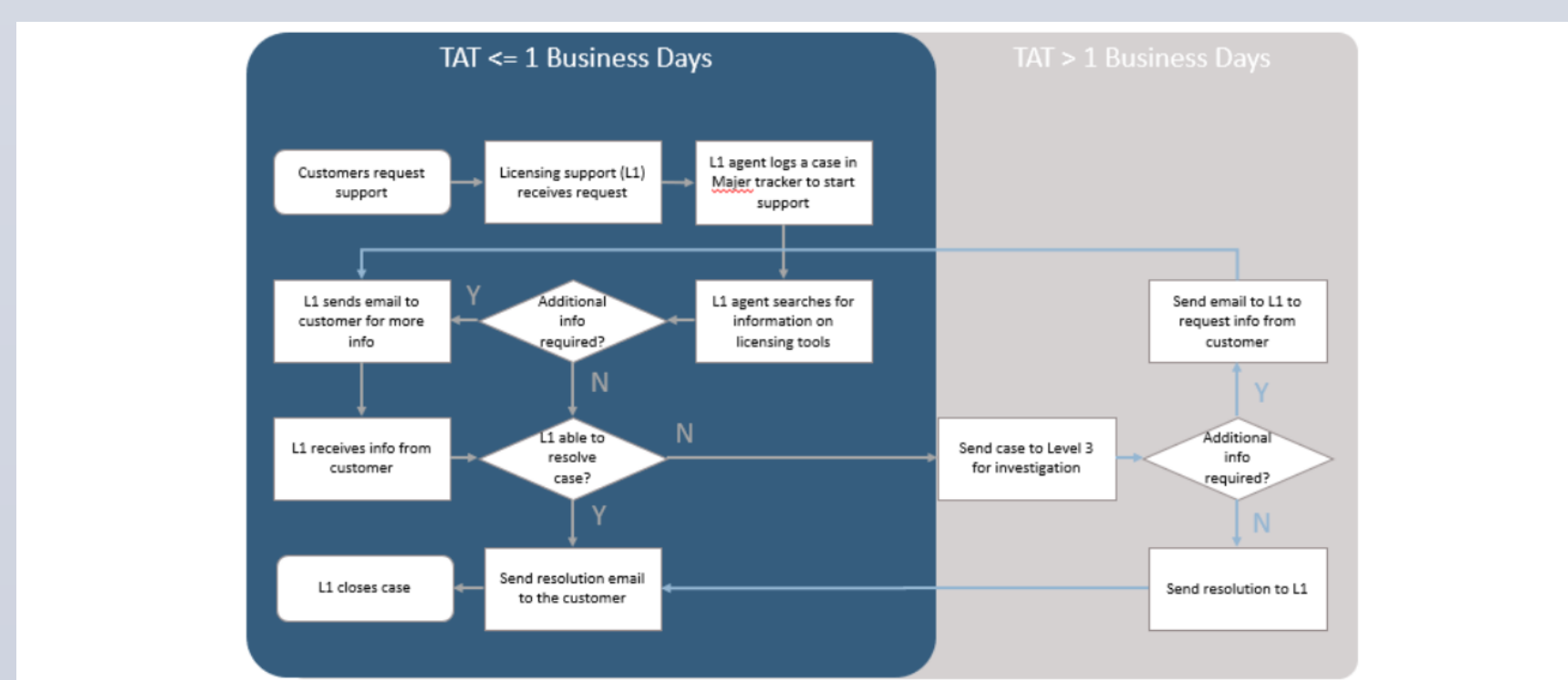


Figure 2
Process Map – Licensing Support

Table 1
Licensing Support Process Outputs

Item	Output
1	Licenses keys redemption
2	Reprint entitlement documents
3	Temporary license generation
4	License re-hosting/replacement
5	License transfers
6	License activation instructions (information)
8	License requirements consultation (information)

The Process Map in Figure 2 revealed a relationship between Level 1 agent missing information or knowledge to resolve the ticket, elevations to engineering team (Level 3) and the resolution turnaround times.

Measure Phase

Historical information extracted from the support database was used to confirm and set the baseline for the project metrics.

Analysis Phase

To identify the possible causes, a study of detailed ticket information for the last 3 months was performed. Pareto charts were created to identify products and support activity outputs that had the greatest impact on both metrics. The Pareto charts revealed that the products and the outputs with greater turnaround times and elevations to Level 3 support were the same. The scope was narrowed to focus on ten products and four activities as shown on Table 2.

