


# Tech acceptance: Why people do (and do not) adopt technology



# WHO AM I?

- I'm Jonathan Robst
  - ~4 years of IT experience
  - Bachelors in Psychology
  - Currently work for 12 Points
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**12 POINTS**

**TECHNOLOGIES**

Managed Services

Cyber Security & Forensics

# WHY PSYCHOLOGY?

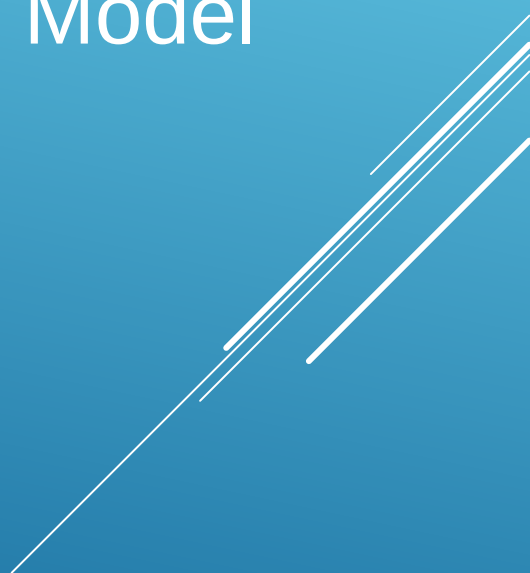
- The ERP is 40 years old
  - ERP unpatched for 30 years
  - Untested backups
  - Unknown if we have second server
  - Stolen(?) Licenses
  - Unpatched WIN2003 for DC
  - SOHO routers as switches
  - File server's backups are "untestable"
  - 802.11B wireless
  - "The domain controller hasn't been the same since it was ransomware'd"
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# WHO HAS HEARD ANY OF THE FOLLOWING?


- You cannot engineer away a human problem
- That's a human problem, not an IT problem




# Enter: The Technology Acceptance Model



# WHAT IS THE TAM?

- From industrial-organizational psychology
  - “The science of making work not suck”
  - Originally from 1989, newest version from 2008
  - “...There is a need to understand how various interventions can influence the known determinants of it adoption and use.”
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# QUALIFICATIONS

- Voluntary only
  - Can only explain about 80% of the difference
  - Recommendations are only in newest version
  - Mostly considers end users
  - Not tested on training
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# TAM: CORE CONSTRUCTS

- Perceived ease of use

Does it *seem* easy to use?

- Perceived usefulness

Does it *seem* relevant to my job?



# PERCEIVED USEFULNESS

- Subjective norms

The person's belief that those important to them will want them to adopt the technology

- Image

Using it will increase their social standing

- Job relevance

Is it relevant to their job



# PERCEIVED USEFULNESS CONT'D

- Output quality

Their belief that the output will be atleast as good as the output from other systems

- Result demonstrability

That it will have tangible, observable, and communicable benefits.



# PERCEIVED EASE OF USE

- Computer self-efficacy

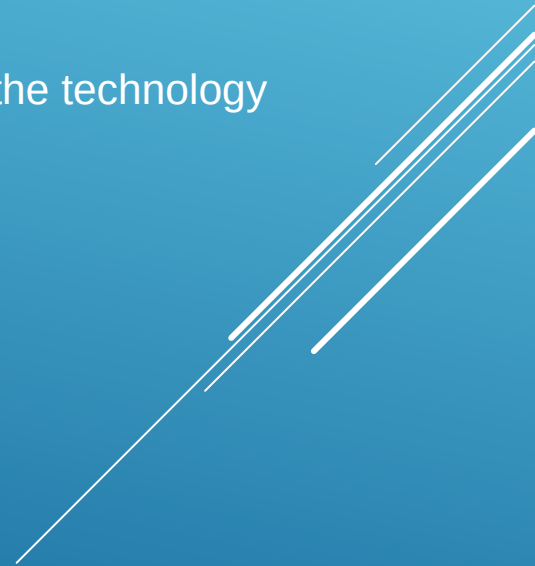
The person's belief in their ability with a computer

- Perception of external control

How much they believe the organization will support their adoption of the technology

- Computer anxiety

The anxiety they associate with using a computer



# PERCEIVED EASE OF USE CONT'D

- Computer playfulness
  - How playful or experimental they are with computers
- Perceived enjoyment
  - How enjoyable using the application appears to be
- Objective usability
  - How much effort is objectively required



How to apply the TAM?  
Especially to security?




# COMPUTER SELF EFFICACY, ANXIETY, PLAYFULNESS

- Mostly hiring decisions, I think
- Emphasize that nothing will be that bad



# JOB RELEVANCE, OUTPUT QUALITY, AND RESULT DEMONSTRABILITY

- Understand pain points and user needs
  - Get them involved in deciding
  - Difficult to do with security
  - Security culture
  - Personal relevance (maybe)
- 




# PERCEIVED ENJOYMENT

- Consider UI and UX when deciding on tech
- Get end users in too
- Emphasize the UI and UX



# OBJECTIVE USABILITY


- Ask users to judge the output
  - Focus on the results in training
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# SUBJECTIVE NORMS AND IMAGE

- Start with leadership and senior staff



# PERCEPTION OF EXTERNAL CONTROL

- Don't talk down to users!
  - Training, training, training
  - Documentation, documentation, documentation
  - Responsive IT
  - Available IT
- 

SO WHY DON'T PEOPLE ADOPT NEW  
TECHNOLOGY?




# COMPUTER SELF EFFICACY, ANXIETY, PLAYFULNESS

- User anxiety about “not being good with computers” run wild



# JOB RELEVANCE, OUTPUT QUALITY, AND RESULT DEMONSTRABILITY

- You did not understand the needs of end users, so you solved a problem they are not having
  - You did not understand what the end users want from the technology's output
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# PERCEIVED ENJOYMENT

- You did not consider UI or UX when deciding on new technology





# OBJECTIVE USABILITY

- You did not get end users into demos, so its hard to judge output



# SUBJECTIVE NORMS AND IMAGE

- Organization leadership and seniors are not using it



# PERCEPTION OF EXTERNAL CONTROL


- Your end users don't think you will support them adopting new technology



# BROAD RECOMMENDATIONS



# BROAD RECOMMENDATIONS

- Consider what your end users are comfortable with and emphasize that they cannot break anything critical
  - Ask a lot of questions from the people who will use the software
  - Get end users involved in demos and try to understand if it solves their issues
    - Ask them how easy they find it to use
    - Ask them about the output
    - Ask them if they think using it will make them better at their jobs
  - When deploying software, consider who gets it first
  - Provide a lot of support through training, documentation, and being present
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“BUT I DON’T MAKE PURCHASING  
DECISIONS! OR DEAL WITH END USERS!”

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# CONSIDER THIS

- In 2020, almost 80% of ransomware attacks involved improperly configured system security (Microsoft, 2022)



# REFERENCES

- Microsoft. (2022, August). *Extortion Economics*. CyberSignals. <https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE54L7v>
- Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273–315. <https://doi.org/10.1111/j.1540-5915.2008.00192.x>



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