Grow into your role of Software Architect

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ae.be

Who's speaking?

Bart Lannoeye

- Technical Architect & Owner @ SanITy BV
- Principal Consultant @ AE
- Focus on .NET / Azure

- Active in the community
  - @bartlannoeye

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No unicorn solution for Software Architecture

Nor any code

Personal opinions

Based on real-life experience

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We’re not born as a Software Architect

1. Nomenclature
2. “Technical” aspects
3. Soft skills
4. (Often bumpy) road to architect

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1 Nomenclature

A software architect is a **software development expert** who makes high-level design **choices** and tries to enforce technical **standards**, including software coding standards, tools, and platforms.
(Wikipedia)

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What's in a name?

Chief Architect

Systems Architect

Test Architect

Application Architect

Team Lead

Infrastructure Architect

Grow into your role of

Senior Business Analyst

Software Architect

Solutions Architect

Integration Architect

Principal Developer

Engineering Manager

CTO

Cloud Architect

Enterprise Architect

Technical Architect

Business Architect

Senior Software Engineer II

Specialized ⟷ General

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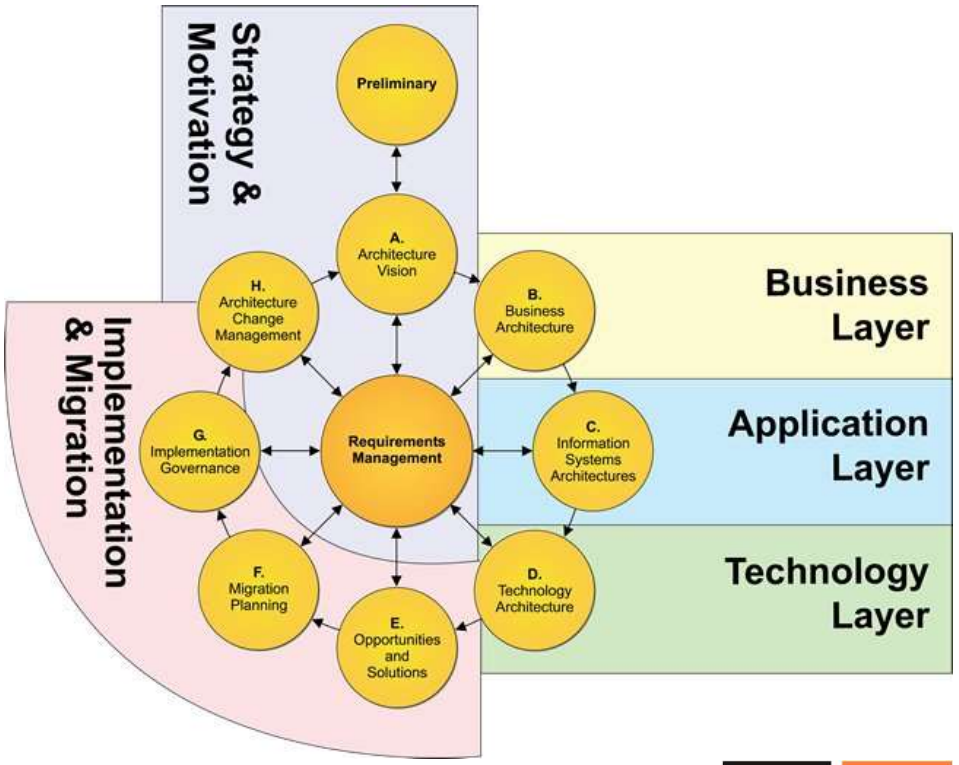
What's in a name?

Title influence by

- Company size
- Company or local culture
- Title inflation
- Personal preference
- Specialization
  - # Roles confirmed by TOGAF



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2 “Technical” aspects

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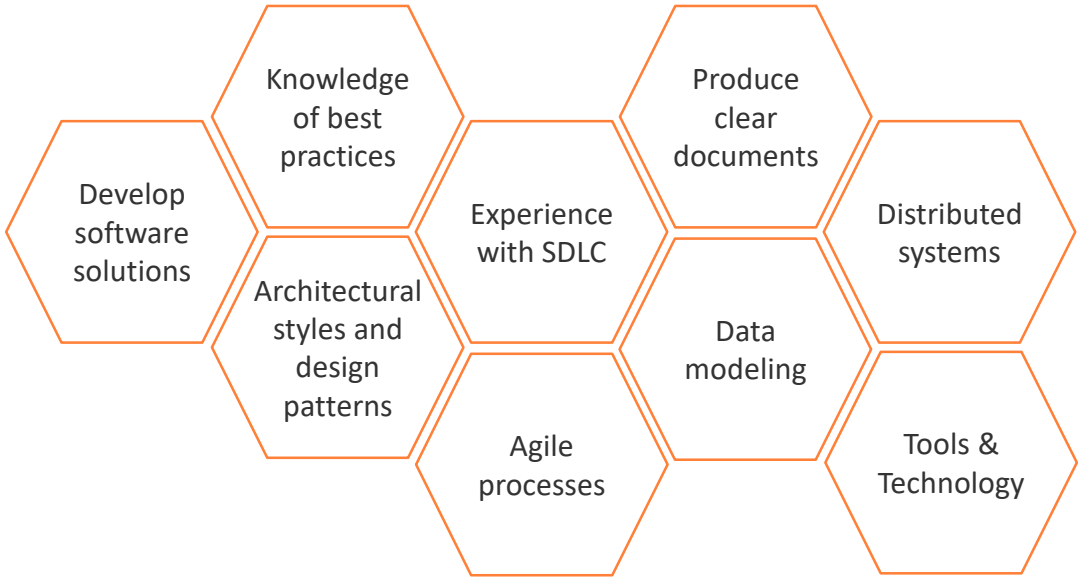
Software architecture: ‘technical’ skills

