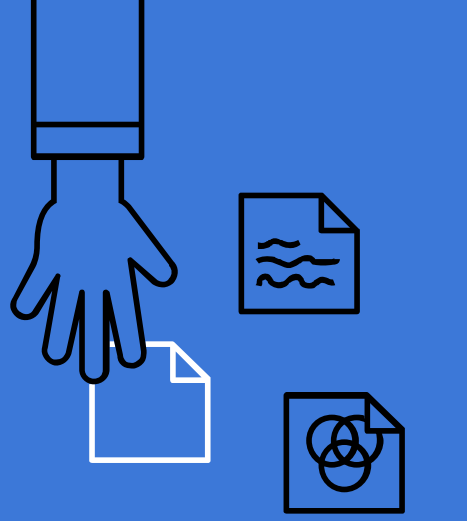
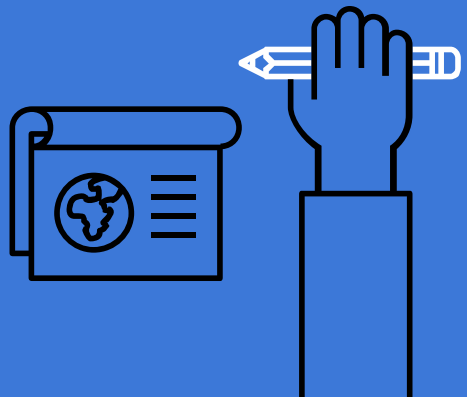
AGILE TESTING DAYS

How the heck do I perform a Risk Analysis?

Sources

https://rapid-software-testing.com/





HELLO!

I am Paul Holland

I am here because I love to give presentations.

You can find me at @PaulHolland_TWN

HELLO!

I am Huib Schoots

I am here because I love Paul Holland.

You can find me at @huibschoots

HELLO!

I am Paul Holland

I want to change my answer.

I am here because I think Huib is really smart and awesome.

HELLO!

I am Huib Schoots

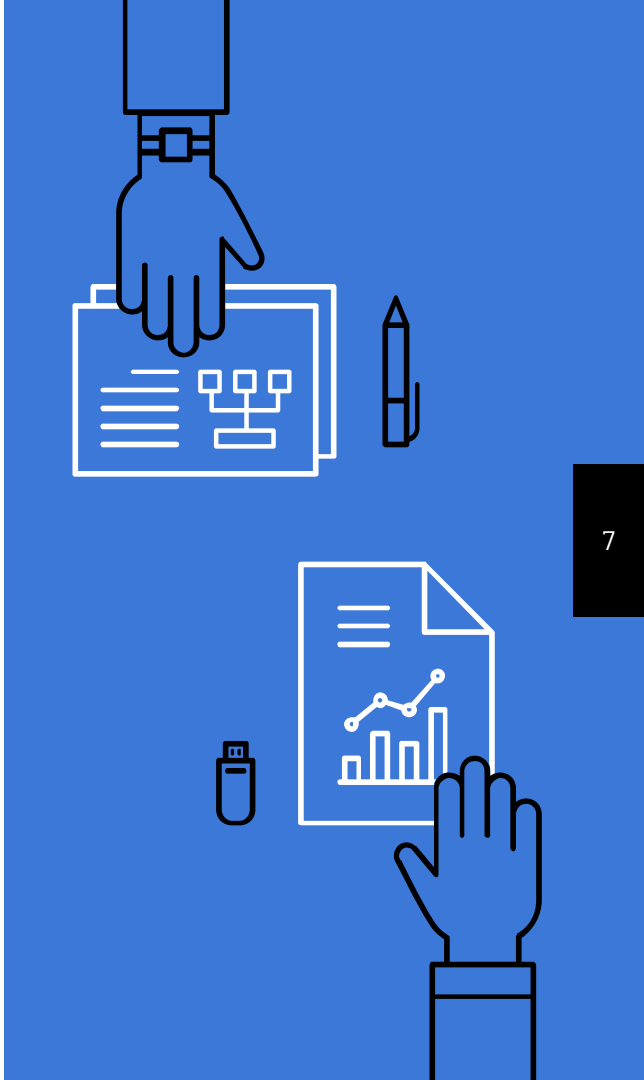
Wait, then I want to change my answer too. I not only love Paul but I think he is pretty funny and rocks at testing and teaching!

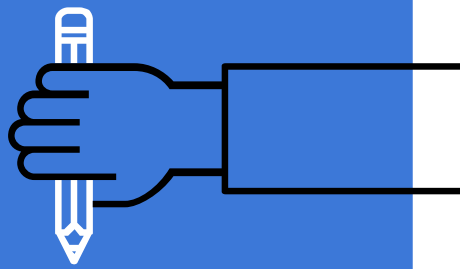
Let’s talk about Risks!

- How to use risks effectively in your daily work
- How to do a practical and thorough* risk analysis
- How to use risk heuristics to make your risk analysis better**

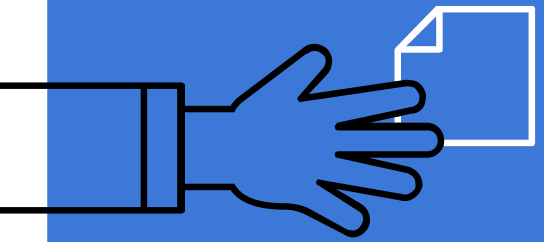
* We cannot guarantee the thoroughness of your analysis :-)

** We do think that your thoroughness will improve if you use these heuristics





1.
Warm-up Exercise



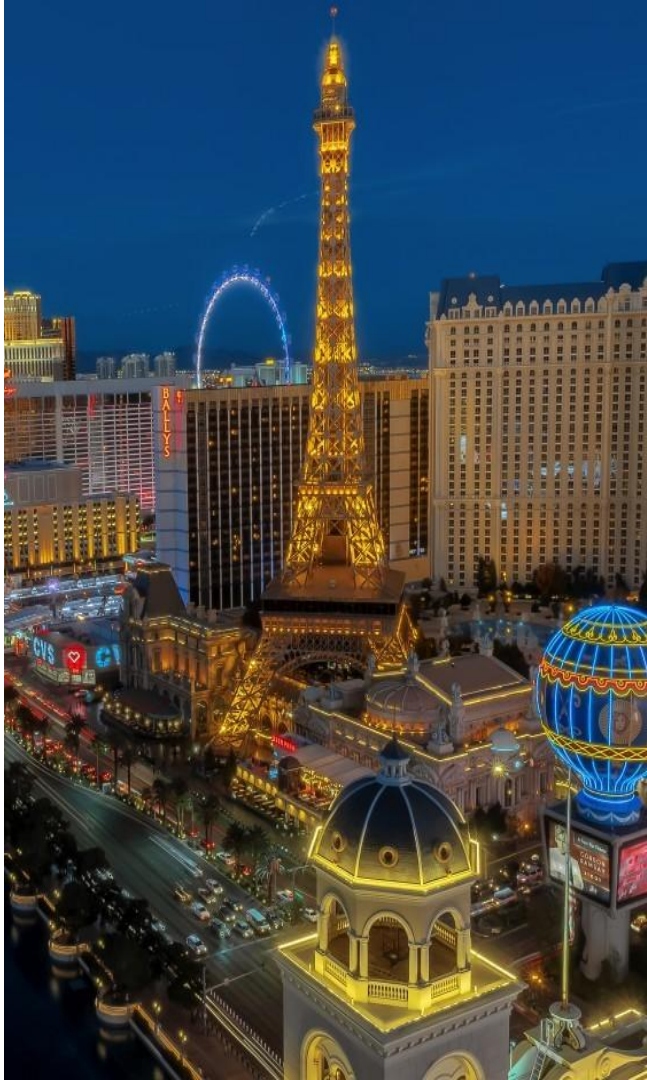
Let's start with an **easy** exercise...

Exercise #1

- You are the primary tester on a banking system that allows currency exchanges across all countries and currencies while following all national, provincial, and local laws for taxes and financial reporting
- What risks can you think of?
- You have 5 minutes

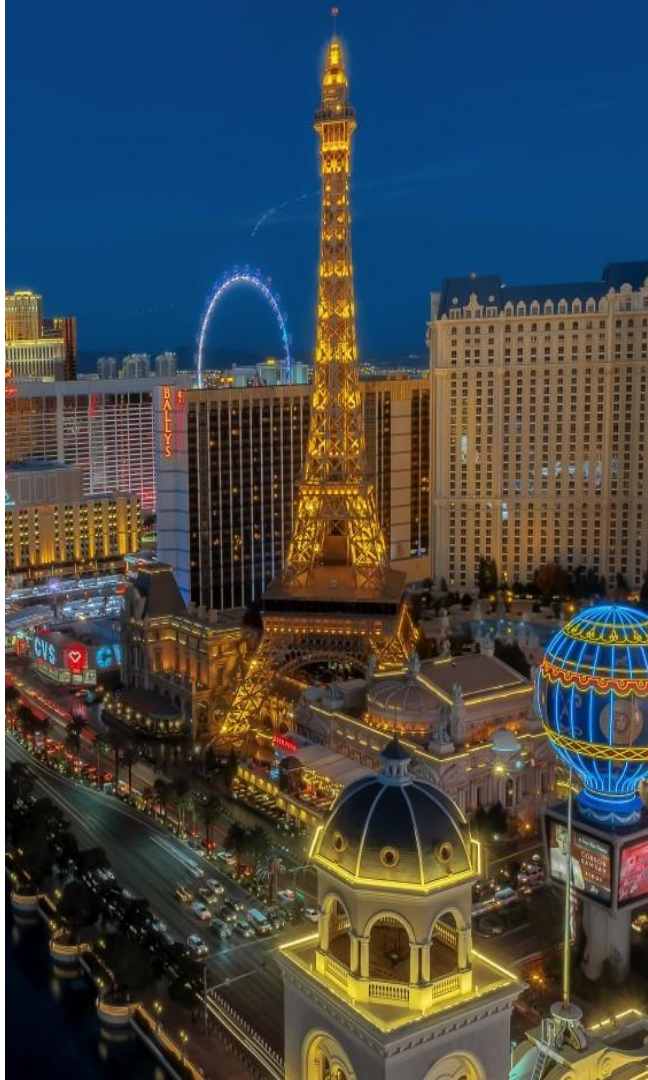
The Real Exercise #1

- You are the owner of a casino on the strip in Las Vegas.
- What risks can you think of?
- You have 5 minutes



