

OVERVIEW

On December 14-January 15, the TRMS (Transaction Risk Management Systems) UX team conducted a deep dive with 17 manual BRI (Business Risk Investigations) Investigators to better understand the investigators' workflow in conducting core buyer risk investigation tasks. The goal of the study is to identify top pain points and blockers in using available tools and opportunities for design changes to improve time-at-task, decision accuracy, and user satisfaction during the manual investigation process. The purpose of this document is to share the findings from the study as well as share design recommendations for next steps.

The study took place in multiple stages. First, we shadowed investigators during New Hire training over the span of 2 weeks, and during 1:1 investigation shadow sessions with tenured investigators in Seattle. Second, we conducted 17 structured interviews with global investigators across tenure level, queue specialty and work location (Appendix B). Tenured investigators were asked about their pain points using tools across queues. New hires were asked about first impressions, confidence using tools and perceived blockers. Feedback was gathered during interviews, including investigator quotes and anecdotes (Appendix A). Findings from this study were categorized into themes and reported in this document. Additionally, we identified issues and design recommendations prioritized for current and/or future platform launches with Nautilus and Triton (See Appendix E for Glossary).

For context, the goal of UX research is to advance our design and product development teams' understanding of the interaction between users and system elements and to deep dive on issues that may have an impact on users' efficiency, decision accuracy and overall needs being met. We do so through activities ranging from quick-fire usability studies to test specific features, to longitudinal research studies and deep dives that help inform larger design and business goals.

FINDINGS

A. KEY OBSERVATIONS AND SUMMARY

A key deliverable for this research is to document the investigator journey and how it diverged from the expected flow outlined in training materials (Appendix C). There were 4 moments where users diverged from their expected journey:

1. Rather than completing one investigation at a time, tenured investigators opened multiple tabs with up to 5 investigations simultaneously, as this was perceived to be more efficient due to page latency.
2. Within a single task, rather than reviewing data widget-by-widget, users scroll up and down across all widgets searching for key indicators, at a high level first, to evaluate where to allocate their investigation time, as reviewing all data points sequentially in a timely manner is perceived to be unrealistic.
3. During core investigation; and if tools didn't work as expected, investigators "followed their gut" to make a decision, or waited on mentor or peer availability to guide them.
4. When accessing large order histories and when page latency competed with their ability to meet IPH, investigators made a judgment call on whether time spent on deep dives was worth the effort (Appendix C). Generally, Investigators avoided going down "Rabbit Holes" in order to meet IPH, which competed with their ability to make smarter decisions.
 - i. "I would open 5 tasks at a time and while waiting for pages to load on one task, I would go to a second one. Keeping the pace and flow is really important." – P3 [Tenured Investigation Specialist & Mentor].
 - ii. "We need to be calling banks 40% of the time. When you're on hold for 20 minutes, you don't want to be waiting on the phone calls. That's why it's important to be doing something else when you're doing a phone call." – P1 [Tenured U.S Investigation Specialist].
 - iii. "The deep diving is random, most of the time I will end up in a dead end, and I try to avoid clicking on anything that will slow me down and doesn't add any new insight to the case. For example, the Icons and IV (Internet Verification) buttons often lead to dead ends." – P4 [Investigation Specialist].

B. TOP PAIN POINTS

The **biggest pain points** for Investigators, which are discussed in detail below, were: **(1)** Page loading Latency was a number one blocker to improved efficiency (17 out of 17 participants). **(2)** New Hires are often unable to independently complete a task due to difficulty making a decision from raw data, and have to rely on human help (5 out of 7 New Hire participants). **(3)** Missing aggregations (e.g sums, averages, count, top 5) cause core tasks to be labor-intensive (7 out of 17 participants)¹. **(4)** Data is often perceived to be inaccurate, hindering users' trust in system information (8 out of 17 participants). **(5)** Tools often didn't work as

¹ While only 7 participants mentioned aggregations as a painpoint, these participants mentioned this issue more than once (See Appendix A for user quotes).

expected due to system bugs or feature usability issues (15 out of 17)². **(6)** Difficulty of Policy adherence (5 out of 7 New Hires). Of those pain points, 11 issues were identified, causing Investigators to be less efficient or less accurate than desired (See Section D for issues list and design recommendations).

C. DETAILED FINDINGS - PAINPOINTS

1. Page loading Latency

Load time of Investigations and Investigation data views is a top pain point for investigators interviewed, presenting them with an obstacle to both decision quality and efficiency. All 17 participants, including new hires, rated tool load time as the number one frustration, and expected data to load a lot faster. Investigators cited latency as often a blocker to completing core investigation tasks. When data load time competes with IPH, investigators make a judgement call on whether these steps are worth the time spent in accessing the data, and often abandon the task or skip the step to meet IPH. When prompted, all tenured investigators cited a preference to work on multiple investigations at a time, as it helps conduct investigations faster. Reasons cited for this preference were **(1)** Page loading latency issues compete with meeting IPH (7 out of 8) **(2)** Multiple tasks allowed them to get into a flow and be engaged with their work (2 out of 8) **(3)** Waiting on hold with customers or bank calls slowed their work pace (2 out of 8).

