Network Field Maintenance

Introduction

This paper, the eleventh in the series, describes the 7.3.1 Network Field Maintenance Product Category and the most recent two year history. As a product category with 28 companies providing data to 31 TL 9000 registrations, Network Field Maintenance includes contracted or internal services to maintain network equipment in the field. However, this product category excludes warranty and standard maintenance activities performed in support of a particular product by the product Original Equipment Manufacturer.
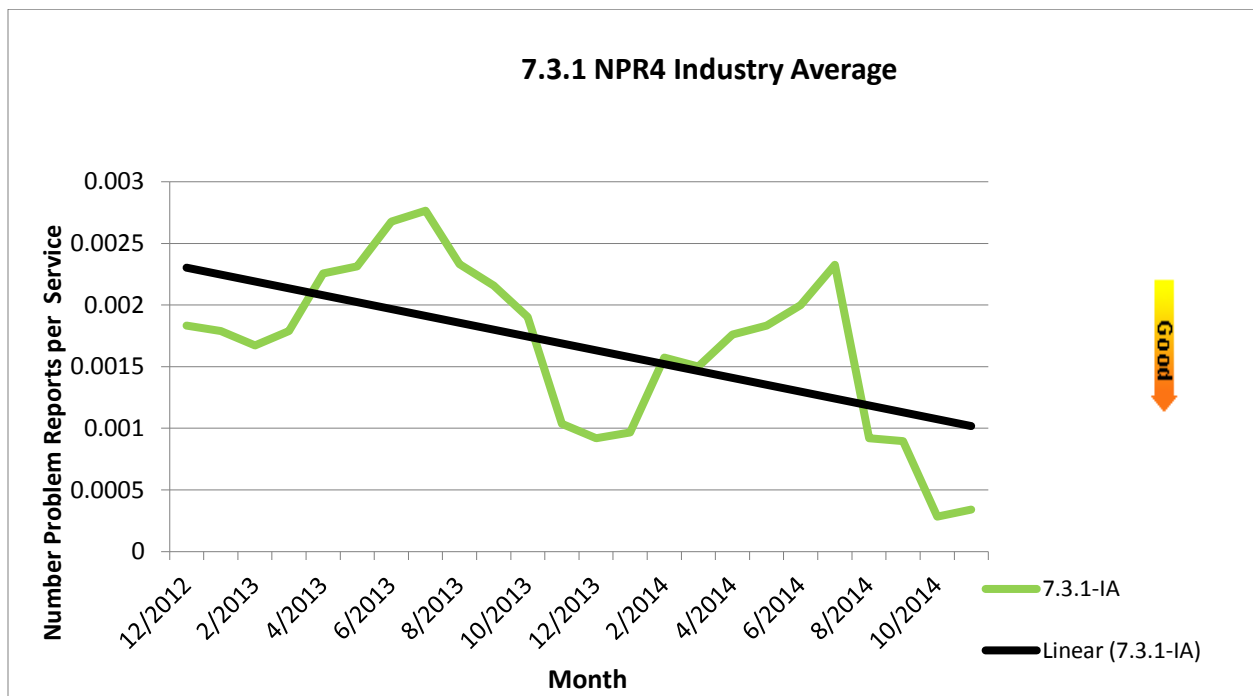

Figure 1 - NPR4 Industry Average

Problem Reports (NPR4)

As shown in the Figure 1 trend, there were major improvements in the NPR4 Industry Average. The problem report measurement for this product category is measured by the number of problem reports per number of normalization units per year and is identified as the Number of Problem Reports Industry Average (NPR4 IA). It is measured as the Number of problem reports in the month divided by the normalization units per year (i.e. the number of network elements maintained for the period). The results are the Number of Problem Reports per number of maintained network elements per month.

There was significant improvement in reducing the number of problems over the two year period. While the NPR4 Industry Average exhibited variability over the period, a linear trend of those results shows more than a 33% improvement, or a reduction from 0.0023 to 0.001.

