



# Maintenance @ SBB: From smart to clever

**Michel Kunz,**  
Head Network Design, Assets & Technology  
SBB Infrastructure



- Some thoughts on smart maintenance from a management perspective
- Selected use case SBB
- Q&A

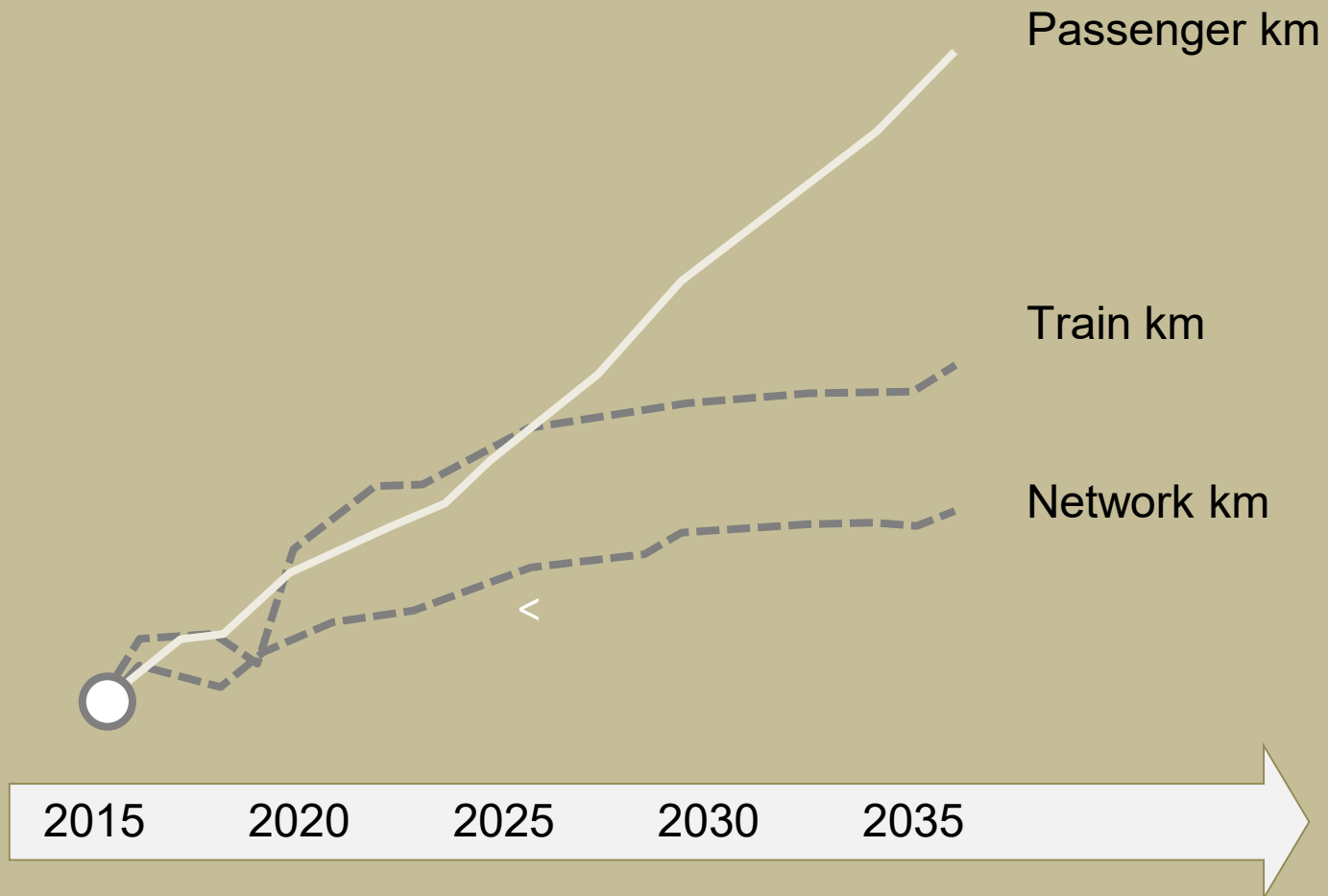
"We do not always know whether things will get better when they change. But things have to change if it's going to be better."

