

Unlimited Audio: Espionage Report

To provide an Assessment of Employee's Suitability to hold a Position at Unlimited Audio, (UA) including the threat and broader implications, for UA, on any decision made.

1. Conclusion

We find Shane Jefferies Likely (65-75 %) to be suitable to hold a position at Unlimited Audio (UA).

We find it Unlikely (31.5 %) that Shane Jefferies is engaging in Espionage of UA's IP, however that means there is a 31% possibility that must be further investigated.

Espionage is not the only threat to UA and Max10 release.

Lack of response by UA Human Resources to Mr Jefferies' complaint of homophobia has exposed UA to possible loss of an employee key to planned release of MAX10, plus possible litigation if the situation is not handled carefully.

We recommend urgent Covert Investigation continues into:

- Key Indicators given in Section 3 (to gain further certainty of Espionage)
- Mr Jefferies complaint to HR, and
- why UA Human Resource Dept did not respond.

Overt Investigation at this point places unnecessary risk on both UA and MAX10 release.

Probability Questions

- Probability 1: According to the polygraph results, the the probability that Shane lied on this question is 13.1% and therefore Very Unlikely.
- Probability 2: Given the probability of Shane's IT malicious activity was 13.1%, then the probability that Shane is involved in corporate espionage is Even Chance (48%.)
- Probability 3: Jeffries' Drug test was negative. The probability that this is a false negative is very Unlikely (7%.)

Definition and interpretation of Task.

1. In regard to UA we assume 'Suitability' to mean the following priorities:

- honesty
- trustworthy: IP and Security
- not likely to damage UA's reputation, longevity or financials.

2. "the threat and broader implications for UA on any decision made." which we interpreted to mean 'any relevant decision which could be made by UA at this point'.

Key Judgments

- there is no direct evidence of Espionage by Shane Jefferies apart from the Anonymous Allegation.
- there is an allegation by Shane Jefferies of homophobia, which could be defined as sexual harassment
- Human Resources non-response to the complaint of 'homophobia' may expose UA to litigation

The Judgements rely on Key Assumptions (below) which need to be checked via the Key Indicators to provide greater certainty.

Key Assumptions

1. UA Security Protocols are strictly adhered to at all times.

If this is wrong the probability that Shane Jefferies is engaged in Espionage is higher, and becomes Likely. (see 'Key Indicators')

2. Linda Kim's statement was reliable.

If Linda Kim was not reliable in her recent assessment of Mr Jefferies, then the probability of espionage is higher and becomes Likely

3. Shane Jefferies is in a same sex relationship with Brian Diaz

- Jefferies and Diaz share address, bank account and phone numbers are one digit apart. If Mr Jefferies is not in the relationship, it does not impact our assessments.

4. Shane Jefferies complaint of Homophobia was true.

- If untrue, then it is a higher probability (Even Chance) that this complaint was used as a cover for malicious activity.

2. Reasoning

Methodology: to find the most plausible alternative hypothesis and contend them against each other.

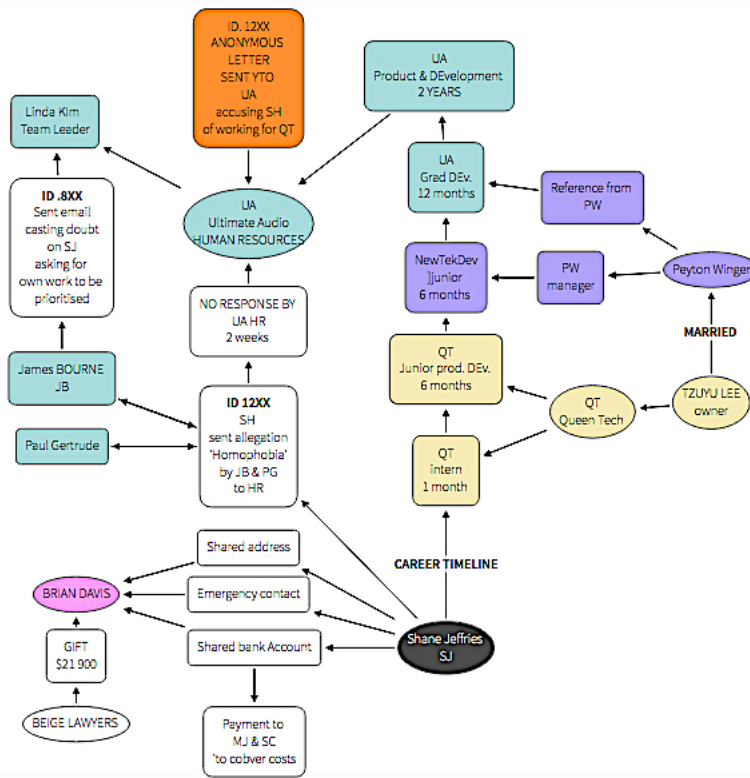
2.1 Evidence

Evidence evaluation was on credibility/reliability/ relevance /currency. The Evidence Table was then used for the Competing Hypothesis table (2.4).