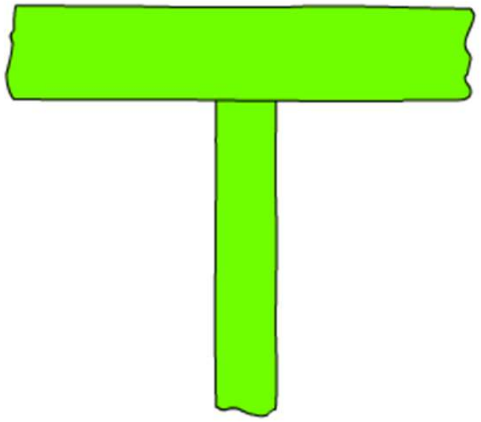
Learn them over time



The T-shaped profile

"I-shaped"
Expert at one thing

Generalist
Capable in a lot of things
but not expert in any



"T-shaped"
Capable in a lot of things
and expert in one of them

The T-shaped profile

Strengths	Weaknesses
Expert in one (a few) topic/tech	Takes time and effort
Broad enough for many topics	Fall back on specialist
Use expertise to deduct in other topics	T-shape is not the finish
Partially tech independent	

Be more than a title

- Don’t let someone force a title onto you
- Live your title / role
  - Be pro-active to take up your role
  - Earn the title (respect from the team)
- Stay honest
  - To your personal feeling
  - To your skillset (*)

3 Soft skills

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YOUR PERSONALITY TYPE IS:

ARCHITECT (INTJ-A)

And now... now we wait.

MIND

This trait determines how we interact with our environment.

37% EXTRAVERTED — INTROVERTED 63%

ENERGY

OBSERVANT 39%

67% THINKING — FEELING 33%

TACTICS

This trait reflects our approach to work, planning and decision-making.

PROSPECTING

78% JUDGING — 22%

IDENTITY

This trait underpins all others, showing how confident we are in our abilities and decisions.

60% ASSERTIVE — TURBULENT 40%

Remember “What’s in a name?”
“Everyone” can become a Software Architect!

