



VEHICLE CONNECT – A VEZ TECH FEATURE

Mobile in automobile – The Future Vision of Technology

ABSTRACT

Adventures are full of surprises. So is the road. World's first leading technologies to help you stay ready for the route ahead and receive automatic updates, 24/7 and so much more, stay connected with Vehicle Connect today!



Keep calm and drive with Vehicle Connect!

By:

Shreya Desai

Karis Kim

Keerthi Marripati

Nidhi Verma

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1. Executive Summary

This assessment will focus on the Help Desk of an IT service that shall be referred herein as Vehicle Connect from a prominent multinational corporation that shall be referred herein as Vez Tech. Vehicle Connect provides an application that connects smartphones and computers to vehicles and offers a variety of features for security and diagnostics. The Help Desk is a critical element of Vehicle Connect as an IT service, facilitating the warranty of Vehicle Connect services. This report will identify several key performance indicators to quantify and measure Vez Tech's management of the Vehicle Connect Help Desk, and analyze the findings. The purpose of this analysis and assessment is to make recommendations for improvement in line with ITIL best practices for Vez Tech's Vehicle Connect IT Help Desk.

2. Background

2.1 Background on the Company

Vez Tech is a large multinational telecommunications company that provides a number of technological services, one of which is an IT service for vehicles. Vez Tech was founded over 10 years ago. The headquarters of Vez Tech is located in New York. Vez Tech is one of the leading companies in providing connected services in the automotive industry with more than 6 million vehicles currently connected worldwide, and approximately 349,000 vehicles sold in America equipped with Vehicle Connect capability in 2015. Vez Tech has six brands of vehicle telematics services, providing applications that connect the vehicles to smartphones and computers, including a number features for security, diagnostics and monitoring for vehicles manufactured after the year 2012. These services use information technology to keep drivers safe and connected, and can be used through the built-in console of compatible vehicles and/or through a mobile app. One of the several brands of Vez Tech's vehicle telematics services is Vehicle Connect. Vehicle Connect is specifically catered for a select German automobile company, but Vez Tech does offer other brands of vehicle telematics services for use with compatible vehicles of other automobile companies as well.

2.2 Background on the Vehicle Connect Division

The Vehicle Connect Division of Vez Tech has approximately 1,500 employees, with about 200 members in the IT team, and about 1,000 customer care specialists (a.k.a. - IT Help Desk agents) that support this IT service. The estimated worth of Vehicle Connect Division in the United States is 800 million dollars. Vehicle Connect Division and Help Desk are located in the United States. 1,000 Help Desk agents work 8-hour shifts and agents are on standby 24 hours a day, 7 days a week, and 365 days per year, to provide continuous assistance.

2.3 Background on Vehicle Connect Services

Vehicle Connect is an IT service for select vehicles that provides a seamless link between a vehicle, smartphone and computer. Vehicle Connect IT service enables users to receive safety features, remote vehicle access, and automatic vehicle diagnostics. The following are representative Vehicle Connect features involving the Help Desk:

- A critical safety feature of this service is the ability of the Vehicle Connect application to recognize that the vehicle has been in an accident and automatically alert the Vehicle Connect Help Desk to assist in sending an emergency response team.
- Another feature of Vehicle Connect provides GPS assistance: Drivers who need navigational guidance can receive real-time directions from a Vehicle Connect Help Desk agent while driving. The GPS assistance of Vehicle Connect application can also alert the driver's smartphone or computer on the location of the vehicle that may be stolen or lost or a Help Desk agent can provide the location for/to the driver.
- Vehicle Connect also features remote access to the vehicle, allowing drivers to unlock and lock doors from their smartphones or by calling the Help Desk to remotely unlock the door when a driver is locked out of his vehicle.
- The automatic vehicle diagnostics feature of Vehicle Connect performs diagnostics on the health of the vehicle, such as engine maintenance, battery levels, tire pressure, and the break system, and automatically reports the results to the driver's smartphone and computer. Vehicle diagnostics will alert a Vehicle Connect Help Desk agent of critical and non-critical vehicle health issues, and an agent can even assist drivers in setting appointments with the maintenance department of the dealership.