- I. *“What makes me upset are the things that make me waste time. One customer is (Has been on the platform) from 1999, to look at their entire (order) history is an issue. Trying to get through the order history fast is impossible.”* – P3 [Tenured Investigation Specialist].
- II. *“If a customer has 100 orders, it could take a minute to load each page, then you have to scroll through each screen individually and because you can only go back 1 page at a time, and wait for the page to load, it will slow down your metrics, so it’s not worth it.”* – P1 [Tenured Investigation Specialist].
- III. *“I’ve noticed myself going faster and the investigations getting easier, but sometimes the tables themselves won’t show up and I just have to wait.”* – P12 [New Hire Investigation Specialist].
- IV. *“Mostly 2 tasks is a work around because of the loading time. Makes you go a bit faster.”* – P6 [Tenured Investigation Specialist, Zappos].

2. New Hires need additional tool help

When asked if a Wizard³ as an alternative UI interaction method would be desirable, participants had mixed responses based on their tenure level. All new hires (7 out of 7) cited a more guided flow will help their ramp up time in reaching more accurate decisions independently. For new hires, the amount of information on task views are often “overwhelming”, leaving them confused as to what their next steps should be. Four out of 7 new hires cited that data displays did not guide an understanding of which attributes are pertinent for specific fraud MO’s. This causes them to rely on mentor availability and training during ramp up to make use of what to do with the data available to process a task. On the other hand, only 2 out of 8 tenured Investigators perceive a wizard as somewhat desirable. For these participants, the ability to conduct deep dives on raw data a flexible UI gives is seen as important.

- I. *“The hardest thing is to find out which data you really need for the specific case (Fraud MO)”.* – P11 [New Hire Investigation Specialist].
- II. *“The biggest obstacle is where to pass and when to hold and when to fraud, and when to do a VCAC. It was touched on during training but that wasn’t sufficient or hands on enough. I wish there were links within the task page itself. For example – this person has bad debt – to help me with what to do from there.”* – P10 [New Hire Investigation Specialist].
- III. *“At first, it could be too much data bombing. When it’s all up in your face all at once it could be overwhelming. It would be nice to save your settings or expand and collapse widgets, so you can focus on what you need.”* – P10 [New Hire Investigation Specialist].

3. Missing aggregations cause core tasks to be labor-intensive

Manual counting and stitching together pieces of information to “add up the math” slows down investigators. 4/8 tenured Investigators cited the large amount of raw data review to be cumbersome, and expect the tool to better aggregate and display data in more meaningful ways. One New Hire cited that “doing the math” was a major efficiency blocker, and having to learn percentage calculations in order to process an account with outstanding debt as a blocker. Overall, Investigators desired better sorting and

² Aside from the GSI widget (7 out of 17), this category is responsible for less pain per participant compared to latency and missing aggregations.

³ A wizard is an interface pattern that leads users step by step to complete a task. Wizards are often used when tasks are long or complicated, allowing the UI to guide a user to task completion by breaking user inputs into a series of user-made decisions that affect downstream choices.

filtering mechanisms to help complete tasks faster and make meaningful insights out of data or to guide where to further drill down. Zappos investigators (2/2) said that abusive statuses on customer accounts are distracting, and desired a mechanism to filter out abusive status to make fraudulent status more prominent.

- I. *“My top pain point is having to do the math. It’s frustrating when you have to deal with things like outstanding debt. I have to figure out 25% of the total order of the last 16 months, so I have to count the completed orders and add the numbers. It’s time consuming and frustrated for me because I’m not good at percentages, but now I have to learn it to know what action I need to on the account.”* – P12 [New Hire Investigation Specialist].
- II. *“We have to do a debt assessment; Scrolling through the order history and adding up our mind what the completed order amount is for a 3-16-month period, which is what most of the SOPs go by. We have to manually calculate if the debt is less or more than a 16-month amount. I want the system to count for me.”* – P2 [Tenured Investigation Specialist and Mentor]
- III. *“From a single glance, I want to know what is new and what’s out of the ordinary. For example, is there any specific password change that I should focus on? If the system can tell me at one glance what’s new, it would be very useful.”* – [P2 Tenured Investigation & QA Specialist].
- IV. *“If there’s some way to sort by or break up the data by the type of relationship (Customer Relations Widget). I don’t use the pop ups to do drill down, and no one does that.”* – P1 [Tenured Investigation Specialist].

The process of accessing multiple tools and stitching information to complete a simple action on a single account is time consuming. The need to access multiple tools to complete a simple task is time consuming and a cumbersome process, and investigators avoid tasks that require multiple program access in order to save their time on task. Two out of seven new hires cited copy & pasting and stitching information together to access pertinent information to complete a task was cumbersome. Zappos Investigators (2 out of 2) desired an easier mechanism to access bank contact information from a single tool.

- I. *“I use gift card explorer a lot, and it’s very annoying and cumbersome to try and investigate a gift card. It would be nice to link gift cards the same way credit cards are treated here (In Jupiter).”* – P11 [New Hire Investigation Specialist]
- II. *“If I need to look at a credit card, I have to cut and paste, go to multiple programs. It takes up time and almost confuses me sometime; which screen was I in? So I go back and look at which screen (Tab) I was originally on.”* – P13 [New Hire Investigation Specialist].
- III. *“To get bank contact information for a particular credit card, I have to access this other tool (LEADS), copy and paste, and it’s time consuming. You can cut off about half of that if the number doesn’t have to be looked up separately. I rarely end up calling the bank myself and avoid doing it to save time.”* – P6 [Tenured Investigation Specialist, Zappos].