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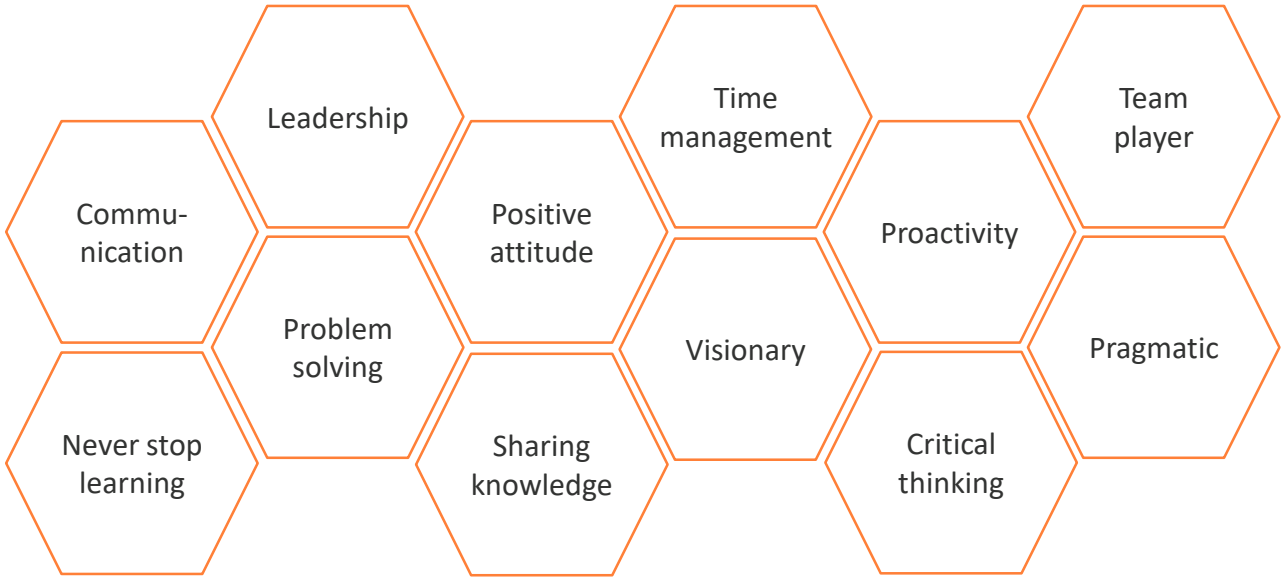
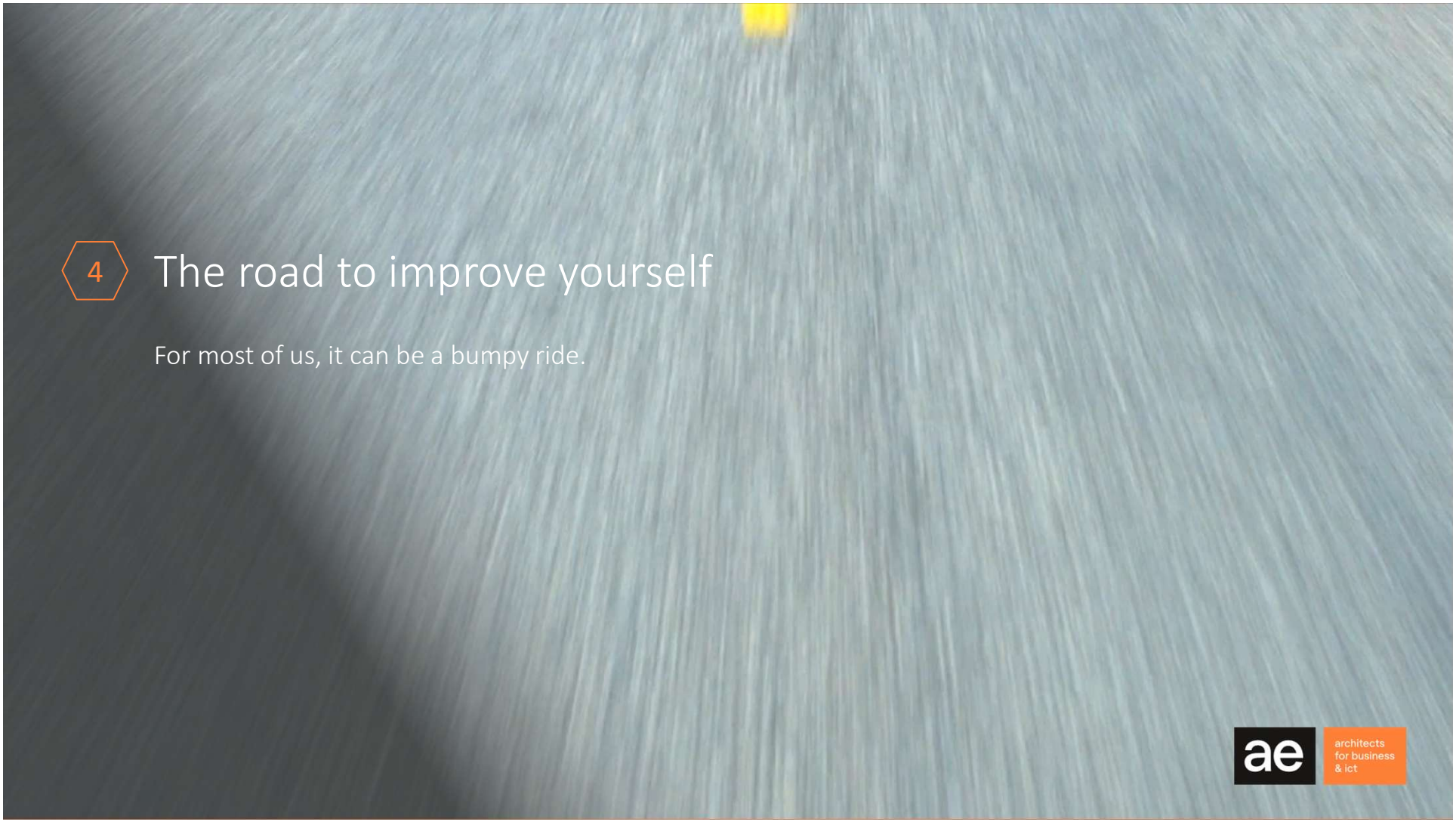
Source: Medium (Bruno Filippone)

Software architecture: soft skills





4

The road to improve yourself

For most of us, it can be a bumpy ride.