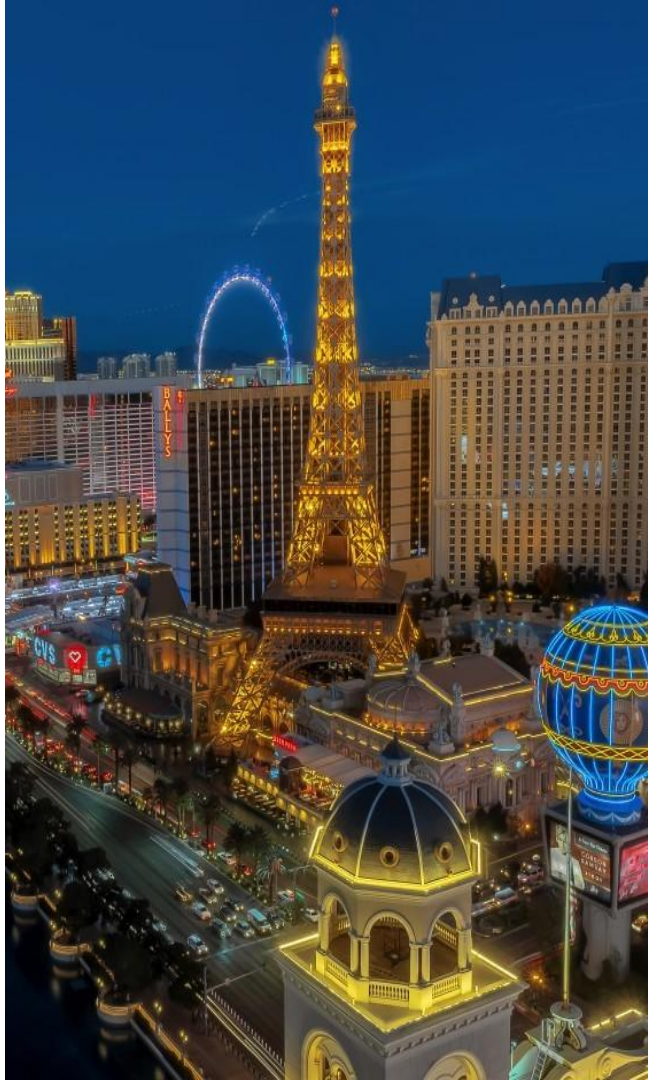
Exercise #1 - Part 2

- Now take that list of risks and discuss in a small group of 3-5 people in your breakout rooms
- What additional risks can you think of?
- You have 10 minutes

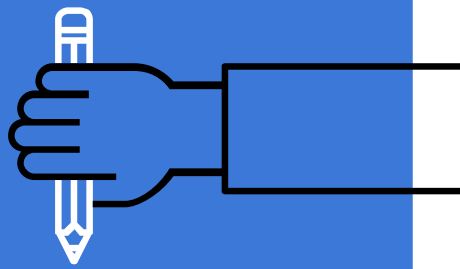


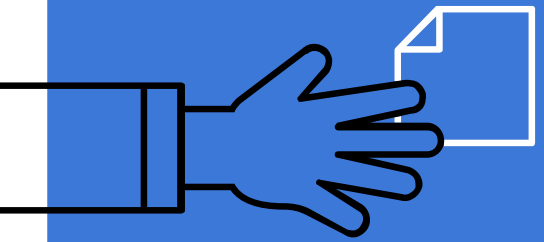
Exercise #1 - Debrief

- What risks did you come up with?
- How did you know it was a risk?
- Did you notice how much more effective the second part of the exercise was? Why was that?
  - Being in a group - you can build off each other's ideas and trigger new ideas
  - Thinking about the problem for a second time - your subconscious was still working on it
  - Longer to think about it



2.
Some slides about risk analysis

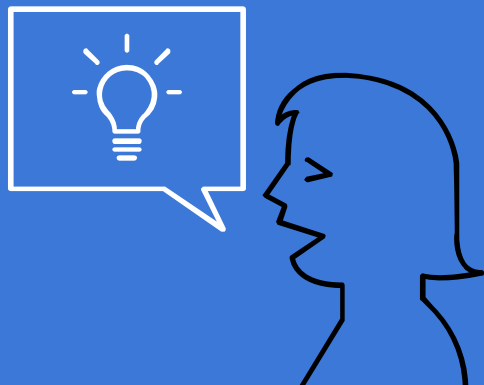


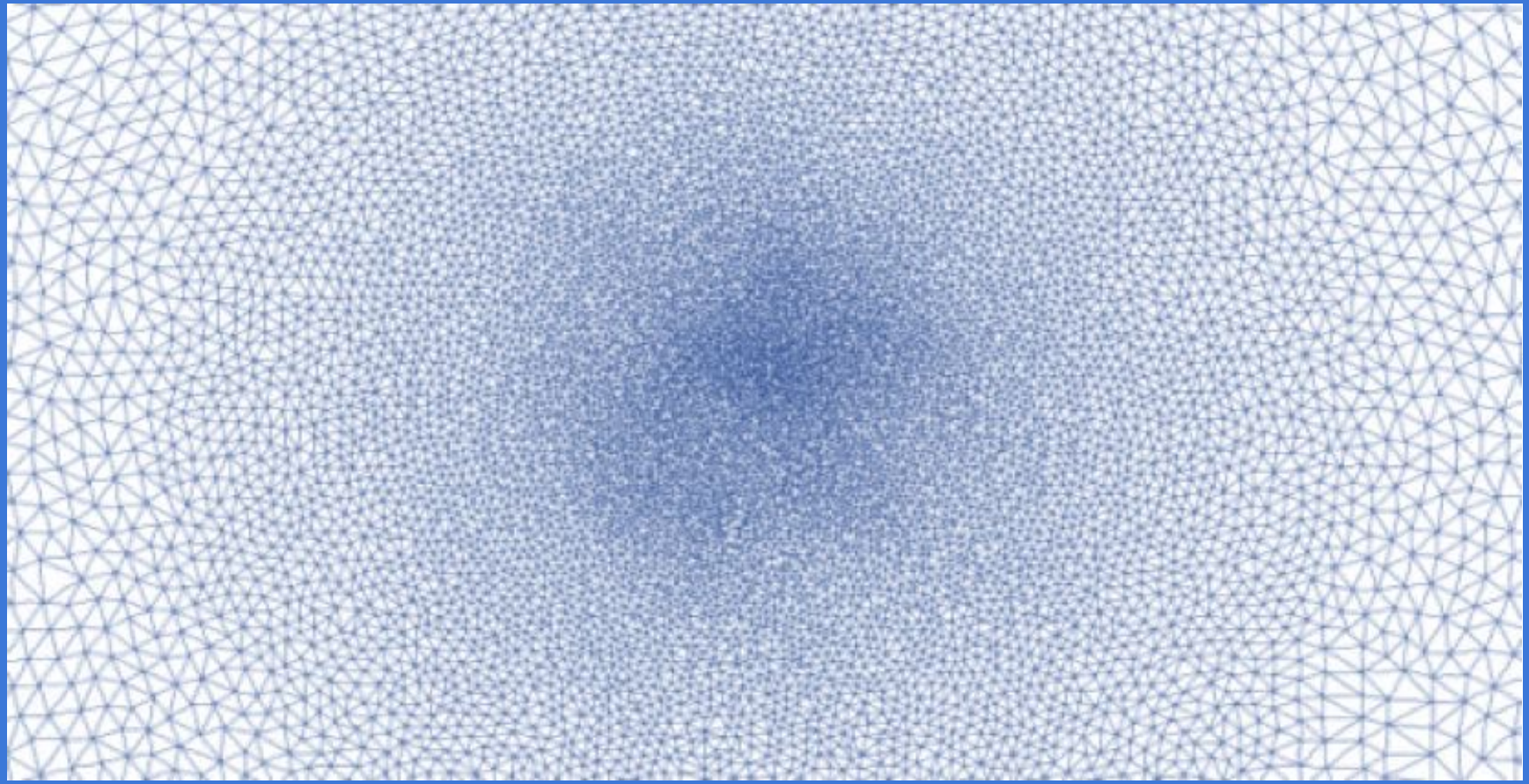


To help you understand what we are trying to say...

“Risk

“Something bad might happen.”

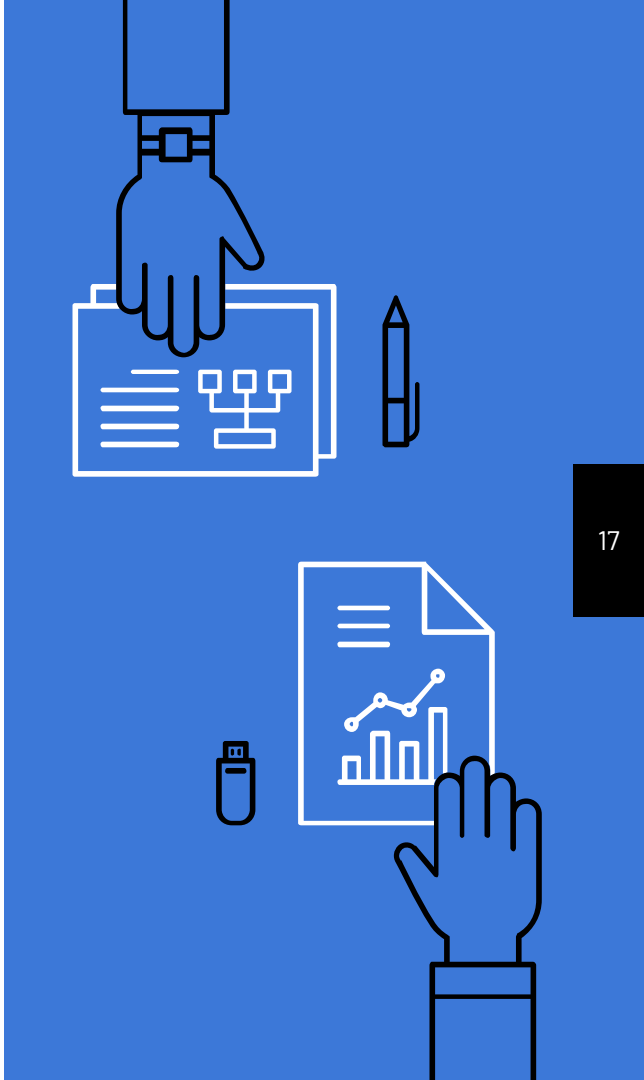




During SW development we have unknown unknowns

- Customers/Product Owners don't know or can't imagine what they want…
- Development team can’t image what customers will actually do
- Research: new insights & evolutionary design
- Dealing with complexity, confusion, change, new insights and half answers