Table 2
License Support Process Outputs

Products	Brocade	Activities
3PAR	Brocade	Information
D2D	LeftHand	Generation
iLO	Microsoft	Reprint
MSA	OneView	Rehost/Replace
RedHat	VMware	

In coordination with the Licensing Support team technicians, a Cause and Effect diagram shown in Figure 3 and the 5 Why's technique were used to identify possible causes affecting the products and activities identified by the Pareto analysis. Three possible causes were identified:

- **Lack of training, lack of agent knowledge:** Attributed to no Engineering team involvement during the new support team bring up and no formal product licensing trainings.
- **Procedure not available or poor documentation:** Attributed to outdated procedures and no centralized location available for support processes or product licensing documentation.
- **Level 3 escalation path and players not always defined:** Attributed to a lack of effective communication between Level 1 and Engineering teams; and some 3rd party product teams not identified within the Licensing Support documentation.

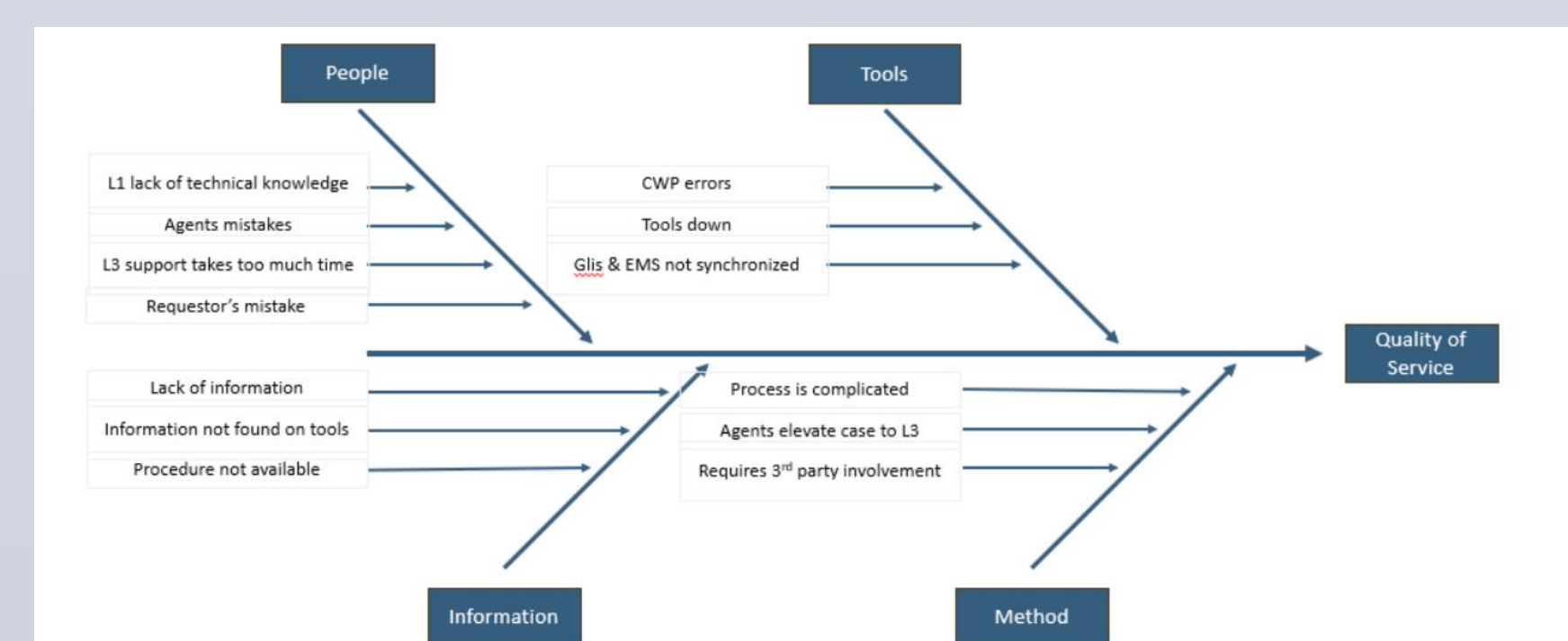


Figure 3
Cause & Effect Diagram – Licensing Support

Improve Phase

The project focused on facilitating product knowledge and formalizing training documents with product specific licensing information. The Licensing Support Management engaged the Software Product Engineering team to create new or update existing training documents. Training sessions with Product Engineering were facilitated and documentation was completed for iLO, 3PAR, D2D and Microsoft products. As shown in Figure 4, these products account for 34% of the tickets elevated to Level 3.