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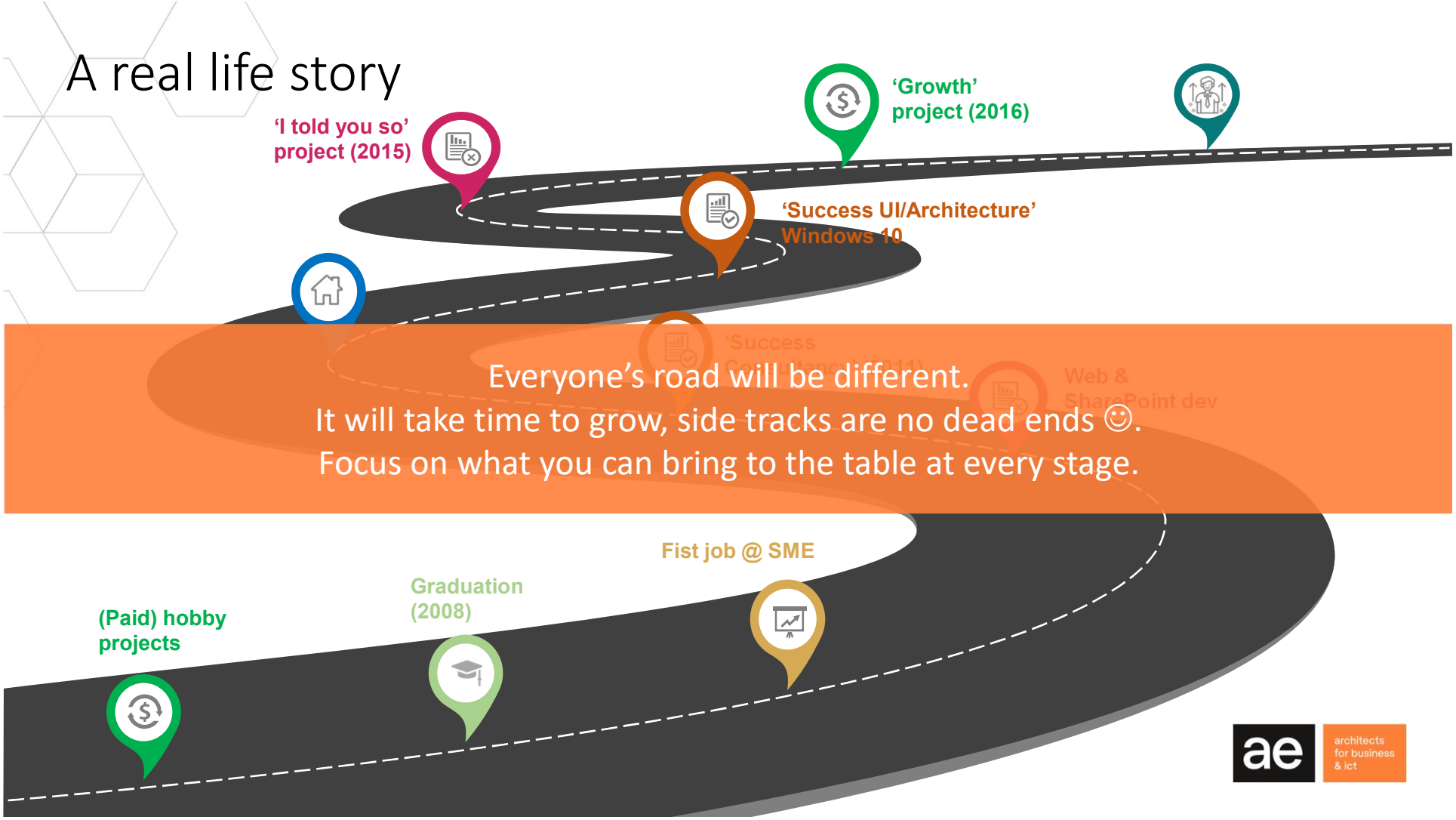
A real life story



Everyone's road will be different.
It will take time to grow, side tracks are no dead ends ☺.
Focus on what you can bring to the table at every stage.

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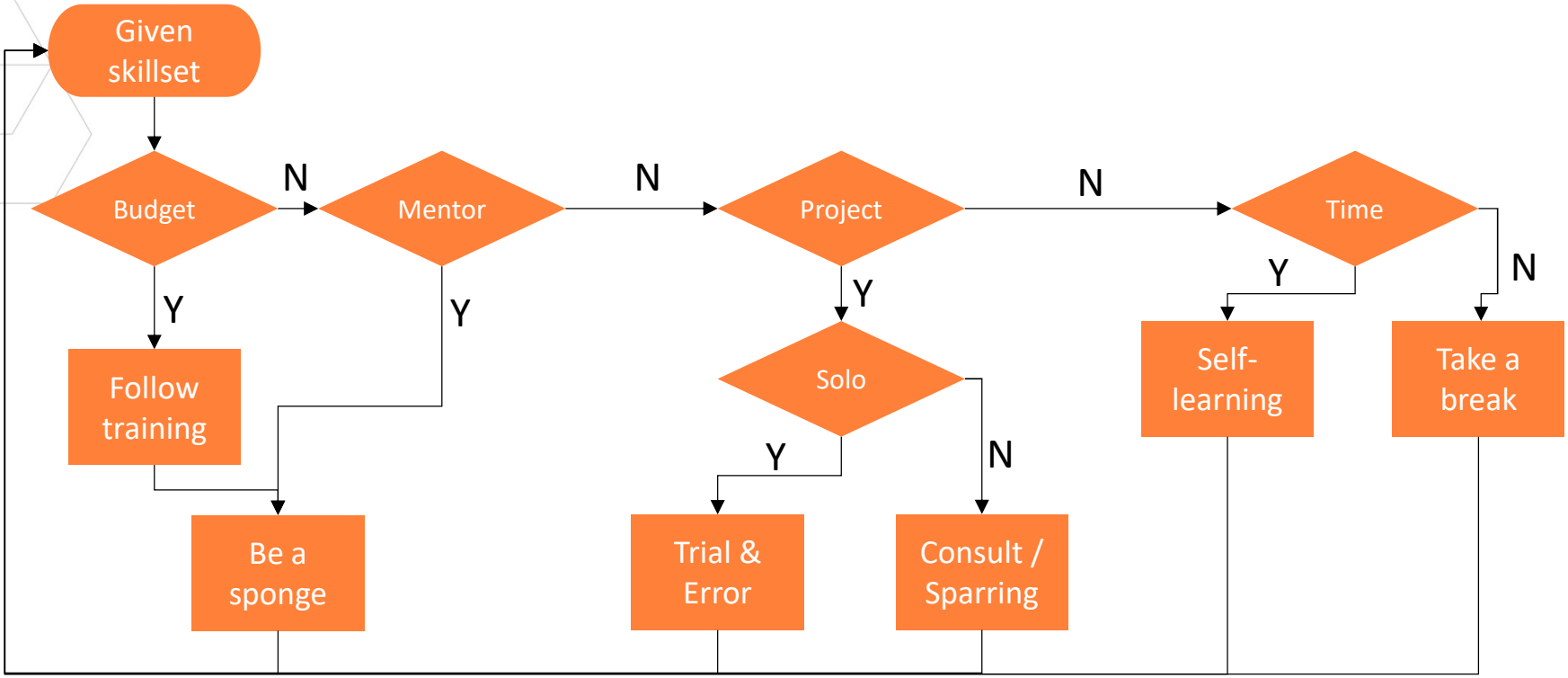
Key learnings from a (partial) career

