## Creating an employee

## planning application

## that can be trusted

#### Meike de With

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### Agenda

**01** The planning problem

**02** The solution

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**03** Overcoming challenges

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### The planning problem

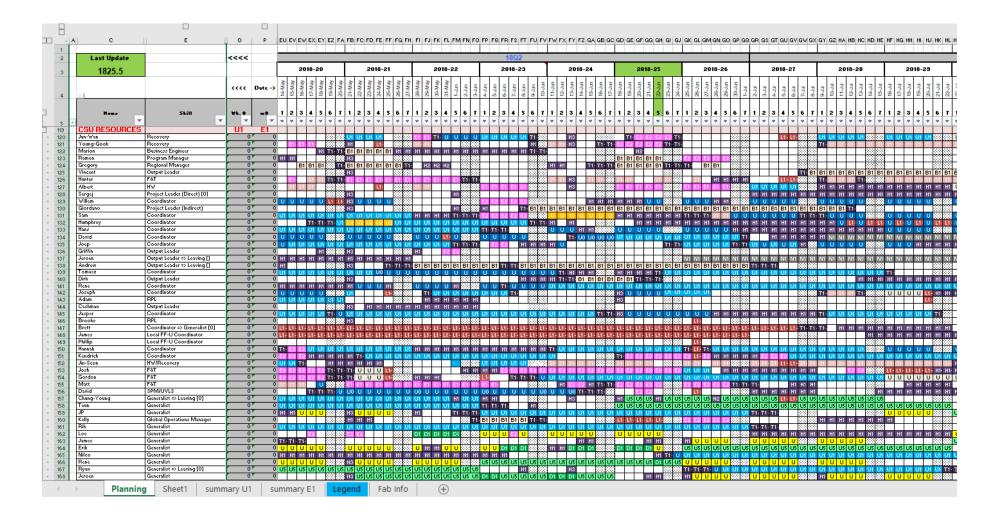
- Customer service department of an international manufacturing company
- Allocating specialized employees to on-site installations and upgrades of highly complicated machines
- Constraints on skills, travel, etc





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#### **Previous solution: Excel**

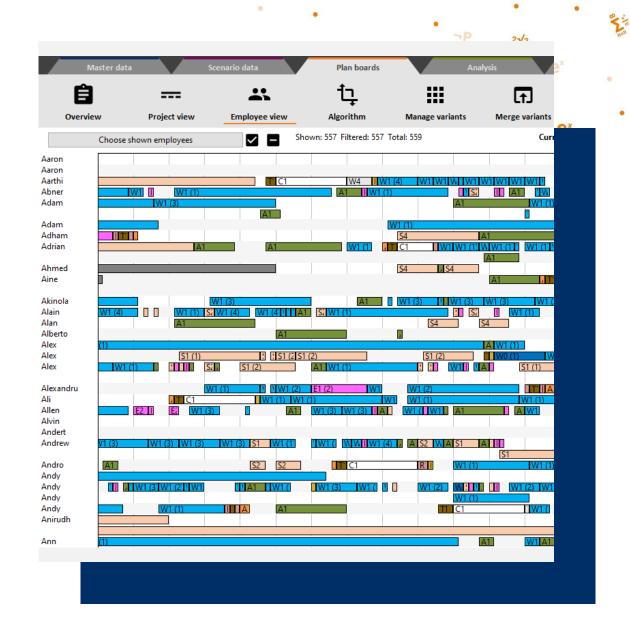


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#### New solution: AIMMS

- Supports manual planning in many ways
- Adds automated planning via (partial) GRASP heuristic
- Easy scenario creation and comparison
- Concurrent planning



#### Challenge 1: Trust the algorithm

- Manual planning before automated planning
- Conscious decision-making
- Heuristic is good enough and less of a black box
- Rescheduling mode
- Time for support: answer questions, check results

