

# Professional Development and Career Progression for Data Scientists

# **Grow.**

Professional Development and Career Progression for Data Scientists

# Noa Tamir

Freelance Data Scientist and Analytics Consultant

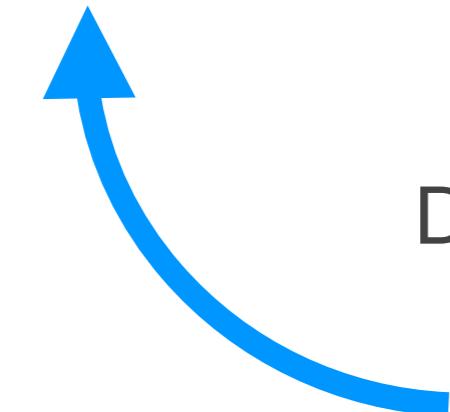
Data Scientist

Senior Data Scientist

Data Science Technical Lead

Data Science Team Lead

Director of Data Science



@noatamir



noatamir



noatamir.com



noatamir

# Noa Tamir

Freelance Data Scientist and Analytics Consultant

R-Ladies

Women in Machine Learning and Data Science

satRday

R Forwards

NumFocus DISC

Ampair



@noatamir



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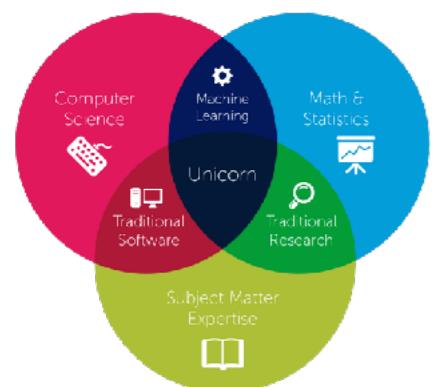
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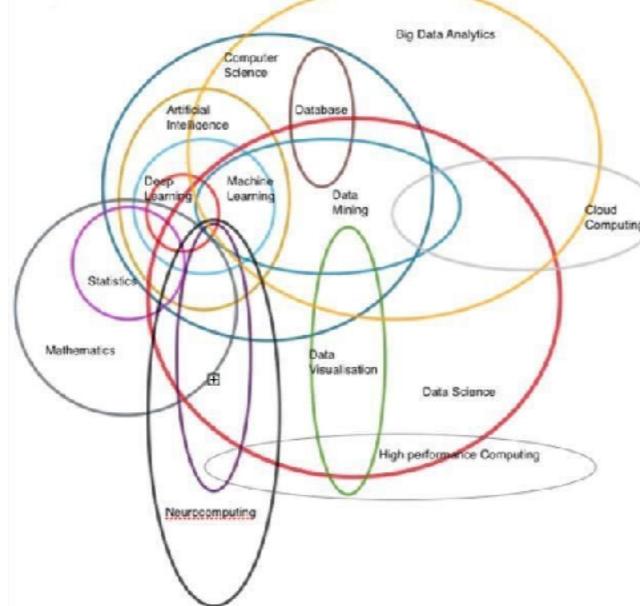
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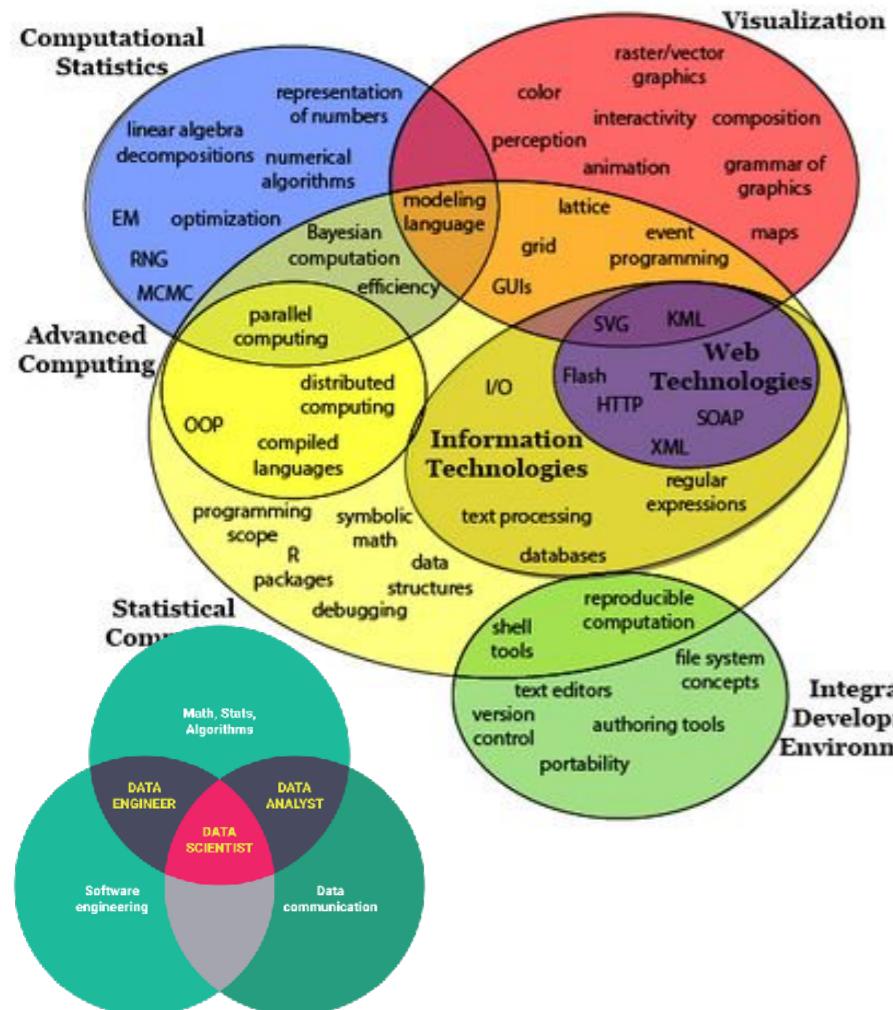
# Data Science



