How cognitive biases and ranking can foster an ineffective architecture and design

Kenny Baas-Schwegler & Evelyn van Kelle
Engineering Flowchart

DOES IT MOVE?

NO

SHOULD IT?

NO

PROBLEM!

YES

WD-40

YES

PROBLEM!

MAKE, DO AND MEND

NO

SHOULD IT?

YES

SHOULD IT?

NO

YES

NO

PROBLEM!
Complexity:
When things go bad, endure and observe what you can change, and probe! don’t go chasing a happy to-be situation.
Matthew Skelton @BLM @matthewpskelton · Oct 27

TIL: a major UK group of companies decides - in 2020 - to adopt a core-cut Spotify Model: "wait SAFE together.

What could possibly go wrong?

Steve Smith @SteveSmith_Tech · Oct 27

@Kenny_Baas on line

Buyout Footage

Kenny Baas-Schwegler @Kenny_Baas

Replying to @SteveSmith_Tech and @matthewpskelton

you called?
We’re dealing with complex adaptive socio-technical systems. Those 3 aspects impact each other. Balance is key.
Open office space to improve communication
Investments in technology are also investments in people, and these investments will make our technology process more sustainable.

Nicole Forsgren
If you design a monolith or part of a software landscape without boundaries or the wrong boundaries, you just architected an open office space for software teams.
Habitability makes a place livable, like home. And this is what we want in software — that developers feel at home, can place their hands on any item without having to think deeply about where it is.
TRUST ME,

I'M AN ARCHITECT
“Architectural design is system design. System design is contextual design — it is inherently about boundaries (what’s in, and what’s out, what spans, what moves between), and about tradeoffs.”

—Ruth Malan
Bounded Context

Unit of Consistent Language

A model for a specific purpose
“If the architecture of the system and the architecture of the organization are at odds, the architecture of the organization wins”

—Ruth Malan
Creating a shared sense of reality
Visual and Collaborative modelling is a practice of using requirement analysis and modelling techniques to create a shared understanding.
technical architect

Socio-technical architect

(A role, not a function!)

(and of course owned by a person or group)
Ensuring flow in meetings

How to make sure everyone said what has to be said?

How can we create and include new insights?

Who decides on the architecture?

How to get everyone on board on the decision?

Who to invite?

How to deal with issues that keep cycling back?
Ensuring flow in meetings

How to make sure everyone said what has to be said?
from: Decision-making practices for evolving and sustaining software architecture by Rebecca Wirfs-Brock and Ken Power
Explicit ranking

- Your position in the org chart, your job title, your job description, level of power, etc.

Implicit ranking

- Your gender, your skin colour, the level of charisma, how you communicate/treat others, the level of informal power you have, etc.

Ranking

Once upon a time, there were a tall white guy and a woman in IT...
Ranking IRL

Sarah Mei 🟡 @sarahmei · Apr 30, 2018
Replying to @sarahmei

Even as adults, we get messages that sometimes suggest ignoring power dynamics is the right way to go. For example, I often see women asking men to treat them the same way that they, the men, treat other men at work.

Sarah Mei 🟡 @sarahmei

The trouble with ignoring a power dynamic when you're on the upward side is that in doing so, you _reinforce_ the dynamic, even though in many situations (like pair programming) neutralizing it would be better.

7:45 PM · Apr 30, 2018

151 Retweets 38 Likes
Symbolic violence
“A Pair programming or mob session where one of the participants is hitting oneself is not a co-creation, it is submission..”

— Romeu Moura
How to deal with the impact of ranking?

Play a little mind game called ‘Turn it around’!

https://twitter.com/manwhohasitall/status/1321550806869450752?s=20
So what?
Shadow IT
Deep Democracy the lewis method
Every autocratic decision, suppresses knowledge and wisdom and creates resistance.
“And those who were seen dancing were thought to be insane by those who could not hear the music”
How to make sure everyone said what has to be said?