*Freely quoted from Georg Christoph Lichtenberg*

"...and against the background of the future challenges of the railways, it seems clear to me that things must change.

*My personal postscript*

# The future challenge and set goals



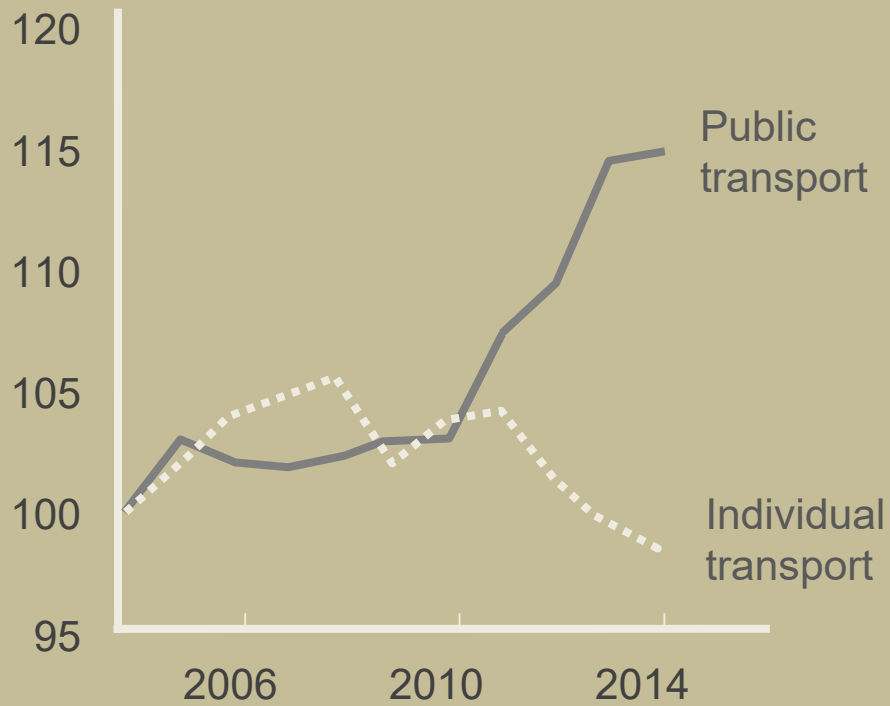
# The order of magnitude

*Asset class: civil engineering*

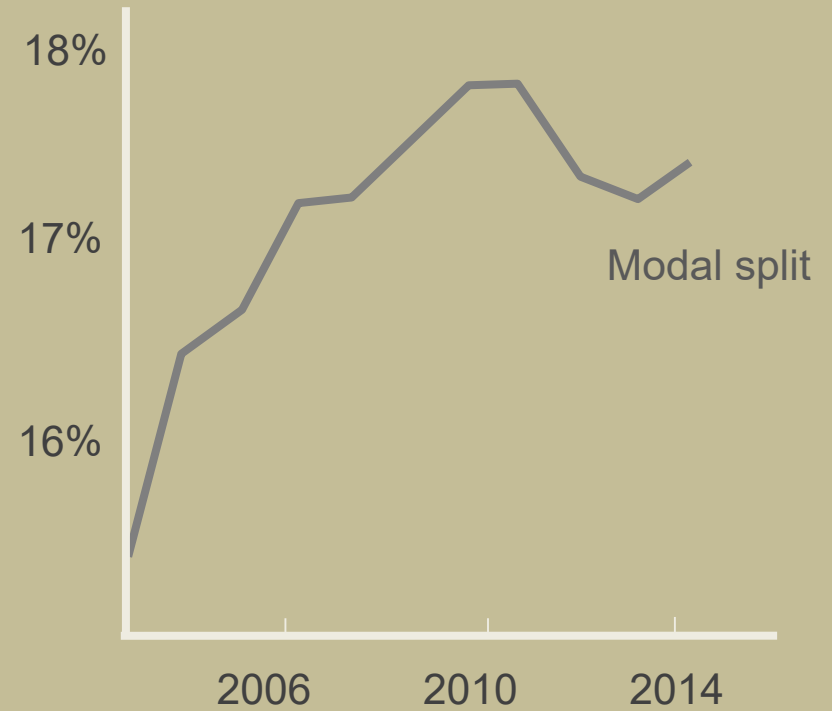
Carrying value:	CHF 42 Mrd.
Bridges	6'192
Tunnels	428'963 m
Investment cycle	118 y
Network state	good
Backlog	CHF 120 Mio.
Average cash out	> CHF 200 Mio.