- A straight road to perfection doesn't exist
- A setback or sidestep doesn't mean failure
- Every step is a lesson and part of your skill profile (cfr T-shape)
- Keep looking for improvement

Step-by-step improvement



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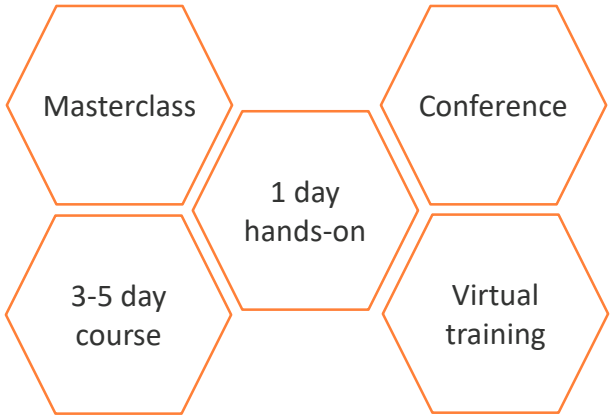
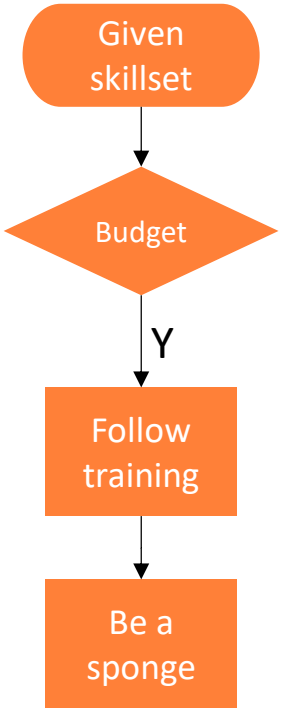
Training through budget

- Budget = money
- Budget = time

- Hands-on in early stages
- More general / theoretical later in your career

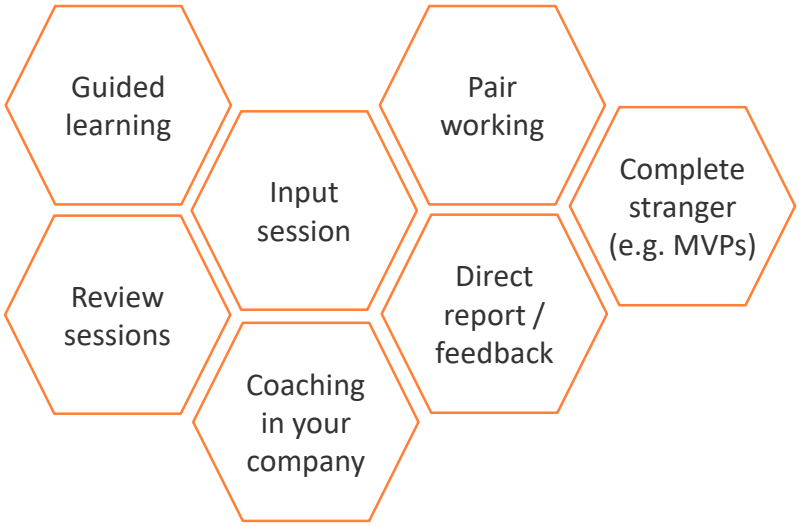


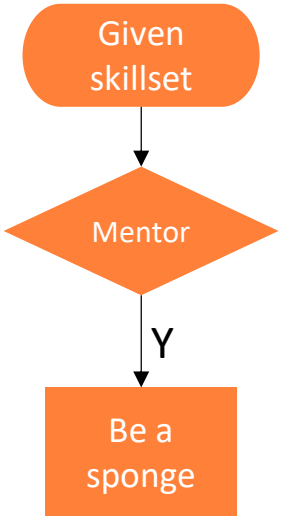


Find a mentor

- Someone with
  - Expertise
  - Time
  - Coaching skills
- On or off the job
- Multiple options of mentorship

