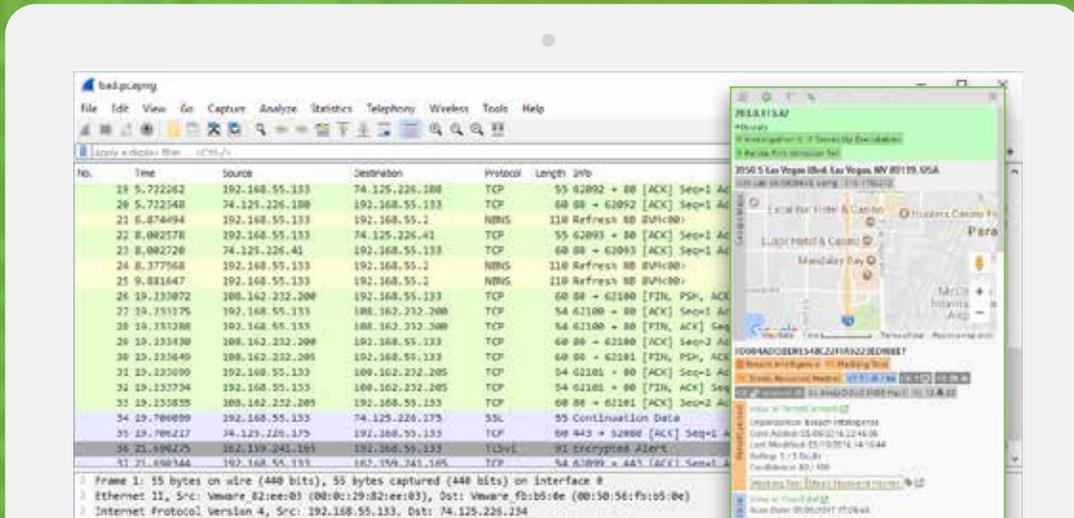


POLARITY

Your Time is Limited, Don't Waste It



An unescapable commonality between you and me is that we all have limited time on this Earth. I think this uncomfortable truth is part of the reason it is so painful to be stuck in rush hour traffic, lose a document due to a hard drive crash, sit silent in a “pointless” meeting, or be interrupted when trying to get something done. Time is a very valuable yet always depleting resource. For us, the following were observed pains that inspired us to create Polarity.

HUMAN MEMORY LIMITATION AND SEARCH

Why memorize something when you can just look it up? Well, search takes time, energy, and is error prone. What if you search the wrong thing or don't know that you should have looked something up. The human brain has been optimized over thousands of years for many things, memorizing large data sets is not one of them. According to a study by McKinsey & Company, knowledge workers spend 19% of their workweek searching and gathering information[i]. For one of our customers with a small 100-person team, this was more than 36,480 hours, approximately 19 man-years wasted every year. Polarity helps capture this lost value, but more importantly improves decision-making while it does.

LACK OF INFORMATION SHARING CAUSES INTELLIGENCE FAILURES AND DUPLICATION OF EFFORT

Many of us at Polarity are former intelligence officers. Imagine you are an intelligence analyst investigating a target. How would you find out if another analyst somewhere in your vast organization is investigating the same target? In the event that each of you has a unique piece of the analytic puzzle, not collaborating can result in an intelligence failure. Without Polarity, for you to connect with another analyst, you have to upload your notes into a centralized knowledge management platform and the second analyst has to search the platform to find your notes. Even if other analysts working on the same target don't have critical information related to your investigation, you still have the problem of



duplicated work and wasted time. Polarity reduces the required actions from two users down to one. As long as one of you captures your notes in Polarity, Polarity automatically brings those notes to the other analyst's attention.

MEMORY AUGMENTATION

With memory augmentation you decide what information you want to add to a collective memory. You can connect Polarity to large datasets but also perform one-off annotations of things you want to share with your co-workers or be reminded about in the future. Once data is in the collective memory, if it is related to something on your computer screen, the data is automatically overlaid on top of your existing applications and tools. Polarity determines if something is related by using computer vision to recognize textual content of your screen as you do your work.

HOW A COLLECTIVE MEMORY FORCES COMMUNICATION EFFICIENCY

Memory augmentation addresses timeliness, distraction, and distribution inefficiencies in current communication technologies such as email and group chat.