# the sensitivities

Indexed price development

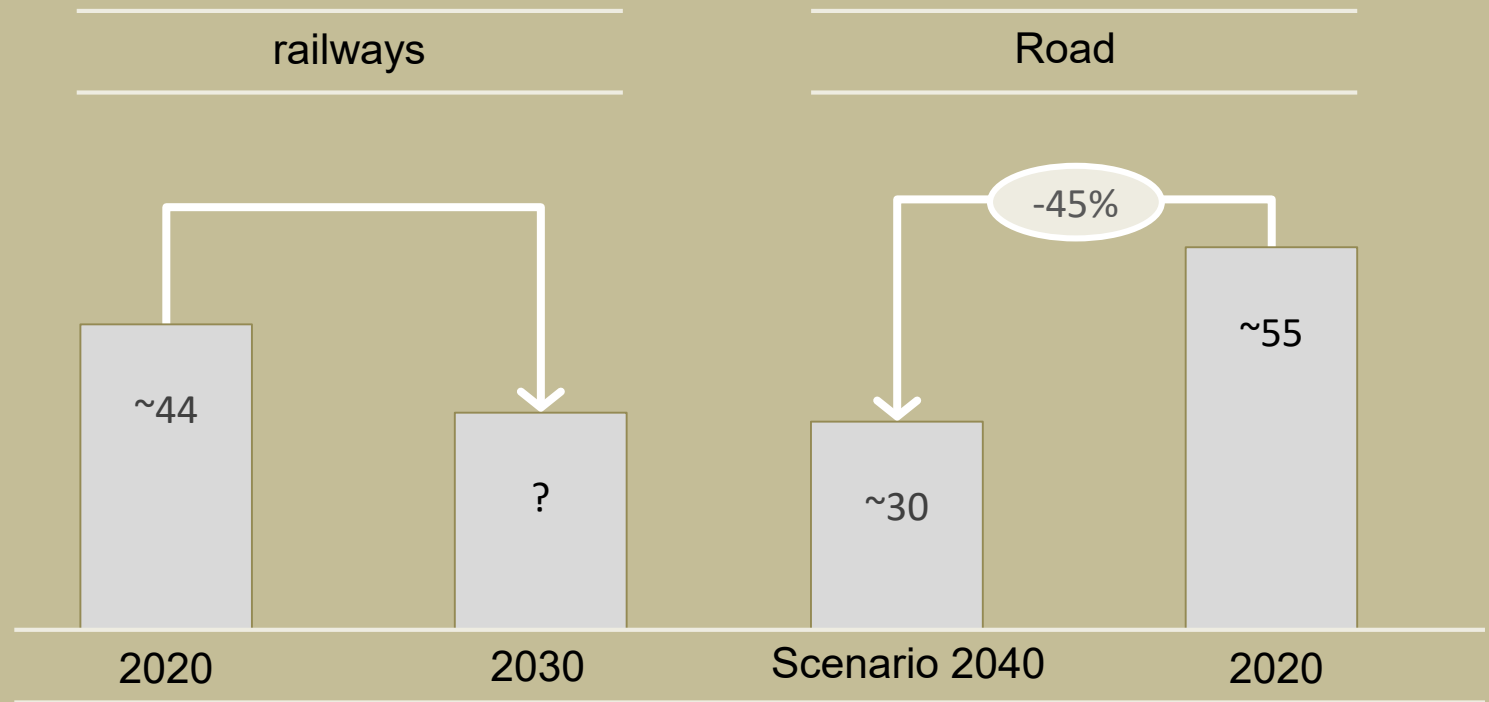


Modal split



# The long term challenge

*Rp. / PKM indicative values for illustration purposes*



## Medium term ambition level

New paths must be taken