- Know your limits





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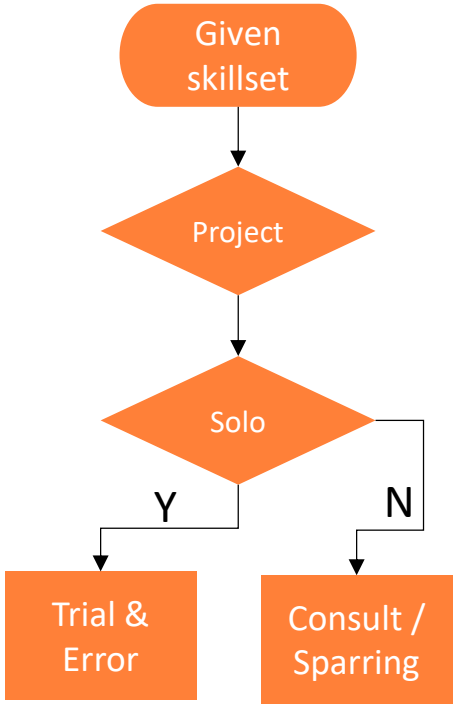
Learn from your project

- The challenging project
- The ‘less-challenging’ project
- Hobby projects

- Try to find someone for sparring
- Trial & Error?
  - PoC: prove or fail fast

- Get another project or role within project/organization

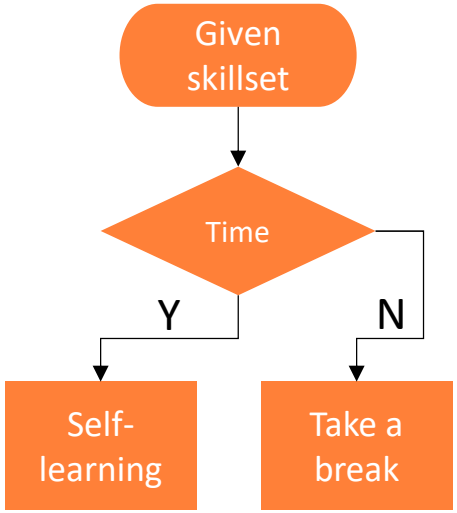


Never stop learning

Except when taking a break

- ‘Bench’-learning
- Take a day off to learn
- Put ‘downtime’ to good use

- Don’t burn yourself out



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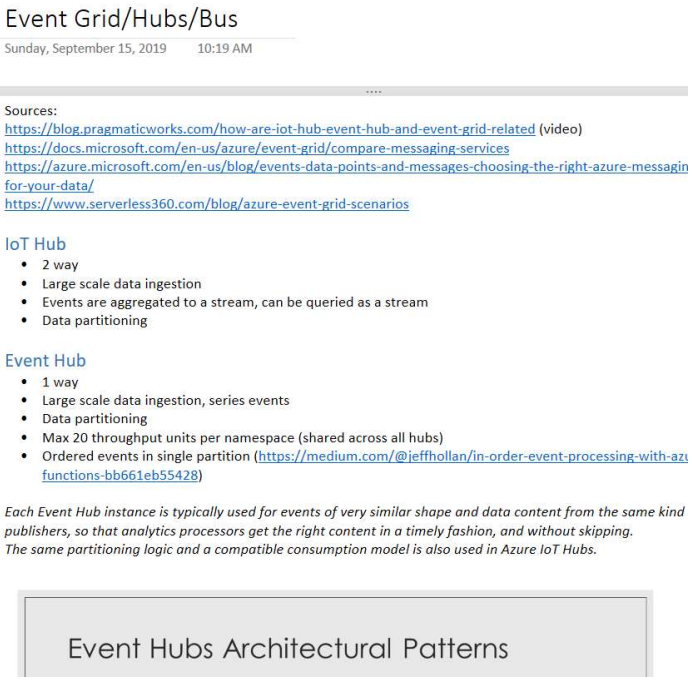
Learning iterations

- Within single topic: high level to deep dive
  - Terminology
  - Theory
  - Practical experience
- Broaden your horizon
- Don’t bite more than you can chew

The details of learning

Taking notes

- Learn once, reuse knowledge
  - I forget a lot ☺
- Also write down things to learn
- Tooling
  - Moleskine (also on interviews)
  - OneNote
  - Go public with (micro)blog
- Look for / create templates, libraries, …



Event Grid/Hubs/Bus

Sunday, September 15, 2019 10:19 AM

Sources:
https://blog.pragmaticworks.com/how-are-iot-hub-event-hub-and-event-grid-related (video)
https://docs.microsoft.com/en-us/azure/event-grid/compare-messaging-services
https://azure.microsoft.com/en-us/blog/events-data-points-and-messages-choosing-the-right-azure-messagin
for-your-data/
https://www.serverless360.com/blog/azure-event-grid-scenarios

IoT Hub
- 2 way
- Large scale data ingestion
- Events are aggregated to a stream, can be queried as a stream
- Data partitioning