COMMUNICATION TIMELINESS

The timeliness of information is an important criterion of actionable intelligence. The clichéd example is learning about a "future" terror attack the day after it occurred. However, timeliness of information is a concern with everyday communication as well. For example, let's say I have a coupon code for something I think you might purchase in the future and I want to tell you about it. If I send an email or chat message with details of the coupon code the day after you make the purchase, you will get no value from it. If I send you the coupon code a couple of months before the purchase you will likely forget that you have the code. To be efficient, I would need to get extremely lucky and send the communication at the exact point in time when you need the information. Polarity removes the need for luck to facilitate efficiency, and displays the coupon code when you browse to the website to make the purchase and then stops displaying the code after you navigate away from the website. You get the information exactly when you need it, when it is relevant to what you are working on.

COMMUNICATION RELEVANCE

Another criterion of actionable intelligence is relevance. If I send you a coupon code for something you never purchase, my interruption has wasted your time and caused a distraction. McKinsey & Company estimates 28% of a knowledge workers time is spent reading and answering emails. Now if my "message" of the coupon code is only distributed when relevant, there will be no interruption, distraction, or wasting of your time.

DISTRIBUTION AND COMMUNICATION CHANNELS

How many times have you seen distribution lists get too large, or more people copied on an email than necessary? As people in an organization grow the number of possible communication channels or one to one communication paths does not grow linearly. For example, on a ten person team there are 45 possible communication channels:

Communication Channels = $N(N-1)/2$, where N is the number of people on the team
 $45 = 10(10-1)/2$

Whereas on a 100 person team there are 4,950 channels, on a 1000 person team, 499,500, and for our largest customer with over 250,000 employees they have more than 31,249,875,000 possible communication channels. Using the coupon code example, copying 249,999 people on an email with



a coupon code will likely get you let go, but if put into a collective memory, the code will only be distributed to those who need the information when they need it.

DESIGN CONSIDERATIONS

When designing Polarity, we were able to draw on our experience building, deploying, and using tools for intelligence analysts as well as designing and building video games. We leveraged things that worked and learned from things that did not when architecting the first commercial collective memory.

USER ENGAGEMENT CHALLENGE

Some users resist change; they have a workflow that works for them and they don't want to mess with it. This resistance to change means new, more efficient, or powerful tools available to the user are often ignored. The question became, how can we empower users while not asking them to change their workflow? To address this, rather than require users to adopt a new workflow, we designed Polarity to enhance your existing workflow through on-screen overlays. User's that typically resist adopting new tools can continue to use those tools but use them more efficiently with Polarity. So even if only 20% of the user base contributes to the data in the collective memory, all 100% of the user base can leverage the data.

WORKFLOW CULTURE

Another way we have seen organizations attempt to solve user engagement issues is by mandating that all users on a team follow a regimented workflow. In our experience this sometimes communicates a lack of trust in the users and can cause users to have tunnel vision when they should deviate from the regimented workflow. When collaboration is across different teams or organizations, forcing a common regimented workflow might not even be feasible. Polarity addresses these issues by enabling users with overlays across any workflow so that users don't need to change their behavior, they just get additional context information brought to them automatically.

DATA JOIN CHALLENGE

Does tool X work with tool Y? A version of this question can be a roadblock when choosing new technology. So we asked, how can we build a platform that augments every other system out-of-the-box without needing to explicitly join data? The common interface glue became the pixels, as long as data on the screen is visible to the user, Polarity can use computer vision to identify the content and overlay relevant information. This technique works across network boundaries as well, if you are logged into a remote system, Polarity will overlay context without needing to be installed on the remote system.

INTEGRATION ARCHITECTURE

When users are making decisions, what data could better inform those users to make better decisions? Every organization has its own set of intelligence and institutional knowledge in different formats and systems. We wanted customers to leave that data in-place while leveraging it across the organization. The Polarity Integration Architecture gives customers the ability to define, 1. What they want to recognize on users' screens, 2. Where they want to gather contextual data from, and 3. What they want to overlay on the users' screens.

Join Us

Why be held back by the limits of human memory? Sign up for a trial of Polarity today and I guarantee you and your team will be able to do more with less time. I am continually amazed by what our customers do with the platform and look forward to seeing what you build on it. <https://polarity.io/>