

JTC Flagship - Fall 2024

The Human Side of Tech

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"INIT"

USR COURIER

AT&F&S11=55&C1&D3&HA&R2&M4&K1¹

Dialing...

Connected

Negotiating Speed... 2400bps!

^Z



¹ I remembered most of it, but had to refer to [Cisco's handy chart](#) for some of the fiddly init bits.

In June of 1993, the above was representative of the initial terminal view I had in accessing the wider world of networked information. After my parents bought me a computer (that I had to pay off in installments) I was introduced through word of mouth into the world of BBS's (Bulletin Board Systems). The local systems I could dial into were the long defunct Omni-Link (Run by the late [Kerry Pelton](#)) and one Sysop'd by a very good [friend of mine](#), NeverNeverLand ([NNL](#)) - which is *still* in operation to this day.

I spent countless late nights and early mornings through an 80 column x 32 line terminal exploring how these systems worked; marveling that I could telnet through the Omni-Link BBS and then open an anonymous ftp session to [Walnut Creek's](#) ftp.cdrom.com and download anything I wanted from their vast collection of 20-30 CD-ROM titles². Albeit at speeds that would make anyone today throw their phones in frustration...

But the most interesting thing I experienced was the use of message posting and e-mail³. After asking another user, who was also a classmate, how email worked while posing such naive questions as, *"How many days does it take to deliver a message?"* I was soon set up with an account @Omni-link.net.

Evolving Communications

I had joined the electronic messaging party at a transition point from newsgroup postings and BBS message boards to World Wide Web propagated email messaging. Instead of having to closely monitor the equivalent of a messaging party line or login to a specific BBS, I could access and send messages from wherever I had a connection to the web at large. It seemed the capabilities of email and

² They had around 12-13 GB of files available on their cross-linked CD-ROM changer system. If you requested a file from a disc not currently loaded, you'd have to wait until the request queue for the current disc was completed, and then wait for whatever disc you'd requested a file from to be loaded from the carousel changer.

³ We hyphenated that word back then.

messaging greatly expanded and did so very quickly. After America On-Line (AOL) democratized the process of laypersons and everyday people getting on the internet and having an email address - options began to abound for connecting with others. AOL instant messenger, ICQ ("I Seek You"), Yahoo Instant Messenger, and so on and so forth were options to not only send text messages to friends, coworkers, and new acquaintances, but to do so in real or near real time.

In the fall of 1998 a girlfriend named Jennifer moved from Northern Ohio to Louisville, Kentucky to attend a culinary school. I came to visit quite often. And there, her roommate (also named Jennifer) had America On-Line setup, but couldn't use the darn thing! Back in those days, especially on larger networks such as those found in college campuses, you had to either call up their IT support to have them come out and configure your computer or know a bit about IP routing, subnets, and POP3 servers. With my experience in computers, I was able to troubleshoot some of the problems they'd had and soon their email and messenger worked as intended. I worked for quite a few years as the "computer guy" in both my personal and professional life before joining the military in early 2002.

Left Behind

Jumping many years ahead, I ran into an issue upon getting my first job after release from confinement. The business I worked for used Facebook Messenger Groups to keep team members in contact with each other and to post important work related messages. I did **not** have Facebook Messenger. For most of 2024, I didn't even have an internet capable phone. I was able to make it about 2 months before this inconvenience started affecting my job performance, since I'd missed important messages from the night before and was reliant upon people to pass them along to me via word-of-mouth the next morning. Not good if I'm the only one there to open up the kitchen/deli! Eventually, I got a laptop I could use at home and at least check messages before work each morning⁴.

⁴ And participate in the JTC Tech Pathways course, and now Flagship!

On the one hand, I am one of the first to bemoan the anti-social, poor posture, and myopic eyesight of people who seem constantly glued to the feed of mostly useless information constantly demanding their attention. My low opinion in that area of smartphone use is constantly bolstered by the slowdowns and interruptions it causes in the performance of work not related to cradling a phone and checking on its well-being.⁵

On the other hand, our always-on instant messaging is an incredible boon to working on remote collaborative projects or seeking clarification from an expert on a task or subject. The amount of time saved by this availability is incredible.

