Don’t make them guess

How to improve your architecture visualizations

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How to improve your architecture visualizations

Communicating (about) architecture to non-IT and business stakeholders is a valuable skill for architects. After all, many architectural-relevant decisions are made by others, so they need to be informed with clear, honest, intelligible and helpful information and advice. This presentation will show theory and practical tips on eight different facets of visual communication of architecture.

Jochem Schulenklopper, Xebia
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Who’s *them*?
And *why* can’t we let them *guess*?
Software components

Services, modules, libraries

SOLID, GRASP, DRY, KISS

Integration

Performance, scalability

Consistency, availability, stability

Frameworks, languages, platforms
Costs, investments, revenue

Old-fashioned applications

Issues, changes

Metrics, KPIs, ROI

Opportunities, threats

CAPEX vs. OPEX

Vulnerabilities, risks
‘Architecting’

- Getting input
- Providing information
Communication \(\text{ˈkə-myū-nə-ˈkā-shən}\)

Using words, sounds, signs, or behaviors to express or exchange information or to convey ideas, thoughts, feelings, ...
... to someone else
Communication \(kə-, \text{myū}-nə-ˈkā-shən\)

Getting a message across and understood

Protip: it helps to use a language your audience understands
The ‘other’ architects use visualizations all the time

rectangles, circles
and lines, glued together
following rules

- architecture visualizations, a sort-of-haiku
Jochem
@jschulenklopper

Replying to @jschulenklopper
insights and some tips;
so architects will sketch, see
much smarter drawings

- haiku-ish summary of my talk at #oreillysacon

4:54 PM - Feb 19, 2018

See Jochem's other Tweets
Simplified working **example** for today
(not far removed from many architecture visualizations we see)
Improve your architecture visualizations, using...

1. Pre-attentive processing
2. ‘Gestalt’ principles
3. Color
4. Text
5. Icons, images
6. Graphs and (interactive) data visualizations
7. Storytelling
8. Sketchnoting
Pre-attentive processing of visual attributes
Warning: close your eyes if you’ve got photosensitive epilepsy :-)

Protip: don’t make objects equal if the objects aren’t equal (according to some measure)
And since not everybody is here: don’t assume that objects are equal if they look equal.
Protip: group things when things are alike (again, according to some measure)
Wealth
Wisdom
Royalty

Trust
Confidence
Stability

Safety
Harmony
Healthy

Clean
Purity
Light

Energy
Attention
Happy

Success
Enthusiasm
Creativity

Passion
Strength
Energy

Mystery
Elegance
Power
Protip: use color to convey or boost your message

(but use it wisely, and not just to prettify)
This should be TURNED OFF before 4Q2018

PoC in 2018: INTEGRATING these three

Minor UPGRADE required to v. 9.1

EXPENSIVE!

This should be TURNED OFF before 4Q2018
just right

very creative,
not readable

too few

too small

suitable

boring, and ugly

this is way, way too much text to convey such a simple tip

Ascender Descender

Do not Stem Tail Serif

Crossbar Use Counter

Eye Terminal Jargon

Condensed Kerning
Protip: K.I.S.S.

(and do not use jargon)

Yes, that’s a joke. “K.I.S.S.” is jargon.
GDPR anyone? Where’s our “personal data”? 
Protip: be prudent with pictures, and intelligent with icons

(Use them, but with caution)
Vinyl records are back, unquestionably!

revenue 2005 - 2015

Source: US-based data compiled by the Recording Industry Association of America
... but it’s still nothing compared to the ‘80s

revenue 1973 - 2015

Source: US-based data compiled by the Recording Industry Association of America
There are three kinds of lies: lies, big lies, and statistics graphs.

- Benjamin Disraeli could have said this
Who or Which?
Where?
When?
What?
How or Why?
How much?
Business processes
Flow of information through business
Radar plots

- Business
- IT
- Market
- Technology
Application portfolio visualizations

- **IMPROVE**
- **MAINTAIN**
- **PHASE OUT**
- **ACCEPT**

https://portfolioviz.com
Like visualization and creative coding? Try interactive JavaScript notebooks in **Observable!**

**D3.js** is a JavaScript library for manipulating documents based on data. **D3** helps you bring data to life with HTML, SVG, and CSS. It is known for its powerful features for creating dynamic and interactive data visualizations. It is widely used in data journalism, scientific visualization, and data-driven exploratory analysis. For more information, visit [https://d3js.org/](https://d3js.org/).
Jupyter notebooks & Observable

http://jupyter.org/

https://beta.observablehq.com/
Some inspiration for data-based visualizations

Sites
• https://informationisbeautiful.net/
• http://flowingdata.com/
• http://www.visualisingdata.com/

Books
• http://www.visualisingdata.com/book/
• https://www.edwardtufte.com/tufte/books_vdqi
• http://book.flowingdata.com/

Tools
• https://d3js.org/
• https://rawgraphs.io/
• https://www.tableau.com/
Protip: be honest, clear, intelligible and actionable

(and look for a high data-ink ratio)
The universe is made of stories, not of atoms
- Muriel Rukeyser
Public-key cryptography, also called asymmetric cryptography, is a communication where people exchange messages that can only be read by one another.

In public key cryptography, each user has a pair of cryptographic keys:
• a public key
• a private key

The private key is kept secret, while the public key may be widely distributed and used by other users.

Incoming messages are encrypted with the recipient's public key and can only be decrypted with their corresponding private key. The keys are related mathematically, but the user's private key cannot be easily got from the widely used public key. The most usual problem with this method arises when private key is accidentally leaked.

The two main branches of public key cryptography are:
• **Public key encryption**: a message encrypted with a recipient's public key cannot be decrypted except by the recipient private key. This is used to ensure secrecy.
• **Digital signatures**: a message signed with a sender's private key can be verified by anyone who has the sender's public key. So if the sender signed the message no one can alter it. This is used to get authenticity.
Business processes in landscape
Evolution of an application or landscape

$\text{t}_{\text{yesteryear}}$

$\text{t}_{\text{today}}$

$\text{t}_{\text{tomorrow}}$
Protip: “Once upon a time…”

(Take a minute more, and imagine a story)
The Sketchnoting Handbook

The Illustrated Guide to Visual Note Taking
Quicker, more versatile than other drawing tools

Low-fidelity >> high-fidelity

Creates and shows a story at the same time
Protip: sketch, doodle, draw and scribble more and more

(And hold back from PowerPoint, Visio, Illustrator, OmniGraffle, ...)

@jschulenklopper
So, don’t make them guess

I’d love to see us all make better architecture visualizations

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