HOW MEDIA ATTENTION CAN SHORTEN REPAIR TIMES FOR DAMAGED CABLE SYSTEMS

Kristian F. Nielsen, Kieran Clark (Submarine Telecoms Forum)
Email: knielsen@subtelforum.com

Submarine Telecoms Forum
21495 Ridgetop Circle, Suite 201, Sterling, Virginia, USA 20166

Abstract: Lately, the news coming from the submarine fiber industry has fallen into two categories: what's new and what's damaged. With new systems seemingly popping up in every time zone, existing and aging systems fight for headline space when a fault occurs and service is interrupted. Over the past three years, SubTel Forum has noted that a handful of systems in separate regions have been experiencing regular fault – be that accidental or otherwise. In this time, we've observed that there are plenty of other systems that suffer faults, but these few make the most press about the incident. The question that presents itself is "Does the media have any impact on the actual downtime a cable can see before a repair is accomplished?" Examining the three different modes of news transmission – paid subscription, free news feed and social media – we will perform an analysis of news coverage regarding cable faults that have occurred since 2010. Each news post will be subjected to a metric that will determine its effectiveness on impacting response time to a fault in a given region. And further, the method of news will also be analyzed, determining which method of news distribution has been the most effective for our industry.

1. THE CONCEPT

Since Cyrus Field pioneered the first Transatlantic submarine telegraph line over 150 years ago, the submarine cable industry has remained a little known, though pivotal, industry in the world. This often-unheard of niche of the telecommunications industry has quietly supported the world's explosive infrastructure development – the consuming public is largely unaware of where their television, internet and mobile phone data comes from. Asking the average person on the street how their information travels generally elicits a response along the lines of "satellites, of course". Contrary to this popular assertion, the world's demand for low-latency, high-capacity communications can only be handled by the network of fiber optic cables crisscrossing the ocean floor – each no wider than a man's wrist. (Summers, Nielsen, & Clark, 2015).

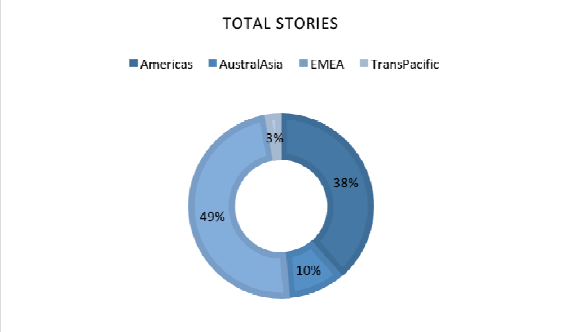
There are not many information resources widely available to the layman regarding the submarine cable industry. The vast majority of texts and presentations are made for internal consumption or tradeshows. Seeking to address this blind spot the magazine Submarine Telecoms Forum was founded in 2001. This publication has endeavored to make the submarine cable industry easier to understand, more collaborative and more approachable. The industry itself is rife with secrecy, though the majority of information is already public domain (Nielsen, 2016). Keeping the spirit of information freedom and availability in mind, the magazine and its related publications are completely free to all readers.

SubTel Forum has developed a database which tracks over 40 different fields of information on the cables that provide the international backbone of the information world. There are over 400 entries in the database, making it one of the single most comprehensive sources of its kind and the only one that supports publications freely available anyone. A team of analysts works under a strict code of ethics when researching – all data must be in the public domain and from reputable sources. By ensuring the data is ethically sourced, the magazine not only protects itself from potential litigation, but also protects its readers from misleading information and the cable owners from baseless rumors. In the world's current paradigm of fast paced information dissemination and syndication, the analysts at SubTel Forum are tasked with vetting the data that they find. Without third party confirmation, the data is tabled until it can be verified or disproven. In the case of cable owners, misleading information can unravel already tenuous financing offers and contractual discussions. This industry is in a recovery period. Nerves are still shaky from a recent depression, and investors are being extra careful with their money. Finally, in the case of the magazine itself, a news organization prides itself with timely, relevant and accurate reporting. Without those three things, the magazine's readership would wane and ultimately seek its news elsewhere.

SubTel Forum is currently performing research into repair times after cable faults occur – specifically the impact that media coverage of the fault has on repair time. To examine the potential correlation, SubTel Forum analysts are collecting data on cable faults from around the world. The resources for this effort consist of entirely public domain publications, including the SubTel Forum Daily News Feed, PR Newswire and the discussion board from "01 The Submarine Cable Systems group" hosted on LinkedIn.