- Irrelevant Evidence (primarily media articles) was identified and checked highlighted during mapping and +1/-1 competing Hypothesis.
- Simple scoring was used that weighted relevant evidence evenly, but noted Assumptions required in regard to Linda Kim's statement, and the adherence of Security protocols at all times which is discussed in the Indicators Section.

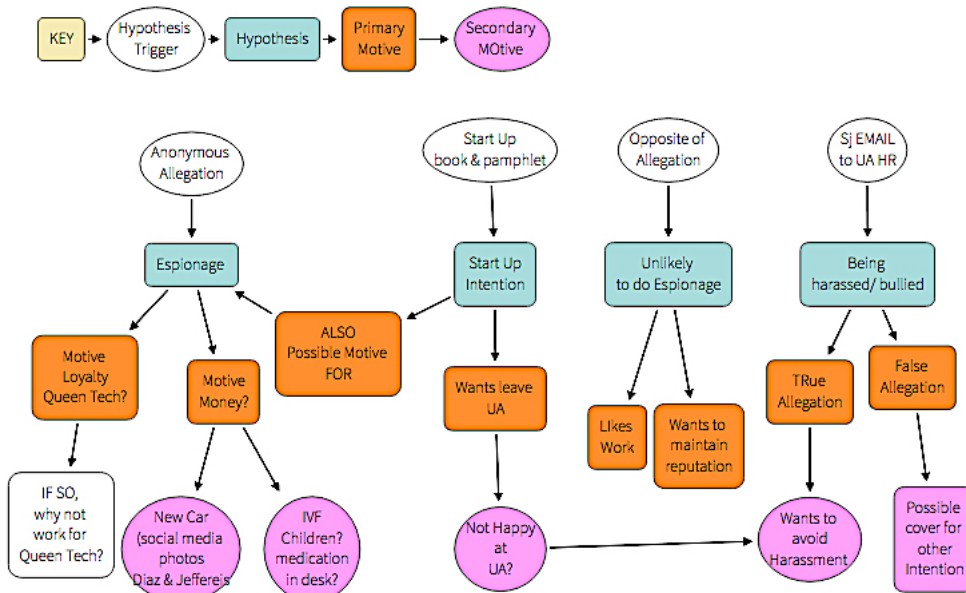
2.2 Evidence was used to diagnose connections to establish relationships. We found that Shane Jefferies has strong past connections to Queen Tech, and problems flagging with James Bourne.

figure 1 Connections and relationship diagnosis



2.3 Hypothesis mapping below showed plausible motive for 4 Alternative theories.

figure 2. preliminary Hypothesis & motive diagnosis



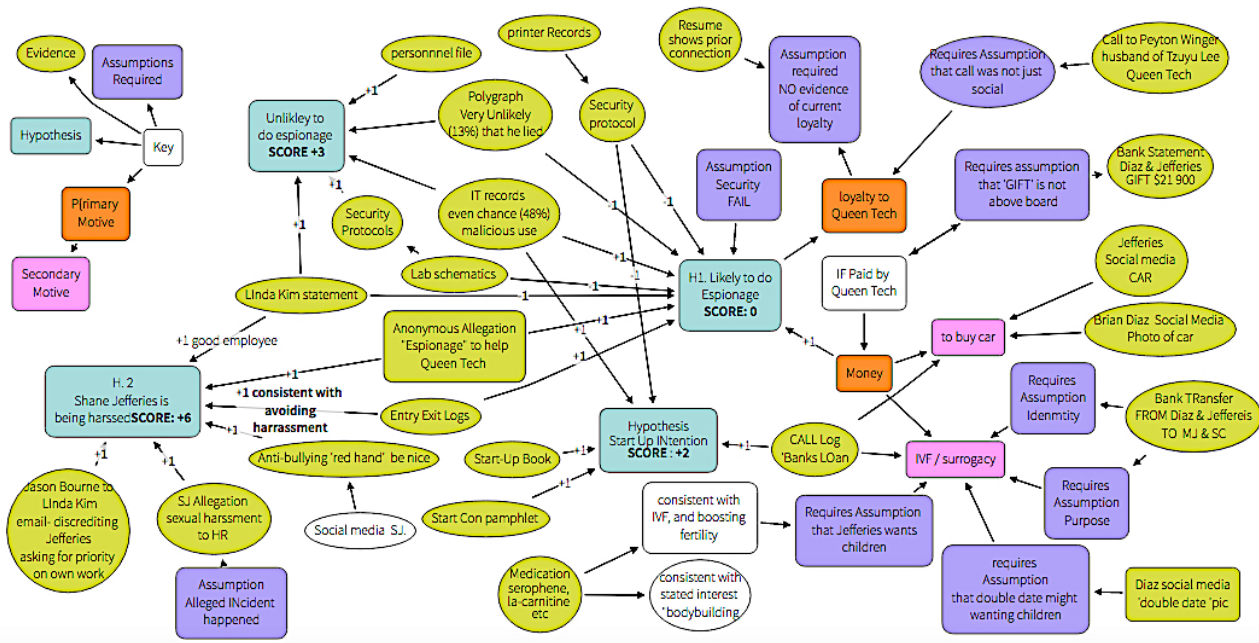
2.4 We then contended the theories against the Evidence List in a Competing Hypothesis Table, and found that Espionage was Even Chance, against Harassment which was Likely.

