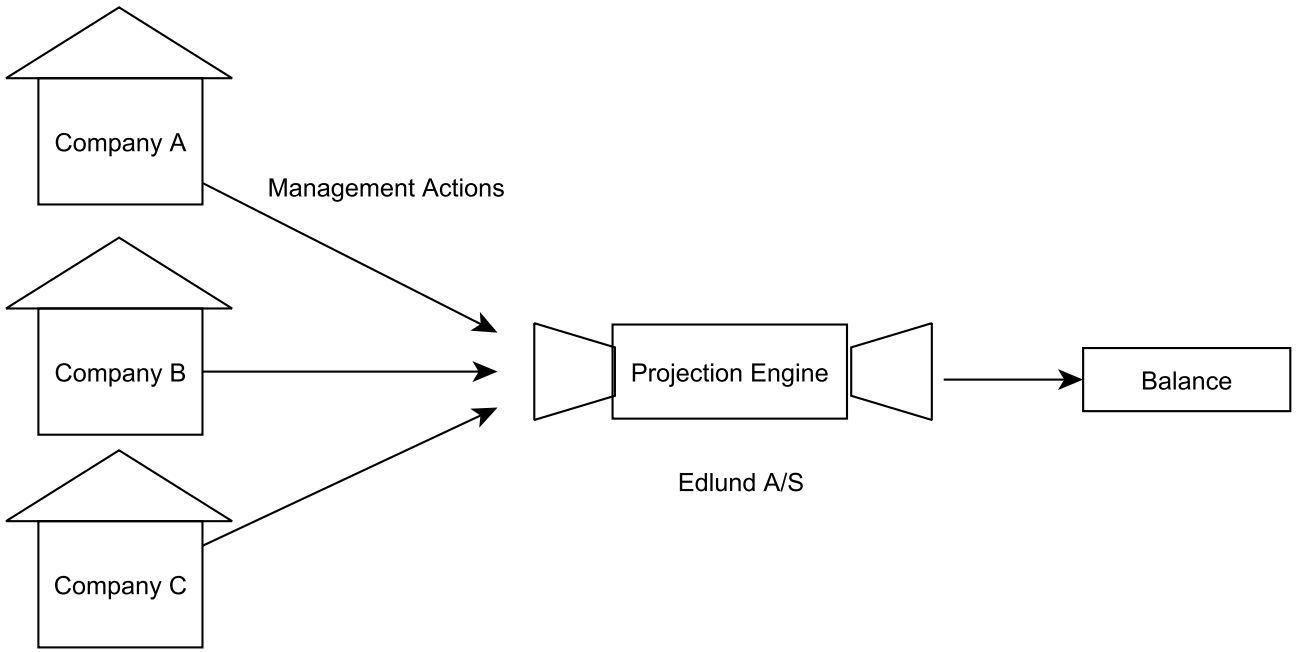
Co-designing DSL Quality Assurance Measures for and with Non-programming Experts

Workshop presentation - DSM'21

Holger Borum, Christoph Seidl, and Peter Sestoft
IT University of Copenhagen

Innovation Fund Denmark
Projection of Balances and Benefits in Life Insurance (7076-00029B)

Management Action Language (MAL)



Co-designing with non-programming experts

- How do we design quality assurance (QA) measures that non-programming domain experts deem viable?

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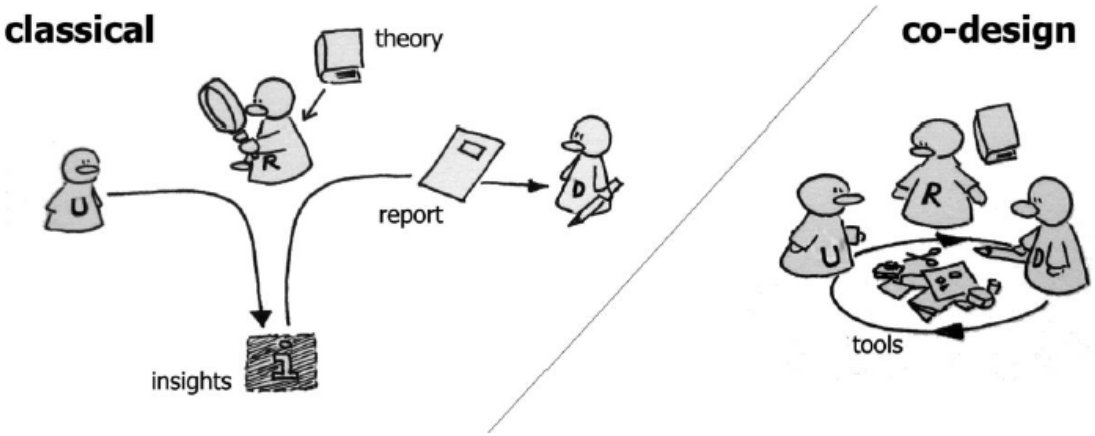