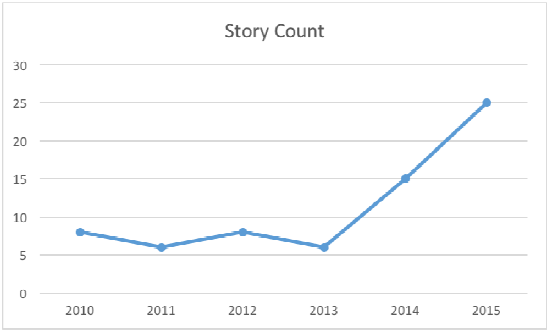
The data sourced for this study includes regional information on all publicly announced system faults dating back to 2010. Specifically, 15 systems have been the most active in their news media participation. These systems are general representatives of their regions and will show a growing trend in media announcements, which will correlate to a small improvement in repair times for those regions.

2. THE ANALYSIS



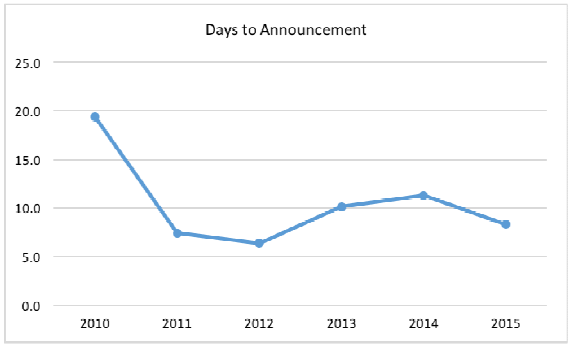
Unsurprisingly, the two largest regions in the world generate the most media stories about cable faults. The Americas and EMEA regions are not only expansive, but several of the landing stations contained within each region are also in high traffic shipping areas. While the lack of stories about Transpacific cable faults is also expected – considering the nature of most routes and the location of their endpoints – the small amount of stories about cable faults in the AustralAsia region is somewhat unexpected. This region contains a slew of cables crisscrossing major shipping lanes in a region that is also geologically active. It is likely that many cable faults for this region simply go unreported to the media.

The remaining Indian Ocean Pan-East Asian and Transatlantic regions have had no reported cable faults within our timeframe. While the former region simply doesn't have as many cables to worry about in a relatively cable safe region, the latter is one of the most established regions in the world. It is again likely that many faults in these regions go unreported. Specifically, in the case of the Transatlantic region, there is almost always a cable repair ship nearby to quickly restore any damage within days or hours – likely preventing a fault from even being noticeable, in most cases.



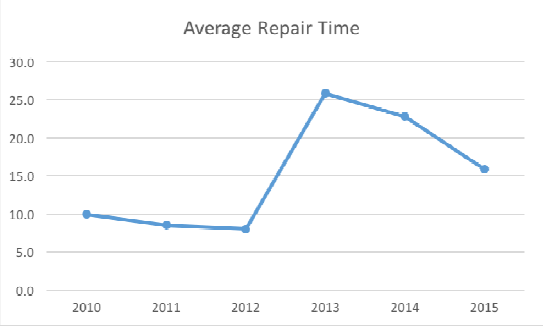
SubTel Forum has observed a sharp rise in the amount of media coverage for cable faults—especially in the last two years. This is likely due to an increase in reporting, rather than an increase in cable faults, and almost certainly tied to the rapid rise of internet media reporting. Our global society is more interconnected than ever, with people sharing news faster than at any point in history.

With the average customer becoming more technologically savvy—and quicker to complain to service providers – this has contributed to an increase in media coverage for cable faults. As more people are connected to the global submarine fiber network every year, the rise in reported faults by the media is expected to continue. This provides much needed transparency and accountability for the submarine fiber industry.



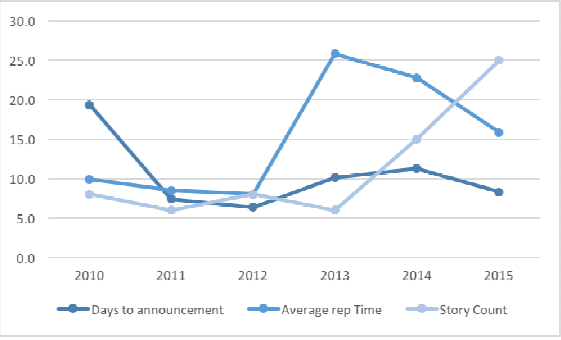
Due to reporting and general awareness of cable faults being on the rise, the time between a fault occurring and a cable owner or operator announcing said fault has decreased dramatically over the last five years. The recent surge in media coverage has put more pressure on cable owners and operators to become increasingly transparent with cable faults. As internet connectivity becomes ever more essential to daily life, customers demand such transparency to help ensure service providers work diligently to address their needs.