figure 3. Evidence List & Competing Hypothesis Table

EVIDENCE	Relevance/ Reliability Key/not Key	engaging in espionage	considering Start Up	suitable, unlikely to do Espionage	suitable, & being Harassed
Personnel File; Jeffries	not current, not Key	0	0	+1	+1
Resume Shane Jeffries	not current, not Key prior connection QT - Tzuyu Lee and Peyton Winger	+1	0	+1	+1
reference by Peyton Winger	not current, not Key	0	0	+1	+1
Polygraph Shane Jeffries	reliable (13%) unlikely to have lied Key Evidence	0	0	0	0
Interview Linda KIM	Key Evidence, Assumed Reliable, check in Key Indicators	0	0	+1	+1
Lab Schematics	Assumed Reliable & Key Evidence Unknowns- What are walls made of?	-1	0	+1	0
Entry exit logs	Key Evidence, Reliable	+1	+1	0	0
Printer Records SJ	current, reliable, credible	0	0	0	0
IT Report	Key Evidence, Not current	+1	+1	0	0
news article TZUYU LEE	irrelevant + 'Hearsay'	0	0	0	0
JB email to Linda KIM	Hearsay / unreliable Key Evidence for harassment	0	0	0	+1
Social Media SJ	photo car / 'be nice' / beer / conference unreliable- any connection is speculative not Key	0	0	0	0
Anonymous Allegation	Key Evidence BUT no forensics (Regs, Indicator check)	+1	0	-1	+1
SJ email to HR	alleging Homophobia Key Evidence assumed, truthful	-1	0	0	+1
Interview with Tzuyu LEE 'Home Life'	irrelevant	0	0	0	0
Drug Test Shane Jeffries, Negative	Key Evidence (7%) false negative	0	0	0	0
Security Check SJ DESK	Reliable, current TRansducer book may be Indicator for further investigation (How To Startup Book) + (Startcon pamphlet) MEDICATIONS- consistent with both FERTILITY & stated interest : powerlifting	-1	+1 +1	0	0
Bank Records Diaz & Jeffries	contains Unknowns otherwise reliable	+1	0	0	0
Phone Records Shane Jeffries	contains Unknowns otherwise current and reliable (call to bank re loan possible connection to theory) (recent call to Peyton Winger)	+1	+1	0	0
Brian DIAZ Social Media	not Key, reliable but contains Unknowns	0	0	0	0
UA Financial Forecasting	not relevant to theory diagnosis, relevant to Implications				
	TOTAL WEIGHT Evidence gives to Theory	+3	+5	+4	+7

2.5 Evidence was mapped to hypothesis, with value links to check how supported by Evidence (green) or Assumption (purple) they were. We found evidence supported the harassment theory, (+6) and did not support the Espionage theory (0).

Figure 5. Evidence supporting Hypothesis value Weighting.



2.6 A Multi-Criteria Score Table averaged the two methods, and we found that being Harassed or bullied Theory was more strongly supported by evidence.

figure 6. Multi Criteria Score Table

Diagnosis Technique	H. 1 Engaging in Espionage	Intent to do Start up	Being Harassed or Bullied
Hypothesis Argument (V2)	0	2	6
Competing Hypothesis Table	3	5	7
Total	3	7	13
Average	1.5	3.5	6.5
Expressed as %	15%	35%	65%
Therefore Estimative probability	Very Unlikely	Unlikely	Likely
Therefore	Likely (85%) to be NOT engaged in Espionage	likely (65%) to NOT intend Start-Up	unlikely (35%) that harassment is NOT happening

The Assessment that Shane Jefferies is very unlikely (15%) to be engaging in Espionage was checked against the finding that his IT assessment which gives him Even Chance (48%) probability of engaging in Espionage.

$(15\% + 48\%) / 2 = 31.5\%$ and therefore Unlikely (31.5%) to be engaging in Espionage.

2.7 It is important to note that this 31% probability is expressed as 'Unlikely' but the fact that there was a 31% Chance caused us study closer work hours and Print/Scan output.

