

(S//SI//REL) Is There a Sustainable Ops Tempo in S2? How Can Analysts Deal with the Flood of Collection? -- An Interview with [REDACTED] (conclusion)

FROM: the SIDtoday Editor
Run Date: 04/06/2011

(U//FOUO) Editor's note: Here's the conclusion of our interview with SID's Deputy Director for A&P [REDACTED] (pictured). (*If you missed part one, you can find it [HERE](#).*) In this segment [REDACTED] comments on Analytic Modernization and why it is taking center stage...

6. Q: (U) When we [last interviewed you](#) in August 2009 -- you were Assistant DDAP at the time -- you spoke of the importance of creating a sustainable ops tempo in S2. Have you succeeded?

A: (U). No. No, I haven't... And it's not just because there's so much happening in the world. Here's the thing: we have to take a fundamentally different approach to how we do business. The volume and quality of access we have now gives us an unprecedented capability to produce some of the best intelligence we ever have, but the fact is that we are only getting to a fractional portion of what we have access to. I can't tell you for sure that as good as what we produce is, that it's the absolute best we can do. It's not sustainable for the workforce or the mission to keep working in the way we always have.

(U//FOUO) We've embarked on Analytic Modernization. In the past there have been transformations... modernizations... renovations... it gets tiring! But to a large degree those efforts have represented supercharging ***existing*** capabilities -- doing more with less. We need to fundamentally change how we interact with SIGINT.

(U//FOUO) This is a big deal, because for decades we've trained our workforce -- and took pride in the fact -- that we had the unique responsibility within the [IC](#) to manage this information in accordance with the 4th Amendment. To that extent we thought of SIGINT as "radioactive" and it was our job to render the information safe for others. Our process was about managing the information in a manner consistent with the privacy rights of U.S. persons.

(U//FOUO) I believe we have developed an awareness of the information and an understanding of our authorities that allows us to think differently about that relationship... and in so doing, to create an increased capacity and recover more time for the analysts. I don't mean only analysts in SID, but also analysts in [IAD](#), in [NTOC](#), etc. The key is to better leverage the Intelligence Community and our partner relationships for the exploitation of SIGINT, which is something in the past we would not have done to the degree we're proposing -- it was considered ***our*** domain (and "radioactive").

(U//FOUO) We must take advantage of the expertise and capabilities in the IC and our customer base to enhance discovery and capacity, and to make the actionable information available almost as soon as we encounter it. This is not about turning NSA into a collection resource for others (although collection is in fact one of our great strengths and one we are uniquely qualified to undertake) -- it's about making sure we don't expend cryptologic resources doing work that is not uniquely cryptologic in nature -- work that others can do.

(U) Q: Can you give an example?

A: (S//SI//REL) If NSA discovers a pathway into an adversary's information space and we extract a terabyte of CAD [computer-aided design] drawings of weapon designs, is it of best value for the IC to have talented NSA analysts work their way through this 1 terabyte of data? Is it uniquely cryptologic? Or is it of better benefit to the nation that we expose it immediately to the best and brightest weapon designers in the US government to work on in a collaborative space, to triage, assess and exploit the value of that information?

(U//FOUO) In so doing we are not precluding NSA analysts from continued access to the data, any more than a published SIGINT product report isn't available for future reference. We are just leveraging the power and expertise of others so that we can turn our attention to that which **only we** can exploit by virtue of our unique talents.

Q: (U) Isn't it possible that our customers won't want to devote their own people and time to analyzing the data?

A: (U//FOUO) If we get access to the best information on a topic, the value will speak for itself and the customers will make the resources available. It's like YouTube videos -- they "go viral" when people with good reputations recommend a video to others. If we put the information out there and monitor the customer response to it, we'll know when to recommend specific items they might want to take a close look at. Amazon does the same thing by looking at how you react to the products you've looked at. We can figure out what the communities of interest are for that topic... If the material is in a foreign language, we have tools they can use to get the gist of it, and if it looks promising, they can use the [National Virtual Translation Center](#) to get it translated. We want our language analysts focused on uniquely cryptologic problems that rarely boil down to a straightforward translation.

(U//FOUO) So what does this approach accomplish? We've exposed the intelligence to people who can interpret it and use it, and we've created opportunities for collaboration. We've also off-loaded the responsibility to manage the data in our repositories and own the compliance responsibility. If data is stored in the [Library of National Intelligence](#), someone else is paying for it.

(U//FOUO) In the end, we exist to produce information. The only way to go more deeply into targets is to avoid getting stuck on production that others can do for themselves. Our challenge is to be always out looking for something new. We need to think about problems, not just about production.

(U//FOUO) The collaborative component means it's not an NSA view, a [DIA](#) view, etc... Rather, it's opened up to all on A-Space. I would like to see people log onto A-Space and announce "I want to share traffic and create a multi-seal report based on joint input." Why not collaborate at the point of discovery?

Q: 7. (U//FOUO) Various pushes for analytic modernization have been going on for decades at NSA, but now the issue really seems to be taking center stage. In fact, the number one "SIGINT Goal for 2011-2015" is to "revolutionize analysis." What's different now?

A: (S//SI//REL) We live in an Information Age when we have massive reserves of information and don't have the capability to exploit it. I was told that there are 2 petabytes of data in the SIGINT System at any given time. How much is that? That's equal to 20 million 4-drawer filing cabinets. How many cabinets per analyst is that?? By the end of this year, we'll have 1 terabyte of data per

second coming in. You can't crank that through the existing processes and be effective.

Q: (U) ...So it's a matter of volume?

