Technology Acceptance Model

- Technology Acceptance Model (TAM)
  - Fred Davis (1986) – PhD Thesis at MIT
    - Adaption of Fishbein and Ajzen’s Theory of Reasoned Action (TRA)
  - Davis’ paper “Perceived usefulness, perceived ease of use, and user acceptance of information technology” (1989)
    - Citations on Google Scholar
      - 19/05/10 - 5,403
      - 06/03/13 - 15,092
      - 07/03/13 - 15,103
      - 31/01/14 - 18,410
    - A very heavily cited paper
Technology Acceptance Model (TAM)

- External Variables include “system characteristics, training, user involvement in design, and the nature of the implementation process” (Venkatesh & Davis, 1996)
- These ‘[...] directly influence the perceived usefulness and perceived ease of use’, in turn mediating behavioural intention to use” (Davis, 1993)
Problems with TAM Research

• TAM is a parsimonious model
  • This strength is also its weakness
  • Researchers have “overlooked essential determinants of decisions and actions […]” (Bagozzi, 2007)
    • Why do people use a technology in the first place?
    • Think of COMPGA10 – People & Security
• TAM has been augmented many times
  • Introducing new variables to explain why parts of the model work the way they do
    • Age, gender, voluntariness, age, training, innovativeness, anxiety, etc.
Adding New Variables to TAM

• Example studies:
  • **Gender** Differences in the Perception and Use of E-Mail: An Extension to the Technology Acceptance Model - David Gefen and Detmar W. Straub - MIS Quarterly, Vol. 21, No. 4 (Dec., 1997), pp. 389-400
  • Featherman, Mauricio. "Extending the technology acceptance model by inclusion of **perceived risk**." (2001)
  • Yang, Hee-dong, and Youngjin Yoo. "It's all about **attitude**: revisiting the technology acceptance model." Decision Support Systems 38.1 (2004): 19-31
  • Gefen, David, Elena Karahanna, and Detmar W. Straub. "**Trust** and TAM in online shopping: An integrated model." MIS quarterly (2003): 51-90
  • etc., etc., etc.
External Variables & TAM

TAM Research

- Each paper follows the scientific method:
  - Description of TAM and identified shortcoming(s)
  - Hypothesised augmented TAM
    - Hypothesised linkages between variables
  - Data collected – usually a survey
  - Data analysed – usually structural equation modelling
  - Results explained
  - Conclusions

- But is this enough? Is this the right approach?
Bagozzi’s (2007) Critique

• Focus on extending TAM by introducing new variables has broadened, not deepened, it
  • No understanding of why does a particular variable influence technology adoption
• Venkatesh et al. (2007):
  • Identified problems with researchers focusing on ‘tweaking’ of TAM, rather than the more important issues in technology adoption
• Extensions to TAM are “[…] a patchwork of many largely unintegrated and uncoordinated abridgements”(Bagozzi, 2007, p.252)
TAM References

A Good Thesis (from COMPGA99)

- Addresses one or more challenging information security problems
- Describes why this problem is important

- Describes related work that has already been done in the area and what the state of the art currently is

- Proposes solutions and gives a critical evaluation of the proposed solutions
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A Good Thesis (from COMPGA99)

• Gives an easy to read presentation of the results, uses precise and correct technical terms

• It gives a balanced and critical evaluation of the proposed solutions

• May point to further interesting research questions
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A Good Thesis

• Ties the different parts of the thesis together to form a whole coherent argument

• It displays creativity, thoroughness, logical and critical reasoning, etc.
A Good Thesis

• Ties the different parts of the thesis together to form a whole coherent argument.

• It displays creativity, thoroughness, logical and critical reasoning, etc.

• A well structured, logical narrative with an obvious beginning, middle and end.
MSc Dissertation Tips

• Start straight away!

• Ensure you have a well formed research question/problem
  • Which you can justify
  • Is succinct – one sentence ideally
    • Print it out and put it above your desk

• Stay focused on research question/problem
  • But don’t be afraid to slightly shift focus - if justifiable

• Don’t treat literature review as an afterthought
MSc Dissertation Tips

• Be very aware of “scope creep”

• Plan your time
  • Simple project plan – Excel or Word will do
  • How can a software project be a year late?
    • “one day at a time” – Fred Brooks, The Mythical Man Month, 1975

• Draft a table of contents early on
  • Summary of each section
  • Helps maintain focus
MSc Dissertation Tips

• Can you clearly identify your hypotheses?

• Revisit and refine your COMPGA11 literature review
  • Will need rewriting to refocus it to fit in with the dissertation approach and structure, and page limits

• User studies take time and effort
  • Plan well in advance!

• Get someone to read it
  • Someone not expert in the field
MSc Dissertation Tips

• Keep in regular contact with supervisor(s)

• Do not expect supervisor to solve problems for you or tell you what to do

• Try to think of possible solutions to discuss with your supervisor
Example of Peer-to-Peer (P2P) File Sharing Literature Review

COMPGA11 Literature Review

What is P2P?

History of P2P

What is motivation for P2P?

Good/bad use of P2P

P2P technologies

P2P file-sharing

Problems with P2P

Summary of research into problems of P2P

Causes of inadvertent disclosure via P2P

Incidents of inadvertent disclosure

P2P empirical studies

Overview of P2P topic, real-world problems, existing research in field, identified gaps
Dissertation Literature Review

Overview of P2P topic, real-world problems, existing research in field, identified gaps

COMPGA11
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- History of P2P
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Dissertation
- What is P2P?
- Examples of existing UIs for feedback and control
- Problems with existing UI approaches
- Theoretical Foundations of Privacy
- Cognitive problems
- Existing theories about users’ perceptions of privacy
- Problems with P2P
- P2P file-sharing
- Causes of inadvertent disclosure via P2P
- Incidents of inadvertent disclosure

Caveat: This list is not exhaustive!
Dissertation Literature Review

Structured by a) technology and history; b) real world problems; c) studies into problems.....

COMPGA11

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What is P2P?

Mental models

- Problems with existing UI approaches
- Problems with existing UIs for feedback and control
- Theoretical Foundations of Privacy
- Cognitive problems
- Existing theories about users’ perceptions of privacy

Dissertation

More specific focus on inadvertent disclosure, peoples’ mental models, perceptions of privacy, problems with UIs

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Dissertation Literature Review

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COMPGA11 lit. rev. informs dissertation lit. rev (but they must be different)

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