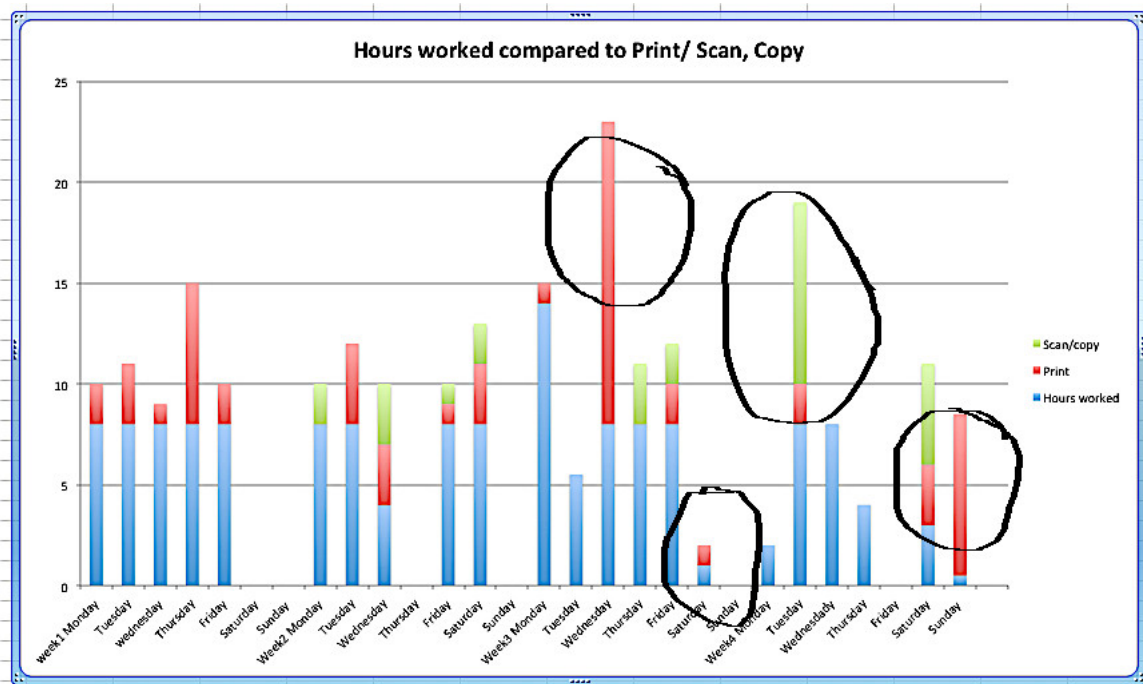
We note that high print/scan happens on days when Mr Jefferies is working outside 9-5, and found that there is reason for concern IF Security is not adhering to protocol, outside business hours, checking Prints before release from Lab.

Alternatively, the Trend towards inconsistent work hours is consistent with Mr Jefferies complaint to HR where he stated that he was trying to avoid work colleagues because of the homophobic comments.

Figure 7. Entry / Exit Flags

	4 WEEKS AGO		3 WEEKS AGO		2 WEEKS AGO		LAST WEEK	
	Entry	Leave	Entry	Leave	Entry	Leave	Entry	Leave
Monday	0900	1700	0900	1700	0900	2300	1800	2000
Tuesday	0900	1700	0900	1700	0930	1500	1000	1800
Wednesday	0900	1700	0900	1300	0500	1300	0900	1700
Thursday	0900	1700			0900	1700	0900	1300
Friday	0900	1700	1100	1900	0900	1700		
Saturday			0700	1500	0800	0900	1400	1700
Sunday							0700	0730

Figure 8: Entry/ Exit vs Print/Scan Flags

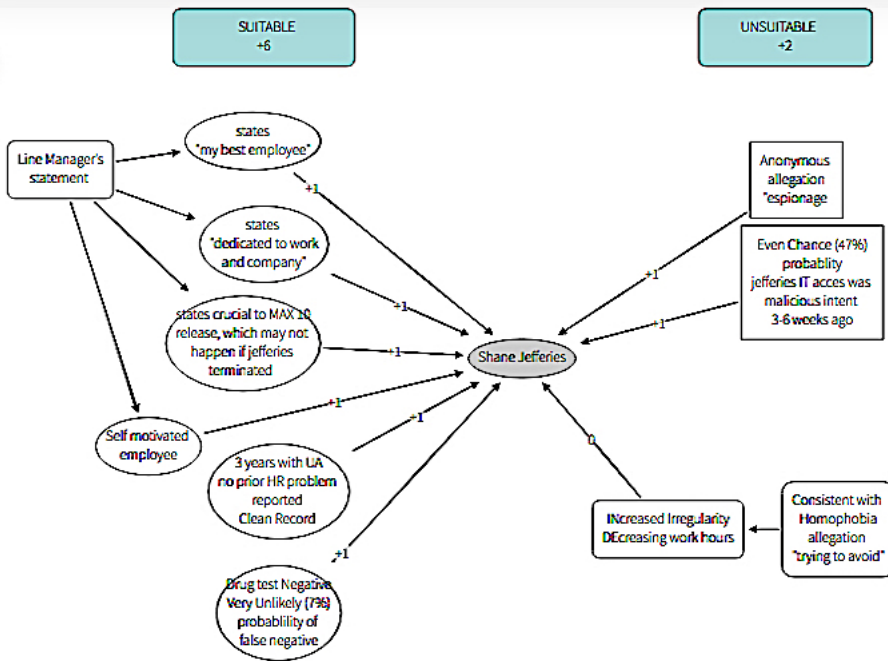


We checked the two remaining Alternatives against the 'Suitability Definition' compared to only 'evidence obtained within UA', to get a current picture of Mr Jefferies within the workplace.