A: (S//SI//REL) Not volume alone, but also complexity. We need to piece together the data. It's impossible to do that using traditional methods. Strong [selectors](#) -- like phone numbers -- will become a thing of the past. It used to be that if you had a target's number, you could follow it for most of your career. Not anymore. My daughter doesn't even *make* phone calls, and many targets do the same. Also, the commercial market demands privacy, and this will drive our targets to go encrypted, maybe into unexploitable realms. Our nation needs us to look for patterns surrounding a particular spot on Earth and make the connections -- who can do that if not us? And we can't do it using traditional methods.

8. Q: (U) Looking into the future, is there anything that especially worries you? ...An eventuality (internal or external) that would make it hard for A&P to continue to put out quality intelligence?

A: (U//FOUO) I'm worried that we have so much good stuff that we could lock down analysts and have them just producing product, and something would jump out and surprise us. So we need the discipline to invest in the wild and the unknowns.

9. Q: (U) Is there anything else you'd like to say to the SIGINT workforce?

A: (U) At the risk of being melodramatic, as hard as the work is and as challenging as the work environment can be, we should never forget how lucky we are to have a job where we can have so much impact for the nation. Don't let the turkeys get you down!

(U) The SIGINT Philosopher: Cognitive Overflow?

FROM: (U//FOUO) [REDACTED]

Run Date: 04/15/2011

(U) There's a computer sitting atop your shoulders. Granted, real computers can apparently best human brains on [Jeopardy](#) with ease, but all the same... Since Noam Chomsky and his cohorts at MIT opened the floodgates to the study of how we think, cognitive psychology has come a long way. Although the ensuing decades of research have highlighted the astounding capabilities of our gray matter, the field has also exposed the limitations our brains are subject to. It may be worth considering the implications these limitations have for our work in SID.

(U) "Channel capacity" is the term some cognitive psychologists have begun to apply to the brain's limits on the amount of certain information it can retain. For instance, research shows that the average person can only differentiate between 5-9 different tones, shapes, or textures at a given time. Any more, and our capacity to categorize becomes overtaxed, and we begin to make mistakes. In other words, the servers overload. It is yet another example of how unprepared humans are, in evolutionary terms, for the information age. Evolutionary biologist Sherwood Washburn once wrote:

(U) "Most of human evolution took place before the advent of agriculture, when we lived in small groups, face-to-face. Man evolved to feel strongly about few people, short distances, and relatively brief intervals."

(U) The question then becomes: If an individual brain has finite "channel capacity," does the vast collective of SID, comprised of thousands of brilliant, yet limited, brains also have a definite "channel capacity"? If so, what is it? How do we know when we've reached it? What if we've already exceeded it? In essence, could SID's reach exceed its grasp? Can the combined cognitive power of SID connect all the necessary dots to avoid, predict, or advise when the improbable, complex, or unthinkable happens?

(U) Take for example the number of tools, clearances, systems, compliances, and administrative requirements we encounter before we even **begin** to engage in the work of the mission itself. The mission then involves an ever-expanding set of complex issues, targets, accesses, and capabilities. The "cognitive burden," so to speak, must at times feel overwhelming to some of us. The SID is an organism with many moving parts. So how do we ensure our **SIGINT potential** is in line with, and doesn't overwhelm our collective **cognitive capacity**? Can we count on our overarching SID mechanism to self-regulate, to organically cull, sort, and retain? Or is there perhaps something extra we ought to be doing to ensure we operate at full exploitative and analytic force?

(U) Surely someone will point out that the burgeoning amalgam of **technological advances** will aid us in shouldering the burden. However, historically, this scenario doesn't seem to completely bear out. The onslaught of more computing power--often intended to automate some processes--has in many respects demanded an expansion of our combined "channel capacity," rather than curbing the flow of the information that's necessary to retain.

(U) It's an issue worth thinking about and discussing. In the meantime, I'll be working on my [14-character](#) password...

(U) Editor's note: See a [Tapioca Pebble](#) on this topic.

(U) 'Data Is Not Intelligence'

FROM: [REDACTED]
SID Reporting Board (S12R)
Run Date: 09/18/2007

(U//FOUO) These words came from Dr. Thomas Fingar (pictured) in his keynote address at the Analytic Transformation Symposium in Chicago on 5 September. Such a strong reminder at the opening of his address was intended to remind those at the symposium of the importance he and the Director of National Intelligence, the Honorable J. Michael McConnell, place on improving analysis throughout the Intelligence Community.

(U//FOUO) Dr. Fingar, the Deputy Director of National Intelligence for Analysis, made this statement at the opening of the symposium sponsored by the Intelligence and National Security Alliance, a non-profit, non-partisan public policy forum focusing on intelligence and national security issues. The symposium was held in Chicago, Illinois, from 4 to 6 September 2007.

(U//FOUO) Dr. Fingar continued by saying that "intelligence comes from the brains of analysts." He clearly wanted those attending the symposium to understand his view of the importance of the analytic process in producing intelligence. The emphasis throughout his remarks was that the Intelligence Community must transform its analytic mission. The transformation is being effected in three areas: enhancing the quality of analytic products; managing the mission more effectively at a Community level; and building more integrated analytic operations across the Intelligence Community.

(U//FOUO) To enhance the quality of analytic products, analysts themselves must improve. They can do this by receiving more and better formal training, and by continuing to learn through experience and mentoring from more experienced analysts. In addition, they must alter mindsets that keep them from sharing information, especially that which would improve an intelligence product. An adjunct to changing mindsets about sharing information is establishing trust between and among analysts as a way to improve the quality of analytic products.