The trend has been improving over the last two years within the industry as a whole; the reasons for the swings are not readily known; however, there is a substantial downward positive trend. A company with a NPR4 in excess of 0.0197 in 2013 would have been above the average. Furthermore, a company maintaining that same level today would also need to evaluate their current practices to match the industry trend.
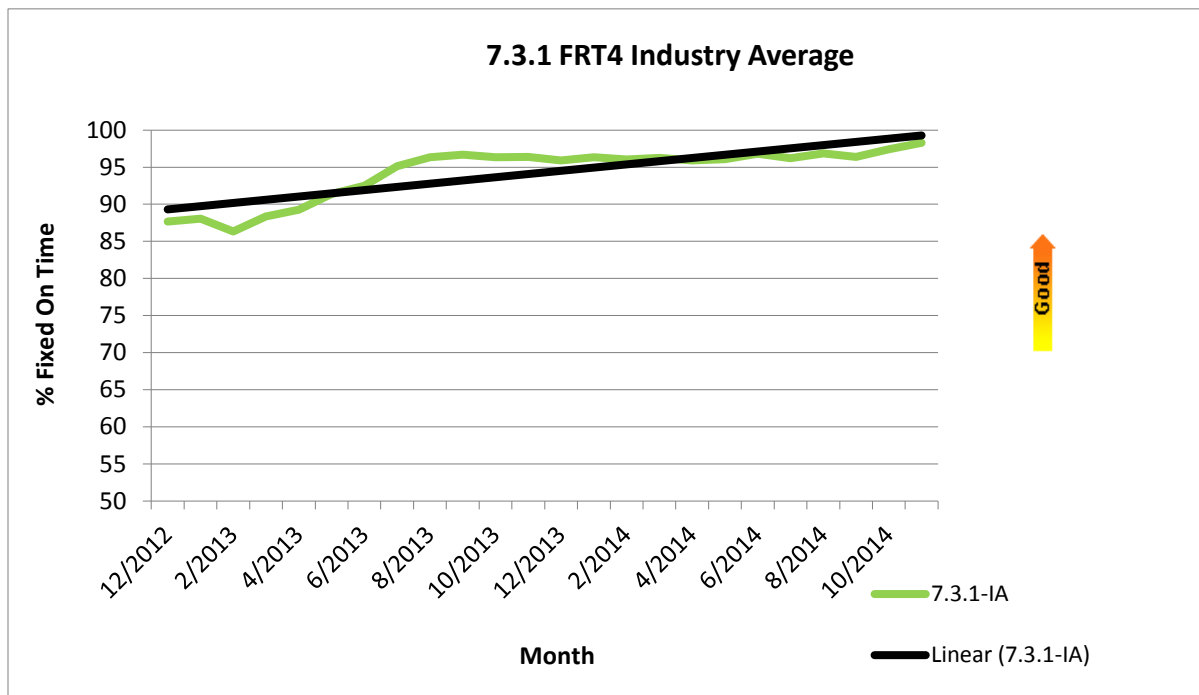

Figure 2 - FRT4 Industry Average

Fix Response Time (FRT4)

The Fix Response Time measurement is used to quantify responsiveness to the customer in fixing problem reports. The industry average trend at the end of 2012 was 89% with a significant improvement during 2013 surpassing 99%. Another way to view the FRT4 Industry Average trend is that there was an 11% gap compared to two years later with only a 1% gap demonstrating a substantial improvement in fixes delivered on time.

In 2014, the trend was stable and began to gradually improve to 99% late in the fourth quarter. A supplier with values below the average in the third quarter of 2013 would fall further behind if there was no improvement.
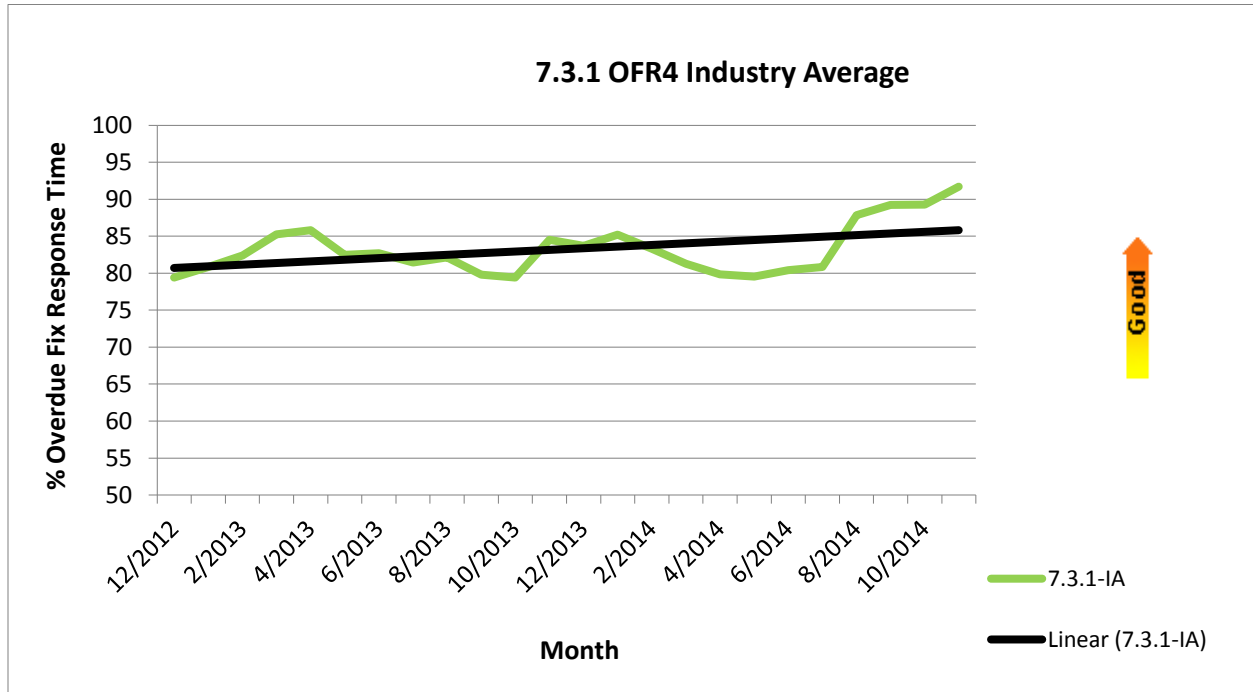
7.3.1 OFR4 Industry Average