“How Stuff Works”

From primordial message board postings, to networkable email text messages, to desktop/office bound instant messaging, SMS Texts, and now to an always-on personally-carried world-wide capable communications system our abilities to reach out to others and to have them share in kind has proven that we are - without a doubt - people who crave community and connection.

At the heart of such things as email, instant messages, or Rich Communication Services (RCS) protocol conversations lies the simple aim of sharing our thoughts, ideas, and feelings with others. We want to know from who we’re receiving these things and want others to know that we’re the ones sending what we send.

Unfortunately our increased connectivity is fraught with bad agents, malicious actors, and greedy advertisers. The arguably weak infrastructure⁶ of a header indicating sender, intended recipient, and message type has been continuously subverted almost as easily as forging a fictitious return address on an envelope.⁷

⁵ The [tyranny of objects](#): They require you to care for them as though they were living things and yet, they are not.

⁶ I’m aware this is a gross simplification, but it cuts to the heart of the matter once you strip away encryptions, authentication tokens, or obfuscation techniques.

⁷ Those things you put stamps on.

Even if your messages are the ones you wanted to send, and the ones you truly wanted to receive, the odds of these messages being personal to only your recipients and yourself are quite low. The needs of safety and security or the aims of compromise and control necessitate the use of [dubious](#)⁸ and [sometimes complicated](#) messaging methods if you attempt to have communications privacy. The larger the network, the more eyes various government and intelligence gathering entities have to see all that traverse those paths.

Having worked alongside NSA contractors in various capacities during my time in the military, it was almost laughable some of the blind spots they could not see.⁹ However, what they ***could*** see...was outright frightening.¹⁰ I last worked with them over 15 years ago, so I can only imagine what capabilities they and other worldwide snoopers now use.

In JTC, we've gone through the foundations and framework of various programming languages and subsets of front-end and back-end server implementations. We've touched on the importance of implementing DevSecOps from the outset of a project, instead of as an afterthought or patched on consideration.

Why is this important? Why do we want to do this? Why care about user's data? Because no one asks to be a victim.

Conversations At A Crowded Party

In our communications with each other and the world at large, breaches of our trust and privacy in the digital domain we increasingly inhabit carry with them risks

⁸ TOR was developed by the [U.S. Naval Research Laboratory](#). You can trust that the military didn't build any back doors. Right?

⁹ E.g.: Ham radio operators and ad-hoc networks crossing various edge devices and protocols stymie these gov't funded corporate script-kiddies, for the most part.

¹⁰ Teams of analysts are required to go through the trove of information harvested by collaborative efforts with other allied nations (5-Eyes) as well as co-opted resources from unaware governments/networks. (Often insecure systems on 'adversarial' networks, but sometimes involved "actionable intel" fetched from unwitting allied nations).

of causing psychological injury; anxiety, depression, and even PTSD. We must dedicate a not insignificant portion of our finite lives and resources navigating the bureaucracies of managing credit reports, wrangling with paradoxically difficult to fix identity theft, or struggling to detach from traumatic harassment and stalking of people or groups we wish to move on from.

Back in 1993¹¹ I had no qualms about posting a personal private message to another user on a BBS message board. This, even though I knew the SysOps could view any of those messages on a whim or send them to anyone else, if she/he wanted. Because I trusted Kerry and Ron. They have integrity and practiced a privacy first approach to their operations. They didn't collect and share the usage metrics of the users of their services for whomever was willing to pay for such information. And system logs were permanently flushed and deleted <gasp!> on a weekly basis, so long as the BBS was in good working order.

Why can't we do this now?

Well, the short answer is that the communications landscape has gone from the equivalent of small, secluded gatherings in semi-public spaces to a free-admission high-tech global amusement park with cameras, trackers, biometrics, surveillance, unwarranted searches, laws, and licensed theft, to say nothing of the criminal element¹².