(U//FOUO) In an explanation of how to manage the analytic mission more effectively at the Community level, Dr. Fingar reviewed the A-Space and Library of National Intelligence (LNI) programs. While some leaders might consider these two programs more as tools, Dr. Fingar stressed that they were programs to help analysts enhance products. A-Space will provide a virtual environment in which analysts can work on data and collaborate. The LNI will give analysts a research facility that will help them gather already-disseminated intelligence on a topic.

(U//FOUO) The effort to build more integrated analytic operations involves, in part, greatly improving collaboration. Setting common standards is a key to collaboration, and collaboration will enhance the quality of analytic products, according to Dr. Fingar. He emphasized that the IC analytic standards recently approved were a step, but only a step. He called for "transparency" in intelligence analysis; that is, that all analysis has to be reproducible. Following established common standards will help ensure transparency. More importantly, collaboration will help establish an analytic community.

(U//FOUO) Dr. Fingar's address set the tone for the rest of the symposium. The point was that the quality of intelligence products must improve--must "transform." The most important part in the transformation is the analyst. In training analysts better, by encouraging them to learn continually through experience and mentoring, product will improve. More effective management, through

programs such as A-Space and the LNI, will help give analysts data and intelligence they need, and a better environment in which to work. Collaboration is encouraged and made easier by these programs, and collaboration is part of building integrated operations. All of these together will help ensure that the quality of analytic products improves--that customers receive intelligence, not data.

(U) "Signal v Noise" Column: Do We Need a Bigger SIGINT Truck?

FROM: (U//FOUO) [REDACTED]

Run Date: 01/23/2012

(U) Once upon a time, two people formed a new business. "They built a small shed beside a busy road, rented a truck and drove it to a farmer's field, where they **purchased** a truckload of melons for a dollar per melon. They drove the loaded truck to their shed, where they **sold** them for a dollar per melon... As they drove back toward the farmer's field to get another load, one partner said to the other, "*We're not making much money on this business, are we?*" The partner replied, "*Do you think we need a bigger truck?*"* Sometimes more is just more, if you're not paying attention to what the metrics are telling you.

(U) This example is a pretty obvious demonstration of the need for *business intelligence*. The point of business intelligence is that "**what gets measured, gets managed.**" If we don't have the right measurements available, we simply guess. In this example, the melon duo felt like they should just sell more melons to increase profits and to do so meant getting a bigger truck (don't confuse them with the facts).

(S//SI//REL) Throughout SID we often discuss what "a pound of SIGINT" costs or is worth. It's difficult, but not impossible, to figure out the value or cost of a specific pound of SIGINT. "Measuring lets us determine exactly what we can and can't control. Then what we can control, we fix; what we can't control, we either change or isolate. By measuring, we know where to spend our time and energy."** ***Figuring out what to count across the Enterprise and how to obtain those count results from our SIGINT world can take hours, multiple tools, a variety of frightening pivot tables, multiple queries, a small army of "phone-a-friends," and possibly a registry action.*** (I am not kidding.) Ironically, for an intelligence organization, operational business intelligence can be hard to come by.

(S//SI//REL) Recently I tried to answer what seemed like a relatively straightforward question about which telephony metadata collection capabilities are the most important in case we need to shut something off when the metadata coffers get full. By the end of the day, I felt like capitulating with the white flag of, "We need COLOSSAL data storage so we don't have to worry about it" (aka ***we need a bigger SIGINT truck***), because getting the metrics for empirical evidence to review was so very difficult and, frankly, I'm still a little scarred by the experience.

(S//SI//REL) Without metrics, how do we know that we have improved something or made it worse? There's a running joke in the S3 community that we'll only know if collection is important by shutting it off and seeing if someone screams. That's one metric anyway, and sadly, the easiest one (and arguably the most effective) to obtain.

(S//SI//REL) So, in this year of decreasing budgets and ever-constrained resources, it's naturally more important to measure what we can to optimize our time and energy. Wherever you sit and whatever grade you clock in at, there are things you can measure to determine how **effectively** you are doing what you are doing. Start measuring today and set some new 2012 goals to improve your contributions. For a head start, I suggest reading "[How to Measure Anything: Finding the Value of Intangibles](#)" by Douglas Hubbard. As an added benefit, this skill will not only help improve our SIGINT business but also dramatically improve your EPA, resume, and ACE bullets! After all, it's one thing to *say* you need a bigger SIGINT truck, new tool, promotion, etc. and another thing altogether to **prove** it.

(U//FOUO) Have thoughts on this topic? Post them on the [related Tapioca Pebble](#).

(U) Notes:

* (U) "Do you think we need a bigger truck?" (Source:
http://www.hort.wisc.edu/cran/pubs_archive/newsletters/2002/news_2002_09_05.pdf).

** (U) Bethune, G. (1990). "[From Worst to First: Behind the Scenes of Continental's Remarkable Comeback](#)."

(U//FOUO) Standard disclaimer: All SID*today* columns express the views of the columnist alone and do not represent the official views of any NSA organization.

(U) Op-ed: Leave Bright Pebbles, Not Breadcrumbs, for Those Coming After You

FROM: (U//FOUO) [REDACTED]
Chinese Voice/Graphic Language Analyst
Run Date: 09/24/2010

(U//FOUO) Editor's note: In this [op-ed](#) piece, [REDACTED] provides some thoughts on the need to document and share what we know.

(U) "...pure amount of signal-to-noise that people have to sift."

(U//FOUO) This quote appeared on [Tapioca](#) recently. It caught my attention because we are drowning in information. And yet we know nothing. For sure.