Table 1. Miscellaneous Vehicle Connect Features

Category	Feature	Description
Safety	Teen driver supervision with speed alerts and geographical boundary alerts	Parents can set speed and geographical limits to receive alerts when Vehicle Connect app recognizes limits are breached
Safety	Push-button call for roadside assistance	Vehicle Connect app will automatically detect and notify location of the vehicle in distress and send roadside assistance
Connectivity	Bluetooth technology for up to 5 mobile devices in the vehicle at the same time	Vehicle Connect app can pair multiple phones and drivers can switch bluetooth connectivity with one button
Connectivity	Connect vehicle to receive real-time traffic, fuel prices, weather, movie showings	Vehicle Connect app facilitates relevant internet functions of computer or smartphone to the vehicle
Connectivity	Connect email, contact list, calendar, music list, points of interest from smartphone or computer to vehicle	Vehicle Connect app syncs selected personal data from smartphone or computer to the vehicle

3. Scope

- This report will assess the IT Help Desk for Vehicle Connect only (herein referred as Vehicle Connect Help Desk).
- The Vehicle Connect Help Desk considered in this assessment serves vehicles with Vehicle Connect within the United States only.
- All references to the Vehicle Connect Help Desk in this assessment refer to the IT Help Desk that is located in the United States.
- The metrics and statistics reviewed in this report cover one year, from the year 2015.
- Assessment metrics mainly involve Help Desk support of features listed in the section 2.3 bullet points. The miscellaneous features shown in table 1 of section 2.3 will not be the focus of this assessment, but are provided to present a full view of Vehicle Connect services.

- Vehicle Connect Help Desk in the United States employs approximately 1,000 IT Help Desk agents.
- Not all vehicles compatible/equipped for Vehicle Connect technology sold in 2015 have opted to install or utilize Vehicle Connect.

4. Service Area to Be Assessed

4.1 Vehicle Connect Help Desk

The mission of Vehicle Connect's Help Desk is to provide qualified agents to assist Vehicle Connect users in both critical issues such as accident notification and emergency response team deployment assistance, as well as non-critical issues such as scheduling an appointment with a vehicle dealership for maintenance from a diagnostic report or assisting customers on how to use certain Vehicle Connect features from their smartphones. Vehicle Connect Help Desk agents are available 24-7, 365 days a year. The performance and effectiveness of the Help Desk is instrumental and vital to the success of Vehicle Connect as an IT service. The following areas are supported by the Help Desk:

Critical:

- Accident detection and deployment of emergency response team
- Imminent danger detection from vehicle diagnostics and deployment of emergency response team

Non-Critical:

- Real-time navigational guidance for customers who are driving
- Vehicle locate request for lost or stolen vehicles
- Remote vehicle unlock for drivers locked out
- Scheduling appointments with vehicle dealership from vehicle diagnostics reports
- Vehicle Connect app installation and usage assistance
- Answer questions regarding account, security, and features

5. Key Performance Indicators

For Vehicle Connect IT Help Desk (data for year 2015)

- First Call Resolution - refers to calls resolved in/after the first call.
Total # of calls received in 2015: 1,095,000 calls
Average # of calls per day per employee: 3 calls per day per employee
Average # of received calls per day (cpd): 3000 calls per day
Total # of correctly resolved calls per day: 2600 calls per day

Critical calls received per day: 2600 calls per day

- Emergency calls - life threatening calls (sensor immediately reports to 911)

- Roadside assistance request calls - from the button on the Vehicle Connect device, customers can immediately request dispatch of roadside assistance in cases of fuel depletion, flat tire or towed vehicle
- Stolen vehicle reports - Vehicle Connect's IT Help Desk agents can track any user's vehicle through the use of the chip in the device
- Resolution time for critical calls: 10 minutes

In addition to receiving critical calls, Vehicle Connect's IT Help Desk sends out important updates, especially critical technical updates on a monthly basis.