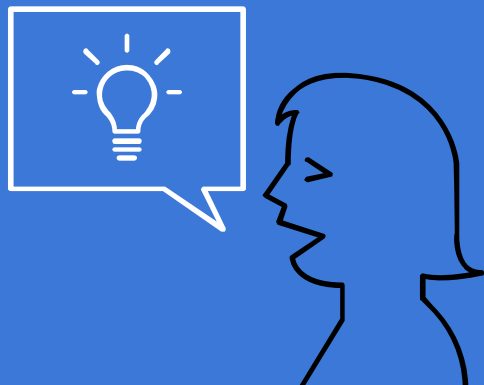
We have to learn and deal with risks!



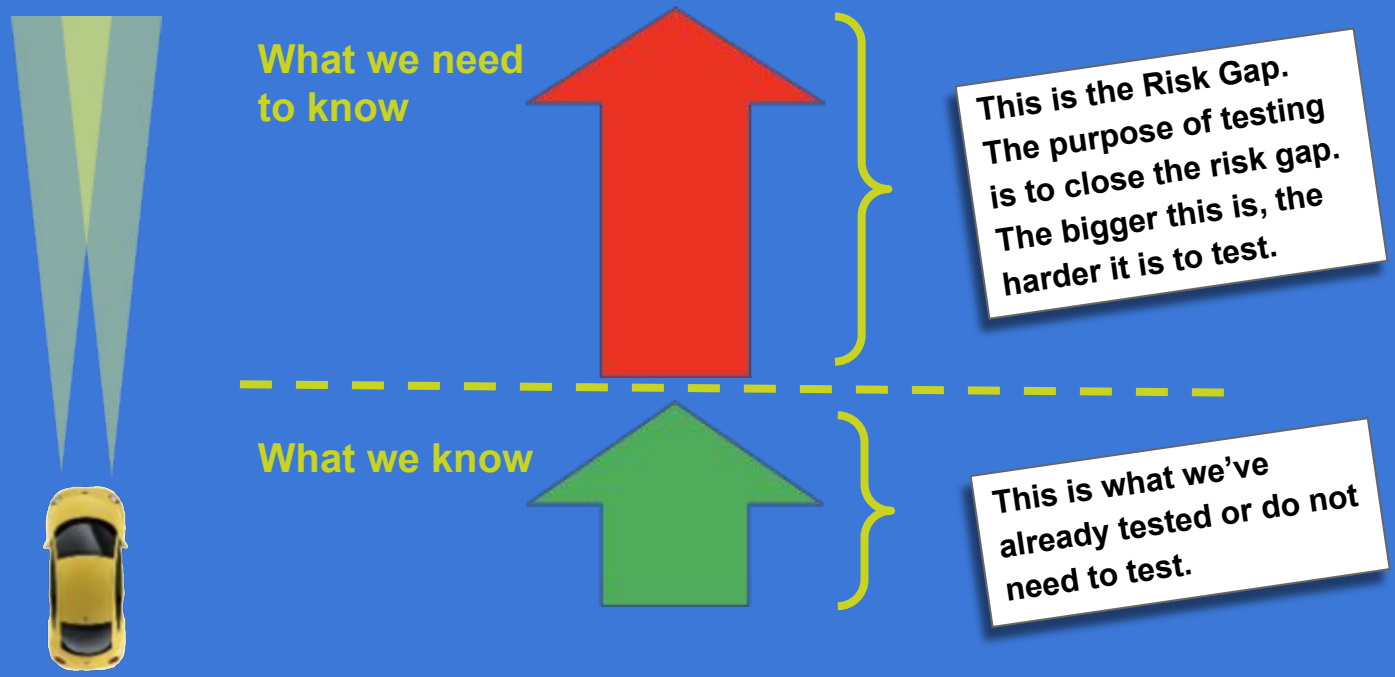
“

“Are there problems that threaten the on-time, successful completion of the product?”

(both known and potential)

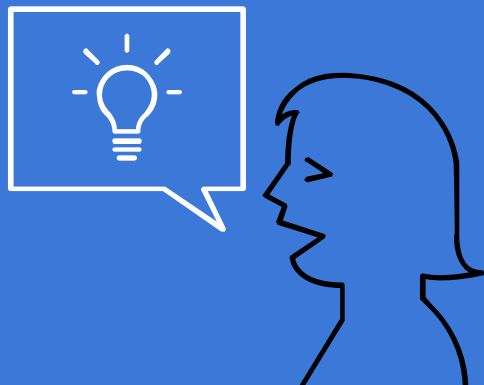


The Product Risk Knowledge Gap



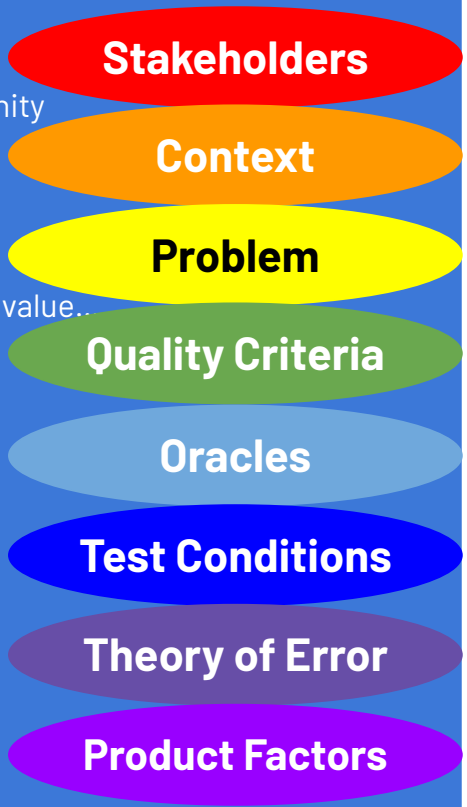
The Product Risk Story

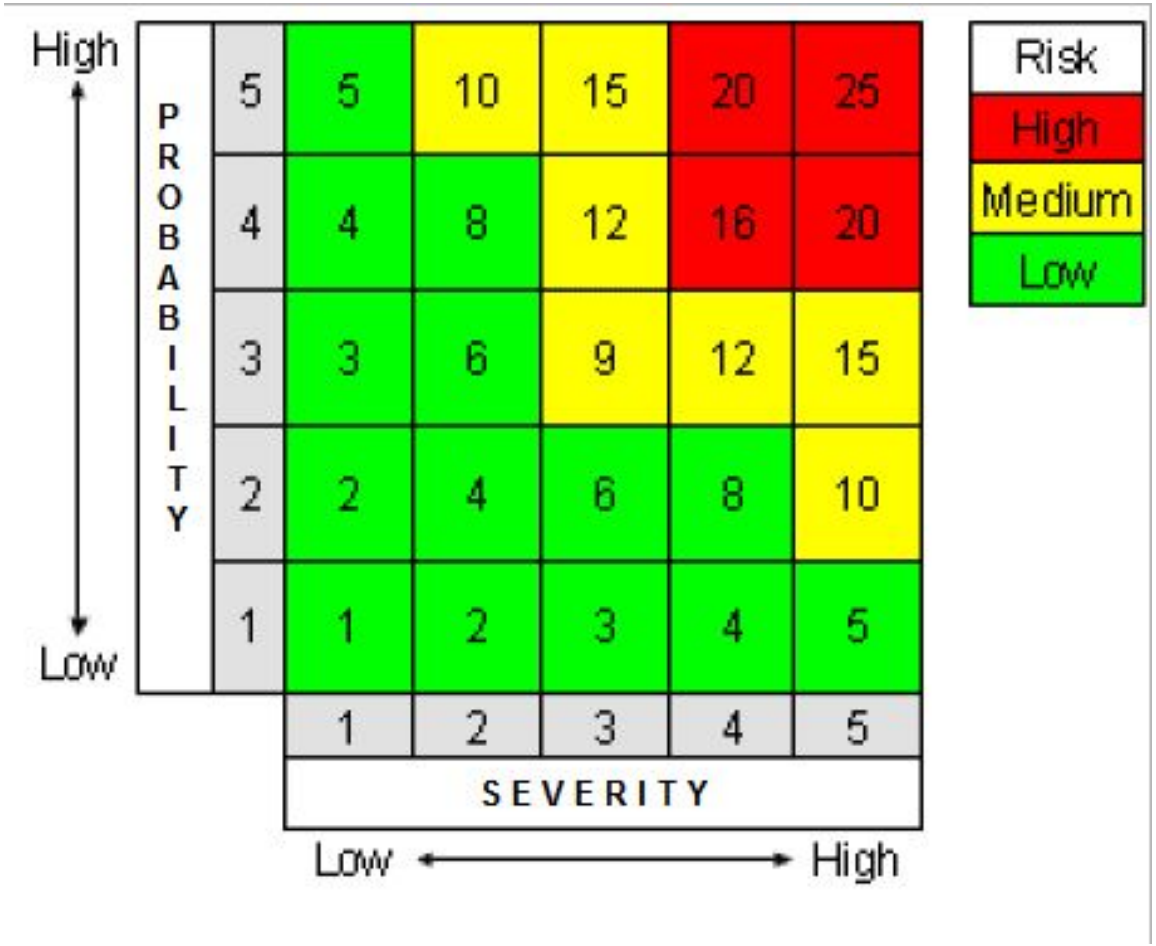
“Some person(s) will experience a problem with respect to something desirable that can be detected in some set of conditions because of a vulnerability in the system.”