4. Data is often perceived to be inaccurate

Participants often perceived certain data points to be inaccurate or inconsistent when comparing information across widgets, causing confusion and low trust in the tool. Eight out of sixteen investigators cited the Related Customers widget and the GSI (Get Sign Ins) widgets in particular to display inaccurate or inconsistent information, causing them to be confused with the information presented, and “follow their gut” when making decisions, as one participant put it. For example, Investigators expected the IP address by which a customer placed the order under investigation to show in the Sign Ins widget as the latest sign in, but currently GSI doesn’t show that information. When information expected to be present in data views are not shown, users often lost trust in system accuracy and abandoned the tools, looking to verify information on other tools instead, such as IW (Appendix A). Other instances where red boxes in the UI intended to indicate strong fraud relations showed misleading information, users abandon the feature as a source of reference altogether in future tasks.

- I. *“The Number one pain point for me is for the information to be accurate. I never use interesting customer activity because the data is not accurate. The same with recent customer annotations, the information here is useless.”* – P3 [Tenured Investigation QA Specialist].
- II. *“It says there’s a payment relationship (In the Customer Relations Widget) but there is no relationship there. Sometimes the red box shows a strong relation but there’s actually no relation. When that happens or I can’t find the source of information, I go with my feeling and follow my gut.”* – P10 [New Hire Investigation Specialist].
- III. *“There are glitch with GSI (Get Sign Ins). The red boxes are not accurate.”* – P8 [New Hire Investigation Specialist].

Other issues that compete with users’ trust with system information were **(1)** Task view did not provide a holistic view of a customer relationship with Amazon at a glance, and users had to go through a cumbersome process of accessing multiple tools to validate account information. **(2)** Data displayed in Jupiter is marketplace-specific, and users described the process of checking a customer accounts across different marketplaces as cumbersome and rarely used. For those who cited cross checking a customer across marketplaces, they found inconsistent data on the marketplace of origin.

5. Investigation tools often didn't work as expected

Usability issues with features can slow down users or lead to inaccuracies when making investigation decisions. Top issues were **(1)** sixteen out of seventeen participants cited email blurb selection as difficult to use, as users had to scan 100's of blurbs to select the one they needed. **(2)** 7 of 17 users cited the GSI and Related customer widgets as the most pertinent to core tasks, and needing the most improvement. **(3)** Navigating multiple rows with inline scrolling and limited screen space, or managing popups that are laid on top of each other hindered the ability to scan information quickly (7 out of 17). **(5)** The Account Sanitization flow lacked basic automations **(6)** Annotations and the 'Mark your Status'⁴ feature were error prone. (See Appendix A for quotes for each pain point).

- I. *"GSI is the hardest to understand or read – It takes a little bit to understand to take advantage of the tool – I am not sure how to use that. The relations widget is easier, but with GSI, I can't figure out what to use this information for. There's too many columns and not easy to figure out how to use that section. When you click (Modal windows) you see something is frauded, you click again and you see a huge list, it's very confusing".* – [P8 New Hire Investigation Specialist].
- II. *"Before you know it, I would have 6 popups opened and it could be an endless list and it could go forever. It's hard to manage them and drag them around."* – P9 [New Hire Investigation Specialist].
- III. *"If you're in BRI in this queue you should only be seeing the ones (email blurb dropdown selection) that are in BRI – if there's a way to sort / filter them."* – P9 [New Hire Investigation Specialist].

6. Difficulty of Policy adherence

The current process to reference SOPs on Amazon Policy is complex, causing new hires to stumble and seek human help. 7 out of 7 New Hires cited a complicated process of referencing the correct SOP in a timely manner, and often found the content of the SOP to be **(1)** Confusing, when providing instructions to do "and /or", and they preferred yes/no charts instead (4 of 7) **(2)** Not Specific enough to help them reach a final decision (3 of 7) **(3)** Often leave them relying heavily on human-guided resources such as a mentor or a peer (3 of 7). New Hires expected the tools to provide more guidance and links to appropriate SOP to guide their investigation time. Tenured Investigation mentors cited difficulty keeping up with SOP changes, and desired better tags, inline links or notifications to allow their mentees to be more independent.

- I. *"The most important ones are the most confusing. For example, e-checks, bad debt or chargebacks. The SOP should not say "do this or this", it should be more clear as to what action I'm supposed to take."* – P12 [New Hire Investigation Specialist].
- II. *"If you follow the SOPs you will never make your IPH. Because they want you to make a phone call on every time, but when there are so many positive factors you can avoid the phone call."* – [P13 New Hire Investigation Specialist].
- III. *"SOPs are very important for new hires I train, so it would be great if we could link to SOPs within the tool. For example, if an account has orders with an e-check, new hires can quickly reference the SOP without having to go digging or come looking for help. Especially if the mentor is busy, they can use this time to memorize the process."* – P3 [Tenured Investigation Specialist & Mentor].

D. NEXT STEPS

The primary goal of this user research document is to identify and report investigators' behaviors when using available tools. There are areas where we see opportunity for improvements to better support the needs of both tenured and new hire investigators. As a next step, we identified 11 issues and created design recommendations that we will work with product owners to prioritize on development roadmaps. We will also work to explore design solutions and ideas for future Nautilus enhancements.

#	Investigator issue / Painpoint	Design Recommendation
1	Investigators open multiple tasks due to page latency issues, competing with their ability to focus on a single task at a time, increase the chance of making errors and disrupting their work flow.	In the absence of addressing the root cause for the latency delays, and if page latency is due to the amount of information being surfaced, provide a navigation structure to allow users to access only pertinent data progressively. [Preliminary concept design on hold pending Nautilus Launch].
2	Investigators spend precious time scrolling up and down and moving around several popups looking for trends in large amounts of raw data, which competes with their ability to meet IPH.	Automate portions of the manual investigation tasks to allow users to detect trends quickly. [Preliminary concept design on hold pending Nautilus Launch].