in provision of cost efficient and effective maintenance and renewal services.

### **Ambition level SBB:**

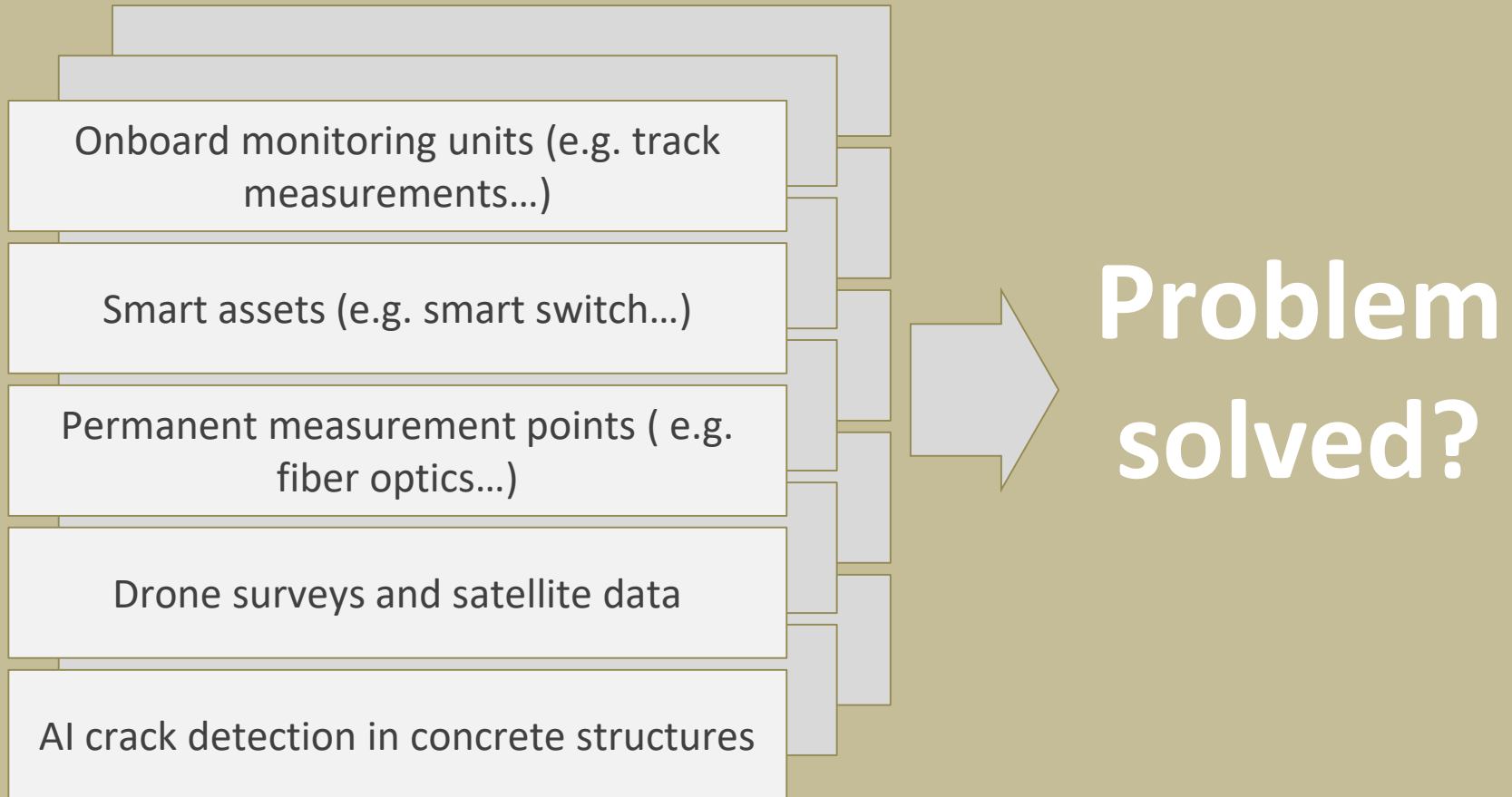
SBB has set the goal to reduce track maintenance cost in the range of 12% in the next 5 years.