(U) Anyone know just how many tools are available at the Agency, alone? Would you know where to go to find out?

(U) Anyone ever start a new target or a new language or IA [Intelligence Analysis] tour/internship without the first clue where to begin? Did you ever start a project wondering if you were the sole person in the Intelligence Community to work this project? How would you find out?

(U//FOUO) How about vocabulary or target knowledge? What if your management feels that linguists are fungible assets to be moved around where necessary, target expertise and breadth/depth of knowledge be damned?

(U//FOUO) Let us assume that you might know a few places to look: [MAUI](#), [Wordscape](#), or a relevant classified wiki page on the Agency's networks or even -- gasp -- the [Target Knowledge Base](#) (TKB).

(U//FOUO) Here is where the nightmare begins: What if the information you so desperately seek is not there? Do you keep turning to your podmates (who might also be new to the job) or to your mentor or to the "target guru" in your Product Line (who might not be willing to help you after the 20th time)?

(U//FOUO) Let us continue with the nightmare: The information is not available because no one put it there. No wiki, no Wordscape entry, nothing in TKB.

Why?

(U//FOUO) Here are some "reasons":

1. "Our branch chief looked at it [TKB] and determined it was not user-friendly. So we'll continue to use our Excel spreadsheets."
2. "I have way too much work to do to feed TKB all day. I might send around mass emails, however."
3. "I keep my vocab on a flat file."

4. "We're not allowed to go to or post anything on [A-Space](#)."

(S//SI//REL) Result: You're out of luck:

1. The phone number or name you're looking for is not in TKB. Never mind the lack of any attachments or extra information even if the phone number does happen to return as "entered."
2. The vocabulary item (English or target language) is not in Wordscape. And you know sweet-fanny-all about nuclear power.
3. You never find out that, on A-Space, there are groups of target experts champing at the bit to share their expertise. And who have posted reports, answered questions, set up blogs, and even "tagged" key items.

(U//FOUO) ***It is imperative we begin sharing -- permanently -- what we know.*** The days of showing up at NSA, opening your desk drawer, and then locking up that very drawer 30 years later -- are gone. The days of short tours, internships, "fungible asset" deployments, are the new rule. Email, so new to some of us over 20 years ago -- is now viewed as quaint.

(U//FOUO) What can you do, right now, on your own, to leave bright pebbles rather than breadcrumbs for those who follow?

Simple:

- Start populating a database near you: TKB, Wordscape.
 - Don't know anything about TKB? "[Go Firefly](#)" and the TKB people are willing to come right to your desk.
- Wordscape: type "wi Wordscape" [takes you to the [wiki page for Wordscape](#)].
 - There are links to various language dictionaries you can start populating! Today!
- Start a [JournalNSA blog](#): Share your expertise. Engage with other bloggers.
- Create a [wiki page](#) for your area of expertise.
- Visit "[Connexions](#)" for a way to dump your bookmarked sites and tag them so others can just click to find the information that has been helpful to you.
- Start visiting [A-Space](#). Join some groups. Answer questions your IC partners posts.

(U) In short: ***Don't let those coming behind you suffer the way you have.***

(U//FOUO) Have thoughts on this **topic**? Post them on the [SIDtoday Blog](#). Comments on the article itself can be submitted using the "Comments/suggestions about this article" button below.

(U) The SIGINT Philosopher: The Fallacies Behind the Scenes

FROM: (U//FOUO) [REDACTED]

Run Date: 03/15/2011

(U) At the end of the day, much of the work done in SID revolves around getting information to people who need to make a decision. Often that decision involves making an estimate as to how probable or plausible a given event is, and what implications such a hypothetical event might have on our national security. It seems straightforward enough. However, at the outset, there are undercurrents flowing through the minds of every analyst, before the fingers even hit the keyboard. The analyst might not even know they're at work, but they are. They're cognitive fallacies.

(U) There's no blame to be handed out -- these fallacies are hard-wired into our brains as a result of thousands of years of evolutionary instinct and decision-making to simply survive. In relative historic terms, we've only very recently shifted our attention from such perfunctory tasks to more complex avenues. So, in the analysis we undertake in our daily duties, here are a few biases to be aware of, or perhaps attempt to change, on an individual and collective level:

The Texas Sharpshooter Fallacy

(U) This logical fallacy is named for a Texan who shot a hole in his barn, drew red and white circles around it, and gathered the neighbors to brag about how great a shot he was. While finding significance and connections between people and events is what intelligence is all about -- the downside is that sometimes we stretch to make the case that relationships or significance are present where they aren't. When we make the case first, the evidence we gather tends only to reinforce it. The reverse should be the rule: go where the evidence leads, don't lead the evidence.

The Gambler's Fallacy

(U) [Kenny Rogers](#) knew when to hold 'em. So should we. Since we're hard-wired to look for patterns, we have a tendency to think of numbers and events as being orderly, when they're anything but. Neuroscientists call this phenomenon *apophenia*. For instance, if you're taking a turn at the roulette wheel, how many hits on black will it take before you think to yourself, "We're due for a red..."? Or perhaps you think because a number on the wheel has come up so often in the past, it's bound to be more absent in the future? Pioneering cognitive scientist Amos Tversky noted "*It's natural to be inclined toward patterns when we observe cause and effect. But in nature, events rarely happen with equal frequency.*" Events are rarely ever "due" to occur, and the frequency of an event in the past is not always an indicator of its future appearance.