⁴ Mark your Status is a feature that allows investigators to set their work status (e.g available, Break, lunch etc). Users cite the feature to be error prone as it is too easy to forget to change UI status to reflect actual status of a user (e.g a user could ea sily shut down their computer and leave their work status as available).

3	Investigators have to scan across the page across multiple widgets to try and guess where to focus their attention, which takes away from the time they need to make quality decisions.	Explore alternative mechanisms by which investigators conduct manual investigations. For example, explore a page layout where key fraud indicators are clearly highlighted at the customer account level. This can allow investigators to quickly identify where further drill down is needed. [Preliminary concept design on hold pending Nautilus Launch].
4	Manual counting of basic order amounts or other addition, subtraction and percentage calculations needed to follow SOP guidelines is cumbersome, and was perceived as a blocker for 1 new hire investigator.	Automate portions of the investigation based on SOP guidelines, so investigators can spend more of their time making accurate decisions. For example, when an SOP required users to add up the total completed order amount of a customer order history, provide the added number in the UI for quick reference. [Preliminary concept design on hold pending Nautilus Launch].
5	New Hires are overwhelmed with the amount of data displayed, and rely heavily on human help to guide them, which slows down their time at task.	Provide inline guidance to help investigators make sense of data presented to them. Leverage different UI strategies depending on investigator tenure level or the complexity of the task at hand [Product Owner: Andrea Halverson. Inline help & Project Squid].
6	7 of 17 participants cited the GSI and Related Customer widgets as the most pertinent to core tasks, and also needing the most usability improvement. Usability issues with these two widgets cause some investigators to abandon Jupiter and use IW to conduct core tasks.	Increase the size of GSI widget & Related Customers Widgets to allow users to vertically scan data rows efficiently. Use progressive disclosure to show more data only when needed (e.g “Show more” links) [Widget Size increase is on roadmap for 3/21, Redesign explorations of GSI & Related Customer Widgets in concept design on hold pending Nautilus Launch].
7	Accessing multiple tools to complete a simple task is cumbersome (e.g users who need to access customer gift cards have to abandon Jupiter and use IW or other tools in order to process a task).	Consolidate tools needed to process tasks, such as customer gift cards and all other necessary core functionality. [On roadmap for 6/30.Product Owner: Julia R.]
8	Investigators waste precious time on labor-intensive subtasks (e.g Searching for and identifying an email blurb, or selecting negtables to sanitizing an account manually).	Provide a simple mechanism to select a blurbs most often used by users. Simplify the VCAC manual steps (e.g selecting negtables) to drive down time at task [On roadmap for 3/21 - Product Owner: Julia R.] Identify opportunities to automate the VCAC flow so that user input is minimal. [TBD]
9	Investigators are not always aware of where to find the most up to date and relevant information in the SOPs.	Provide a mechanism for investigators to reference relevant SOPs within their task view, and notifications when a relevant SOP to the task in view has been changed. [Product Owner: Andrea Halverson. Inline help & Project Squid.]
10	When widgets fail, investigators assume widget information to be unreliable (e.g GSI, Related Customers, Recent Annotations) and have no recourse to report bugs.	Provide hover state clarifying features and an easy mechanism to report bugs with the tools. [On roadmap for 3/21 - Product Owner: Julia R.]
11	Instruction in the echeck, bad debt and chargeback SOPs are confusing for new hires, causing them to spend additional time to understand them and rely on human help to take action.	Avoiding “and/or” instructions particularly on e-check, debt assessment and chargeback SOPs. [TBD]

The goal of UX research is to advance our design and product development teams’ understanding of the interaction between users and system elements and identify root causes that hinder BRI investigator efficiency or decision accuracy. We do so through iterative testing of solutions through quick-fire usability tests, as well as conduct deep dives to guide future initiatives and inform next steps for further research. Visit the UX homepage to learn more about how to engage with our team and keep up to date with future initiatives: <http://sd.corp.amazon.com/display/TRMS/Home>.

FAQs**1) How is this User Research different from current data collection and auditing mechanisms across TRMS?**

In the past we have collected user feedback through high level surveys, shadow sessions, as well as looked at quantitative behavioral metrics of investigators. 1 on 1 in-depth interviews are a different mechanism in data collection that is most suited for uncovering detailed information about current user pain points, and the underlying root causes for user inefficiency or inaccuracies in reaching decisions.

2) How many of these pain points are being addressed by the launch of Triton?

Out of 11 design recommendations developed, 3 are being addressed through the launch of triton, while 2 are on future project roadmaps. For the remaining 6 design recommendations, the UX team will work with the IX development team to prioritize fixes on the development roadmap moving forward.

3) Should this program be scaled?

Scaling will give a more detailed picture into the nature of investigator pain points and how many investigators are affected by each with more 1:1 interviews being done. More interviews will also reveal pain points that only affect a certain segment of the investigator population. With more UX Designers & Researchers, the UX team would be able to conduct research, formulate concepts and conduct usability studies early on in development cycles, which will provide us the ability to iterate quickly and more often. Currently, we have two UX Design reqs open and we are actively interviewing candidates to fill those roles.

Appendices

Appendix A – User Anecdotes & Quotes by Theme

For detailed information on participant groups, see Appendix B.