Risk Story Elements

- Some PERSON(S)
  - user, customer, developer, tester, businessperson, bystander, group, business, community
- will EXPERIENCE
  - be affected, in the context of an event or situation, at least once by ...
- a PROBLEM
  - that leads to bad feelings (annoyance, frustration, confusion), loss, harm, or diminished value...
- with respect to SOMETHING DESIRABLE
  - like capability, reliability, performance...
- that CAN BE DETECTED
  - by a feeling, principle, tool, comparison to a document or picture...
- in SOME SET OF CONDITIONS
  - perhaps always, perhaps only sometimes,...
- because of a VULNERABILITY
  - a bug, a missing feature, an inconsistency...
- in the SYSTEM
  - some result, process, component, feature, environment...

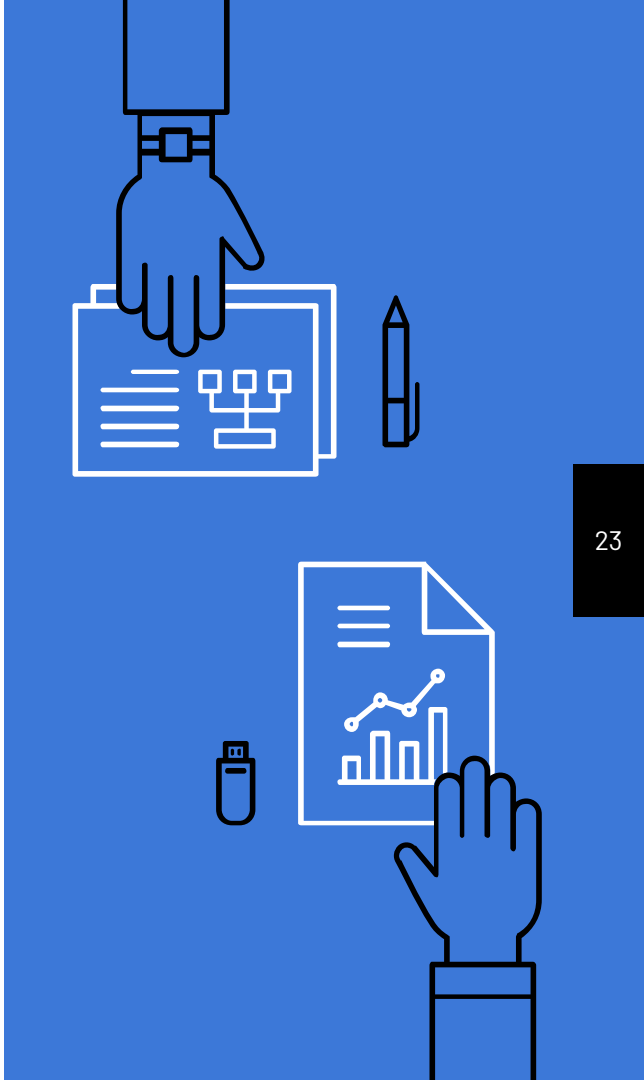



High
PROBABILITY
Low
5 5 10 15 20 25
4 4 8 12 16 20
3 3 6 9 12 15
2 2 4 6 8 10
1 1 2 3 4 5
1 2 3 4 5
SEVERITY
Low
High
Risk
High
Medium
Low

Old School

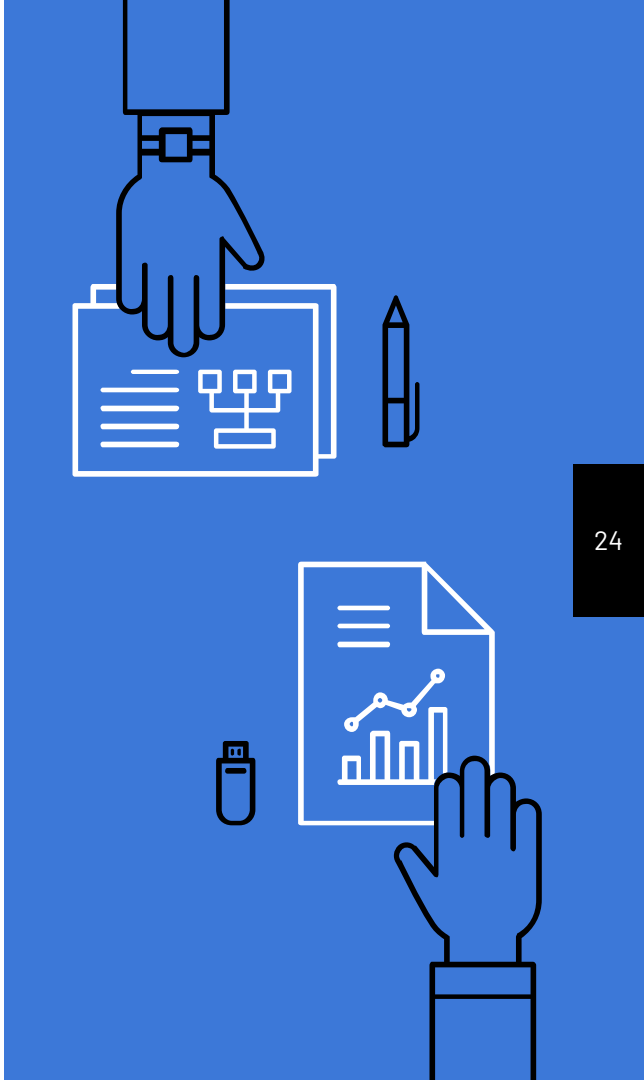
Typical Trouble with Risk Analysis

- Intimidated by the word analysis, and look for easy answers
- Testers may exclusively focus on product risks that they can test for, and exclude other types of risk
- Testers may spend too much time reporting on too many non-product risks that they miss important risks in their own area
- Having no systematic method of risk analysis



Typical Trouble with Risk Analysis

- Unwilling to say that's enough testing
- Trying to frame risk in terms of calculations
- Failing to ground risk in terms of stories about how problems affect people
- Forgetting that risk is tied to feelings
- Conceiving of big huge categories, or tiny specific items, but nothing in between



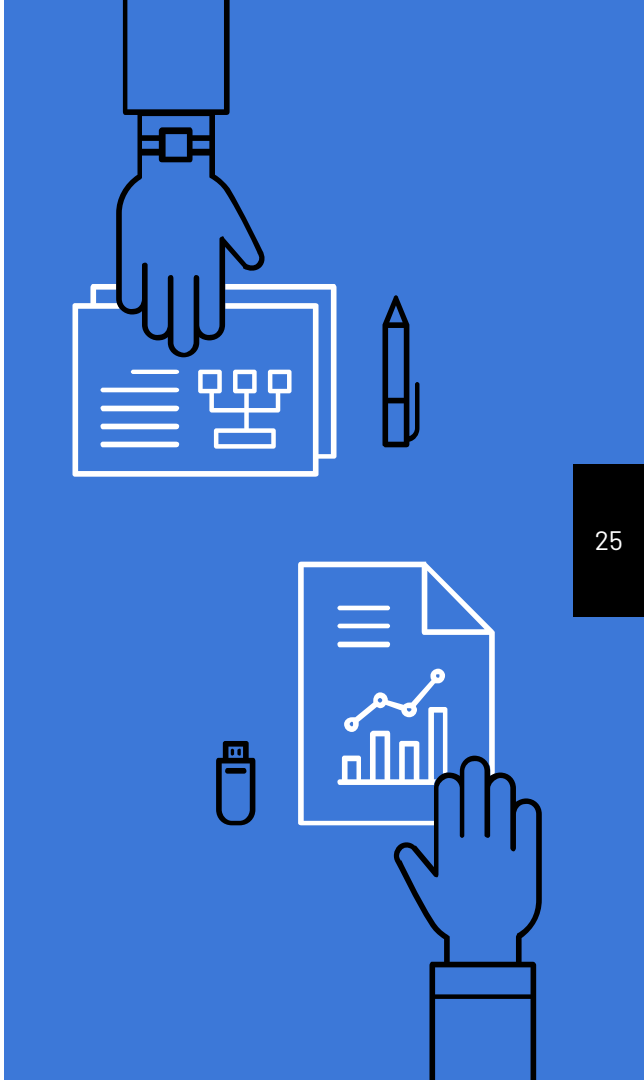
Types of risks

Product Risks:

- Technical complexity
- Interoperability
- Delivery
- Maintainability
- Data complexity
- Data creation
- Usability
- ....

Project Risks:

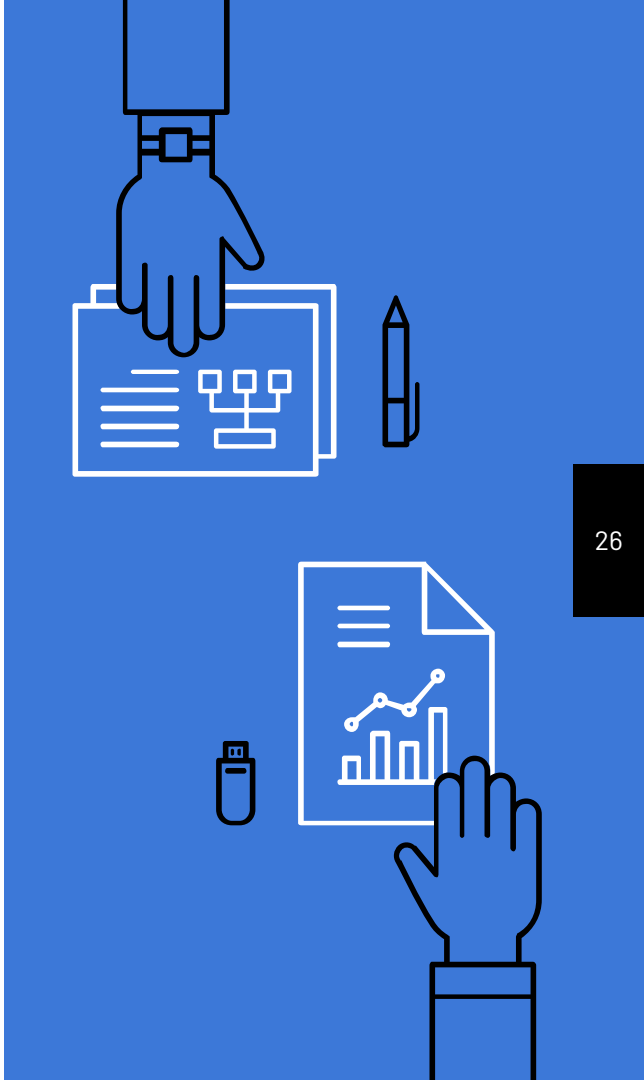
- Financial
- Organizational
- Process
- Behavioural
- Supportability
- Team/People
- Knowledge
- Technical Debt
- ....