The Sunk-Cost Fallacy

(U) How many times have you been watching a terrible movie, only to convince yourself to stick it out to the end and find out what happens, since you've already invested too much time or money to simply walk away? This "gone too far to stop now" mentality is our built-in mechanism to help us allocate and ration resources. However, it can work to our detriment in prioritizing and deciding which projects or efforts are worth further expenditure of resources, regardless of how much has already been "sunk." As has been said before, insanity is doing the same thing over and over and expecting different results.

The Appeal to Probability

(U) Remember [Y2K](#)? We fetched our gas masks and stocked up on canned food for the impending doom that would come at the dawn of the millennium. But alas, midnight came and went with nary a global meltdown. That needless commotion might have been attributed to an *appello probabilitatem*, where an event is thought to be **possible**, and is hence erroneously determined to be **plausible**. In other words, it's the false assumption that because something can happen, it likely will happen. While preparation is a noble goal -- bear in mind the actual probabilities.

(U) There are hundreds of other fallacies that I could touch on, but the main point is to engender awareness that our decision-making processes are directly and unconsciously affected by nature's own hard-wiring. Keeping that fact in mind could have positive impacts on the way we choose to execute our mission. Who knows, perhaps there are cognitive fallacies that have developed -- not resulting from many generations of human evolution -- but from decades of SIGINT evolution? It may be worthwhile to consider the unintended effects on our collective processes that such an evolution may have had, and be on guard against cognitive fallacies and logical biases of all stripes, whether they be recent, or as old as humanity itself.

Now -- back to my poker game with Kenny...

(U) Have thoughts on this topic? See a related [Tapioca Pebble](#).

(U) SIGINT Mission Thread 3

FROM: (U//FOUO)
Thread Three Lead (S2)
Run Date: 08/01/2011

Achieving a Balance Between Discovery and Production

(U//FOUO) The key to good decision making is not knowledge. It is understanding. We are swimming in the former. We are desperately lacking in the latter.* In the afterward to his 2005 #1 national bestseller *Blink -- The Power of Thinking Without Thinking*, author Malcolm Gladwell provides his perspective on the danger of confusing information (collection) with understanding (analysis). Gladwell has captured one of the biggest challenges facing SID today. Our costs associated with this information overload are not only financial, such as the need to build data warehouses large enough to store the mountain of data that arrives at our doorstep each day, but also include the more intangible costs of too much data to review, process, translate, and report. SID's first strategic goal for 2011-2015, the challenge to revolution analysis, is aimed squarely at this tension between information and understanding.

(U//FOUO) In order to revolutionize intelligence, we must "fundamentally shift our analytic approach from a production to a discovery bias, radically increasing operational impact across all mission domains."** With so much data at our fingertips, we must learn how to push the lesser value data to the side, move data that needs less analysis directly to our customers, and provide ourselves the needed agility to dig deep into the toughest analytic problems to produce understanding from well-hidden information.

(U//FOUO) SIGINT Mission Thread 3 challenges us to "achieve a balance between discovery and production that enables analysts to maximize their focus on uniquely cryptologic problems, to include large-scale data analysis and the discovery of new targets and their communications."*** Our first task in achieving this goal is to build a strong foundation of existing analytic techniques. The Analytic Body of Knowledge (ABoK, for short) defines common terminology and captures existing analytic methodologies. The ABoK web portal opened for business on 17 May 2011, and has seen a steady increase in use as your fellow analysts document useful tradecraft and explore new ideas. Through 13 June 2011, over 100 analysts have visited the ABoK portal. You can learn more about the ABoK by visiting the [web portal](#) directly or reading the accompanying [WikiInfo article](#).

(U//FOUO) In a closely related activity, we are also working to document the depth and breadth of analytics and the function they perform or will perform. This knowledge is being captured in the [Analytics Taxonomy](#) (A-Tax, for short). Once substantially populated, A-Tax will provide the mechanism to effectively track and promote collaborative analytic development across the 5-eyes enterprise. The number of users accessing the taxonomy has more than doubled to over 80 just in the last three weeks. Working together, the ABoK and A-Tax will provide analysts access to and influence over shared analytic tradecraft and automated analytics. We invite you to visit the ABoK and A-Tax portals and start documenting existing tradecraft and analytics.

(U//FOUO) We will use the [SigDev Training Roadmap](#) to baseline existing discovery skills across the analysis enterprise, identify critical knowledge gaps, and work to provide the necessary training and skills needed to develop new tradecraft. These advanced tradecrafts could include things such as target behavioral modeling and cyber attribution. The training will also include familiarization with new discovery frameworks such as those described in the [Question Focused Dataset \(QFD\)](#).

[Strategy](#) and the [Revised Metadata Strategy](#). These strategies define on-going additions to the corporate analytic architecture. Of course, NSA and the FVEY community have been coming up with (and implementing) QFDs for years. What has long been missing is a central location where QFDs and related analytics can be easily shared, discovered and evaluated among the analytic community. That's the basic idea behind GAMBIT, a new prototype web portal that will serve as a key enabler of the [AMOD QFD Strategy](#). GAMBIT is slated for an alpha release in late July. We encourage you to learn more about it on the [AMOD QFD Strategy SpySpace page](#).

(S//SI//REL) In addition, over the next 18-24 months, we will work with each of the S2 GCMs to develop product line discovery strategies, to help them shift emphasis towards discovery activities and to increase the customer impact of our intelligence production.

(S//SI//REL) SIGINT Mission Thread 3 is working to empower the enterprise to leverage our existing tradecraft arsenal, to equip the enterprise with the capability and skills to forge new tradecrafts, and to imbue the enterprise with a new culture that values and encourages the development of understanding over the collection of information. Please join us in the journey.