Total # of critical updates sent out in 2015: 7

Non-critical calls received per day: 400 calls per day

- GPS assist calls - when customers are unable to locate their vehicles, IT Help Desk of Vehicle Connect locates the vehicles for them, as well as assist with any questions or concerns about the GPS
 - Vehicle unlock calls - when customers are locked out of their vehicles and are unable to remotely unlock their vehicles through their smartphones, Help Desk agents can remotely unlock the vehicles after identity verification
 - Vehicle Connect app and device assistance calls - users who need assistance navigating the app or the device can receive assistance through the IT Help Desk
 - Resolution time for non-critical calls (non-emergency/normal calls): 1 business day
- Average Call Handling Time - call handling time for critical calls is usually expected to be handled within seconds. Agents are expected to spend about 5 minutes on the call with the customer. However, it is understood that the time with the caller can vary depending on the complexity of the issue. Although, one call cannot provide a good number as a metric, it provides the average call handling time as a whole. Call handling time includes talk time (5 minutes) and hold time (1 minute).
 - Average call handling time per call: 6 minutes per call
 - Critical calls handling time per call: 10 minutes
 - Non-critical calls handling time per call: 1 business day
 - Average Time to Resolve the Call - provides the average time it took to resolve the problem over the year.
 - Average time to resolve per call: 30 minutes, which includes 15 minutes of review and 1 business day to close the call
 - Average Hold Time Per Call - hold time for each caller is expected to be about 1 minute which allows agents to look up information about the caller and access their accounts
 - Average hold time per call: 1 minute

- Average Time to Escalate the Call - the total time that calls could not be resolved by first agent until escalated to a senior agent or management for resolution.
 - Average time to escalate the call: 10 minutes (for both critical and non-critical)
 - Percentage of calls resolved without getting escalated: 87%
- Average Turnaround Time Per Call - provides an estimate of total time needed for resolution, which includes hold, talk and resolve time.
 - Average turnaround time per call: 37 minutes
- Average Cost of Handling - provides average cost of calls, incident reports, and questions. Help Desk employees receive \$15.60 per hour (this figure includes benefits).
 - Average cost of handling per call: \$3 per call
 - Average cost of handling calls per day: \$9,000 per day

Figure 1.