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Planning assistant														
Accept changes	Reset pla	an assistant	Legend:			Sorting:				Travel t	ime f	ilte		
Note: only changes to the current job are processed.			Current job Qualified				Move busy employees to the bottom					🗹 0 days		
Allow horizontal dragging			Not qualified Overqualified		Overqualified	Move employees who cannot get visa to the bottom 26 = Nr of weeks before job start to look at for utilization calculation					🗹 1 day			
Name (Qualification level)			Show employees with lagging qualification			0 = Nr of weeks after job start to look at for utilization calculation 20 % = FIFO vs utilization (enter 0% to sort on utilization and 100% for FIFO)					2 or more da			
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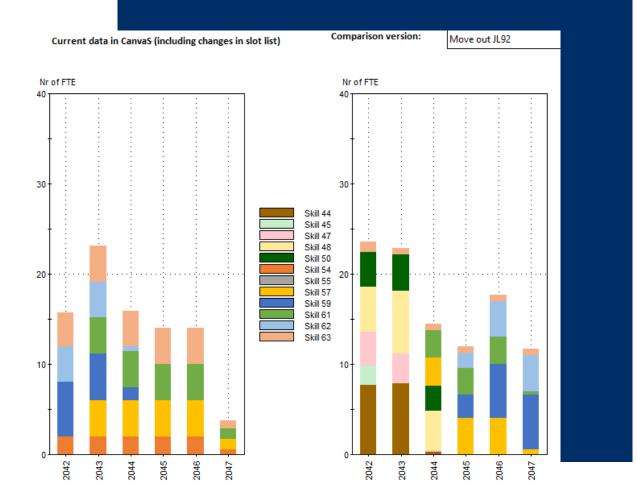
#### Challenge 2: Truly throw away Excel

- Quick feedback loops and agile project
- Implement things that make life easier
  - Pitfall: too many options make the application hard to learn
  - Pitfall: balance between automating options and 'black box'
- Make it easy to go back (but more attractive to stay)
- Be available in-person as much as possible
- Buy-in from management

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S S	Zoom to selection	
	Currently showing projects based on selected horizon.	
	Refresh UI	
L L	Change shifts for selection	
SS	Change shifts for selection and unallocate current	
	Unallocate shifts	
	Allocate underlying job to Jessica	
	Split underlying job from shift onwards	
_	Create single shift job	
	Delete shift	
	Delete job	

#### Challenge 3: Never go back to Excel

- Have a clear plan for Maintenance & Support afterwards
- Stay in contact, be available on-site
  - More difficult in current (corona) situation
- Easy scenario creation/implementation



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# Challenge 4: Before you start saving time, it costs a lot of time

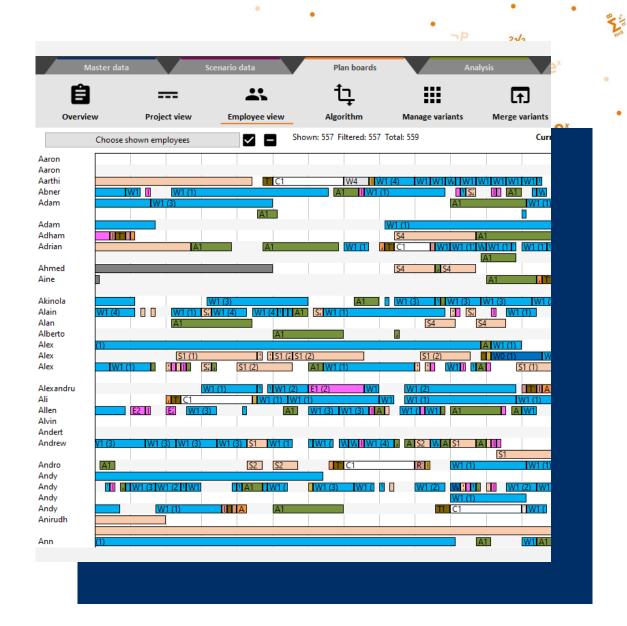
- Dedicated project team with buy-in from management
  - Manage expectations
- Proof of Concept with one enthusiastic department



#### Challenge 5: Not everyone is happy with more clarity and standardization

• Ensure that the application contains enough pro's for all

• Accept that you cannot make everybody happy



#### Result

- Application is now used to plan >1000 employees
- Planners are happy:
  - Management questions can be answered much faster
  - Focus on more interesting things than updating Excel
  - Working together is much easier
  - Support crisis situations (e.g. corona)
- Algorithm is used more and more
- Further extensions planned for the future





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#### Main takeaways

- Building trust is the most important challenge
- Communication and building relations is key
- Happy users are your best advocates



