



**CWI**

# Designing User Interfaces to Communicate Information Effectively

**Lynda Hardman**  
<http://www.cwi.nl/~lynda>

CWI, Interactive Information Access  
UvA, Institute for Informatics

<http://www.flickr.com/photos/iboy/4528401870/>



1982 BSc(Hons) in Maths & Physics from Glasgow University  
1983 Programmer at International Computers Ltd

<https://mywebspac.wisc.edu/~pearlmu/web/Scotland/Dalkeith2.jpg>

## PERQ workstation, ICL



## Office Workstations Ltd., Abbeymount Techbase



1984 Research associate at Edinburgh University,  
programmer at Expert Software International  
1985 Programmer then group leader at Office Workstations Ltd.  
1988 Research assistant at Heriot-Watt University  
1989 Researcher at Office Workstations Ltd.

<http://www.edinfilm.com/dynamic/images/1118223090791.jpg>



1990 Moved to the Netherlands  
 1992 Researcher at CWI (Centrum voor Wiskunde en Informatica)  
 1996 Martin born 24<sup>th</sup> April  
 1999 Group leader at CWI, Anna born 25<sup>th</sup> October  
 2001 Prof TU/e, Multimedia and Internet Technology

## Amsterdam Hypermedia Model



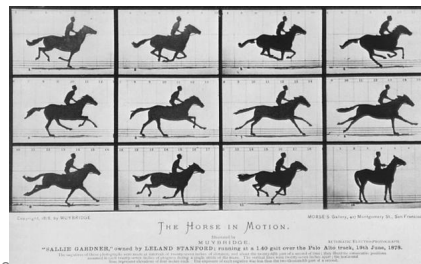
## Researcher to group leader

- SMIL W3C recommendation (15 June 1998)
- Innovation award 1998
- Oratrix started up
- Anna arrived 25<sup>th</sup> October 1999
- Professorship at TU/e



## Different media types

- Image
- Text
- Audio
- Video



# We had images



Cave Chauvet-Pont-D'Arc  
© Jean Clottes



## And then we developed text



Dead Sea scrolls



Newspapers

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## Recording sound

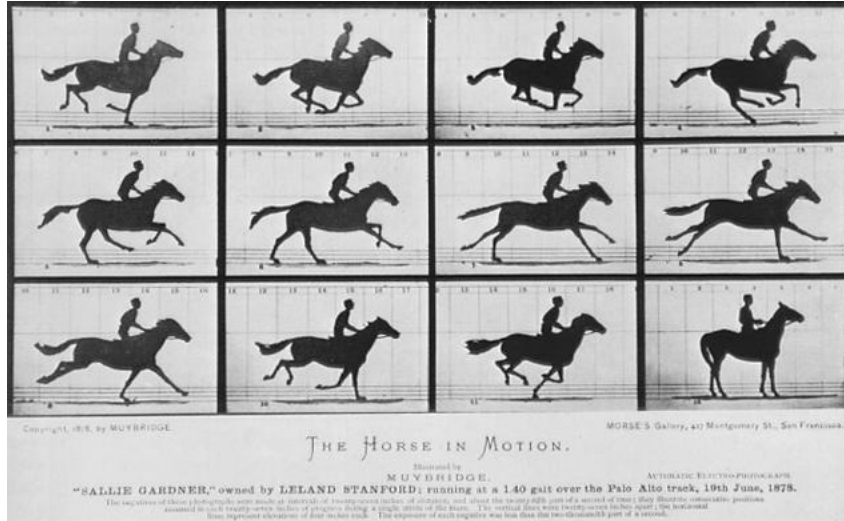


Thomas Edison  
Phonograph, 1877

<http://www.firstsounds.org/sounds/scott.php>

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## Visual (moving images)



[http://en.wikipedia.org/wiki/Eadweard\\_Muybridge](http://en.wikipedia.org/wiki/Eadweard_Muybridge)

## Visual (moving images)



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RealOne Player

gemini.ihc.cwi.nl/cocoon/cuyper/aria/selectorm-process

1393kbps 1:29 / 1:35

### Chiaroscuro & Rembrandt Harmensz. van Rijn




**Chiaroscuro**  
Clair-obscur (French) and chiaroscuro (Italian) both mean 'light-dark'. Both terms are used to describe strong contrast of light and dark shading in paintings, drawings and prints. Although the effect had already been used for many years, the term only came into fashion in the late sixteenth century. Originally, the word came from Italy. The painter Caravaggio (1573-1610) made chiaroscuro his trademark. He was a master at painting illuminated scenes in dark settings.