Again we find that the only evidence that Shane Jefferies may be 'Unsuitable' is the Anonymous Allegation of Espionage, and the trend towards avoidance of regular work hours.

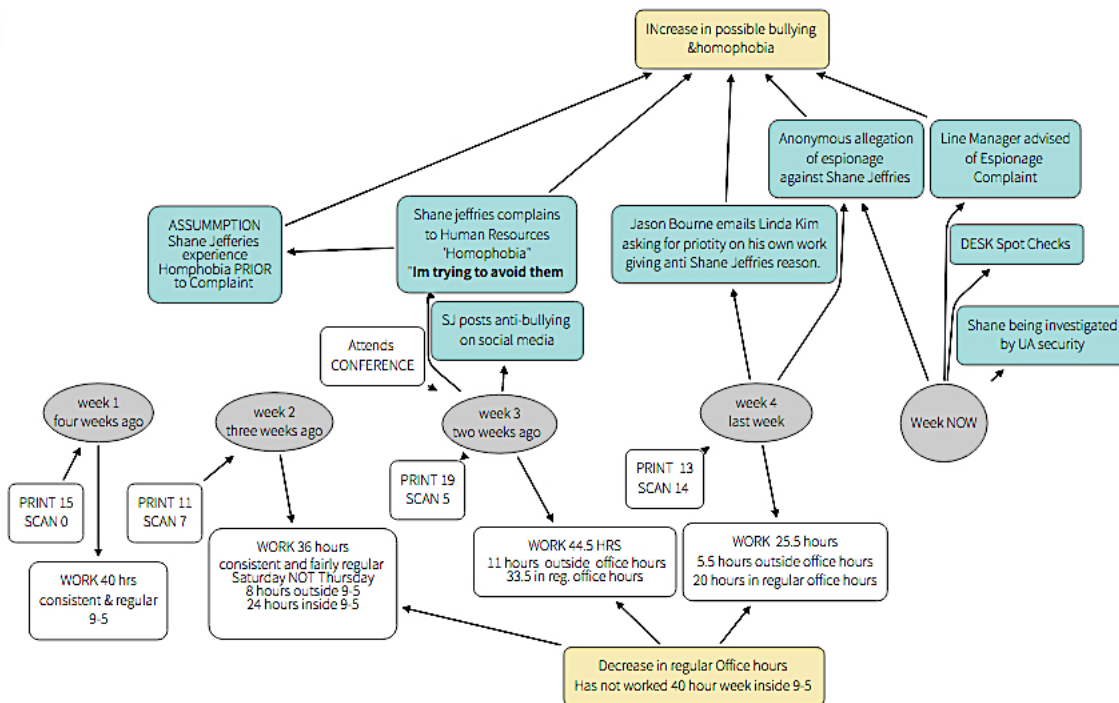
We note: IT access Indicators assessment is inconsistent with 'harassment theory' and have addressed this in Key Indicators #6

Figure 9. Suitability vs Inner UA evidence



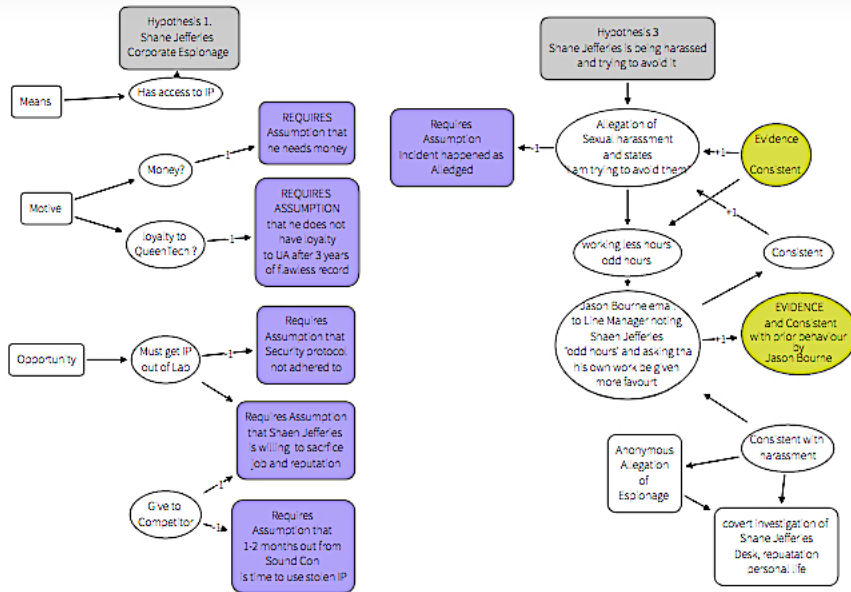
As the trend to irregular work hours is also consistent with avoidance of bullying/harassment, we analysed activity around Mr Jeffries at UA in the past four weeks.