Exercise

- **How do you approach Risk Analysis?**
  - As a team, brainstorm a list ideas, actions, and activities that help you identify risks on a project
  - Create stickies for each item in Miro

    https://miro.com/app/board/o9J_ki-wVK4=/
  - You have 15 minutes

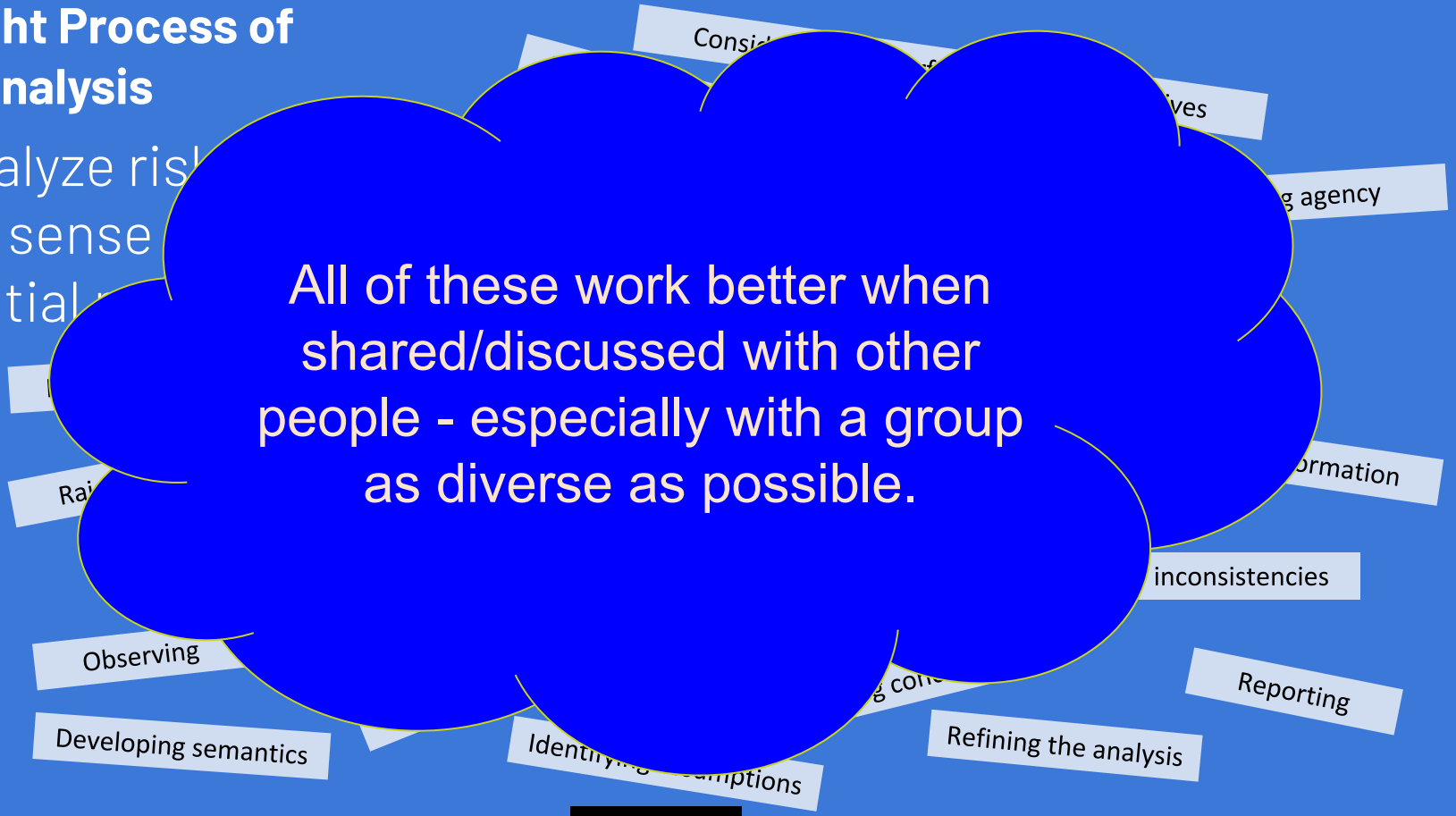


Thought Process of Risk Analysis

To analyze risk is to make sense of potential problems

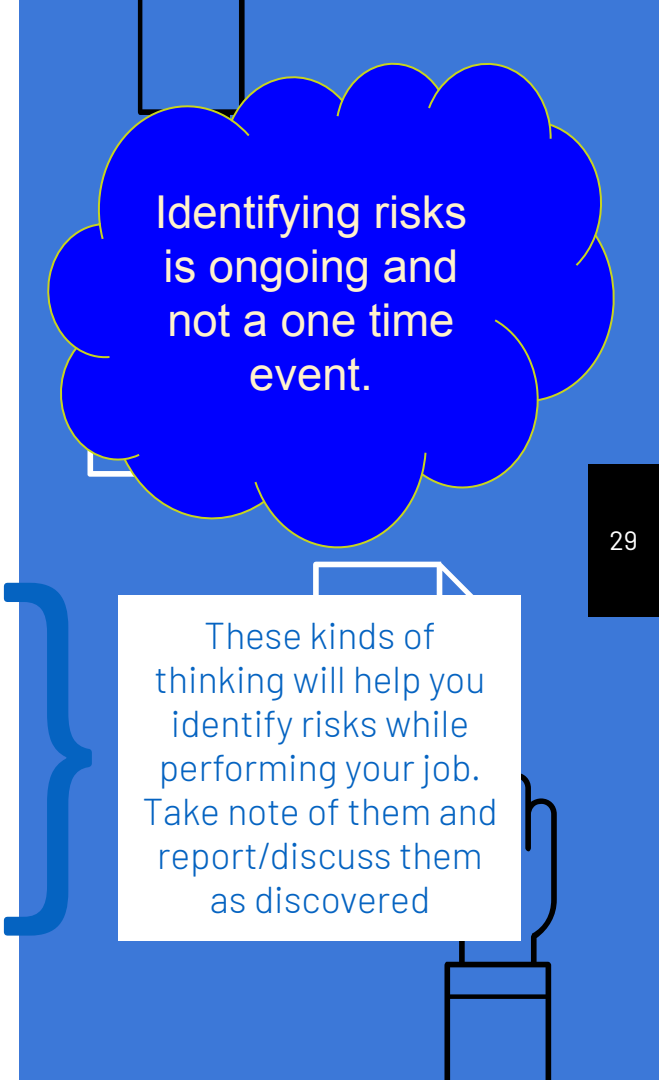
Thought Process of Risk Analysis

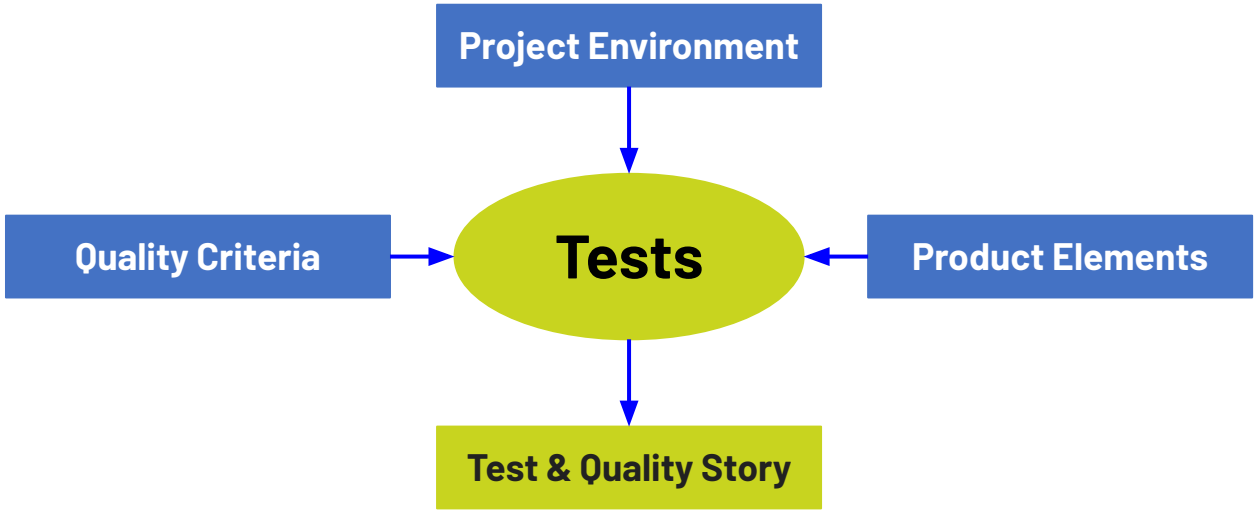
To analyze risk
make sense
potential



Different Kinds of Thinking

Critical Thinking	The process of looking for trouble. **This helps you find the problems that matter.**
Curiosity	The urge to learn things you don't need to know. **This helps find unanticipated bugs.**
Creativity	Imagining and exploring what is possible. **This helps find elusive bugs.**
Sensemaking	Examining something for the purposes of building or associating a coherent model of it in your mind. **You cannot test without sensemaking.**
Experimenting	Designing and performing controlled interactions with the world for the purposes of learning about it. **In other words, test design.**
Logic	Understanding code; deducing outputs from inputs and vice versa. **Logical thinking is needed to decide if a behavior is right or wrong.**
Social Thinking	Analyzing how other people think or feel. **You need this to build a strong case for the need for testing and quality.**