Investigation Journey: Multiple Tasks

- I. *“I would open 5 tasks at a time and while waiting for pages to load on one task, I would go to a second one. Keeping the pace and flow is really important.”* – P3 [Tenured Investigation Specialist & Mentor].
- II. *“Mostly 2 tasks are a work around because of the loading time. Makes you go a bit faster.”* – P6 [Tenured Investigation Specialist, Zappos].
- III. *“We need to be calling banks 40% of the time. When you’re on hold for 20 minutes, you don’t want to be waiting on the phone calls. That’s why it’s important to be doing something else when you’re doing a phone call.”* – P1 [Tenured U.S Investigation Specialist].

Page loading Latency

- I. *“My main pain point is that 70% of the time it takes time to load the section (GSI).”* – P15 [Tenured India Investigation Specialist].
- II. *“One of the widgets I use a lot is the Credit Card widget pop up. The information there is useful, but you often have to wait quite a while for information to load.”* – P7 [Tenured Investigation Specialist, Zappos].
- III. *“What makes me upset are the things that make me waste time. One customer is (Has been on the platform) from 1999, to look at their entire (order) history is an issue. Trying to get through the order history fast is impossible.”* – P3 [Tenured Investigation Specialist].
- IV. *“If customer has 100 orders, it could take a minute to load each page. You have to scroll through each screen individually and you can only go back through the pagination 1 page at a time, and wait for the page to load, it will slow down your metrics, so it’s not worth it.”* – P1 [Tenured Investigation Specialist].
- V. *“I’ve noticed myself going faster and the investigations getting easier, but sometimes the tables themselves won’t show up and I just have to wait.”* – P12 [New Hire Investigation Specialist].

New Hires need additional help

- I. *“The hardest thing for me is to find out which data you really need (to look at) for the specific case (Fraud MO)”*. – P11 [New Hire Investigation Specialist].
- II. *“Initially, it’s very overwhelming to see everything at the same time, because it’s so much information. If you can open them one by one that might help.”* – P12 [New Hire Investigation Specialist].
- III. *“The biggest obstacle for me is when to pass, when to hold and when to fraud, and when to do a VCAC. It was touched on during training but that wasn’t sufficient or hands on enough. I wish there were links within the task page itself to help. For example, if it would tell me this person has bad debt... to help me with what to do from there.”* – P10 [New Hire Investigation Specialist].
- IV. *“At first, it could be too much data bombing. When it’s all up in your face all at once it could be overwhelming. It would be nice to save your settings or expand and collapse widgets, so you can focus on what you need.”* – P10 [New Hire Investigation Specialist].

Aggregations

- I. *“I want the system to count for me. For example, I want to look at order history totals for more than 3 months. Because policy is based on more than 3 months’ numbers.”* – P3 [Tenured Investigation Specialist].
- II. *“The display (Related Customers Widget) is not optimum. If I can sort or choose only rows filtered by relationship type, I think customization controls here would be useful.”* – P1 [Tenured Investigation Specialist].
- III. *“We love having the relations (Customer Relations), but we need it filtered and tailored for information that we’re looking for. Right now, there’s too much information and it’s easy to confuse fraud with abuse. You get mixed up in abusive account, and we find abuse to be distracting. We want to see fraud only but not abuse.”* – P7 [Tenured Investigation Specialist, Zappos].
- IV. *“I don’t like to jump between different widgets. I want to look at an overview first of everything that’s new or important”* – P3 [Tenured Investigation Specialist, Mentor].
- V. *“From a single quick overview, for 50% of the time I can already predict whether the investigation will be lengthy or whether it leans towards a pass or not. I use a few key data points to deep dive if necessary.”* – P1 [Tenured Investigation Specialist].

- VI. *"There's a lot of colors going on – sometimes you're overloaded with information to the point that I don't know where I should focus. I don't think that color has done anything for me though because its being over used. When everything is red and everything is frauded out, it gets confusing. If there's only a few (colors), it catches your eye but when there's a lot I don't know if this hurts or helps me."* – P9 [New Hire Investigation Specialist].
- VII. *"Our old tool that we used at Zappos (Site Manager) had a mile distance indicator between shipping address and billing address, which made it easy to detect fraud from that single number."* – P6 [Tenured Investigation Specialist, Zappos].
- VIII. *I wish there was option to see the additional detail. I am trying to collect open up the additional relations – like in GSI via IP and see everything related by IP or address or name. If you can bring the ones to the top – the frauded and. Sort by Status, sort by date. Same IP and share same UBID – so if I sort by UBID, if there are 10 ones that share the same UBID."* – P11 [New Hire Investigation Specialist].
- IX. *"on GSI, I wish it would default to 720 instead of the other useless view."* – P11 [New Hire Investigation Specialist].
- X. *"Interesting customer sign ins (GSI) show the last 720 days but you have to toggle to get that view. The default view (180 days) shows different data. You have to first click on the toggle, and if you don't do that you can easily make a mistake (on the decision) based on just that."* – P4 [Investigation Specialist].
- XI. *"If there's some way to sort by or break up the data by the type of relationship (Customer Relations Widget). I don't use the pop ups to do drill down, and no one does that."* – P1 [Tenured Investigation Specialist].
- XII. *"I like when u hover over, it shows you the matches (in GSI, Related Customer matches). It would be cool if it shows you the correlated matches of all the attributes. If I hover over UBID for example if I could see all the CID's that belong to that group. – P11 [New Hire Investigation Specialist].*
- XIII. *"I see the abuse symbol but we don't deal with the abuse symbol so why do we see it? They tell us to ignore it in training but I find it distracting."* – P9 [New Hire Investigation Specialist]