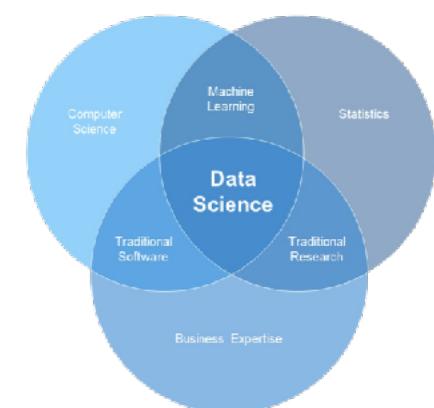
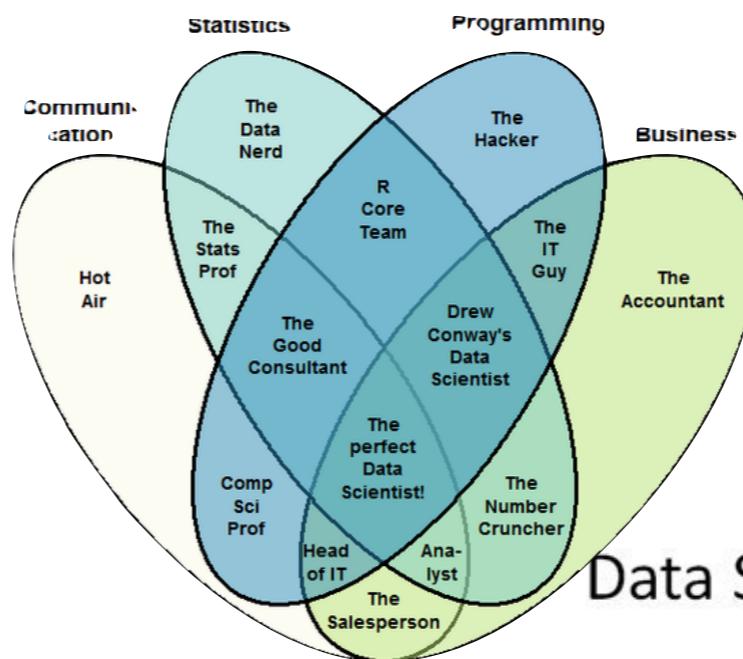
Relation between techniques of Big Data Analytics



This isn't even how Venn Diagrams work??