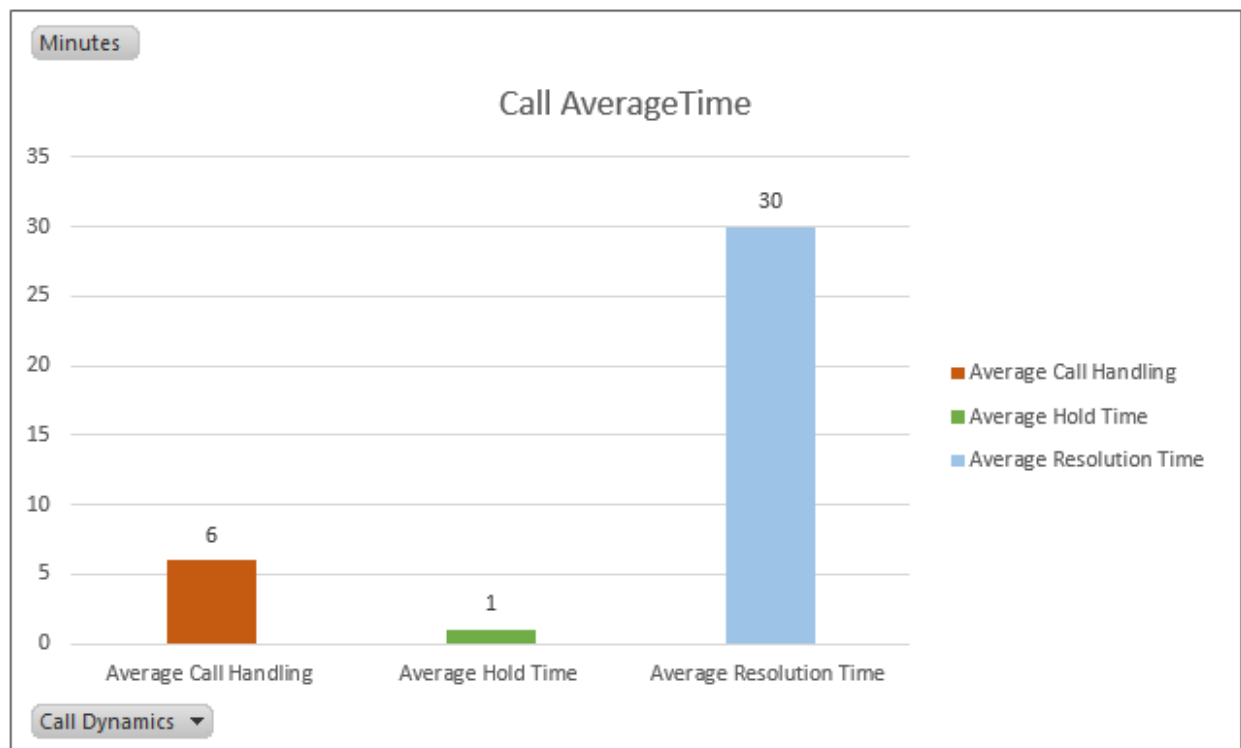


Table 2. KPI metrics summary view

Metrics Type	Metrics Detail Description	Findings from Year 2015
Calls Received	Total # of calls received in 2015	1,095,000 calls
	Average # of calls per day per employee	3 calls per day per employee
	Average # of received calls per day (cpd)	3000 calls per day
	Critical calls received per day	2600 calls per day
	Non-critical calls received per day	400 calls per day
Calls Resolved	Total # of correctly resolved calls per day	2600 calls per day
	Critical calls resolution time	10 minutes
	Non-critical calls resolution time	1 business day
Call Handling Time	Average call handling time	6 minutes per call
	Critical calls handling time	5 minutes per call
	Non-critical calls handling time	1 business day per call
Call Resolve Time	Average time to resolve	30 minutes per call (includes 15 minutes of review and 1 business day to close the call)
Hold Time	Average hold time	1 minute per call
Call Escalation	Average time to escalate the call	10 minutes per call
	Percentage of calls resolved without getting escalated	87%

Turnaround Time	Average turnaround time	37 minutes per call
Average Costs	Average cost of handling per call	\$3 per call
	Average cost of handling calls per day	\$9,000 per day

6. Assessment Analysis on the Vehicle Connect IT Help Desk

6.1 Strengths

- Help Desk employees hired by Vehicle Connect are highly talented and multi-skilled.
- Vez Tech is a self-sufficient company with enough resources, which saves them from outsourcing their work.
- Strong desire and effort to implement of ITIL standards.
- The critical calls are handled with sensitiveness.
- The 24/7, 365 days service provided by the Vehicle Connect Help Desk is a great positive.
- The features provided by Vehicle Connect is highly representative of new day technology.
- Vehicle Connect Help Desk has implemented strong CSI (Continual Service Improvement.)
- The security measures applied by the IT department through SSH is highly commendable.
- Wage per day earned by the employees is sufficient.

6.2 Opportunity

- Vehicle Connect is a booming business providing new technologies, which ensures a bright future ahead.
- With the company's huge net worth of \$800 million, the total of approximately 1,500 employees on-board, and an expected 18% additional growth in staff, Vehicle Connect can enhance Customer support to a whole new level.
- Market research found that the specific brand of German automobiles with Vehicle Connect comprise only 2% of the US auto market, so there is a potential growth of up to 98% of the market.

6.3 Weakness

- The employee to resolution (for critical and non-critical) ratio is quite low.
 - Based on the number of employees, the first line resolution rate without getting escalated should be around 90% - 92% rather than 85%.