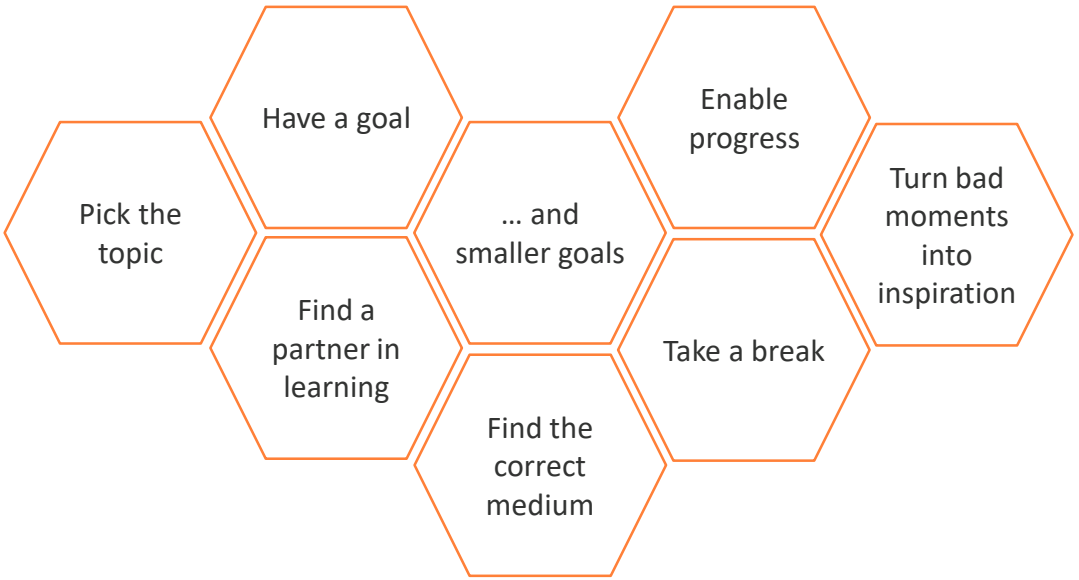
Event Hub
- 1 way
- Large scale data ingestion, series events
- Data partitioning
- Max 20 throughput units per namespace (shared across all hubs)
- Ordered events in single partition (https://medium.com/@jeffhollan/in-order-event-processing-with-azu
functions-bb661eb55428)

Each Event Hub instance is typically used for events of very similar shape and data content from the same kind publishers, so that analytics processors get the right content in a timely fashion, and without skipping.
The same partitioning logic and a compatible consumption model is also used in Azure IoT Hubs.