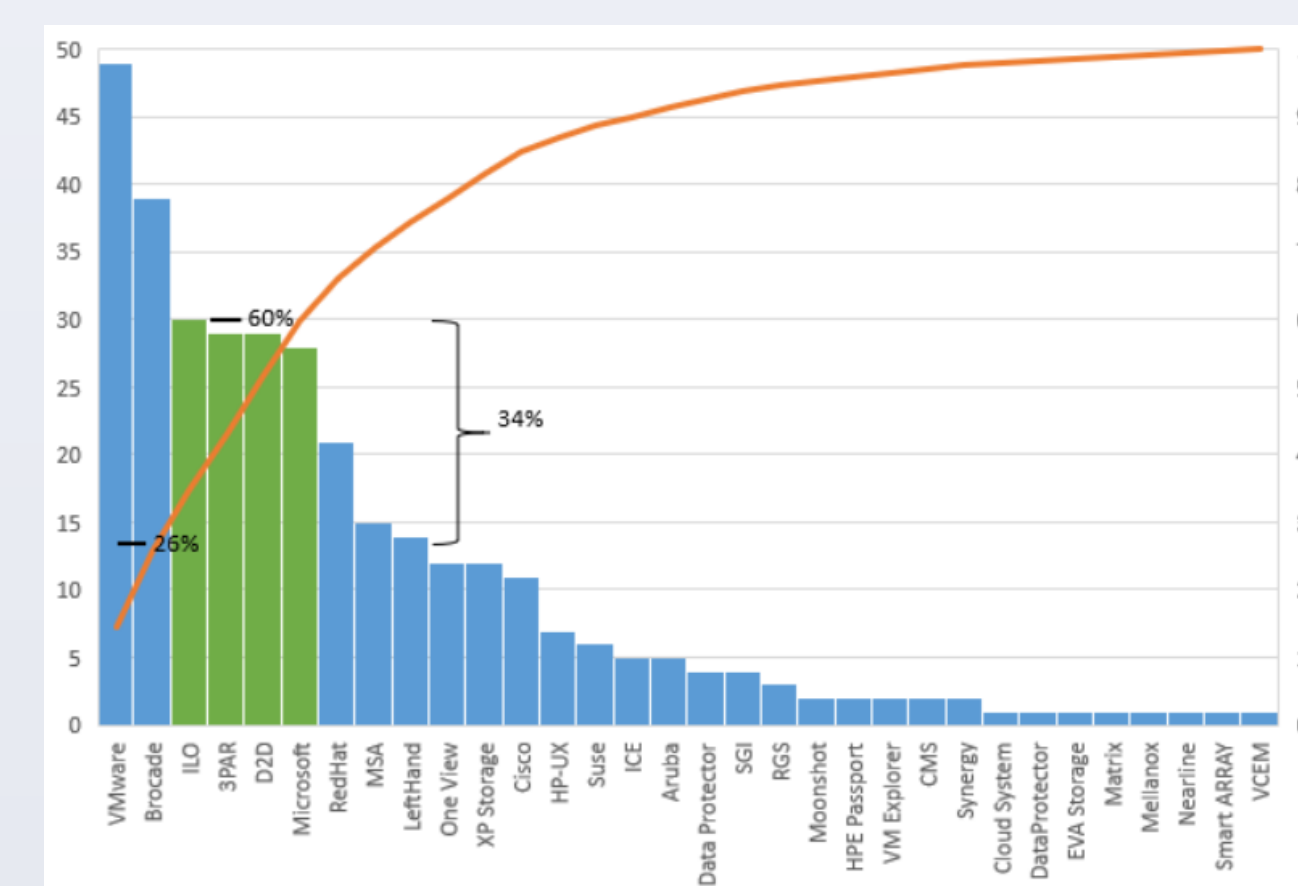


Figure 4
Pareto – Tickets by Products Elevated to Level 3

Control Phase

To ensure that project improvements are maintained, the Licensing Support and Product Engineering Management teams agreed to perform the following activities with a regular cadence:

- Respond to support elevations within 24 hours.
- Conduct monthly working sessions between the Licensing Support Leads and Product Engineers to enhance the knowledge of licensing teams.
- Conduct short one on one trainings between the Licensing Support Leads and Product Engineers for specific process changes.
- Conduct formal product specific refresh trainings every six months.
- Consolidate all process documentation and important product specific information into a One Note shared and centralized library.
- Update procedures according to new products or process changes.
- Incorporate Licensing Support metrics in the Product Engineer Management monthly scorecard.

Results

The Analysis phase showed both metrics were affected by the same product families and process outputs. The Process Map in Figure 2 revealed a relationship between turnaround times and the tickets elevated to Level 3 support. To address both metrics, the project focused on reducing elevations to Level 3 by improving product knowledge and formalizing training documents for the selected products. As shown in Figure 5, the number of tickets elevated to Level 3 support declined quickly once trainings were provided in early May. The number of tickets resolved within 1 business day increase as expected, as shown in the objectives review.