With progressively faster reporting time, it's very likely that announcement times will average under five days in the near future. This not only helps to hold cable owners and operators more accountable, but also provides reassurance to customers that cable faults are being addressed in a timely fashion. More accurate and transparent reporting of cable faults also helps maintenance agreement zones and private contractors more reliably predict where to distribute assets.



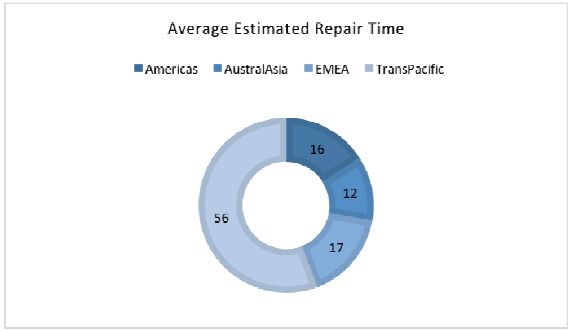
Despite the spike in 2013, the trend for average time to repair has continued to decrease alongside an increase media coverage. Media attention of a cable fault puts obvious pressure on owners and operators to make sure service is restored in a timely fashion. As reporting of cable faults consistently increases in frequency and speed, this should continue to impact the average repair time even further.

The continued downward trend in cable fault repair time could easily lead to the average time to repair falling under 10 days over the next few years. This would be of enormous benefit to the industry as a whole, as less downtime leads to happier customers. In particularly troubled regions, this could greatly change perceptions of a given service provider.



There has been a clear correlation observed between frequency and speed of cable fault reporting and a decrease in average repair time. Internet news media reaches more people and informs them faster than ever before. As media coverage of cable faults extends to a wider audience and provides additional transparency, this correlation can be expected to continue into the future.

Raising awareness of cable faults will also put pressure on government agencies in charge of issuing permits for cable repair work. Many times, this is the largest hindrance for a repair operation. This increased awareness will have a net positive effect on permit turnaround time, and further decrease the average time to repair for a given fault.



While the Americas, AustralAsia, and EMEA regions all have a relatively short average time to repair, the Transpacific regional average outstrips all the others combined. With Transpacific systems containing some of the longest uninterrupted route segments in the world, this comes as no surprise. The longer a route segment is, the longer it takes to find and then diagnose a fault for proper repair. Most systems in the other regions are broken up into smaller segments, and cable faults can be located and diagnosed much more quickly.

As reporting accuracy of cable faults continues to increase, this will help bring down the Transpacific's average time to repair. With repair crews getting better information on where faults are likely to occur, their ability to locate and diagnose a cable fault improves dramatically. Accountability and transparency of this

sort is healthy for cable owners and operators, as well as their customers.

3. THE CONCLUSIONS

Faults suffered by systems in the past have generally gone unnoticed by the end user, due to the high priority placed on route diversity in most regions. As media reporting on cable faults has become more accessible, this has allowed for greater industry transparency. Such transparency leads to increased pressure on cable owners and operators to repair faults in a timely fashion.

It has been the intent of this paper to ascertain a correlation between media coverage and system fault repair times. During the course of this analysis it has become clear that the correlation, while slight, shows the beginnings of a new trend in the submarine cable industry. Comparing the aggregate number of stories annually per region to the respective fault repair times, the correlation coefficient shows a slight negative correlation. This suggests an inverse relationship between media coverage and repair times.

Based on the above analysis, there has been a noticeable rise in stories reporting faults and repairs since 2010. Over this six-year period, an increase of over 200 percent in publically reported faults and repairs was observed. Average time to repair saw a large spike within this period, and has since fallen off roughly 35 percent. Narrowing the scope to the last three years, the two data sets show a -.98 correlation coefficient. This indicates a near perfect relationship between an increased number of stories reporting on faults and a decrease in the actual time to repair.

While the greater scope of the study showed a nearly insignificant correlation coefficient, narrowing the study to a more modern timeframe shows a burgeoning trend among news sources and system owners, one that relays as much information along to the end user as possible. In the future, this industry should expect a far greater interest from the media and end users alike in the day-to-day maintenance of systems and their connectivity.

4. REFERENCES

Clark, K., & Nielsen, K. (2015). *Submarine Cable Almanac* (16th ed.). Sterling, VA: Submarine Telecoms Forum, Inc.

Nielsen, K. (2016, January). *SubTel Forum - About Us*. Retrieved from http://subtelforum.com/articles/about-us/overview/

Summers, K., Nielsen, K., & Clark, K. (2015). *Submarine Telecoms Industry Report* (4th ed.). Sterling, VA: Submarine Telecoms Forum, Inc.