Figure 10.



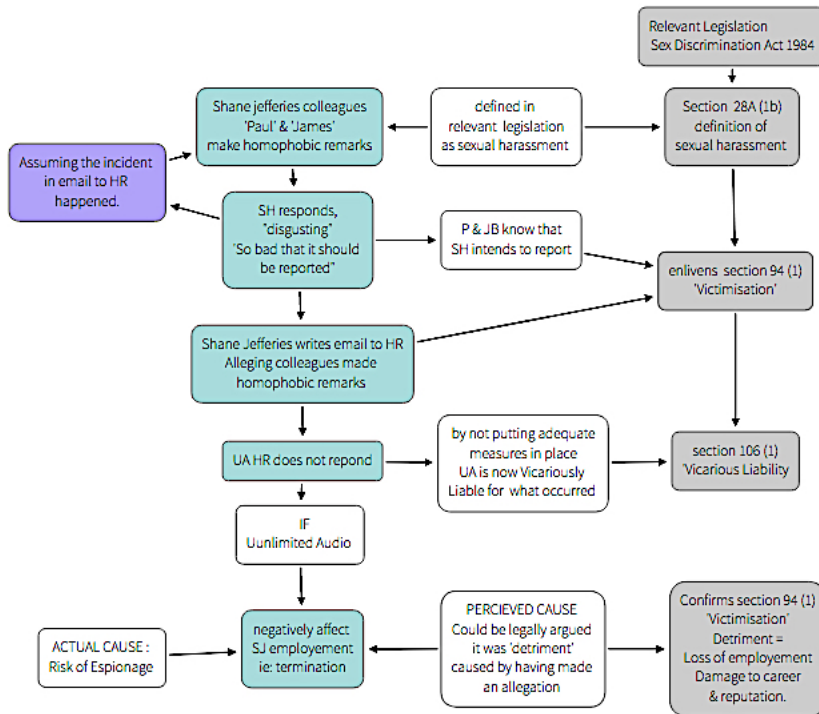
We checked this in an "As Opposed to" diagramming against the Espionage allegation, to assess how many Assumptions were required to sustain each theory. We found that the espionage theory requires numerous Assumptions, whereas the harassment theory only requires one.

Figure 11.



We then analysed the Likely harassment situation against one of the relevant legislation. (*Sexual Discrimination Act 1984, A.C.T*)
 As UA HR did not act in any way to put adequate measures in place, UA have no defence against 'Vicarious Liability'
 Any negative changes to Mr Jefferies employment could now be interpreted as 'Victimisation'.
 Therefore this situation must be carried forward to Threats and Implications Assessment.

Figure 12: Litigation Risk Diagram



3. Threat Analysis & Implications

We find two threats to Unlimited Audio.

The first is that there remains a 31% chance of Espionage by Jefferies.

ALSO

Given that IF MAX10 is not released: UA drop 2 million in earnings, from last year's figures.

If IMAX10 is released successfully: UA gain 5 million in earnings

And Given:

- Linda Kim's statement that Shane Jefferies is crucial to release of MAX 10, and
- that UA's priorities are stated to be not only financial but reputation, and retention of staff.

And given that it is Likely that Mr Jefferies is a victim of harassment &/or Bullying, and that HR did not respond to his complaint, retaining Mr Jefferies to complete MAX10, is also under threat. Also any action by UA towards Mr Jefferies must be take care until a second stage of Investigation into the Espionage and the Harassment is done.