Figure 3 - OFR4 Industry Average

Overdue Fix Response Time (OFR4)

OFR is the response rate measurement for overdue problem reports. Given that a report has to be an FRT "miss" in order to be considered for the OFR measurement, the OFR measurement tends to suffer from small number problems, particularly as the FRT measurement approaches 100%, as it does here. It is not clear if there is a statistically significant trend with this OFR measurement; however, there is some indication of a modest improvement during the noted period.
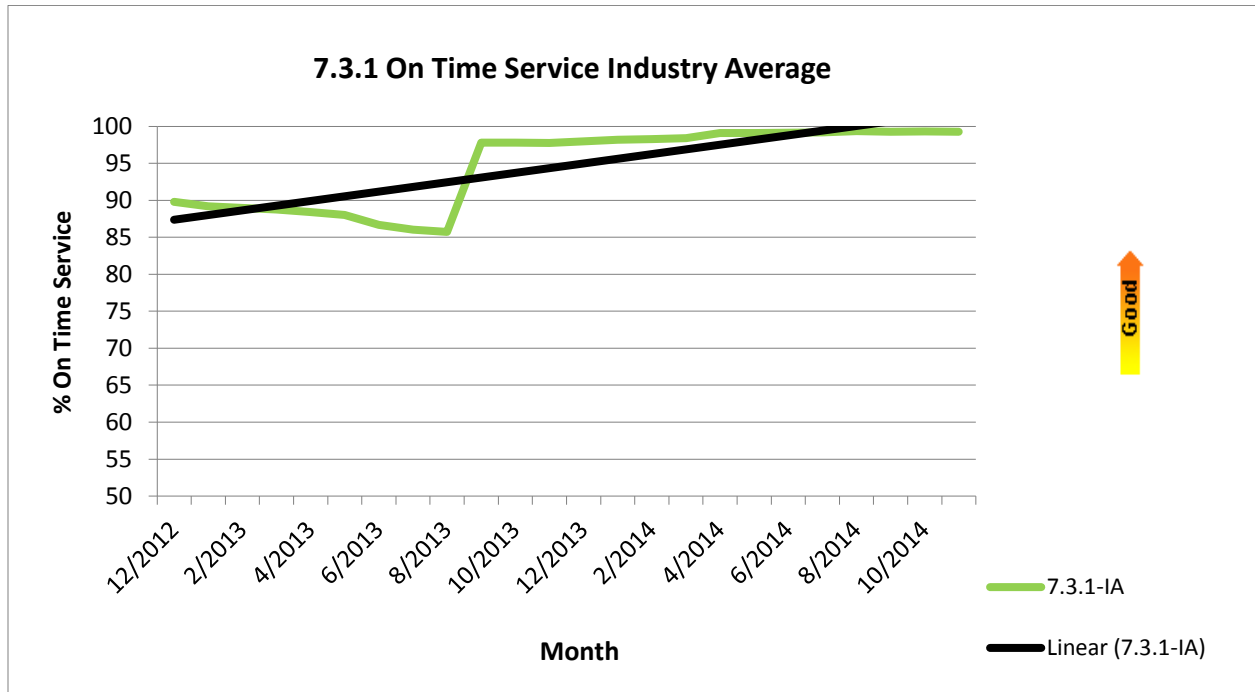
7.3.1 On Time Service Industry Average