(U) Footnotes

* p. 256.

** SIGINT Strategy: 2011-2015 (1/25/2011), [http://\[REDACTED\]/files/1027/pdf/2011-01-25_SIGINT_Strategy.pdf](http://[REDACTED]/files/1027/pdf/2011-01-25_SIGINT_Strategy.pdf) (last visited 6/13/2011), p. 4.

*** AMOD_FY11.12_Deliverables.Feb11.pptx.

(U) The SIGINT Philosopher: In Praise of Not Knowing

FROM: (U//FOUO) [REDACTED]

Run Date: 08/16/2012

(U) I have to begin with a complaint. Hopefully, this will not incite a war with our [IAD](#) comrades, but my beef is really with IT types. You've ruined a great word. If you Google the word "agnostic" on your NSANet browser right now, you will find the results rife with tech-y terms like these:

- The PW storage environment is agnostic regarding...
- Comcast's protocol-agnostic...
- Application layer is bearer agnostic...

(U) ...and so on. In all those uses, "agnostic" means something like "indifferent to." This tech-y use of the word has even snuck out into the common vernacular; a leader once called on SID to become "geographically agnostic."

(U) But that's not what the word means. As the classically trained analyst who sits across from me will attest, its Greek roots literally mean "without knowledge." An "agnostic" in religious terms is someone who is uncertain about God's existence, and who possibly believes the question is unknowable. But that doesn't mean agnostics don't care whether God exists.

(S//SI//REL) I ascend this arcane etymological soapbox not just because a word has been abused. Words change meaning in any language, and there's naught I can do about it. But ***the admission that one does not know something is really an excellent intellectual exercise.*** I recall one time, while stationed at [SUSLAK](#), when I briefed the South Korean Ministry of National Defense on a North Korean military exercise. The South Koreans had just gotten done giving eleven hypotheses. I explained simply that we weren't sure. The General looked at his countrymen and said, "If you don't know, say you don't know like the Americans."

(C//REL) The [IC](#) is full of questions to which we do not know the answer. And yet we are smart, ambitious, conscientious people who were hired to answer those questions, dagnabit, and so we go about trying to answer them industriously. We can take one of two approaches. First, we can write our best guesses, and couch them with all sorts of qualifying language. This is the approach some take with North Korea. Although we may know less about North Korea than any country on earth, hardly a day goes by when my "highlights of IC reporting" e-mail doesn't have a North Korea report in it, in which some industrious thinker has just pontificated that Kim Jong-Un might be open to the West because Mickey Mouse appeared in a North Korean parade. Just by volume, you'd think we actually knew a lot about this country.

(U//FOUO) NSA often takes a second approach, where we attempt to address a very small subset of an important question. Say there is an intelligence need (IN) for Zendian economic information. People want to know how the main sectors of the Zendian economy are performing, whether the needs of the people are being met, and what the high-level plans are to direct the economy. Reasonable questions. But NSA doesn't have the access to answer them. Their reclusive leaders do not use electronic communications we can target. Their missions abroad use triple pig-Latin encryption, and underlying it all is the darn Zendian language that nobody here can even speak. So what do we do? Well, it turns out we can get access to a Zendian gum-chewing manufacturer that has its operations based in the North Pole. So our Zendian Econ team writes 132 reports on Zendian gum sales under the Zendian economic IN. Analysts in other agencies are so happy to get

anything, they report that they are grateful for the reporting, which leads leadership here to conclude the team is doing its mission.

(U//FOUO) Now, I've been in positions before where I was working the equivalent of the Zendian gum factory. There wasn't much I saw of use in the collection I had to work with. And if that's you, and that's where you find yourself, you absolutely should try to do something rather than nothing. You're a civil servant, and you should do the best you can to give value for your paycheck.

(U//FOUO) But it would also be nice for those laboring on these kinds of missions to have their leaders occasionally recognize how little we really know.* Often, in their understandable desire to keep morale high and fight for resources, they tend to always focus on the positive: "We got 87 positive feedback reports from customers! Our customers love our stuff!" That's fine, but going overboard with this sort of thing can lead analysts to conclude they have gone crazy. ***Occasionally hearing "you know, we just aren't able to answer the questions our customers really want" can actually be a refreshing bit of honesty.*** A little (real) agnosticism would really help.

(U) This kind of honesty can help to "rip off the bandage" and reveal how difficult the task of good intelligence gathering really is. It can prevent throwing good money after bad when leadership believes its current efforts are working. It also helps maintain our ethos as honest, straight-shooting Americans.

(U) But, you know, whatever. I'm agnostic to the whole thing.

(U) Note:

*(U//FOUO) I realize some of you have great access and really can answer a lot of your customers' questions. For you, just know that I hate you, and click on over to a recent [Signal v Noise](#).

(U) ELINT Analysts - Overcome by Overload? Help is Here with IM&S

FROM: (U//FOUO) [REDACTED]
ELINT Modernization IM&S (BA6)
Run Date: 10/03/2011

(S//REL) Globalization is leading to an unprecedented proliferation of complex weapon systems. This, coupled with increasingly sophisticated SIGINT collection systems, is leading to exponential growth in the volume, velocity, and variety of ELINT collection and processing artifacts. ELINT Modernization (EMOD) Information Management and Storage (IM&S) provides long-term, uniform access to an increasing number of ELINT data sources, to include traditional (i.e., satellites and surveillance aircraft) and non-traditional (i.e., UAVs, fighter jets, naval vessels) collection and processing systems.