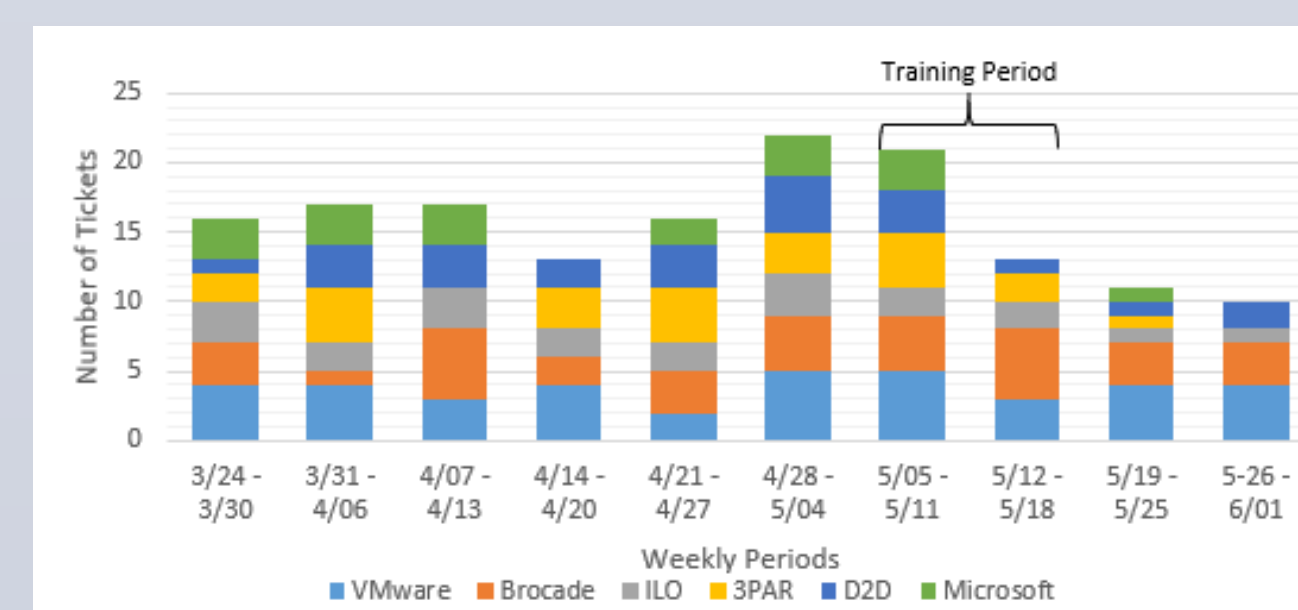


Figure 5
Tickets Elevated to Level 3 Supports by Product Family

Objectives Review

Decrease the percent of tickets elevated to Engineering (Level 3) by two points by June 1st

Measurements taken post training sessions showed noticeable improvement. For the products in scope, over a four weeks period, the percent of tickets elevated to Level 3 decreased from a baseline of 15% to 11%. The metric for the other products remained close to 14%. The percent of tickets elevated to Level 3 for all products was measured at 12% as shown on Table 3.

Table 3
New Data for Tickets Elevated to Level 3 Support

Week of	Scoped Products		Other Products	
	Elevated	Not Elevated	Elevated	Not Elevated
5/05-5/11	141	21	94	14
5/12-5/18	114	15	65	11
5/19-5/25	104	15	60	10
5/26-6/01	121	10	68	13
Total	480	61	287	48
Percent	11%		14%	
Percent (All Products)			12%	
Baseline			15%	

Increase the percent of tickets resolved within one business day by two points by June 1st

For the products in scope, the percent of tickets resolved within 1 business day improved from a baseline of 87% to 90%. The metric for the other products remained close to 86%. The percent of tickets resolved within 1 business day for all products was measured at 89% as shown on Table 4.

Table 4
New Data for Tickets Resolved Within 1 Business Day

Week of	Scoped Products		Other Products	
	TAT <= 1	TAT > 1	TAT <= 1	TAT > 1
5/05-5/11	141	21	94	14
5/12-5/18	116	13	65	11
5/19-5/25	108	11	60	10
5/26-6/01	124	7	68	13
Total	489	52	287	48
Percent	90%		86%	
Percent (All Products)			89%	
Baseline			87%	

Conclusion

The project objectives were met. The percent of tickets resolved within one business day increased by 2%, from 87% to 89%; and the percent of tickets elevated to Level 3 decreased by 3 %, from 15% to 12%.

New and direct relationship between Licensing Support and Engineering management teams were created to manage and build knowledge. The knowledge plan is expected to support the business goals by improving quality of service, increasing team morale and reducing turn over.

Compliance with business goals of 90% resolution within one business day and ticket elevations no greater than 10% is expected once knowledge transfer and documentation is completed for the remaining identified products families.