Self Portrait (1661)

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## Three ingredients



Content



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## Content of example



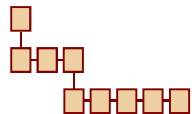
Clair-obscur (Frans) en chiaroscuro (Italiaans) betekenen 'licht-donker'. Beide termen worden gebruikt om sterke licht-donkercontrasten in schilderijen, tekeningen en prenten aan te duiden. Hoewel het effect al eerder werd toegepast, is de term pas sinds het einde van de 16de eeuw in zwang. De oorsprong van het woord ligt in Italië. De schilder Caravaggio (1573-1610) maakte het chiaroscuro-effect tot zijn handelsmerk. Hij was een meester in het schilderen van donkere taferelen met één felle lichtbundel.



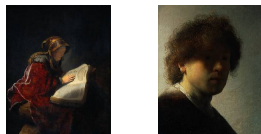
17

## Three ingredients

Presentation structure



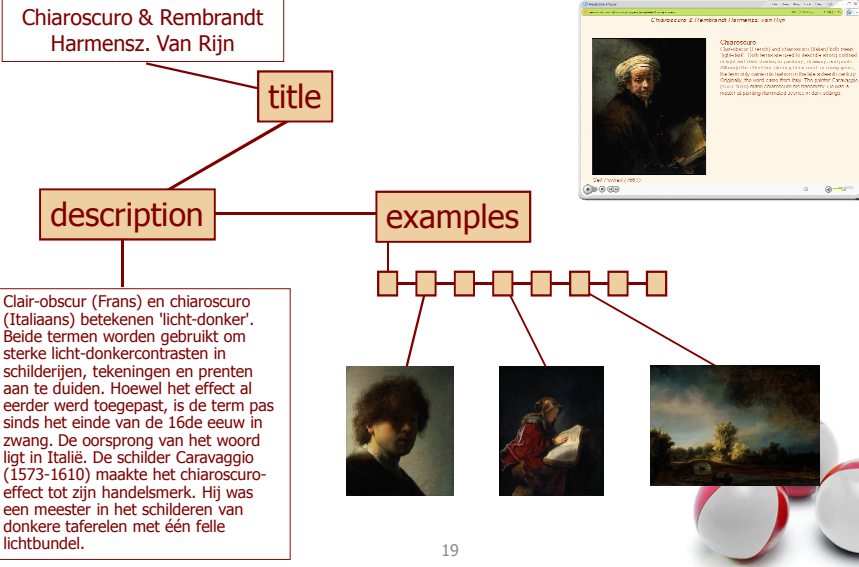
Content



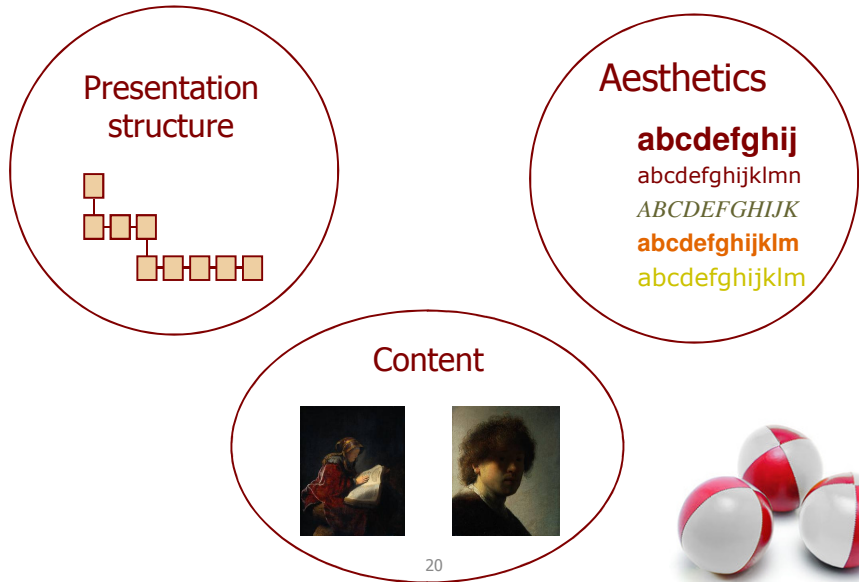
18



# Presentation structure of example



# Three ingredients



# Aesthetics of example

Chiaroscuro & Rembrandt Harmensz. van Rijn

**Chiaroscuro**  
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Self Portrait (1661)

Fonts

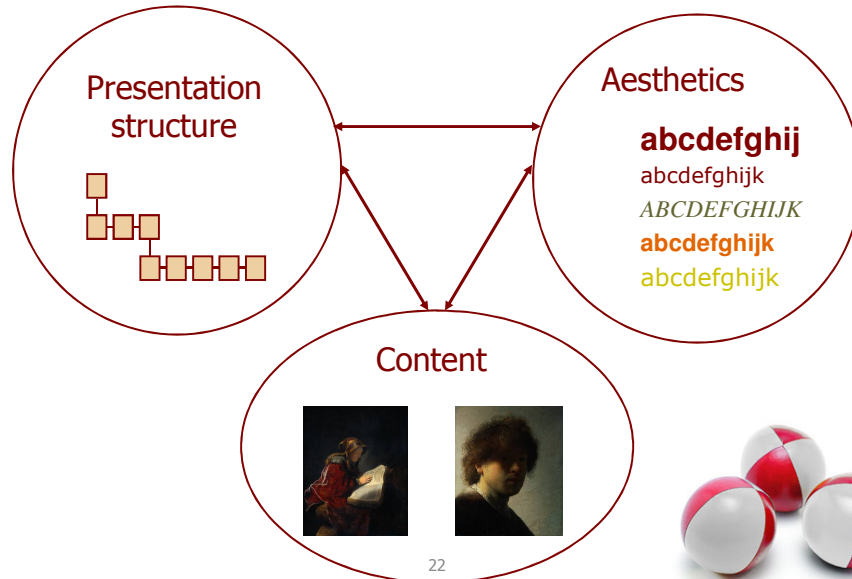
Layout

Colours



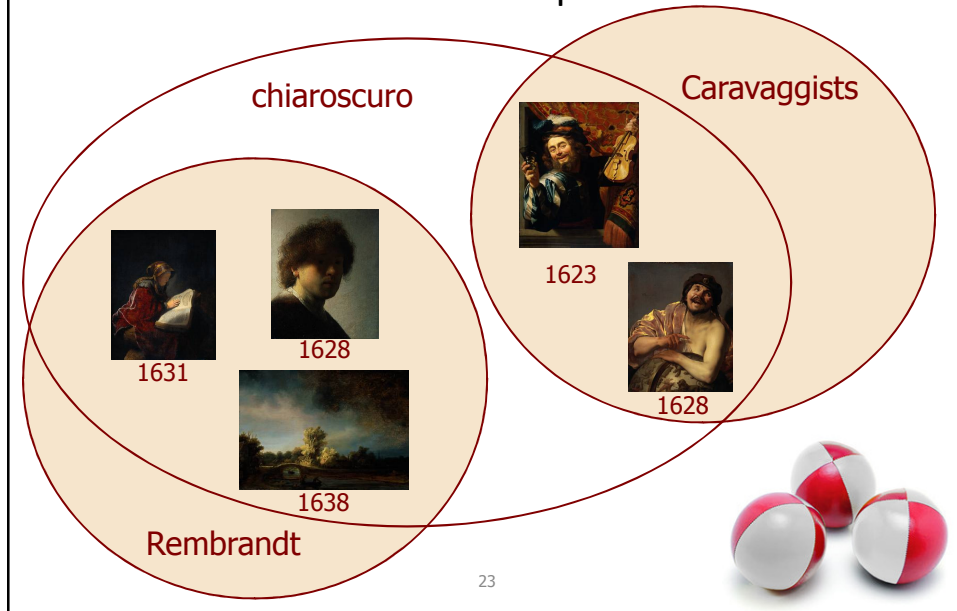
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# Design dependencies