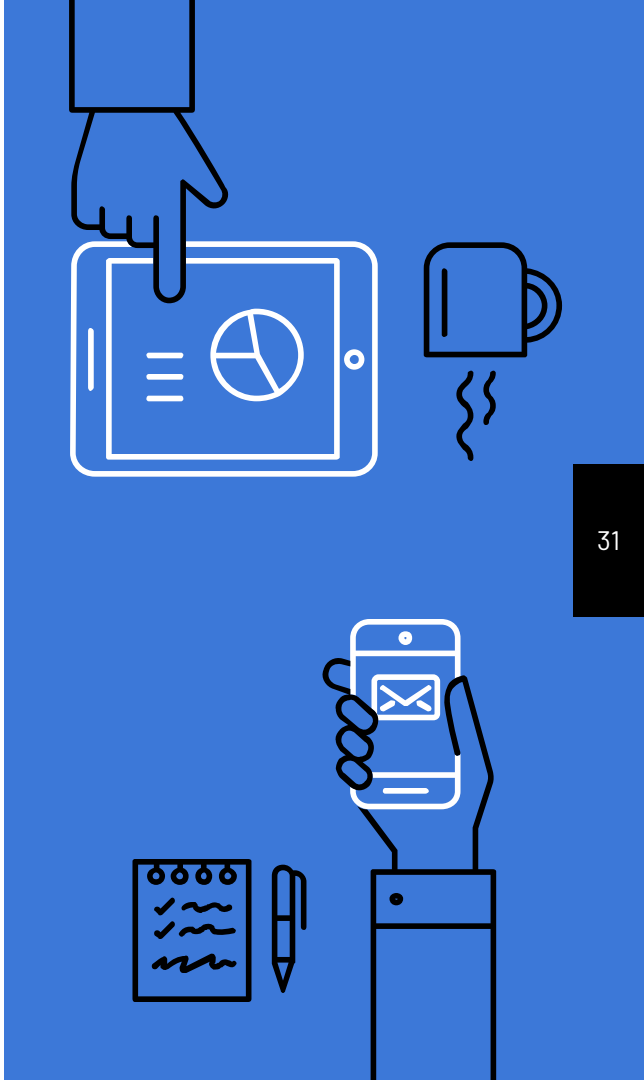




Heuristic Test Strategy Model

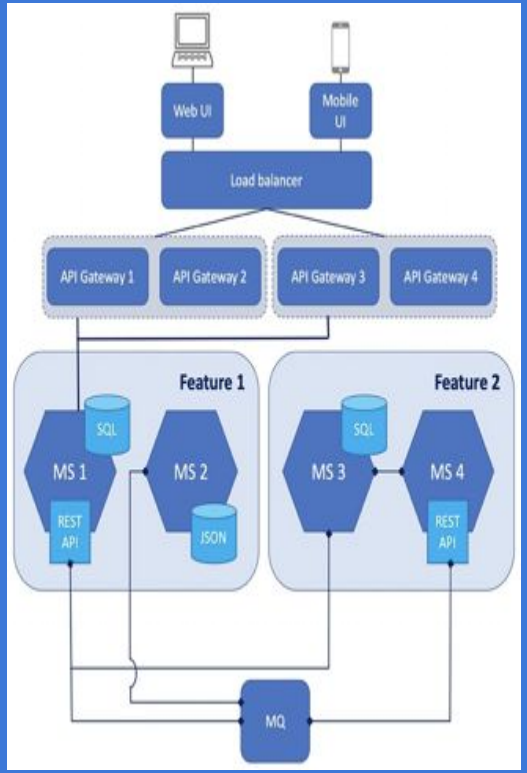
Heuristics

- Software Quality Characteristics
  http://thetesteye.com/posters/TheTestEye_SoftwareQualityCharacteristics.pdf
- Risk Analysis (for Digital Products)
  https://www.developsense.com/resources/RiskHeuristics.pdf
- Heuristic Test Strategy Model
  https://www.satisfice.com/download/heuristic-test-strategy-model
  - Project Environment
  - Product Elements
  - Quality Criteria



Things to Try in a Technical Review

- [pointing at a figure in a diagram] What if this function doesn't work?
- Can this function ever be invoked at the wrong time?
- [pointing at any part of the diagram] What error check are we doing here?
- [pointing at an arrow] What exactly does this arrow mean? What happens if it doesn't work?
- [pointing at a data stream] If the data going from here to there is somehow corrupted, how do we see it? What happens then?
- What is the greatest load this process can handle?
- On which external components, services, configurations does this process depend?
- Can the sources or components drawn here be influenced by another process? How can I crash the process?
- Is this the whole story? What did you leave out?
- How do you test this while you are building it?
- **What are you most worried about?** What do you think we need to test?

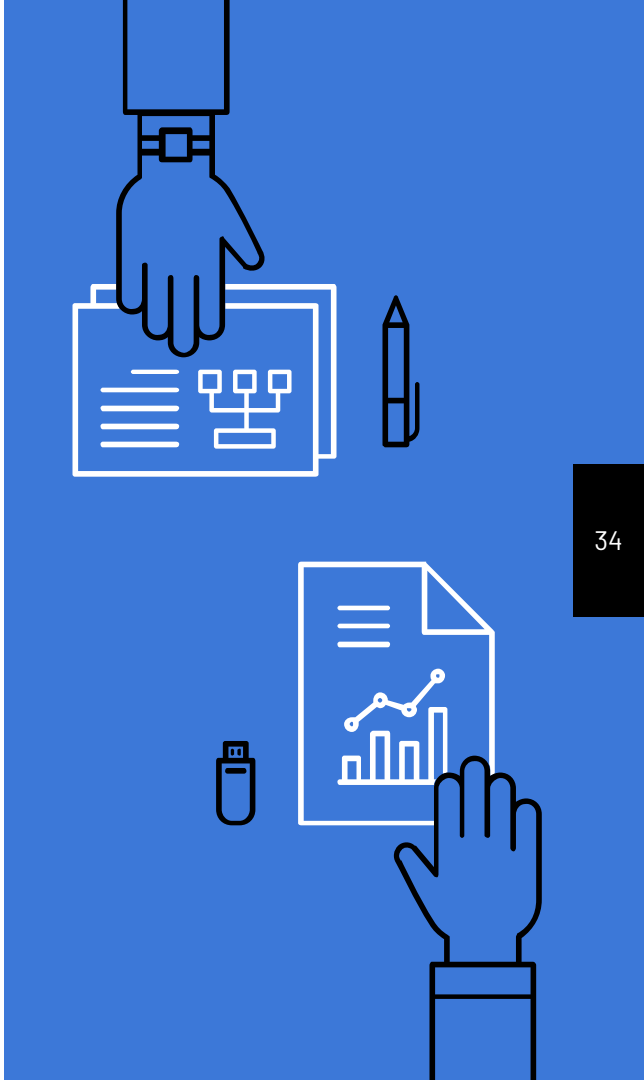


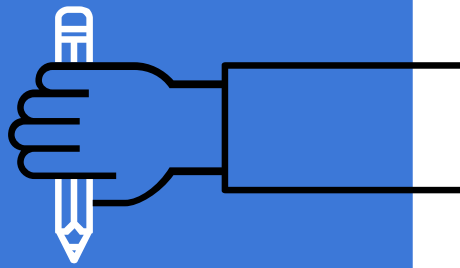
Our stories

about risk analysis

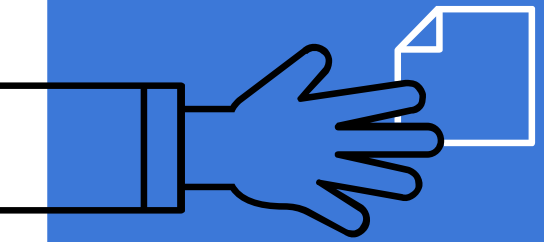
Analyzing Risk

- Consider creating and maintaining a product risk list and a project risk list, especially if no one else on the team is doing it.
- As a team, brainstorm a list of risks, and rank them in order of significance.
- Then compare this list to coverage and quality criteria areas in the Heuristic Test Strategy Model, and/or your own taxonomies.
- Identify tasks associated with investigating and managing risks. Make it public, and advertise when and where you need help.
- Do some testing not focused on specific risks, in order to discover unrecognized risks. Indulge your curiosity without justification.





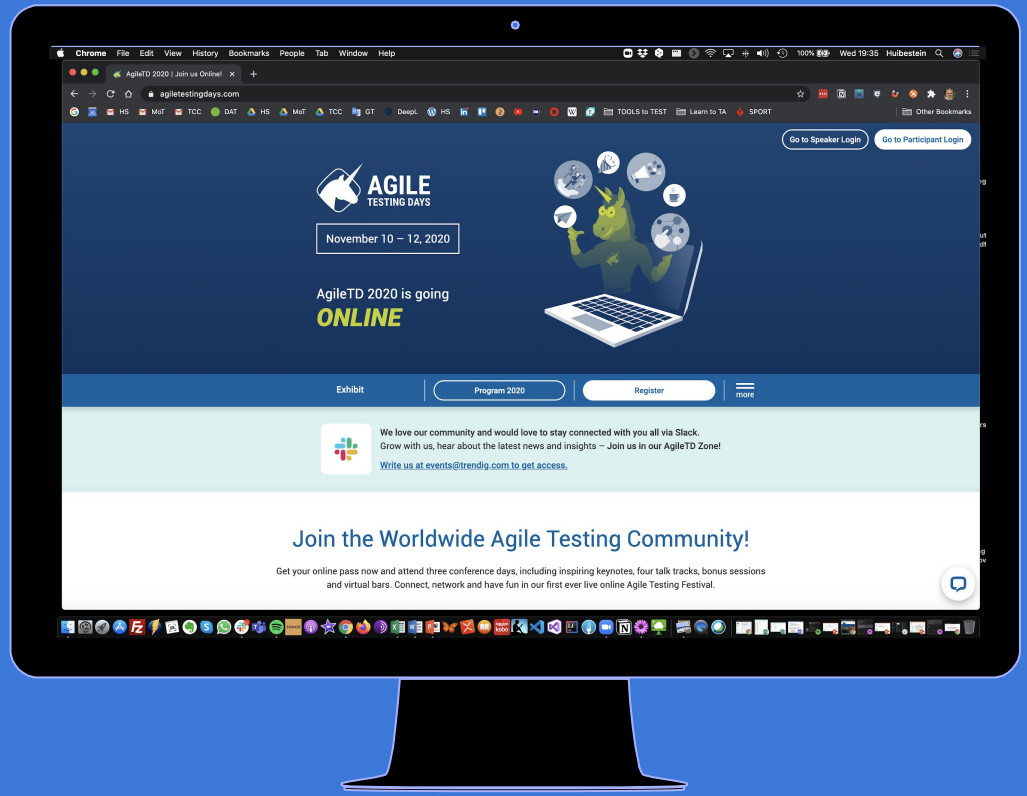
3.
One Big Exercise



To really get you going...