(U) Currently, an IOC* system is deployed which will provide access to five years of ELINT reports and raw data to analysts with NSANet access. Thin client applications allow analysts around the world to search for and retrieve ELINT data with only an NSANet terminal and a current version of Mozilla Firefox. Many additional features are designed to invert the paradigm where an analyst spends more time searching for data than analyzing it. These include:

- (U) **Thumbnail tools** which provide users the capability to preview Power Spectral Density (PSD) displays of Digital Intermediate Frequency (DIF) files with links that enable file slicing prior to downloading them for further analysis.
- (U) **Subscriptions** to automate the query process enabling data to be staged and/or delivered for use when an analyst starts his/her work for the day.
- (U) **PL3+ Accreditation** to enable data sharing with our mission partners
- (U) **User uploads** to enable data sharing within the community.
- (U) **Linking** to present relations between data.
- (U) **Translators** to convert data from native format to standard formats used by the analytic tools.

(S//REL) By early 2012, additional archives will provide access to Combat Sent, Specific Emitter Identification (SEI), Over-the-Horizon-Radar (OTHR) and other conventional sources. Web technologies are used to present a single consolidated view of the data without regard to its actual location. The system will also connect other reference data sources such as Combined Emitter Database (CED) allowing users to view reference data in support of their analysis.

(U) To request an IM&S account from an NSANet terminal, click [HERE](#). For computer-based training, click [HERE](#) and then search for *TOOL2065*.

(U//FOUO) POC: [REDACTED] PM IM&S, secure: [REDACTED]

*(U) [Initial Operational Capability](#)

(U) "Signal v. Noise" Column: Summit Fever

FROM: (U//FOUO) [REDACTED]

Run Date: 06/25/2012

(U) **Imagine that you have decided to climb Mount Everest.** You train for a few years, buy about \$8,000 dollars worth of equipment and \$3,000 of bottled oxygen, not to mention the training time, and then finally are ready to go. You buy the airline ticket for Nepal, maybe even go big and upgrade to business class (it is the trip of a lifetime)! Pay extra to ship your equipment, hire a Sherpa and a guide service (at least \$40,000), pay the \$10,000 fee to even take a step into the base camp area, and take three weeks off of work -- the longest vacation time you've spent away.

(U) Everyone knows you've been training for this and a daily Facebook countdown has spread the word to all of your friends and family who await to see a picture of you at the top of Mount Everest. Years of hard work, careful planning, and tens of thousands of dollars have gone into this trip -- there's no turning back. You arrive at the mountain, settling in a base camp and it's better than you can imagine. You are about to realize the dream. **Then, the weather starts to turn.**

(U) First it's some rain. Then the blue sky turns gray. The Sherpa looks nervous. The wind picks up, snow starts, and when asked if anyone wants to turn back, you reply, "No way! The weather will pass! I'll never get this opportunity again and I can't turn back now." **You and the group push ahead through everything as the weather gets worse.**

(U) The book "Into Thin Air" describes a real-life example. In 1996, "...of the twenty climbers who fought their way to the summit (during a rogue storm), five died. One of the survivors had such severe frostbite, that his right forearm, nose, and most of his left hand had to be amputated." They continued to the summit despite the clear and present dangers, at significant cost. **Imagine being a member of this trip, so dedicated to reaching the summit that you continued ahead even as one fourth of the climbing team died.** Continuing to reach the goal resulted in catastrophic failure, despite achieving the goal.

(U) **Mountaineers call this phenomenon "summit fever" -- when an "individual becomes so fixated on reaching the summit that all else fades from consciousness."*** I think part of this phenomenon is due to the high level of investment (monetary and spiritual) in the project that pushes people to make decisions that are not otherwise supported by objective data.

(C//REL) I believe that SIGINTers, like the world-class climbers, are not immune to summit fever. It's easy enough to lose sight of the bad weather and push on relentlessly, especially after pouring lots of money, time, and resources into something. From turning off a database or collection site to starting over from scratch on a target set or software code, it's difficult to let go of the dream and your work so far. Sometimes, however, it's the very best decision to make. Just like in summit fever, failing to reach a goal that no longer makes sense to pursue takes some perspective and one must "be okay" with failing.

(U) So, when the summit is the only thing you can see, it's time to step back and check the weather. Find those experienced "sherpas" in the organization, and ask for their **honest** opinion and give them permission to speak freely. We should not fear failure, because often failure teaches us something very important. Instead we should focus on "failing quickly" and "less expensively" to progress faster and farther.

* (U) Perkins, D.N., Holtman, M.P., & Murphy, J.B. (2012). "[Leading at The Edge: Leadership Lessons from the Extraordinary Saga of Shackleton's Antarctic Expedition.](#)" AMACOM, p. 70.

(U) Thoughts on this topic? Post them on the [related Tapioca Pebble](#).

(U) The SIGINT Philosopher: Too Many Choices

FROM: (U//FOUO) [REDACTED]

Run Date: 01/18/2011

(U//FOUO) Editor's note: SIDtoday [sought out](#) a "SIGINT philosopher" in our midst, and we found him! We are pleased to announce that [REDACTED] (pictured), a Russian language analyst, will be penning a monthly column on that theme, starting today. The below column is unclassified in its entirety:

I'm not a pleasant person to shop with.

The reason is simple -- an overabundance of choices. The second I'm placed in front of a plethora of tastes, textures, prices, and sizes, I lose my bearings. I don't know the difference between preserves, jams, jellies, or spreads. I know what I like on toast, but heaven help me if I have to go find it in the aisle. Do I go with the bigger jar? What about sugar-free? Swirled with peanut butter? Am I safe with a store brand, or can I assume that with a name like "Smucker's," it has to be good?