Perceived Accuracy of Data

- I. *"The Number one pain point for me is for the information to be accurate. I never use interesting customer activity because the data is not accurate. The same with recent customer annotations, the information here is useless."* – P3 [Tenured Investigation QA Specialist].
- II. *"The Signs-ins aren't always accurate. I've seen that happen quite a bit today. It doesn't show the order under investigation so I can't match my order IP with the Sign in details."* - P13 [New Hire Investigation Specialist].
- III. *"Sometimes the IP of the order under investigation is not in the sign-ins (GSI) widget, and I expect it to be there. It's confusing when things like this aren't accurately displayed and it slows us down and makes us make bad decisions. I usually annotate it, because it could show up later, and I will get grilled on it."* – P1 [Tenured Investigation Specialist].
- IV. *"There are glitches with GSI (Get Sign Ins). The red boxes are not accurate."* – P8 [New Hire Investigation Specialist].
- V. *"The Sign ins (GSI) data is not reliable. I was told in training the same thing so how can I trust that?"* – P10 [New Hire Investigation Specialist].
- VI. *"I don't trust the data on sign-ins."* – P10 [New Hire Investigation Specialist].
- VII. *"The data in related customers isn't accurate. Its sometimes off. For example, the addresses are different but the relation by address icon is showing."* – P4 [U.S Investigation Specialist].
- VIII. *"Sometimes the information is glitchy - Sometimes the icon for credit card relation would show up but the credit card is actually different."* – P12 [New Hire Investigation Specialist].
- IX. *"Customer data widget is very relevant but not very accurate. If I look at the same customer ID on a different marketplace, it would show different information for the customer, such as account origin. It should show me within the same view that this customer has accounts in IN, ES, and the U.S and a brief summary of their order history in each marketplace."* – P1 [Tenured Investigation Specialist].
- X. *"It's nice to see the different accounts the customer has across marketplaces, or different accounts spread across marketplace. It's nice to see that, but it's too many clicks away. Also, when you switch marketplaces, you find that the marketplace of origin is not displayed consistently across marketplace views."* – P6 [Tenured Investigation Specialist, Zappos].

Tools Didn't Work as Expected

GSI (Get Sign Ins) Data Widget

- I. *"It's kind of a daunting thing to look (GSI) at because there is so much information there."* – P10 [New Hire Investigation Specialist].

- II. *"In the GSI widget, the box (the vertical height of the widget) should be bigger because the list is very long – You cannot compare the IP from top to bottom – you can't scan vertically. – P8 [New Hire Investigation Specialist].*
- III. *"The GSI is the most data rich widget, but by far the smallest. If I can't get clear answers from this I look at IW its laid-out way better, there you can look at patterns. – P9 [New Hire Investigation Specialist].*
- IV. *"GSI [Get Sign-Ins Data Widget] is way too damn small – if you're looking into so many rows – I need to be able to expand this and see from today, 6 months ago, right now it's ordered by date: but some people would want to isolate only sign ins by fingerprint, or only sign ins by email, only sign ins by IP, Flash UBID. – P1 [Tenured U.S Investigation Specialist].*
- V. *"I don't trust the data on sign-ins." –P10 [New Hire Investigation Specialist].*
- VI. *"The Signs-ins aren't always accurate. I've seen that happen quite a bit today. It doesn't show the order under investigation so I can't match my order IP with the Sign in details." - P13 [New Hire Investigation Specialist].*
- VII. *"Sometimes the IP of the order under investigation is not in the sign-ins (GSI) widget, and I expect it to be there. It's confusing when things like this aren't accurately displayed and it slows us down and makes us make bad decisions. I usually annotate it, because it could show up later, and I will get grilled on it." – P1 [Tenured Investigation Specialist].*
- VIII. *"There are glitches with GSI (Get Sign Ins). The red boxes are not accurate." – P8 [New Hire Investigation Specialist]*
- IX. *"The Sign ins (GSI) data is not reliable. I was told in training the same thing so how can I trust that?" – P10 [New Hire Investigation Specialist].*
- X. *"Right now we're not allowed to have two monitors – having GSI – having pop up and then another one behind it is really annoying – maybe if there's an easy way to minimize and maximize tables would be good. Maybe I would do a side by side comparison." – P12 [New Hire Investigation Specialist].*
- XI. *"In related customer and GSI, if I click on the IP relations they pop up on the same page – I have to move the pop up here and there to see the other section" – P15 [Tenured India Investigation Specialist].*

Annotations

- I. *"If you refresh the whole page, you lose your annotations. If there's a way to lock annotations that would be neat. Refreshing local widgets would be useful because they don't lose the annotations." – P12 [New Hire Investigation Specialist].*
- II. *"Annotations is like having to learn a foreign language. I get why we have to do it for legal reasons but it's very difficult to express the things I want to say in the annotations format." – P9 [New Hire Investigation Specialist].*
- III. *"I do all annotations separately (on a notepad), because the annotations box is small and inconvenient".*
- IV. *Don't like using the built-in tool. A lot of the auto annotations don't seem to be relevant right now. Suggestions of auto annotations in outcomes are not relevant and are poorly defined." – P11 [New Hire Investigation Specialist].*
- V. *"My mentor does annotations differently than what's described in the training." – P12 [New Hire Investigation Specialist].*
- VI. *"It would be good to have some automatic ones that you use over and over again just for speed purposes. A list of checkboxes that you can do that is prioritized by popularity. Some people make their own little sheets and copy and paste their own annos. It would be cool if you can just click it." – P13 [New Hire Investigation Specialist].*
- VII. *"Sometimes by just clicking on the link, auto-annotates automatically document that you did the IV check or clicked on a particular link, but I usually just delete these annotations because I don't see what it means or that it adds anything. I want to only use annotations to add insight, instead of just that he just looked at Facebook." – P9 [New Hire Investigation Specialist].*