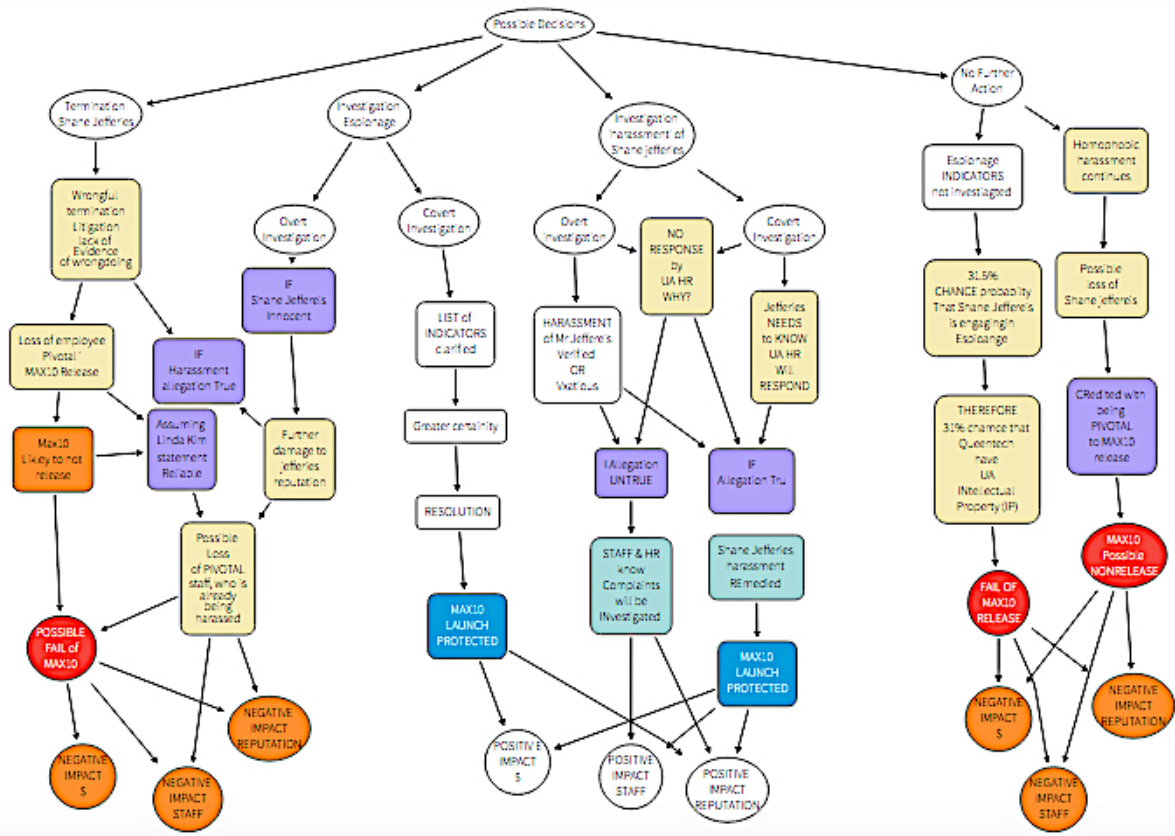
So, as tasked, and defined, we assessed "the threat and broader implications for UA on any (relevant) decision made."

We gave this an extreme range from 'Terminate Jefferies' employment' to 'Investigation, Covert or Overt', to 'Do Nothing'.

We found that Covert Investigation of both the Espionage, and the Harassment, protects UA priorities, and MAX10 .

All other options put the MAX10 release and/or UA at risk.

Figure 13: Implications of Any (relevant) Decisions by UA



4. Recommendations

Espionage: We recommend continuing Covert Investigation into the key Indicators listed below. We believe Overt Investigation, if untrue, may escalate risk to MAX10 launch, by loss of Mr Jefferies.

We also strongly recommend urgent Covert Investigation of the complaint to UA HR, and also into why HR did not respond to complaint.

We strongly recommend that care and respect is used in regard to Mr Jefferies given litigation and vicarious liability risks, and the factor that his Line Manager states he is Pivotal to release of MAX10.

5. Limitations & Indicators

Key Indicators are the Unknowns, that if Known, would lead to greater certainty about a likelihood.

Key Indicator 1. How rigorously does UA adhere to Security Protocols at all times for example scrutiny of print-outs from Lab? Please refer to Work Hours/Print Scan Diagramming in Section 1.

- Analysis of Shane Jefferies' work hours compared to Print / Scan output shows that there is a correlation of print Scan at times when he is present outside of regular 9-5 work-hours,
An essential key Indicator would be to check Security presence and adherence to protocol .

Is it possible to smuggle print copies or equipment past Security in/out of lab?

If it was verified that Security protocols re above was adhered to at all times then Espionage remains unlikely.

Key Indicator 2. Given Mr Jefferies book on Ultrasound transducers we advise UA Security to check the Lab for covert sonic equipment as Ultrasonic waves can be used to trigger mobile phones through Wood, glass and metal.

<https://eandt.theiet.org/content/articles/2020/02/ultrasonic-waves-used-to-surreptitiously-trigger-smartphone-voice-assistants/>

- this may give Means to Mr Jefferies, and trigger Overt Investigation

Key Indicator 3. How reliable is Linda Kim? Our assessment relies on her statement in a number of ways.

- What is the Assessment of Linda Kim?
- Is she correct in stating that Mr Jefferies is reliable, devoted to UA, and essential to launch of MAX10 as stated?
- If Linda Kim is unreliable, through deceit or negligence, it becomes likely that espionage is happening, triggering Overt Investigation.

Key Indicator 4. The Key Evidence 'Anonymous Allegation' is a key Indicator in both the Espionage and Harassment problems.

- Forensics for fingerprints and Handwriting analysis may give identification of writer.
- If the writer of the Espionage Allegation is NOT James Bourne, or 'Paul', then our assessment may be wrong, and Overt Investigation of Espionage required.