Exercise

Consider this product: the ATD website

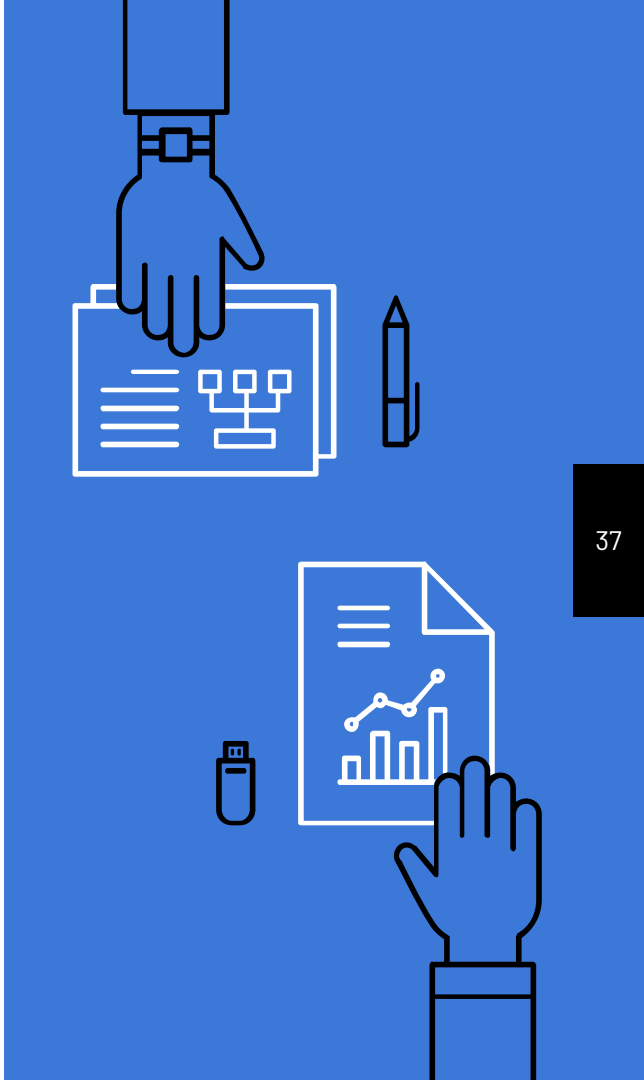


https://agiletestingdays.com

Exercise

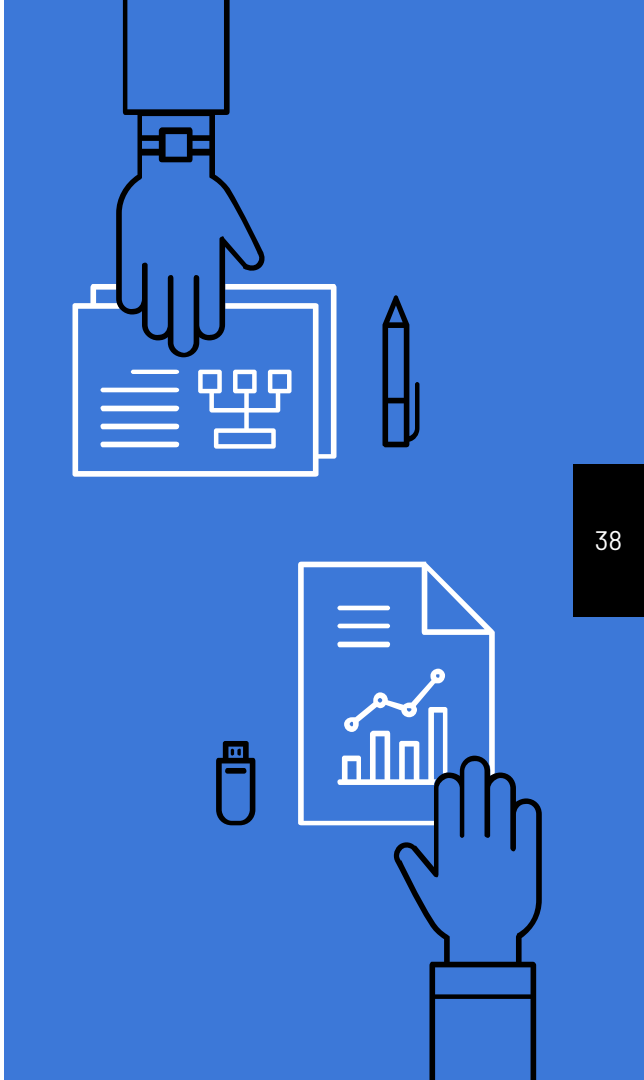
- Consider this product: ATD website

- **Iteration 1:**
  - As a team, brainstorm a list of risks
  - Make sure you use HTSM and/or your own taxonomies
  - Rank them in order of significance
  - You have 15 minutes



DEBRIEF

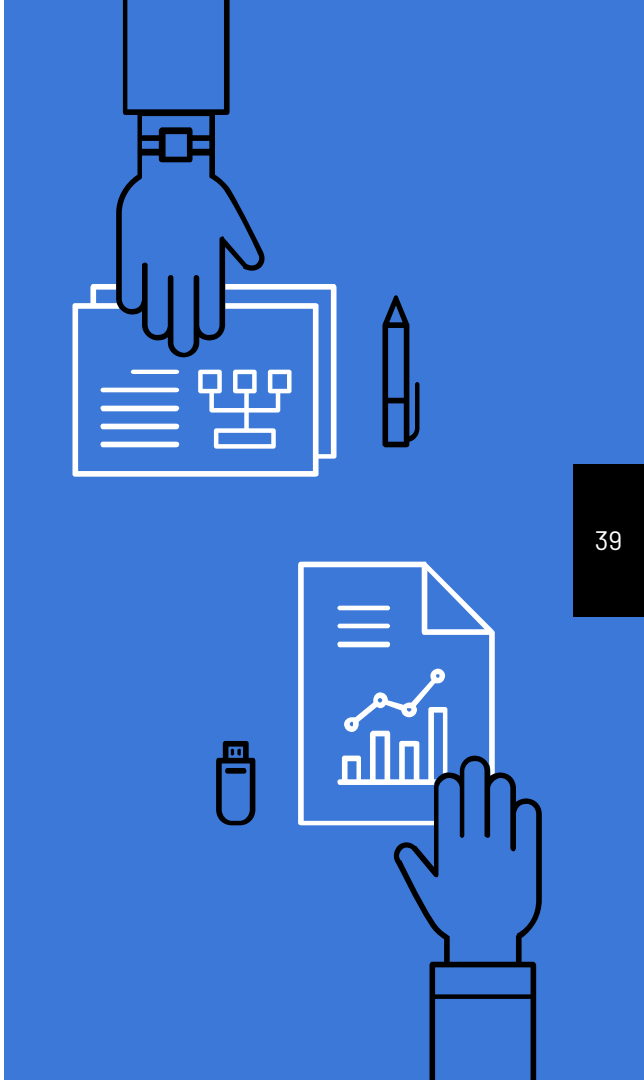
- **Iteration 1 debrief:**
  - What risks did you identify?
  - What was your most significant risk?
  - How the heck did you determine THAT?
  - There are MANY factors that determine significance/priority of the risks. It is often out of the testers' hands to determine the final priority



Exercise

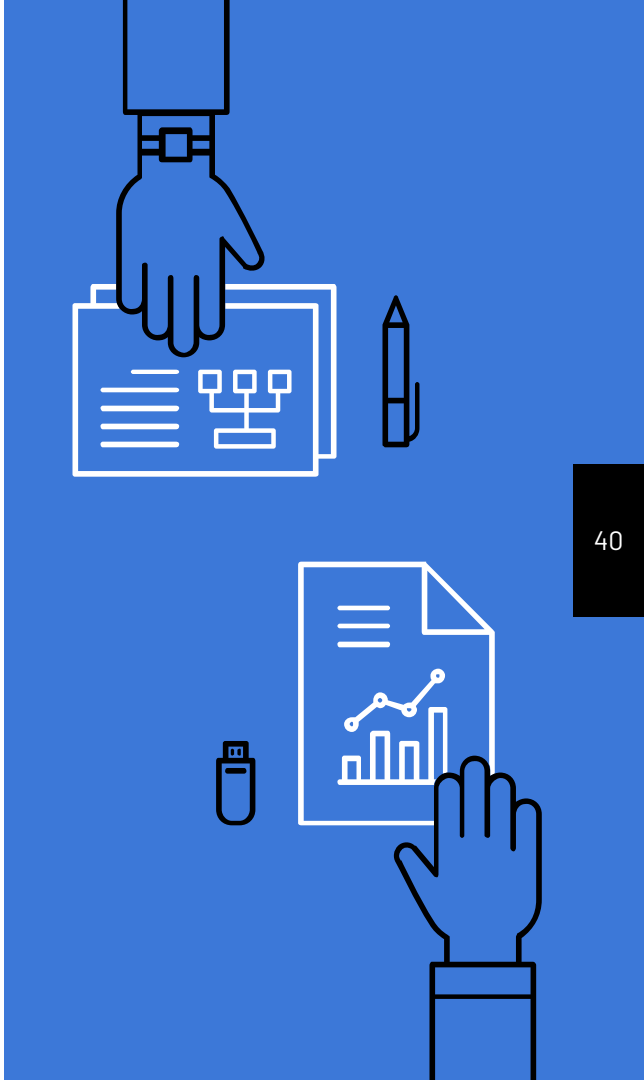
- Consider this product: ATD website

- **Iteration 2:**
  - Identify tasks associated with investigating and managing the top 3 risks
  - You have roughly 12.12564 minutes