You may be wondering right about now just what any of this has to do with SIGINT...

Plenty. We in the agency are at risk of a similar, collective paralysis in the face of a dizzying array of choices every single day.

"Analysis paralysis" isn't only a cute rhyme. It's the term for what happens when you spend so much time analyzing a situation that you ultimately stymie any outcome. It's what happens inside your grandfather's brain while you wait endlessly for him to make his move on the chess board. It's what happens when I stand in front of the jams and jellies at the supermarket. And it's what happens in SIGINT when we have access to endless possibilities, but we struggle to prioritize, narrow, and exploit the best ones.

But hey, we're only human, right? That's my point exactly. Ever wonder why the Pepsi Challenge only had two colas to pick from, or why taste-tests don't ask you to sample dozens of flavors? It's because we're cognitively wired to consume only so much information when making crucial decisions. It's why the best tasting sample will win by leaps and bounds against two competitors, but only by a small margin over many.

In 1971, Herbert Simon could not have known how prophetic the following statement was, given that he was still two decades away from the dawn of the information age:

"...in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it."

(Designing Organizations for an Information-Rich World, 1971)

In an evolving climate where there are few constants, heuristics (rules of thumb) are of little help in drilling down to our most useful accesses and fulfilling our mission. We spend every day trying to

solve what sociologists call "wicked problems." They're tagged as such due to the changing nature of requirements, capabilities, and priorities. They have no ultimate solution and no way to concretely verify the quality of the outcome. These are problems with many "best" answers, and a far greater number of "good" answers. When tackling such issues, narrowing the playing field can be equally vital to broadening our expertise.

The SIGINT mission is far too pressing for many team-building activities or brain-storming sessions aiming to improve our organizational approach to analysis. At the same time, the SIGINT mission is far too vital to unnecessarily expand the haystacks while we search for the needles. Prioritization is key.

And now, if you'll excuse me, I'm off to the store for some jam...

(S//SI) Dealing With a 'Tsunami' of Intercept

FROM: [REDACTED]
Human Language Technology (S23)
Run Date: 08/29/2006

(S//SI) Everyone knows that analysts have been drowning in a tsunami of intercept whose volume, velocity and variety can be overwhelming. But the Human Language Technology Program Management Office (HLT PMO) can predict that in the very near future **the speed and volume of SIGINT will increase even more, almost beyond imagination.** And we are working on ways to help analysts deal with it all.

(S//SI) Of the HLT PMO's five Strategic Thrusts, the one that addresses this problem is **High Speed/ High Volume.** It must deal with today's collection and must plan for tomorrow's. The current collection environment is characterized by huge amounts of data, coupled with severely limited capability to send material forward, and extremely limited number of queries that exactly describe messages of value. That means we are capable of finding huge amounts of data, much of which is not what we really want, and that we cannot send it all back for analyst processing.

(TS//SI) To plan for tomorrow, High Speed/ High Volume is in line with changes in the overall NSA/CSS systems, particularly TURBULENCE and TURMOIL because when they become a reality in the near future, we can expect collection capabilities to increase significantly. TURBULENCE is an umbrella cover term describing the next generation mission environment that will create a unified system. TURMOIL is a passive filtering and collection effort on high-speed networks. This is designed to be flexible and can be modified quickly to deliver data in analyst-ready form.

(S//SI) One of High Speed/ High Volume's first efforts is in developing and implementing ways to **push HLT capabilities very close to the collection points of the SIGINT system.** In particular, HLT is about to demonstrate an operational prototype of language identification for Special Source Operations (SSO) Counterterrorism text targets running at line speeds (STM-16) at the packet-level. Resources permitting, HLT analytic processors will automatically generate content-based events for TURMOIL based on language.

(S//SI) HLT processors will demonstrate the ability to characterize very high speed channels based on content, thus enabling analysts to task the SIGINT system to send back messages based on information found in message content, not just on externals. (Externals can be Signal Related Information (SRI) that comes with each message, such as channel, Time Up/Time Down, etc.) Using HLT services, analysts will be able to build more precise descriptions of the data they want. In addition, content-based metadata will allow SIGDEV analysts to run more detailed surveys. HLT services that work on data content at the collection point can also provide indications or warnings that the SIGINT system must adapt its collection strategy.

(S//SI//REL) Resources permitting, High Speed/ High Volume will deploy **capabilities for voice, text, and image data,** and will take advantage of research being done by a number of organizations including the Research Directorate's Coping With Information Overload Office (R6), Disruptive Technologies Office (DTO), and SID/ Analysis and Production's Advanced Analysis Laboratory (AAL). HLT research and transfer of its technology into operations means the development of algorithms that can incorporate HLT capabilities for the processing of elements such as email attachments and VOIP.

(S//SI/REL) The research and technology transfer also may provide "stealthy," low-profile in-target implants for Tailored Access Operations (TAO) or technologies to enable high speed processing in very low size, weight and power applications for other CLANSIG customers. And, to help address the "unknown unknown" target analysis problem, HLT is investigating techniques and technologies for high volume voice processing so that all voice data can be scanned for key words before it is selected based on phone numbers.

(S//SI) Ultimately, HLT's High Speed/ High Volume will give the analyst greater ability to influence collection and processing much farther forward in the SIGINT system, as well as help the SIGINT system achieve greater overall filtering and selection effectiveness. That means **more analysts wil be getting better SIGINT** at a time when volume and velocity are maximum.