Email Blurbs

- I. *"The name of the blurbs doesn't correspond at all to what is in the blurb. The title of the blurb should match the contents of it. Also, the blurbs are in a very weird order. It's not a complicated task but it takes so long." – P14 [New Hire Investigation Specialist].*
- II. *"The fact that it's not alphabetized that's annoying. It would be nice to have it separate by departments – a lot of them don't apply to BRI. It takes at least 2 minutes to send a blurb. It would be nice to expand the window too so you can read the email / preview. There's only 4 blurbs that I constantly have to use." – P12 [New Hire Investigation Specialist].*
- III. *"I wish there was a way to save the default email you sent". If we had a default it would be nice. I probably use maybe 4 or 5 total. If you can limit which ones you have to scroll through." – P1 [Tenured U.S Investigation Specialist].*

Account Sanitization (VCAC) is manual and labor intensive

- I. *"Cancel the orders manually to sanitize an account is labor intensive." – P9 [New Hire Investigation Specialist].*
- II. *"The VCAC tool is horrible. The workflow for it doesn't make any sense. No one in my department makes it to work correctly"*

- III. *VCAC customer it seems like it asks for data compromise, and sign ins, but when we do it, it always gives us errors. It's not part of an investigation, because most of the time accounts are sanitized after the order is released. The tool is not suited for this task. A lot of India-based investigators jump into using VCAC a lot more than we do it. In Zappos' case, we rarely use it. – P6 [Tenured Investigation Specialist, Zappos].*

Mark your Status Feature

- I. *"It's easy to make a mistake if you get pulled into a meeting and forget to set your status. It's easy for the system to record the wrong status. I use google timer to make an alarm so I don't forget." – P4 [Investigation Specialist].*
- II. *"It would be nice if I shut off or lock my computer it recognizes that he's obviously going somewhere, or if it was integrated into my calendar if I have a meeting." – P11 [New Hire Investigator specialist].*
- III. *"I hate it because it's hard to break a habit and it's easy to forget to change your status. We're generally independent, but everyone's IPH rating is lower now because we forget to set the right status. I have to create all these alarms on google timer and create workarounds to remind me to set my status." – P3 [U.S Tenured Investigation Specialist and Mentor].*

Tool friction or bottlenecks

- I. *"When the tool asks me why I didn't make a phone call – I feel like I'm being interrogated, it adds a lot of friction." – P10 [New Hire Investigation Specialist].*
- II. *Also, when you pass the order / Fraud: The extent of friction, why did you not make a phone call etc. slows down the process. Or are you sure you want to do this and putting manager's approval." – P7 [Tenured Investigation Specialist at Zappos].*

Difficulty of Policy adherence

- I. *"The biggest obstacle is where to pass and when to hold and when to fraud, and when to do a VCAC. It was touched on during training but that wasn't sufficient or hands on enough. I have to rely a lot on the SOPs. Some things are not covered in the training. The training was too much but not enough at the same time. So I'm constantly going through the SOPs. They are probably more helpful than the training but I wish there were links within the task page itself. For example – this person has bad debt – to help me what to do from there." – P10 [New Hire Investigation Specialist].*
- II. *"SOP's are helpful when you first start out, but what I found is that the SOP is not the most current and you find that out from a mentor or a peer, or when someone gets burned and sends out an email about it." – P14 [New Hire Investigation Specialist].*
- III. *"What would be a good improvement is the tagging. If there were better keywords to help me search SOP's. I'm sure what I want an answer for is mentioned somewhere but it's not searchable. The tags in SOP's could be more helpful to help me search for the information I am looking for." - P9 [New Hire Investigation Specialist].*
- IV. *"It would be nice if SOP changes had some sort of notification within the system that an SOP has changed – symbol that SOP was revised contextual to what you're looking at." - P11 [New Hire Investigation Specialist].*
- V. *"I don't have to refer to them [SOPs] a lot, but yesterday I had to go to the SOP's because there was debt on the account so I had to figure out the percentage. That particular SOP can use improvement. It would be helpful if the UI calculated the percentages." – P13 [New Hire Investigation Specialist].*
- VI. *"The e-check SOP is confusing – it could be improved." – P11 [New Hire Investigation Specialist].*

Appendix B – Participant Details & recruiting criteria *Investigators marked with an *were followed up with over the course of the study. Target Investigators were recruited and interviewed by TRMS UX Designer Eman I. Criteria for selecting participants was primarily focused on segmenting behavioral influencers (e.g. years of Tenure, Queue Type), which is more likely to create differences in experience, than by demographics. In this study, we focused our study on New hires vs. Tenured investigators across queue types. We varied our selection to include both U.S based and non-U.S based investigators in the study. Tenured investigators were defined as those who have been conducting BRI investigations for over a year. New Hires (7 total) have been with Amazon less than a month and have completed the New Hire training from 1-2 weeks from the time of the study.