DEBRIEF

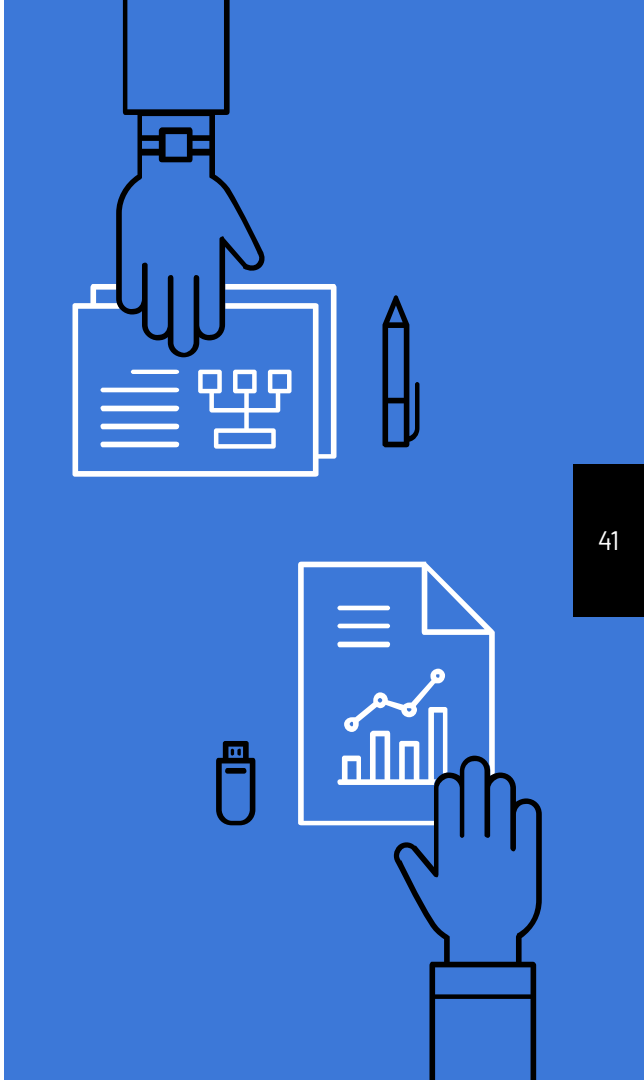
- **Iteration 2 debrief:**
  - What were some of your mitigation strategies?
  - Sometimes the mitigation is out of the hands of the testers or even the development team
  - Sometimes the cost (financial, time, people) of the mitigation is not worth investing for the risk - again not typically the call of the testers



Exercise

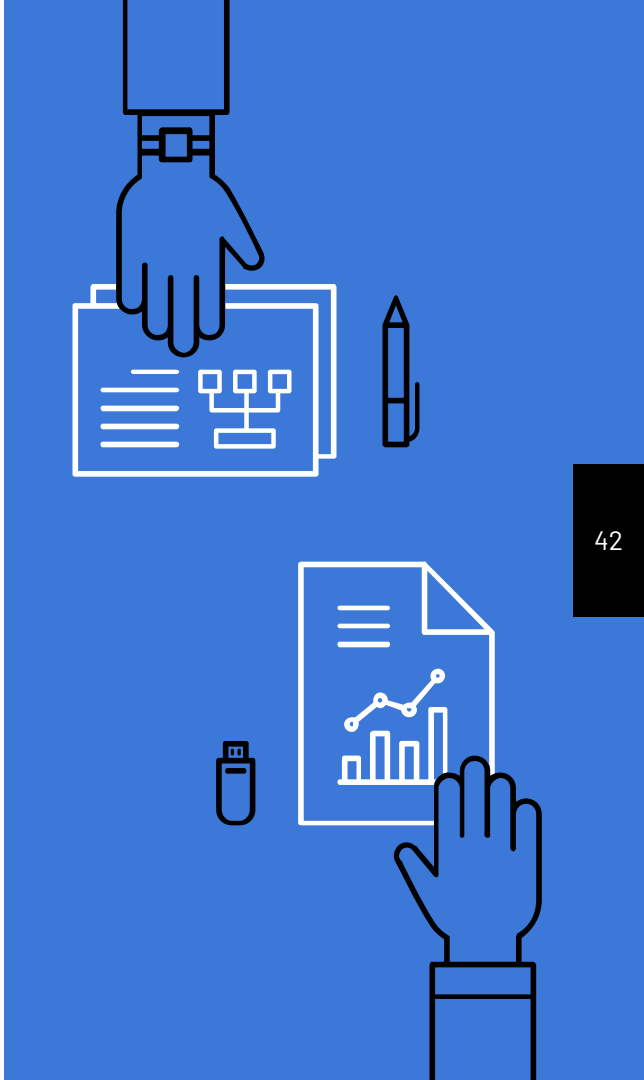
- Consider this product: ATD website

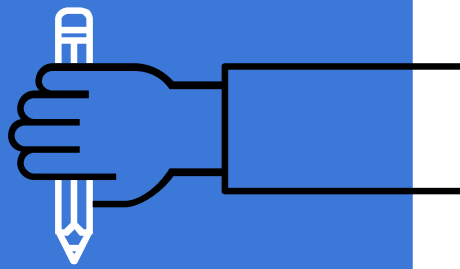
- **Iteration 3:**
  - Use your risk list
  - Come up with some ideas on how to eliminate stupidity in the world
  - How would you report on the risks and the mitigations as the project progressed?



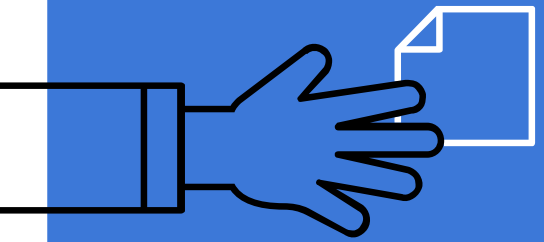
DEBRIEF

- **Iteration 3 debrief:**
  - How would you report and what would you include?
  - How would you show coverage (both test coverage, risk coverage)?
  - How will you eliminate stupidity in the world?





4.
Wrap-up



To make sure we covered all your goals & questions ...

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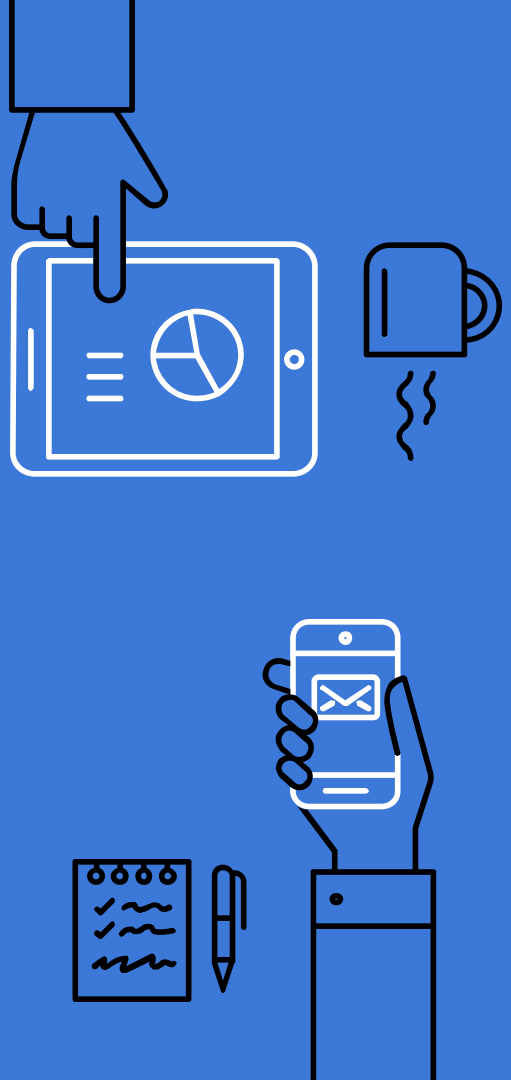
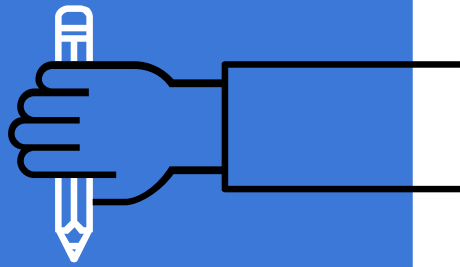
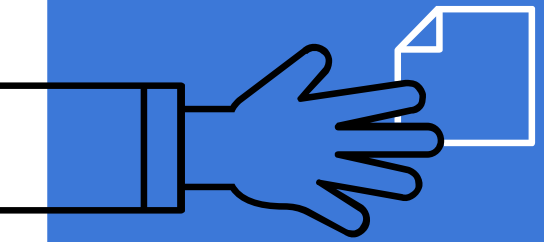


Thank you!





More info

- **Risk Storming**
  - https://www.ministryoftesting.com/testsphere/riskstorming
  - https://app.riskstormingonline.com/
- **Product coverage outline**
  - https://www.slideshare.net/TechWellPresentations/w2-30587756
  - PCO video - https://youtu.be/NUojNfDjljw
- **Testing & Quality Story**
  - https://www.developsense.com/blog/2012/02/braiding-the-stories/
  - https://www.developsense.com/blog/2009/09/when-do-we-stop-test/
- **Pre-mortem**
  - https://www.lucidmeetings.com/glossary/pre-mortem
- **Michael Bolton on Risk Analysis**
  - https://youtu.be/g97mMeC9EIE
- **James Bach on Risk Analysis**
  - https://www.satisfice.com/download/heuristic-risk-based-software-testing