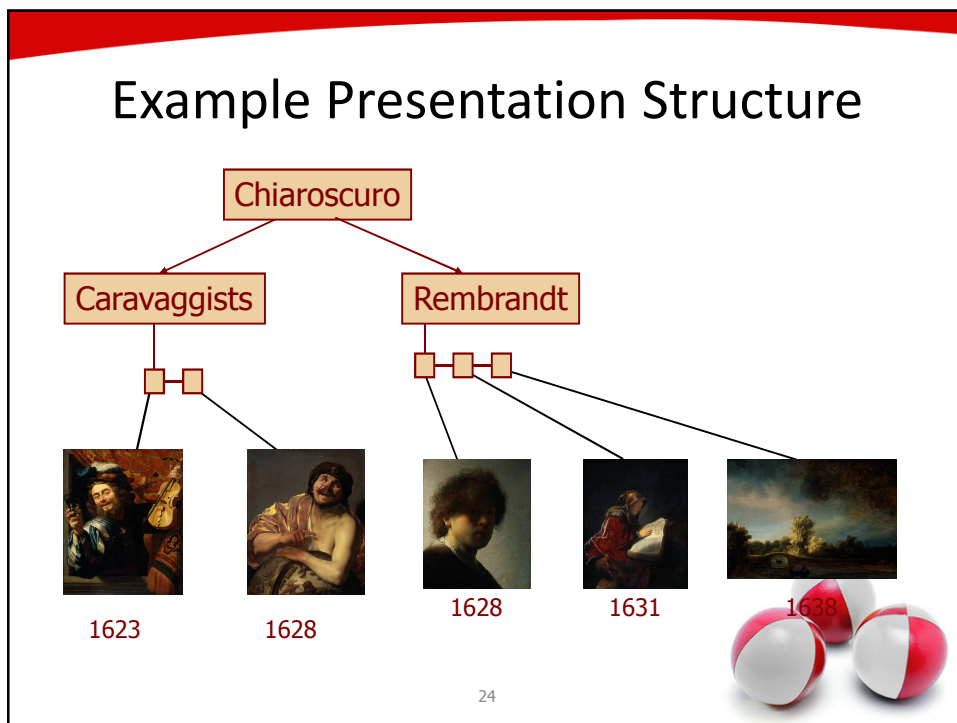
22

## Presentation structure depends on content



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## Example Presentation Structure



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RealOne Player

gemini.ihc.cwi.nl/cocoon/cuypers/aria/selectorm-process 1393kbps 1:29 / 1:35

### Chiaroscuro & Rembrandt Harmensz. van Rijn



**Chiaroscuro**  
 Clair-obscur (French) and chiaroscuro (Italian) both mean 'light-dark'. Both terms are used to describe strong contrast of light and dark shading in paintings, drawings and prints. Although the effect had already been used for many years, the term only came into fashion in the late sixteenth century. Originally, the word came from Italy. The painter Caravaggio (1573-1610) made chiaroscuro his trademark. He was a master at painting illuminated scenes in dark settings.

Self Portrait (1661)

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Google

rembrandt van rijn Search DateSearch more▼

About 128,000 results (0.22 seconds) Advanced search

Related searches: rembrandt van rijn drawings rembrandt van rijn paintings



Everything

Images

More

Any size  
 Large  
 Medium  
 Small  
 Larger than...