BRI Investigator Type	Number of Interview Participants
Total Primary Participants	17
Tenured (1.5+years)	8
U.S based	5
Non U.S based	3
New Hire (< 1 Month)	7
Secondary Participants Surveyed (India-Based)	4

Table 1 Participant Groups

Participant	Title	Location	Marketplace Specialty	Tenure	Key Attributes	Research Date
P1	Investigation Specialist	U.S	Spain	1.5 years	Cross Trained (NA, Spain, France)	12/14
p2*	Sr. Investigations Specialist: QA	U.S	North America	3.5 years	QA	12/15
p3*	Sr. Investigations Specialist: Advisor	U.S	North America	4 years	Investigator Mentor	12/21
P4	Investigation Specialist	U.S	France	4 Months	Currently in Training	12/28
P5	Investigation Specialist	U.S	North America	9 Months	Completed Training	01/04
P6	Investigation Specialist	U.S Zappos	North America	4.6 years	Zappos	01/23
P7	Investigation Specialist	U.S Zappos	North America	3.5 years	Zappos	01/23
P8	Investigation Specialist	U.S	North America Trained	< 1 Month	New Hire	01/04
P9	Investigation Specialist	U.S	North America Trained	< 1 Month	New Hire	01/04
P10	Investigation Specialist	U.S	North America Trained	< 1 Month	New Hire	01/04
P11	Investigation Specialist	U.S	North America Trained	< 1 Month	New Hire	01/04
P12	Investigation Specialist	U.S	North America Trained	< 1 Month	New Hire	01/16
P13	Investigation Specialist	U.S	North America Trained	< 1 Month	New Hire	01/16
P14	Investigation Specialist	U.S	North America Trained	<1 Month	New Hire	01/16
p15*	Sr. Investigations Specialist: Advisor	SJO	North America & UK	2 years	Cross Trained (NA, UK)	02/15
p16*	Investigation Specialist: QA	IN	North America & JP	3.5 years	QA	02/15
P17	Investigations Specialist	IN	North America	1.5 years	Cross Trained	03/01

Table 2 Interview Participant List

Participant	Title	Location	Marketplace Specialty	Tenure	Key Attributes	Research Date
P18	Investigation Specialist	IN	North America	8 months	N/A	02/24
P19	Investigation Specialist	IN	North America	8 months	N/A	02/24
P20	Investigation Specialist	IN	North America	6 months	N/A	02/24
P21	Investigation Specialist	IN	North America	6 months	N/A	02/24

Table 3 Additional Non-U.S based secondary research participants

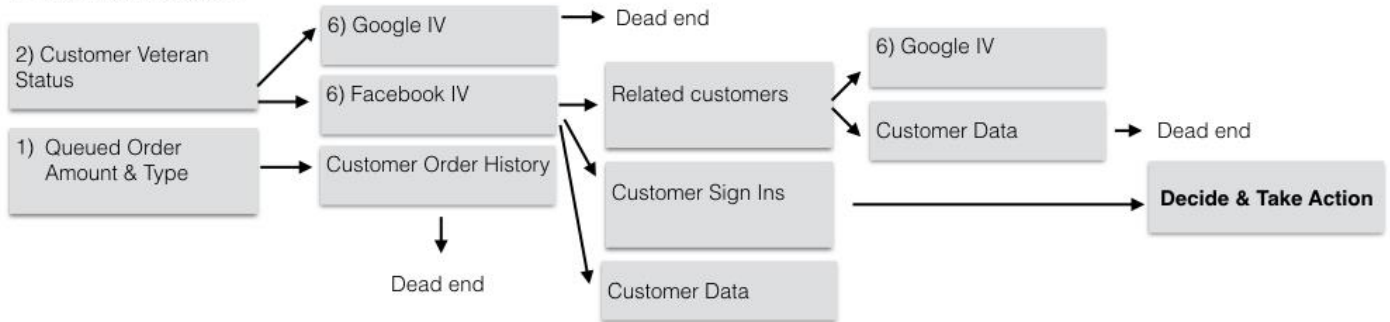
Appendix C – Expected flow vs. Actual flow

Training Flow



Actual Flow

Review Key Indicators



Appendix D - Detailed Research Questions

Below is a list of research questions to guide interview and shadow sessions (Actual interview questions are not covered here)

1. Processes: What are investigator’s processes for making a decision on a task or detecting fraudulent activity?
 - 1.1 How does their journey change across tasks, queue types?
 - 1.2 Which tools do they use?
 - 1.3 Do they use external tools or information sources?
 - 1.4 For each milestone (Onboarding and sign in, status change, primary investigation tasks, Secondary investigation tasks, phone calls, taking action, annotation and task completion), how do investigators go through that process?
 - 1.5 Do they feel they have enough guidance?
 - 1.6 How do they approach determining fraud and fraud types?
2. Pain points: What are their pain points?
 - 2.1 How severe are these pain points?
 - 2.2 What roadblocks do they encounter?
 - 2.3 Are we missing critical features, opportunities, services in increasing their efficiency?
3. Opportunities for improvement: How can we make a more seamless manual fraud investigation experience in terms of onboarding, task completion, task efficiency?

Appendix E - Glossary

- **BRI:** Buyer Risk Investigations
- **Jupiter:** Legacy BRI tools
- **Nautilus:** New Manual Investigation Platform with first launch 2017.
- **Triton:** A new program within Nautilus for Buyer Risk Investigation.
- **SOP:** Standard Operational Procedure