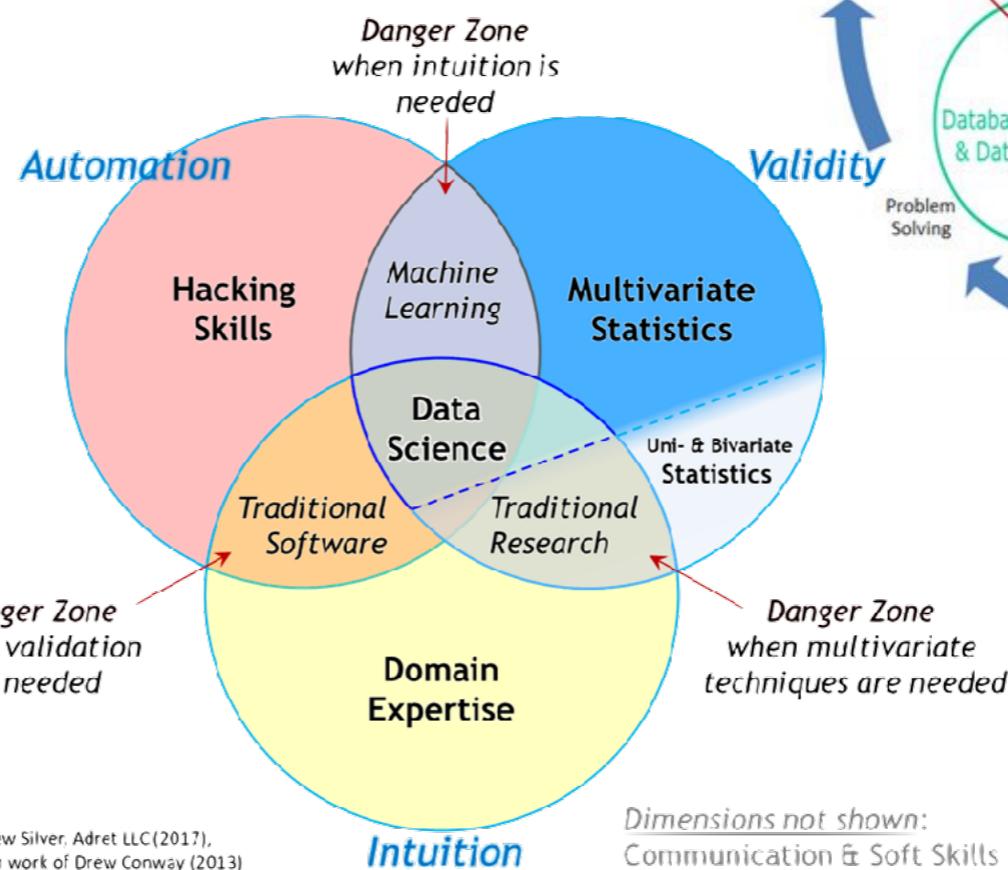
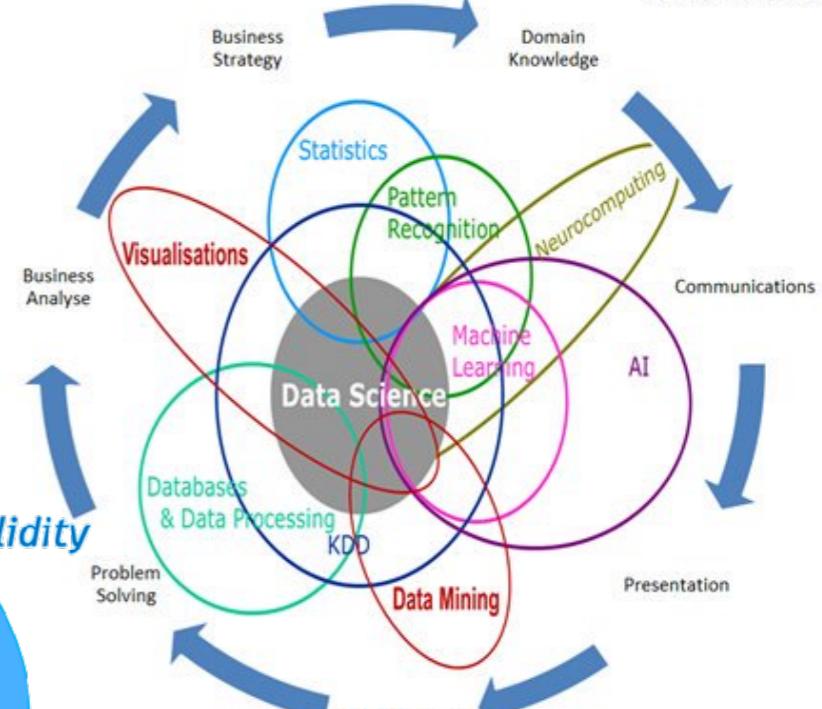