Figure 4 - OTS Industry Average

On Time Service Delivery (OTS)

On Time Service Delivery (OTS) is measured as 100*the number of service orders accepted on the Customer Request Date (CRD) divided by the number of orders where the CRD was in the month in question.   In early 2013, the industry average was in the upper 80 %'s. There is a sudden jump from the upper 80%'s to the upper 90%'s in the middle of 2013.   The industry average then continues to improve from about 98% immediately after the jump to about 99% in late 2014.   The source of the jump traces back to November, 2011, based on data outside the date range of this paper.   The industry average dropped from 95% in October, 2011, to 86% in November, 2011, when three additional suppliers joined the industry average.   The industry average remained in the upper 80's until the aforementioned jump in early 2013, which was actually a recovery from the drop in 2011. A supplier whose OTS was in the lower 90 %'s in early 2013 would have been above industry average.   If that supplier failed to improve from the low 90 %'s, that same supplier would have found themselves well below industry average in 2014.
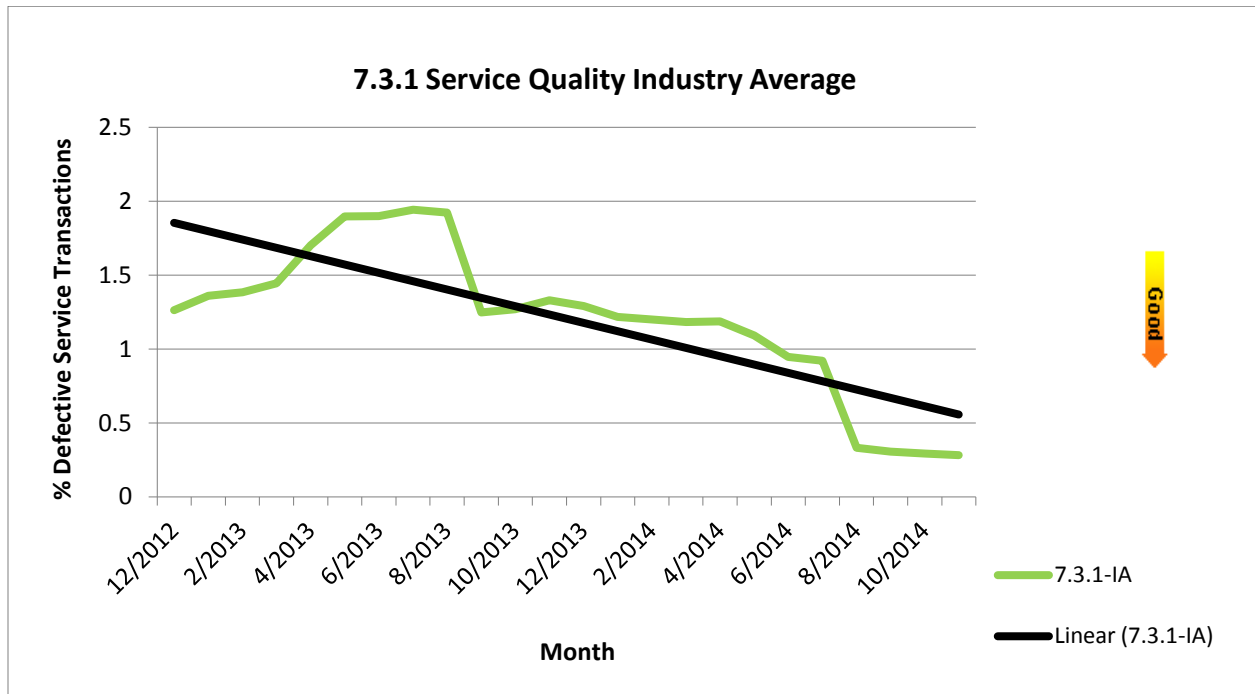
7.3.1 Service Quality Industry Average

Figure 5 - Service Quality Industry Average

Service Quality (SQ)