Any type  
 Face  
 Photo  
 Clip art  
 Line drawing

Any color  
 Full color  
 Black and white

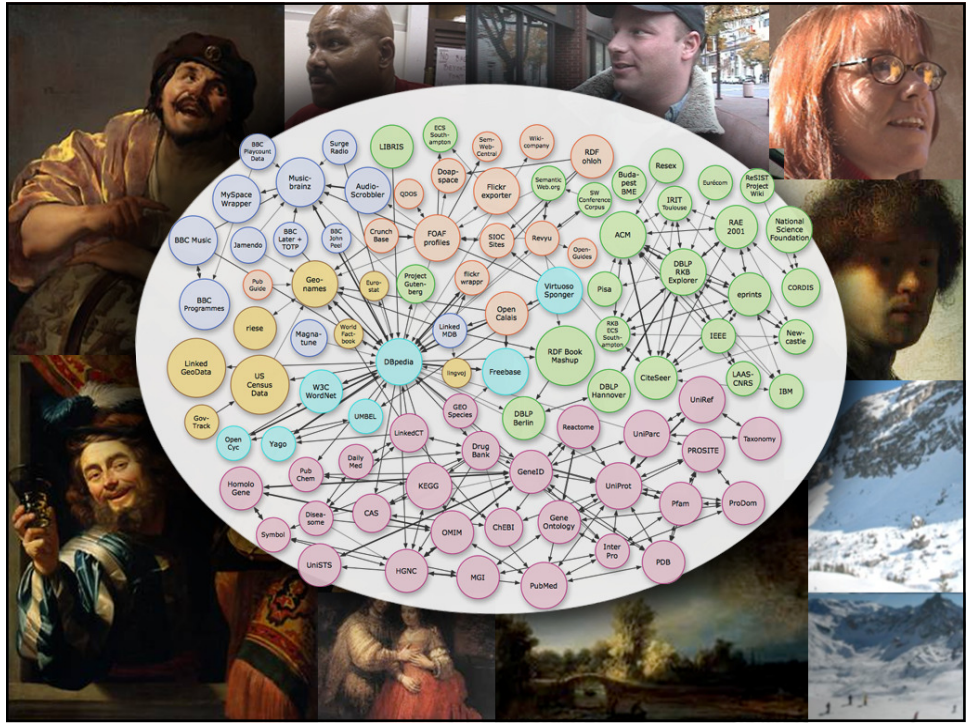
Standard view

Show lists

## Google: Rembrandt van Rijn



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## Video Documentaries on the Web

- Traditional video authoring: there is only one final version, what is shown is the choice of the author/editor
- Proposed video authoring:
  - Annotate the video material semantics
  - Show automatically what the user asks to see, using presentation forms a film editor would use



## Video material

- Focus on video interviews about controversial issues
- **Interview with America** video footage with interviews and background material about the opinion of American people after 9-11  
[www.interviewwithamerica.com](http://www.interviewwithamerica.com)



## Example: What do you think of the war in Afghanistan?



## What do you think of the war in Afghanistan?

**War has never solved anything**

**Two billions dollar bombs on tents**



**I am not a fan of military actions**

**I cannot think of a more effective solution**





## The annotations

- Rhetorical
  - Rhetorical Statement  
(mostly verbal, but visual also possible)
  - Argumentation model: Toulmin model
- Descriptive
  - Question asked
  - Interviewee (social)
  - Filmic *next slide*

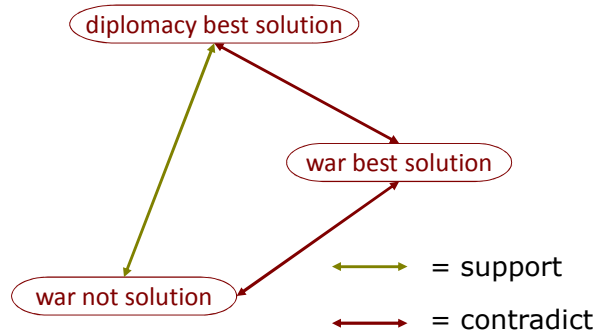


## Filmic annotations

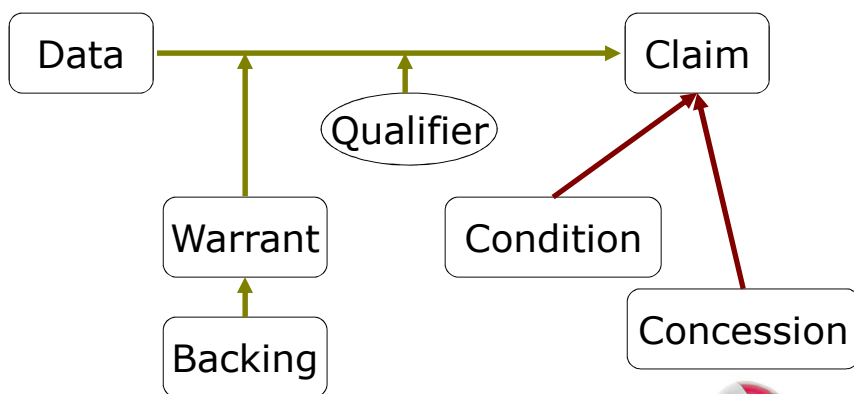
- Continuity, e.g.
- lighting conditions
  - background sound
  - gaze direction of speaker
    - left, centre, right
  - framing continuity
    - close-up, medium shot, long shot
  - camera movement
    - none, pan left/right, shaking,  
tilt up/down, zoom in/out