Own, play and share your rank

Photo by Neil Thomas on Unsplash
Ensuring flow in meetings

How can we create and include new insights?
Cognitive bias
Functional Fixedness

Getting stuck in what you know

• A mental block against using something in a new way that is required to solve a problem

• What we know hinders us to take on new perspectives
Anchoring Effect

*We think relatively, rather than objectively*

- Relying too heavily on the first piece of information you receive (the anchor).

- We adjust our decisions based on this anchor. “This shouldn’t take more than 2 weeks, right?”

*This is why stickies are so effective...*
False consensus effect

“This is the best model in the world, right?”

- Overestimating the extent in which others share your beliefs, opinions or enthusiasm.
- Always check your assumptions.
How can we create and include new insights?

- Embrace the Harry’s in your team/organization to counter functional fixedness
- Model it wrong. Just to see what it brings you
- Drop your anchor consciously
- Leave room for individual contribution to counter the anchoring effect
- Identify & check assumptions
  - And make them explicit to counter the false consensus effect
- Consider the possibility that your model is not the best...
Ensuring flow in meetings

Who decides on the architecture?
How to get everyone on board on the decision?
Who to invite?
Accurate vs Completeness
Accurate vs Completeness
<table>
<thead>
<tr>
<th><strong>Discussion</strong></th>
<th><strong>Dialogue</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions, thinking fast</td>
<td>Insights, thinking slow</td>
</tr>
<tr>
<td>Convince, take a stand</td>
<td>Understanding, listen</td>
</tr>
<tr>
<td>Think against other (yes, but..)</td>
<td>Think together with others (Yes, and...)</td>
</tr>
<tr>
<td>Answer are central</td>
<td>The questions are central</td>
</tr>
<tr>
<td>Attack and defence</td>
<td>Investigate and check</td>
</tr>
<tr>
<td>Opinions and arguments</td>
<td>Principles, values and norms</td>
</tr>
<tr>
<td>Judgement</td>
<td>postpone judgment</td>
</tr>
<tr>
<td>Finding solutions</td>
<td>find the underlying reason</td>
</tr>
<tr>
<td>Risk: false consensus, powerplay</td>
<td>Risk: responsible abstraction, woolly</td>
</tr>
</tbody>
</table>
“Peace is not the absence of conflict. Conflict are the status quo, it is how you manage them is what makes peace.”

- Bart Brandsma
“We must be able to identify all the parts in a system and allow them to speak. All the parts in a group, even those we do not like or believe to be useless, must be present and supported.”

- Arnold Mindell
Who to invite is about thinking in *perceptions* instead of *people*. Invite *especially* people with *annoying* perceptions.
Meetings as campfires
Group Conscious

Group unconscious

Wisdom/Potential

Deep Democracy
the Lewis-method

credit: human dimensions
Deep Democracy the lewis method steps

1. Gain all views
2. Make it safe to say alternative views
3. Spread the why
   ----- VOTE ----
4. Ask: What would it take for you to go along?
How much space do you give?

1. Idea: You have an idea, but nothing is certain
2. Suggestion: You have a clear intention, but other insights are more than welcome
3. Proposal: You have a concretely worked out proposal. Only serious objections can influence the decision
4. Command: Decision is made, what does it take for you to go along?
Who decides on the architecture?

How to get everyone on board on the decision?

Who to invite?

Use the Deep Democracy the lewis method steps.

Be clear on how much power people have on decision making.
Ensuring flow in meetings

How to deal with issues that keep cycling back?
Polarity mapping

Actions/heuristics

Highest goal

Signals/observations

SIDE A

Positive effect from 100% side A

Negative effect from 100% side A

SIDE B

Positive effect from 100% side B

Negative effect from 100% side A

Deepest fear
Ensuring flow in meetings

Create awareness of people their ranks in the group

Own, play and share your rank

Be aware and make explicit the biases at play

Use Deep Democracy the lewis method in your decision making

Start managing polarities with the group by using polarity mapping
Leave the judging to cats.

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