

**620-362**  
**Applied Operations Research**

**Team (Industrial) Projects**

**Department of Mathematics and Statistics**  
**The University of Melbourne**

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**An Introduction to**  
**Industrial Operations Research**

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**Melbourne Operations Research (MORe)**

- An OR consulting group founded in 2003, based at this department.
- Provide professional consulting and contract research services to businesses.
  - Hi Fert
  - Melbourne Airport
  - Country Fire Authority (CFA)
  - An entertainment company
  - A major passenger transport company
  - The Reject Shop
- MORe people
  - Dr Heng-Soon Gan (Acting Director)
  - Ms Olivia Smith (Principal Consultant)
  - Adjunct consultants: Prof Natasha Boland (Newcastle), Prof Mark Wallace (Monash), Prof Peter Taylor (Melb), Prof Robert Johnston (Melb), Dr Andrew Wirth, Dr Owen Jones (Melb), Dr Andrew Robinson (Melb) etc.

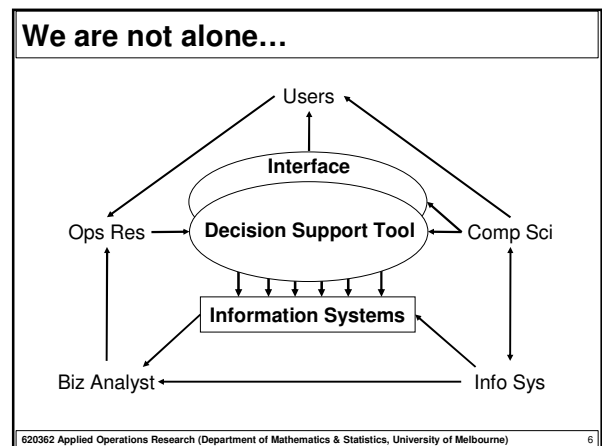
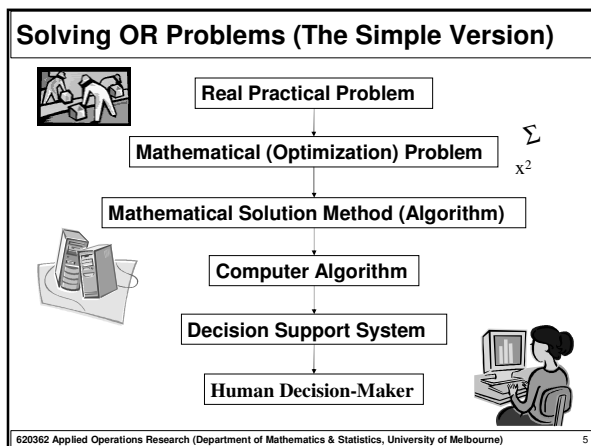
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**Some OR Good News...**

- Kellogg's**
  - The largest cereal producer in the world.
  - LP-based operational planning (production, inventory, distribution) system saved \$4.5 million in 1995.
- Procter and Gamble**
  - A large worldwide consumer goods company.
  - Utilised integer programming and network optimization worked in concert with Geographical Information System (GIS) to re-engineer product sourcing and distribution system for North America.
  - Saved over \$200 million in cost per year.
- Hewlett-Packard**
  - Robust supply chain design based on advanced inventory optimization techniques.
  - Realized savings of over \$130 million in 2004.
- Dell**
  - Could not cope with increase in product variety and volume.
  - Production-scheduling algorithm based on integer programs and heuristics were developed to reduce number of setups required.
  - Algorithm implemented in-house since June 2004.
  - Benefits: production variety doubled, volume increased by 35%, overtime savings of \$1 million annually.

Source: Interfaces

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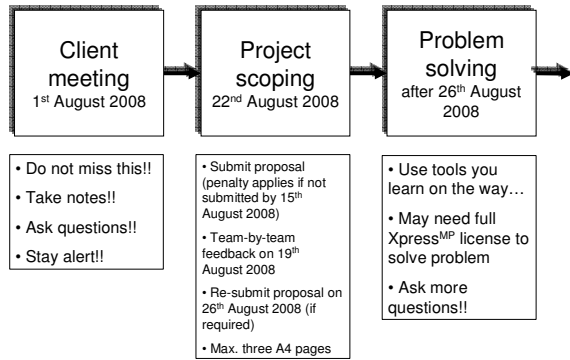
## For 620-362 team project,

you will be liaising with a **real client** and **solving real OR problems**,  
in teams of 4-5 members.

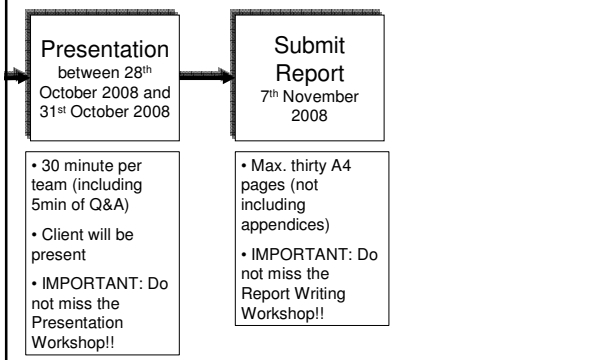
## The Team

- Pre-allocated (by 1<sup>st</sup> August 2008)
- For team allocation purposes, I need:
  - Your name.
  - The degree(s) you are enrolled in.
  - The type(s) of course that you like (Pure|Applied|Hands-on).
  - Your computer programming experience (Y/N).
- Check subject website for final team allocation.
  - This allocation is final.

## Project Structure Overview



## Project Structure Overview (Cont'd)



## The proposal should have...

- A description of the company
- A description of the project
- Project objective(s)
- Project outcome(s)
- Data requirements
- Solution methodology
  - do your own research
- Task breakdown
- Task division (who does what)
- Project timeline

## The report should contain...

- Acknowledgements
- Executive summary
- Problem description, objective(s) and expected outcome(s)
- Solution methodology
- Experiments & results
- Conclusions
- Bibliography
- Appendices

## Project follow-up...

- DO NOT contact client directly. Email: [MelbOR362@gmail.com](mailto:MelbOR362@gmail.com)
- You can also contact:
  - Heng-Soon Gan
    - email: [h.gan@ms.unimelb.edu.au](mailto:h.gan@ms.unimelb.edu.au)
    - office hours: Tuesday, Wednesday, Friday 2-3pm
  - Olivia Smith
    - email: [omadill@ms.unimelb.edu.au](mailto:omadill@ms.unimelb.edu.au)
    - by appointment

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## Assessment

- Each member of a team will receive a project equivalent to the team mark.
  - A team member's responsibility is to carry out tasks outlined in the proposal.
  - Consult lecturer if any concern arises, or changes to proposal are to be made.
- What will be assessed?
  - Project content
  - Report
  - Presentation

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## Good news...

You are dealing with a real industrial client.

Your project outcome may be considered for adoption into client's business.

You are all **OR CONSULTANTS!!**...  
...working in **TEAMS**...  
...**BIDDING** for a project.

**GOOD LUCK!!**

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