## Semantic Graph



## Toulmin model



*57 Claims, 16 Data, 4 Concessions,  
3 Warrants, 1 Condition*



# Analysis of the Example

**Two billions dollar bombs on tents**



Claim

*contradict*



Claim

**I cannot think of a more effective solution**

*weaken*

Concession

**I am not a fan of military actions**



Claim

*support*

**War has never solved anything**



# Vox Populi interface

Question		Interviewee		Opinion		
Why did they do what they did? What do you think of the casualties among civilians? What do you think of the Afghanistan war? What are the consequences of the war? What are the roots of the problem? What do you think about the Anthrax?		Cameron Parking Guard at Stamford Lawyer in Harward		War in Afghanistan - Pro		Position
Age	Education	Employment	GeoLocation	Race	Religion	Sex
Middleage Old Teenager Young	HighEducated LowEducated MediumEducated	HighIncomeJob LowIncomeJob MiddleIncomeJob Retired Student	NotUSA USA	AmericanIndian Asian Black Hispanic White	Atheist Christian Muslim	Female Male
First Character						
Age	Education	Employment	GeoLocation	Race	Religion	Sex
Middleage Old Teenager Young	HighEducated LowEducated MediumEducated	HighIncomeJob LowIncomeJob MiddleIncomeJob Retired Student	NotUSA USA	AmericanIndian Asian Black Hispanic White	Atheist Christian Muslim	Female Male
Second Character						
Strategy		Bandwidth	Intercut	Caption		
<input type="radio"/> None <input type="radio"/> Create Clash <input type="radio"/> Create Support <input type="radio"/> Vox Populi		<input type="radio"/> Low Bandwidth <input type="radio"/> Medium Bandwidth <input type="radio"/> High Bandwidth	<input type="radio"/> True <input type="radio"/> False	<input type="radio"/> On (can cause problems) <input type="radio"/> Off		
Done		Reset				



## Conclusions

- Automatic generation of video interviews augmented with supporting and/or contradicting material
- The **user** can determine the subject and the bias of the presentation
- The **documentarist** can add material and let the system generate new documentaries



## Pointers & Acknowledgments

- Demo available at:  
<http://www.cwi.nl/~media/demo/VoxPopuli/>
- VoxPopuli research was funded by the Dutch ToKeN I<sup>2</sup>RP and CHIME projects





2009 Prof UvA, Multimedia Interaction  
2011 Cluster leader at CWI (Centrum Wiskunde & Informatica)

## To push or not to push? That is the question

- It's not just what you know, it's who you know
  - that's how you get pulled into things
- Be aware when you are being pulled and when you are pushing
- Sometimes the pulling comes too soon
  - They think you are ready for the next step, so you probably are
- When you get pulled, you don't learn how to push
- When you push, you mustn't appear "pushy"



## Tips 1

- Be aware of how people communicate
  - Some styles may annoy you. Work out why. Even if they annoy you, you might still be able to learn something from them.
  - Be aware of how you communicate
- Ask questions (I'm good at this)
  - always good, you learn stuff
  - makes the other person feel they are interesting
- Tell stuff too
  - This is where I often fail. Tell them something that will help them and allow them to remember you.



## Tips 2

- With every interaction think explicitly about what is in it for you
  - The only person looking out for your interests is you. Everyone else is looking after their interests. This is a neutral observation. Be aware of it. Don't become paranoid
- Be memorable.
  - Say interesting things. (If you open your mouth, make sure something useful comes out.) Be nice to people – they have long memories
- Learn from the guys
  - what they say, how they say it, when they say it, to whom they say it. Don't compete, use your own angle
- Don't whine
  - Having explained what you want, and having failed to get it, analyse the situation, seek advice
  - Try something else, or admit the effort is not worth it



## Work on your main strengths

- Number 1: yourself
  - be yourself at all times.
  - Just help yourself to be aware of where you are, where you want to go and how to get there.
- (Other) women
  - talk to other women in male-dominated fields, it keeps me sane 😊
- (Other) men
  - they are either learning with you, or have experience to pass on.



# Acknowledgements



Jacco van  
Ossenbruggen



Frank Nack



Raphaël Troncy



Stefano  
Bocconi



Alia Amin



Michiel  
Hildebrand



Andre Fialho