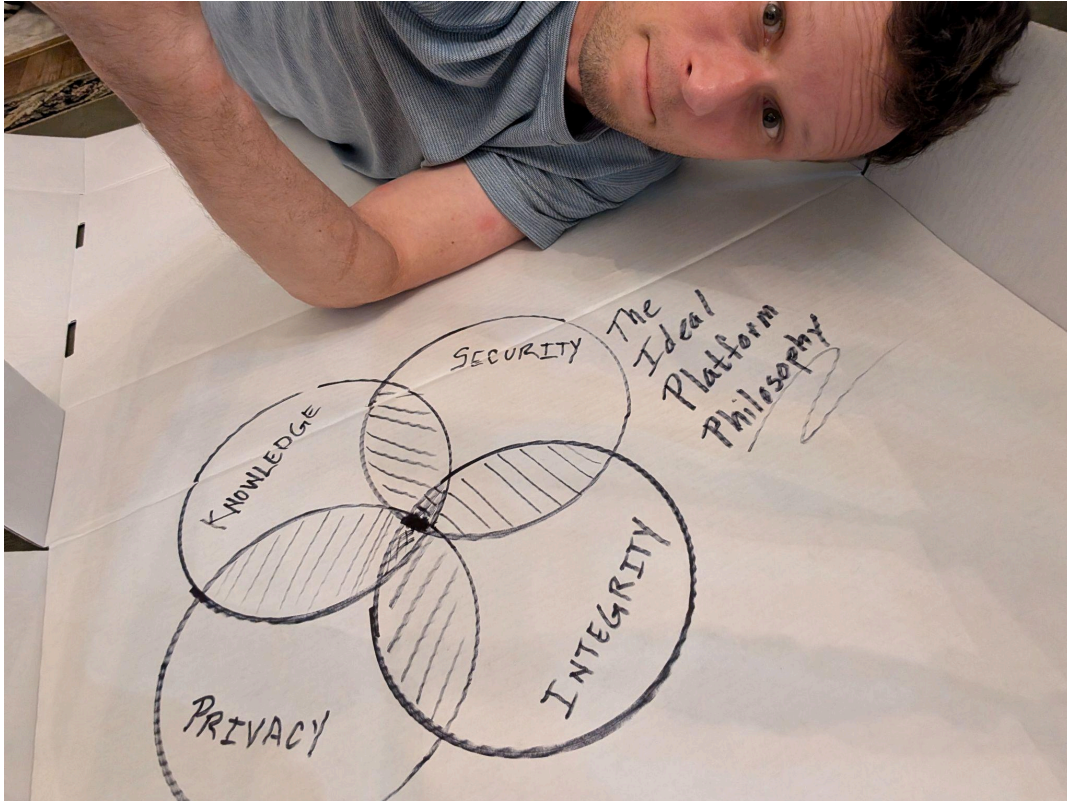
People don't know the people they are connected to. And not in a '*well that's interesting*' 6-degrees-of-separation kind of way.

Moving Among the Partygoers

¹¹The times weren't idyllic, but there was a large portion of responsibility and trust shared among system administrators and users alike.

¹² <https://www.eff.org/issues/privacy>

I firmly believe that it is only through the incorporation of knowledge, security, integrity, and privacy in our development practices that we can enable environments that are 'safe spaces' for communicating:



- **Knowledge** is necessary to craft and maintain a platform or service that leverages built-in features, modules, and libraries of an appropriate development language to competently handle the raw tasks of transmitting, storing, and deleting user data.
- **Security** is tightly coupled with all other aspects of a platform or service: The knowledge to code a solid platform protected by measures that enable practices of integrity and privacy. Data protection, retention, and deletion schemas are wholly compromised if our system unwittingly sends everything to an unknown recipient.
- **Integrity** is handling user data in ways that are expected by the user, and including transparency in the ways they may not expect. Transparency also

means fully informing users, in plain language, what happens with the data they share and the data they receive; not burying the T's&C's in a tiny-typed 30+ page EULA.

- **Privacy** means the use and records of use by a given user are not available to anyone or anything outside the platform or that particular user themselves.

Communications Conclusion

The human side of technology has remained very adaptable, for better or worse, in making the most of all the advances in communications as they come along.

I came from an era where online meant a couple hours during late nights dialing into a local BBS on a 20-foot phone extension cord, posting text messages and having chats on an ANSI terminal. Now, I have all the libraries of the online world at my fingertips to toss back and forth with those I communicate. We can share how we look, how we sound, and what we feel about all manner of things as needed or simply on a whim, if we choose.

Now, if only I could have a conversation with a friend without advertisers trying to monetize my personal thoughts and feelings...^Z

...

NO CARRIER¹³

¹³ That means our dial-up modem session is over. TTFN!