- Documentation created by the Vehicle Connect to keep records on the calls and escalation and/or resolution incidents is unorganized.
- 27% of total non-critical calls received per year are from users needing guidance on how the Vehicle Connect functions work in their car. That indicates the non-user friendliness of the device.
- 11% of calls received per month were to report Vehicle Connect features not working accurately.
- Target resolution time for critical calls was 10 minutes, but average was 6 minutes. Actual resolution time failed to meet target goals by 5 minutes.
- All critical calls are not handled consistently.
 - The calls by the user for any medical emergency, which came out to 60%, were handled with great priority and professionalism, but carelessness has been reported for the remaining 40% of calls made for various reasons such as flat tire, roadside assistance, stolen cars, etc.
- All non- critical calls are scheduled to be resolved in 1 business day.
 - The time should instead be determined based on the severity of the situation. Not all the calls take 1 business day to be solved. Some issues are resolved in 8 hours or less but still the employees do not update the system for 24 hours.
- New Help Desk employees are not trained efficiently, resulting in increased burden on the seasoned skilled workers.
- Different approach has to be maintained for critical and non-critical calls; the average hold time per call for critical calls should not be more than 30 seconds.
- Help Desk employees are not utilized to their full potential as average call per day per employee is only 3 cpd. In actuality, employees could be managing an average of 5 calls per day and resolving issues of the client's rest of the time.

6.4 Threats

- Many competitors are entering the market with similar technologies.
- Lack of user manual can hinder service performance.
- Continued delay in solving of non-critical issues might result in the customer revoking the services and selecting the services of a rival company.
- Skilled workers quit and join a rival company due to heavy workload and new opportunities.
- The current investment made in the company is huge compared to the requirements.
- Even though Vehicle Connect Help Desk is doing a great job, the fact that the rival company provides the same features might result in decreased revenue by approximately 7% annually.

6.5 Incident Management

Incident management's records, monitors, classifies, investigates, diagnoses and resolves issues reported with the service. The main motive of incident management is return normal service operations as quickly as possible and also minimize adverse effects and outage of service for a long period of time. In case of any severe incident, the service quality maintenance should be of utmost preference. The incident management implemented by Vehicle Connect scored a strong

3.4 on a scale of 5. Even though incident management has been a great success, there have still been few cases where the issue tickets have either been misplaced or not reached the right person.

6.6 Problem Management

The process of finding the errors and eliminating them to further reduce the incident ratio is known as problem management. Successful implementation of problem management will result in the smooth flow of the business. Until now Vehicle Connect has not come across any drastic problem management issue, but with the rapid growth and popularity of Vehicle Connect, problem management may become an issue sooner or later. Problem Management System scored 2.9 on the scale of 5.

6.7 Knowledge Management

Knowledge management will include training employees in all the IT Service Management processes. Vehicle Connect maintains a Knowledge Management System (KMS), a strong database which stores documentation of service support and ITIL process undertaken by the company. For all the processes to function properly, KMS should be updated regularly. But, based on the assessment, Vehicle Connect Help Desk is lagging behind on updating the documentation. The Knowledge Management System scored a below average score of 2 on the scale of 5.

7. Recommendations

7.1 Recommendations for Help Desk Operations

1. Vehicle Connect Help Desk's expected response time for all calls is 5 minutes. If the Help Desk fails to respond within 6 minutes and the wait time for Help Desk service is more than 5 minutes, the affected customer should be compensated with a 10% reduction on the monthly charge.
2. If Vehicle Connect Help Desk fails to provide service to the non-critical calls within 8 hours, Vez Tech should take responsibility for not providing the service in time with compensation, reducing the monthly charge by 30% of the price for the service of that particular month.
3. If the escalation calls on the service exceed 100 (calls/emails/messages) per month, Vez Tech should assume responsibility and compensate all affected customers with 10% reduction on the service price for that month.
4. Delivery of features outlined in the SLA pertaining to the Help Desk functions should be at or above 98% at all times.
5. If during quarterly inspections the documentations like the Knowledge Management System created by the IT Help Desk are not found to be recent and up to the mark, a penalty of 3% should be charged from the IT Help Desk.
6. By the next quarterly inspection all senior and new Help Desk agents should be trained to their full potential.

7. Considering the number of Help Desk employees and their utilization rate, there is a 13% excess of employees. Before the next annual inspection, all employees should be utilized to their full potential or employees with low performance should be relieved from duty.

7.2 Recommendations for Incident Management

- The staff should be assigned tasks based on their expertise.
- Special tools should be implemented for logging in the incidents.
- Maintain a system to move tickets from unresolved to resolve to closure.

7.3 Recommendations for Problem Management

- Maintain a document containing problem management processes in different scenarios.
- Train employees on how to take measures in different problem situations.