Event Hubs Architectural Patterns

Motivation

Learning takes energy



Don’t be afraid of Imposter Syndrome

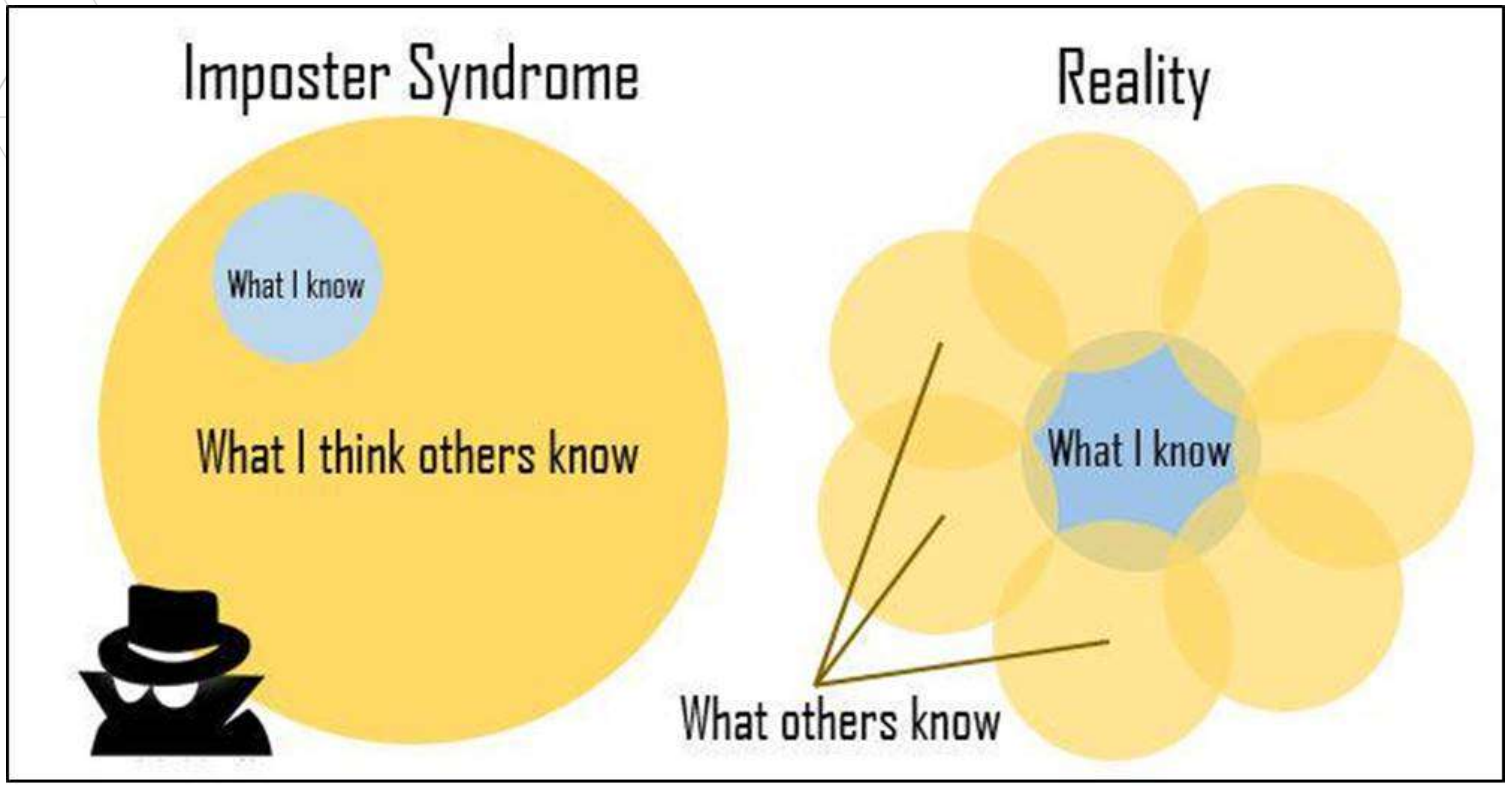


Image by David Whittaker (@rundavidrun) Used with permission

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Don’t be afraid of Imposter Syndrome

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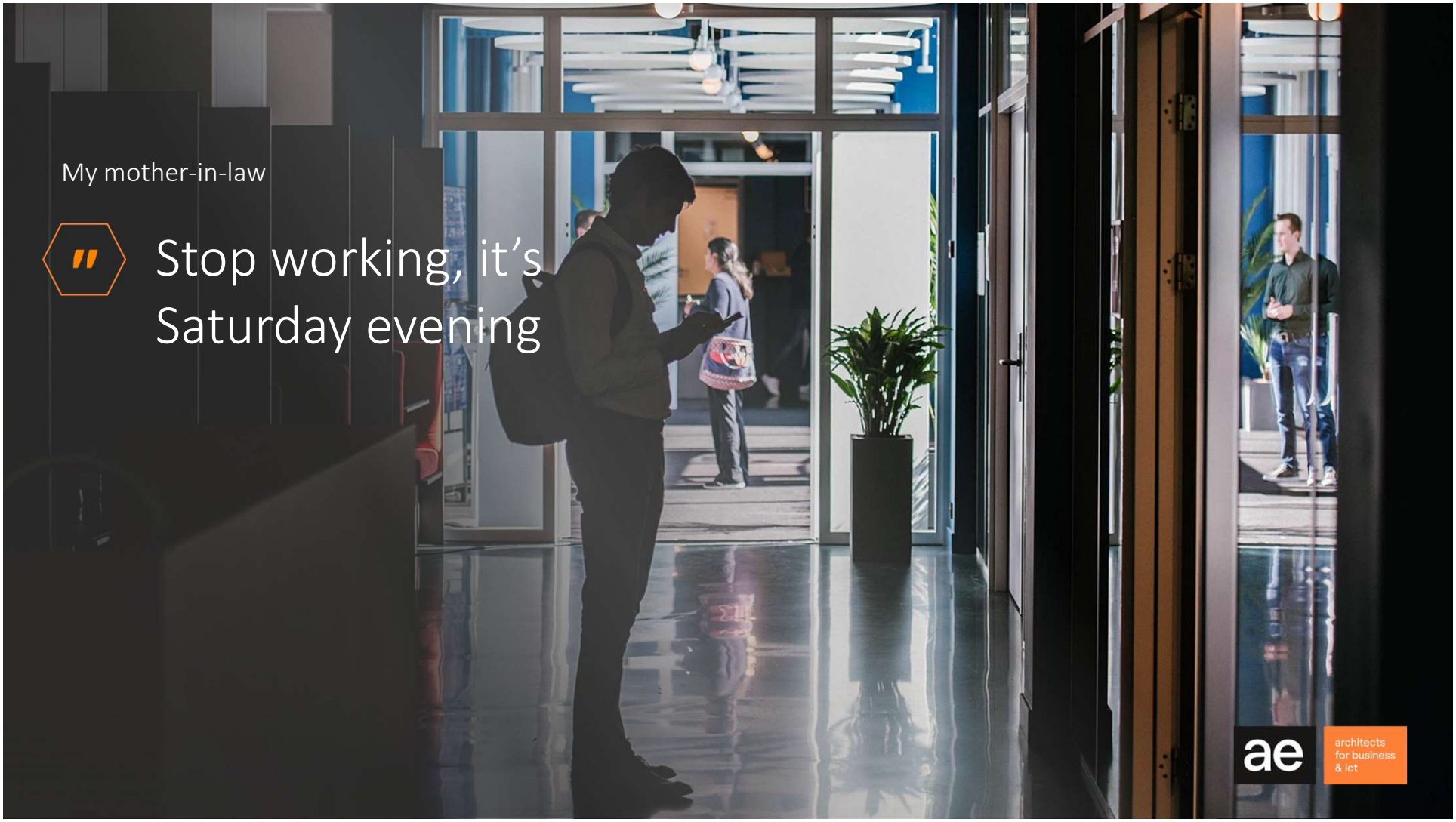
Give back to others

You know how hard improvement is

- Be a mentor / sounding board
- Provide constructive feedback
- Give space to colleagues on the project to grow
- Share knowledge
- Stay within your comfort zone

Every bit of help is welcome


My mother-in-law
Stop working, it’s Saturday evening
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