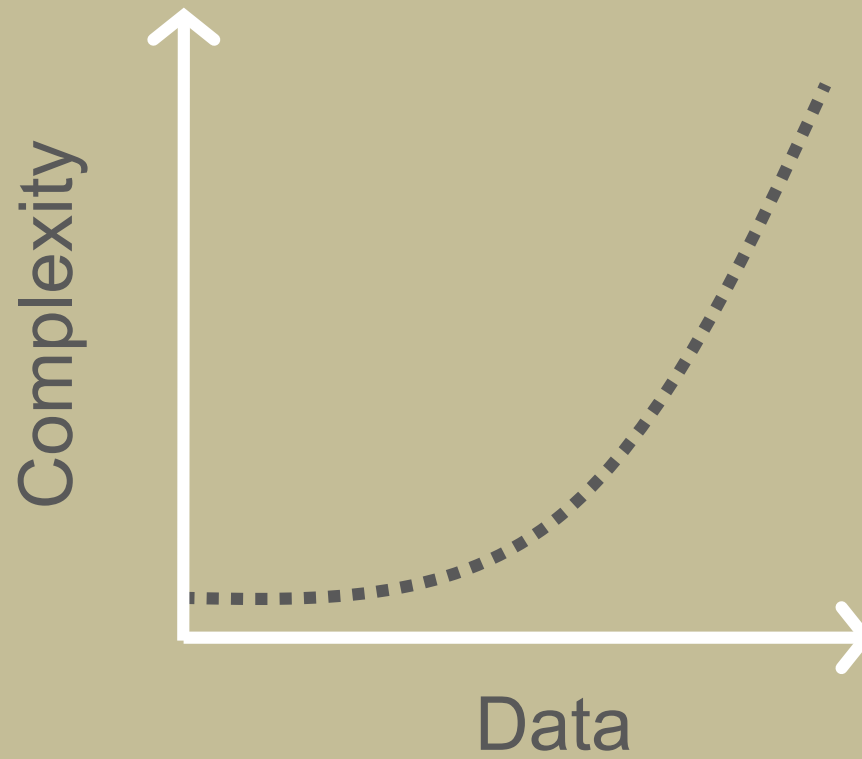
# The maintenance evolution path

4	Prescriptive	Decision making What should be done?
3	Predictive	Forecasting What is likely to happen?
2	Diagnostic	Reasoning Why did it happen?
1	Descriptive	Understanding What happened?
	Level	Key question