7.4 Recommendations for Knowledge Management

- Assign employees to keep the documentations updated.
- Project managers of all teams should be a part of KMS.
- Documents should be reviewed bi-weekly to eliminate any errors.

7.5 Recommendations for Vehicle Connect General Development

- For new vehicle models, launch of any new features should be expected to meet the established timelines by Vez Tech. If there is a delay in releasing new features beyond publicized timelines, Vez Tech should consider offering 10% discount as compensation for every week of delay beyond the established grace period.
- To maintain market dominance and lead, Vehicle Connect should conduct a survey regarding user requirements and develop a few more unique features.

8. Conclusion

The growth of Vez Tech in the past decade is highly commendable. Vehicle Connect has implemented a number of ITIL processes in all the current services that they have provided and it has been a great success. Even though there is a room for improvement, the Help Desk employees hired have adapted very well to ITIL processes. There are employees of varied talents in the Help Desk. Though some of the new employees should be trained a lot better to decrease the stress of experienced and skilled workers. Vehicle Connect Help Desk is very efficient; Vehicle Connect features providing 24/7, 365 days of functionality is highly commendable. Depending on all the opportunities that exists for Vehicle Connect employees outside Vez Tech, the company should improve employee satisfaction by increasing creativity and incentives. The Vehicle Connect Help Desk documentation could be more accurate and up to date, so more work needs to be done on

documentation for the sake of record keeping and also for the processes that can be implemented in the future. The security measures taken through SSH for the IT Help Desk has been a huge success.

There are fourteen disciplines that make up the ITIL framework, out of which 6 frameworks are implemented strongly by Vehicle Connect, 2 frameworks have not been implemented at all, 3 frameworks have been weakly implemented, and 3 frameworks have average implementation.

Looking at the above statistics it looks like even though Vehicle Connect has done great work in ITIL implementation, there is still some room for improvement. If the above mentioned ITIL statistics are met to a greater degree, then it can help reduce the downfall by approximately 3% bringing it to 4%. If the documentations of the Vehicle Connect Help Desk are brought up to the mark, then it can also serve as a logbook which can be referred in case any unusual issue arises.

However, due to increasing number of companies providing the same features and services as Vehicle Connect, Vez Tech should explore new features to be added to the existing features, to distinguish Vehicle Connect from the rival companies' products, in addition to maintaining top performance levels of the Help Desk. To avoid losing skilled Help Desk employees, Vez Tech should train new employees efficiently and facilitate existing experienced employees to explore and thrive on new horizons. Considering the fact that there is still a huge growth potential, Vehicle Connect should strive to maintain the lead in the market. Vehicle Connect's performance has been above average, but if standards and deadlines do not meet at any given time, then company should consider the above mentioned compensations to be applied immediately to customers.

9. References

- i. John Doe (pseudonym to protect his identity in exchange for corporate information disclosed for this report), a current employee of Vez Tech in the Vehicle Connect Division located in Georgia, has provided information mentioned in section 1 and 2.
- ii. At request of John Doe, a pseudonym Vez Tech has been used for the name of the actual multinational company referenced in this paper, in order to ensure confidentiality.
- iii. At request of John Doe, a pseudonym Vehicle Connect has been used for the name of the actual IT service provided by the aforementioned company, in order to ensure confidentiality.
- iv. Details regarding Vehicle Connect features and services were obtained from the website of the actual product, but URL cannot be disclosed to ensure confidentiality.
- v. Values for metrics used in section 5 and 6 are rough estimates based on educated speculations and may not be indicative of actual figures.
- vi. *How Vehicle Age and Model Year Relate to Driver Injury Severity in Fatal Crashes*[PDF]. (2013, August). Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration.
- vii. *2015 Motor Vehicle Crashes: Overview*[PDF]. (2016, August). Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration.
- viii. Nace, S. (n.d.). The Statistics Portal. Retrieved November 30, 2017, from <https://www.statista.com/topics/760/united-states/>
- ix. (n.d.). Retrieved November 30, 2017, from <http://www.itsm.info/downloads.htm>