Key Indicator 5. Did the alleged Harassment against Mr Jefferies happen?

- Is there Security camera coverage of place where incident is alleged?
- Polygraph test of Jefferies, Bourne & 'Paul' would require Overt investigation, but there are no perceived risks in that.

Key Indicator 6. It Access Logs Indicating Malicious use of internet 3-6 weeks ago.

Did the activity stop 3 weeks ago, OR are IT access logs N/A for past 3 weeks?

- An understanding of the pattern of IT Access in the past 4 weeks would lead to greater Certainty
- Greater Detail of what Jefferies was accessing both internal and external would lead to greater Certainty

6. Alternatives

Alternatives contended against the Espionage Hypothesis were:

1) That Mr Jefferies was being harassed, given the complaint to HR, and the Bourne email to Kim Lee.

2) that Mr Jefferies was considering a Start-up:

- However its is more likely that Mr Jefferies would use his own IP to develop a Start-Up.
- Phone call to a bank could be consistent with seeking funding for a Start Up,
- Likely as a possible motive for espionage to gain either finances OR IP.

3) That Shane Jefferies is possibly planning fatherhood given medications found in his desk, are consistent with fertility.

- We found this required a number of Assumptions
- Medication is also consistent with stated interests "powerlifting".
- while the bank Transfer 'to cover costs' is consistent with covering costs for IVF, etc, the costs of IVF in Australia are not high.

4) We considered whether the complaint letter is vexatious and a cover for malicious activity.

- We found this implausible, but have recommended investigation.

5) We considered whether an ultrasound could be used to transmit information from Shane's computer, to a receiver

- We found this unlikely because of Security protocols, and other team members present in lab. BUT it must be considered as an Indicators towards Overt Investigation.

6) We considered whether the Bank Transfer 'GIFT' \$21 900, to Diaz may be espionage payment, and whether Beige Lawyers were acting on behalf of Queen Tech

- 'Gifting' money is often used as a method of tax avoidance.

8) If Jefferies had a current loyalty to Queen Tech

- We found no evidence of current loyalty. Social media photographs of beer drinking /social activity may be linked to TZUYU and WINGER, however this is speculative at best.

Words of Estimative Probability

Almost No Chance	Very Unlikely	Unlikely	Roughly even chance	Likely	Very Likely	Almost Certain
1-5%	5-20%	20-45%	45-50%	55-80%	80-95%	95-99%

Appendices

Appendix 1. Probability calculations

1.1 Polygraph test

The Recruitment polygraph interviewer notes that the polygraph result indicated that Shane lied on Question D, "is there any reason why you would not maintain the confidentiality and secrecy requirements of a role with UA?"

Given that the business use cases say that only 2% of people are involved in insider IP theft or corporate espionage, then the the probability that Shane actually did lie on this question is $1.78 / (11.76 + 1.78)$ is 13.1%

	Person says Truth	Person says Lie
Polygraph says Truth	88%	11%
Polygraph says lie	12%	89%
	100%	100%
	98	2
Polygraph says Truth	86.24	0.22
Polygraph says Lie	11.76	1.78

1.2 IT USAGE INDICATORS

Using the prior probability of 13.1% that a person is unlikely to maintain confidentiality.

Given that Shane has both SCANNED and ACCESSED, then the probability he is GUILTY of Malicious activity is $6.6849 / (6.6849 + 7.2417) = 48\%$

	Innocent		Guilty	
	Access YES	Access NO	Access YES	Access NO
	0.25	0.75	0.81	0.19
Scan YES	0.33	0.083	0.63	0.5103
Scan NO	0.67	0.167	0.37	0.2997
	Innocent People		Guilty People	
new base rate, after polygraph result	86.9		13.1	
	Access YES	Access NO	Access YES	Access NO
Scan YES	7.2417	21.7250	6.6849	1.5681
Scan NO	14.4833	43.4500	3.9261	0.9209

1.3 Drug Test

Jefferies Drug test negative:

We are given

- In the general population, of 20-29 year old, 28% of people take drugs. Shane is in this age range.
- 69% of Tests will be using DD3-O, 31% of tests will be done using DD3-U
- DD3-O (the old test) gives false positive 23%, and a true positive 81%

	DD30	
	Where Drugs = TRUE	Where Drugs = FALSE
result positive	81%	23%
result Negative	19%	77%
	100%	100%

- DD3U (the new test) gives False positive 6% and true positive 93%

	DD3-U	
	Where Drugs = TRUE	Where Drugs = FALSE
result positive	93%	6%
result Negative	7%	94%
	100%	100%

so for 1000 people, using the tree in the figure below, how many people show a negative result: $209.81+382.54 + 6.08 + 36.71 = 635.13$

How many are FALSE negatives: $6.08+36.71 = 42.78$

Therefore, the probability that it is FALSE negative, given that it is a Negative is $42.78 / 635.13 = 6.74\%$