# The current initiatives

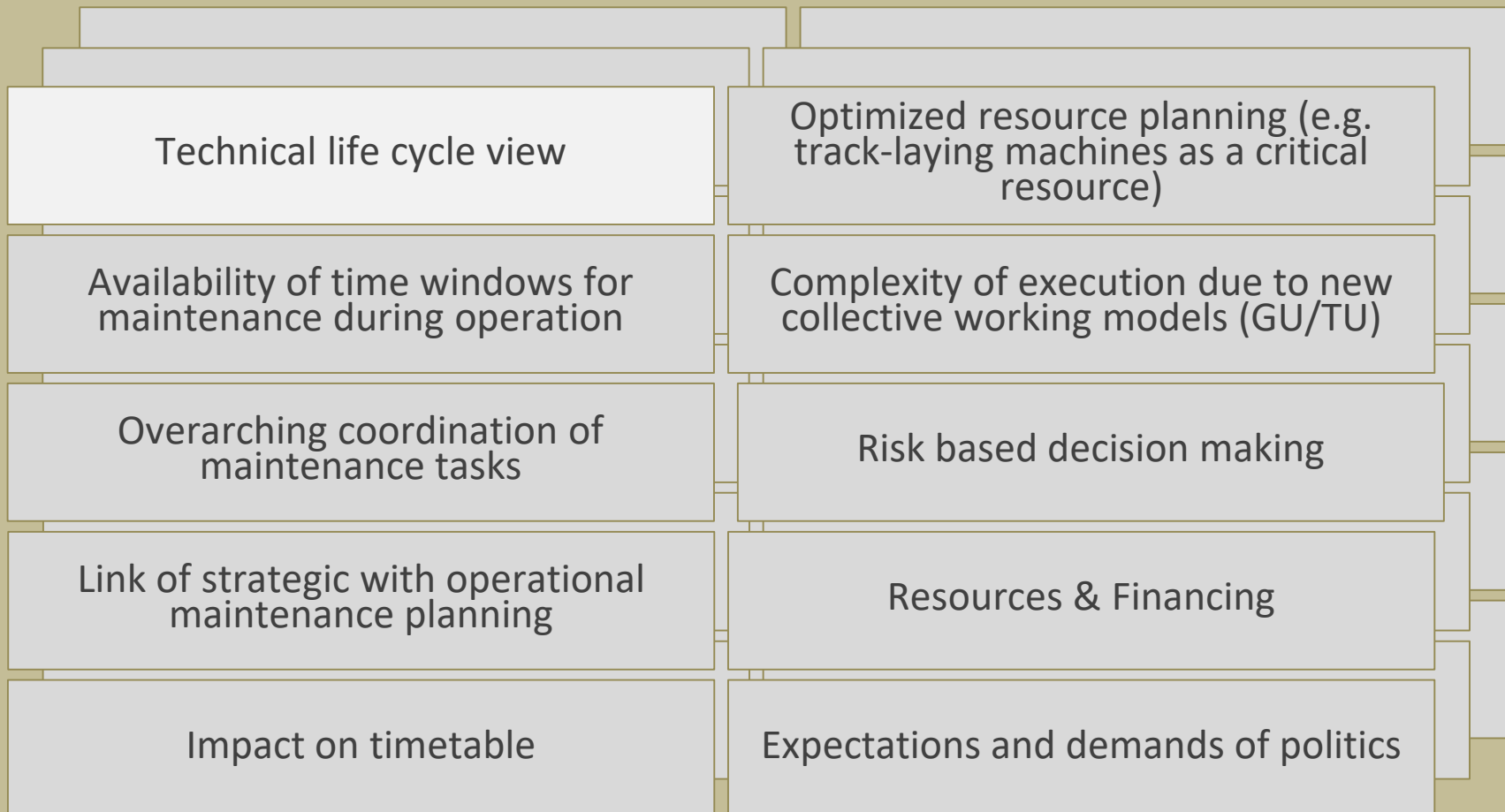


# The technical view

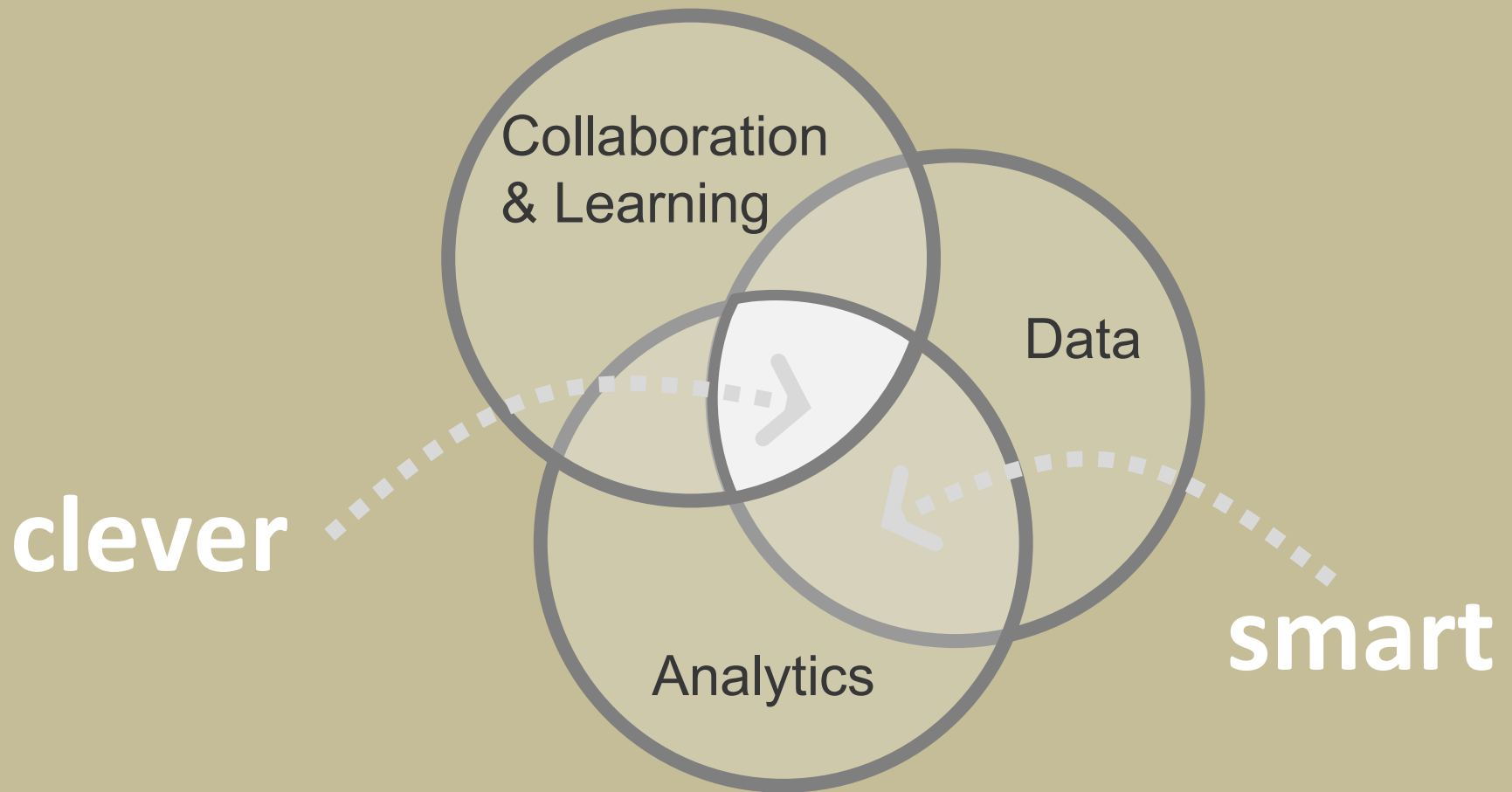


# The management view

conflict of objectives



# The prerequisites



# The recipe (... at least, some of the ingredients)

	smart	clever
User	Specialist (expert system)	Interdisciplinary (platform)
Architecture	Proprietary, closed	Open, expandable
Scope	Focused on specific asset (static)	E2E process vies (holistic)
Basic idea	Perfectionism of technical solution	Evolution of decision platform

# Use Case IVEG

Smart maintenance platform for  
green areas

<https://youtu.be/1HQgFOPjxNo>

# Q&A



Thank you for your attention