The Service Quality measurement (SQ) is measured as 100*the number of maintenance callbacks divided by the number of maintenance actions. The industry average stabilizes between 1% and 1.5% in 2013 and early 2014. In late 2014, it drops to less than 0.5%. The cause of the drop is not clear; however, a supplier with a Service Quality of 0.75% of its maintenance actions in 2013 would have measured themselves better than industry average. If that same supplier did not improve and remained at 0.75%, that same supplier would have been worse than average by the end of 2014.
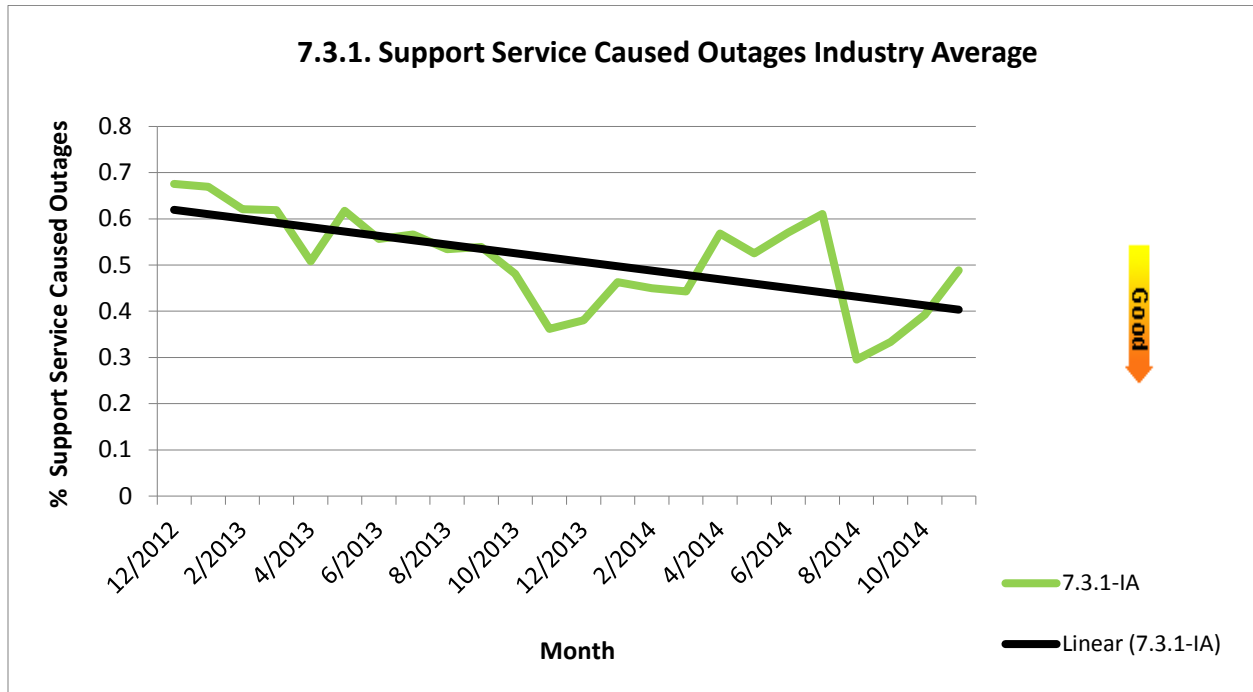
7.3.1. Support Service Caused Outages Industry Average

Figure 6 - SSO Industry Average

Support Service Caused Outage Measurement (SSO)

The Support Service Caused Outage Measurement (SSO) is measured as 100*the number of service caused outages divided by the number of maintenance actions in the month in question. Figure 6 shows that the 7.3.1 SSO industry average exhibits a gradually improving trend from 0.65% in early 2013 to 0.4% in late 2014 for an 62% trend improvement.   Here again, a supplier who had 0.5% of its actions causing outages would have been better than average in early 2013, and, if it failed to improve, would have been worse than average by late 2014.

Summary

Customers look to their service providers to fulfill the promises of new technologies, which in turn, challenge the supply chain to continually improve the performance of both the products supplied and the services rendered.

The 7.3.1 NPR4 industry average exhibits a gradually improving trend from 0.65% in early 2013 to 0.4% in late 2014. A company maintaining that same level NPR today would also need to evaluate improvements to match the improvement trend within the Industry. This shows a company should watch the Industry Average and seek to evaluate improvements to match the improvement trend within the Industry. This evaluation also extends to the Fix Response Time (FRT), Service Quality (SQ) and SSO measurements since the supplier would have been worse than average by the end of 2014; potentially jeopardizing their business and increasing their costs.

The key is to improve quickly enough to maintain or gain market share. TL 9000 registered companies in this 7.3.1 product category can use the TL 9000 benchmarking data to determine how much improvement may eventually be necessary. Special thanks to coauthors Art Morrical, Brad Burchnell and Tom Land.