Source: Elizabeth B.-N. Sanders and Pieter Jan Stappers. 2008. Co-creation and the new landscapes of design. CoDesign 4, 1 (March 2008), 5–18

Our prospective users

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\begin{aligned}
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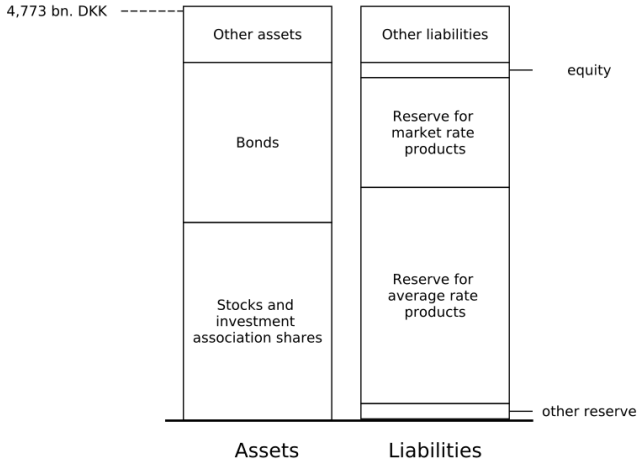

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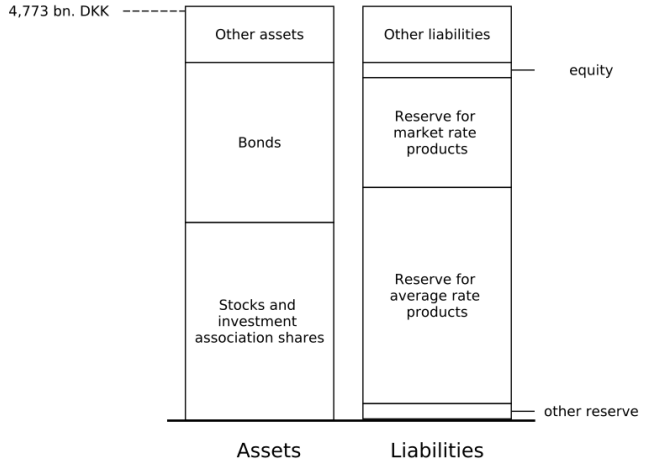

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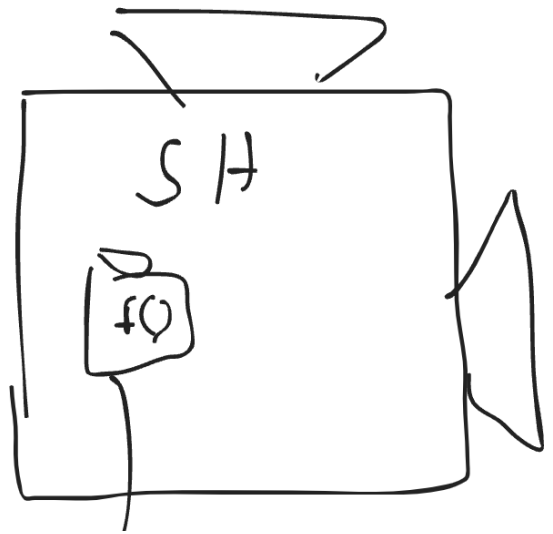

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Identify properties of management actions	
Discuss how to ensures these properties	

[1] All quotes are from notes and translated.

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Workshop - Refocus

“How do you think we can improve the existing quality assurance?”

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- Quantity monitors
- Fragment debugging
- Debugging spreadsheets

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We proposed the possibility of debugging programs using spreadsheets.

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	A	B	C	D
1	Policy 1			
2			Global.Param.BaseFee	Projection.PeriodLength
3	let baseFactor =	=POWER(1+C3,D3)-1	0.02	1.3
4			policy.TotalReserve	
5	policy.Fee =	=B3*C5	5234.23	

A formula view of a part of a debugging spreadsheet.

Lessons learned

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- Analytical tools important for its prospective users

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- presented MAL be used in asset/liability projections
- described an approach to and experiences with co-designing quality assurance measures
- demonstrated how three concrete quality measures were derived from the co-design workshop
- presented debugging spreadsheets as a general quality assurance measure applicable to domains with complex mathematical calculations

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