The Data Scientist Venn Diagram



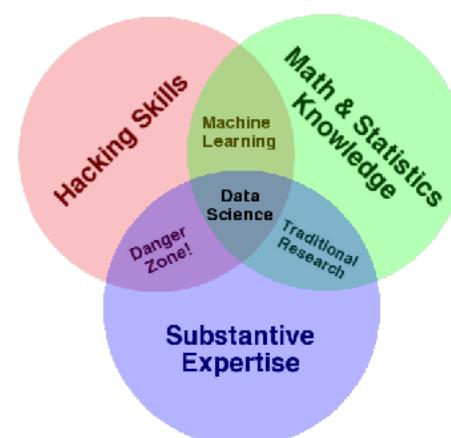
## Data Science Is Multidisciplinary

By Brendan Tierney, 2012



by Andrew Silver, Adret LLC (2017),  
builds on work of Drew Conway (2013)

Dimensions not shown:  
Communication & Soft Skills



# Career Tracks

## Skills: Levels, “Hard”, “Soft”

Mindset  
Resources  
In Practice

Where's the “Data Science Part”?





Tracks



“Tracks”

# “Tracks”

Junior



Professional



Senior



...and then? ...

**“Tracks”**

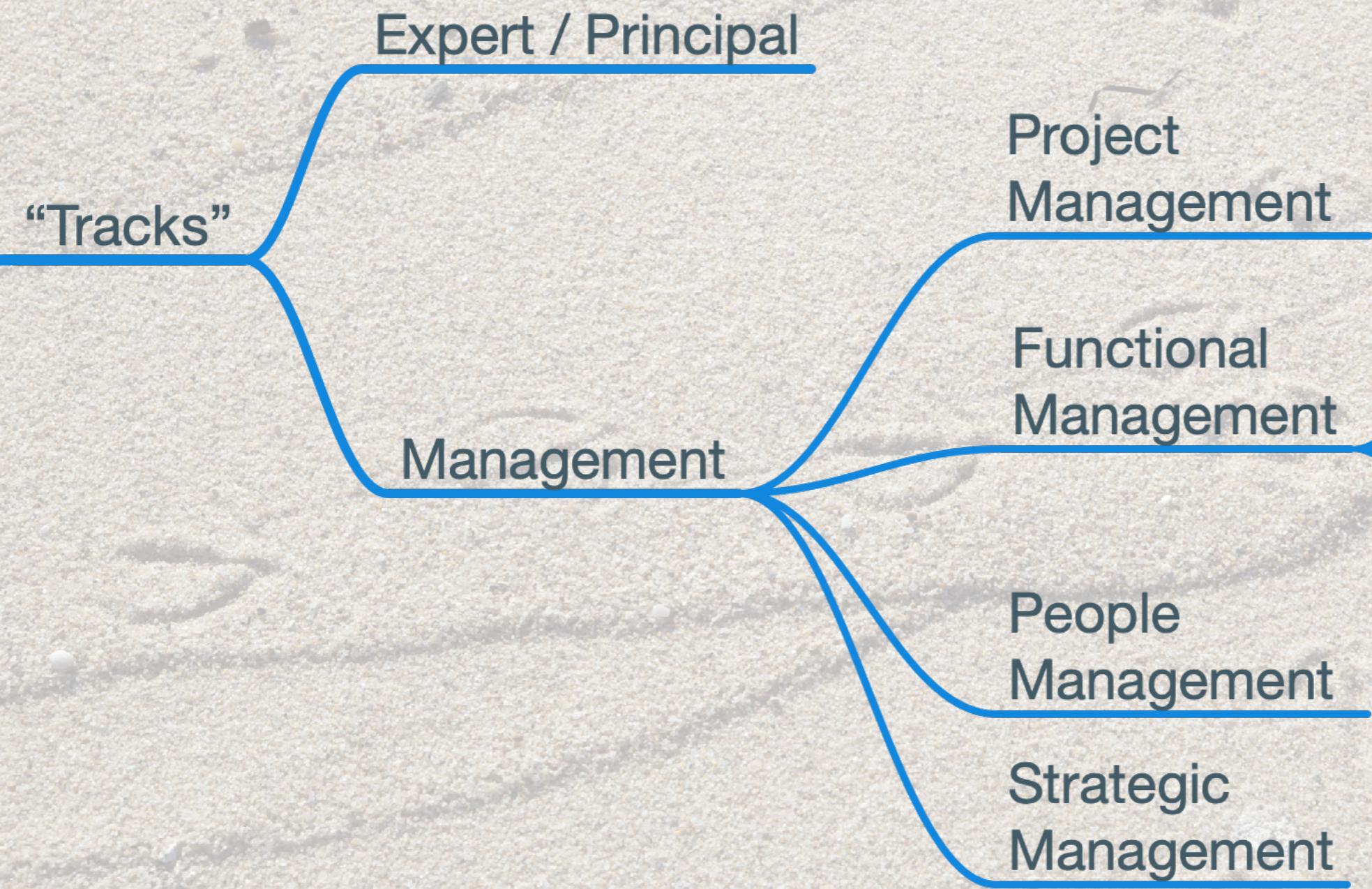


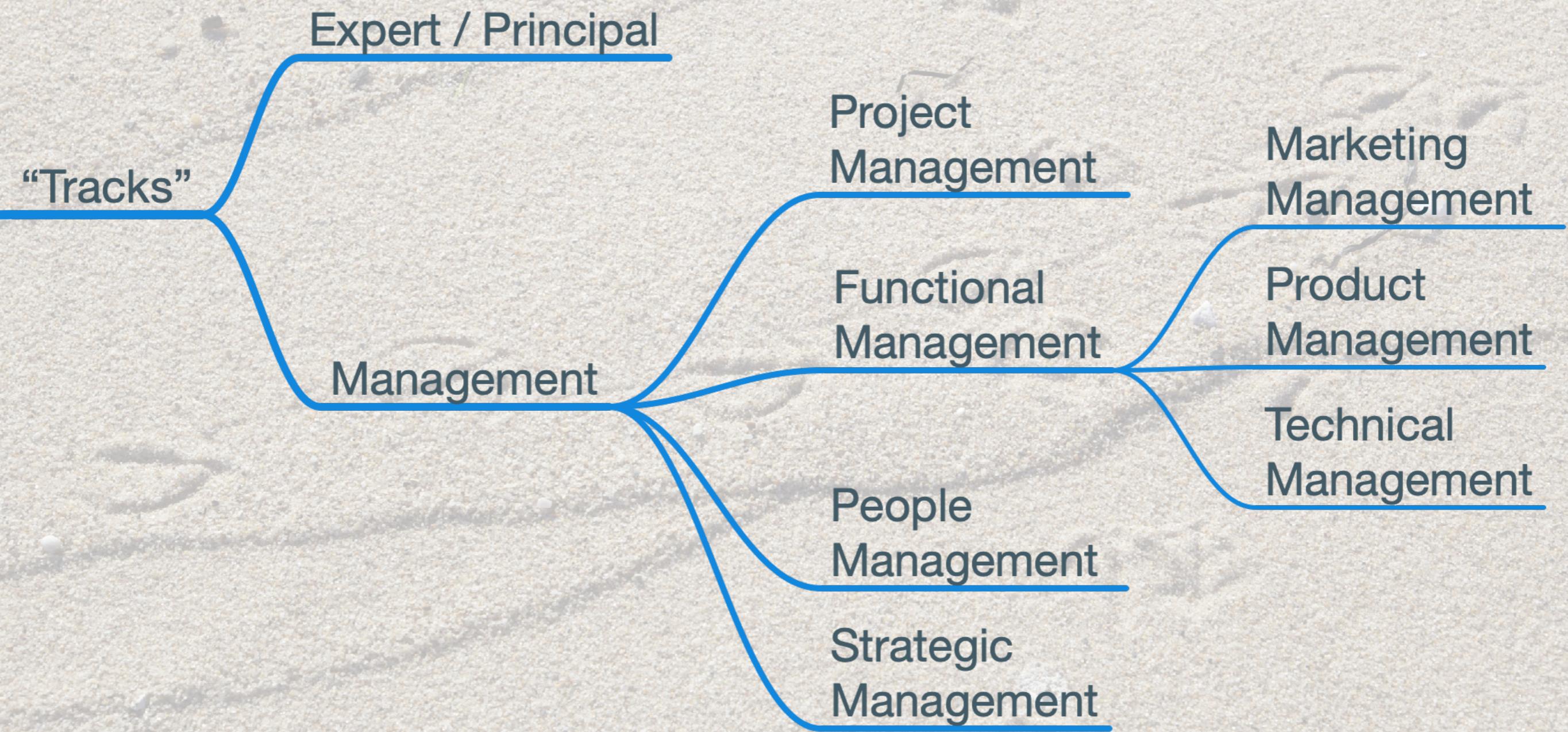


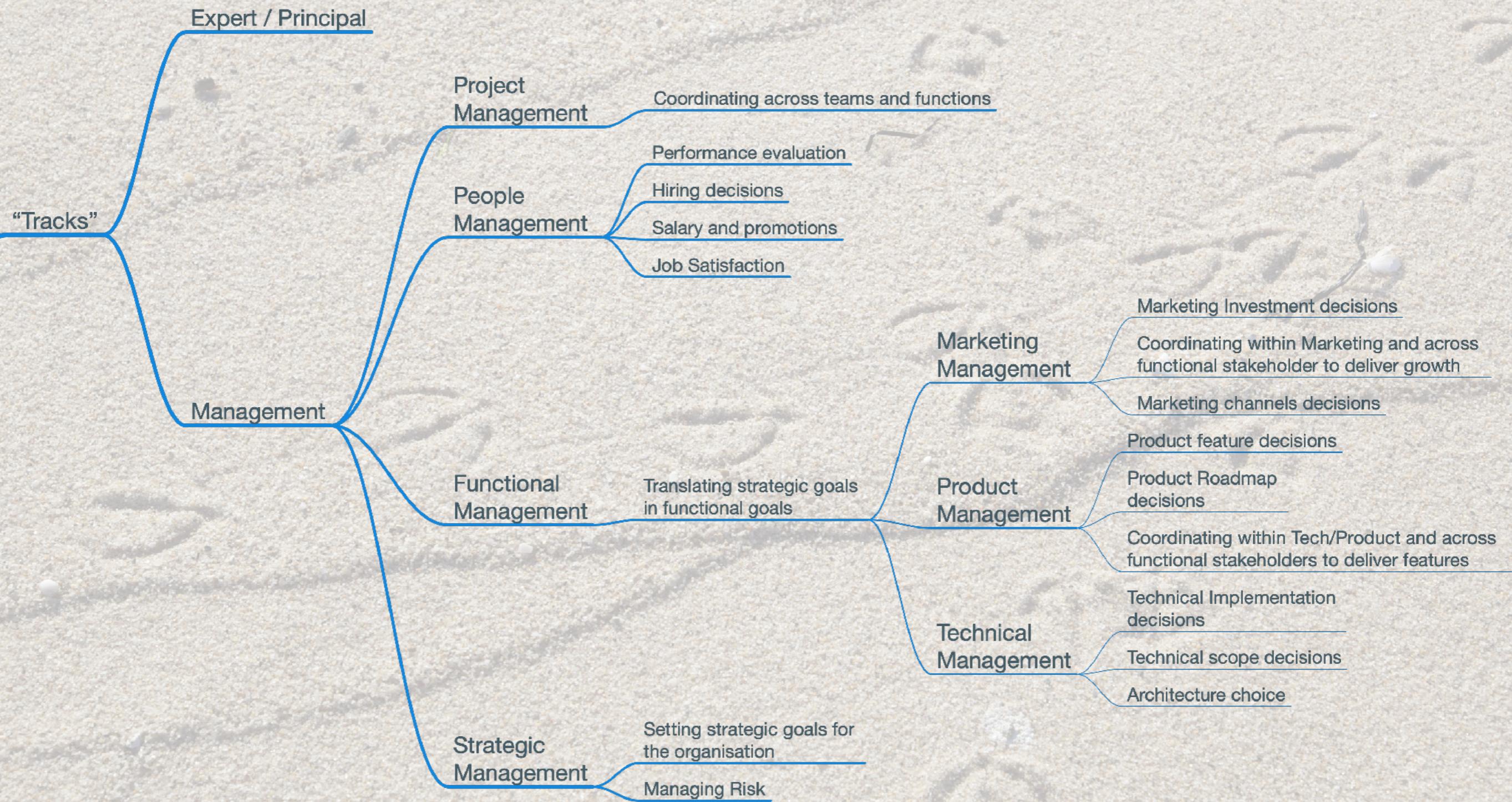
Expert / Principal

“Tracks”

Management



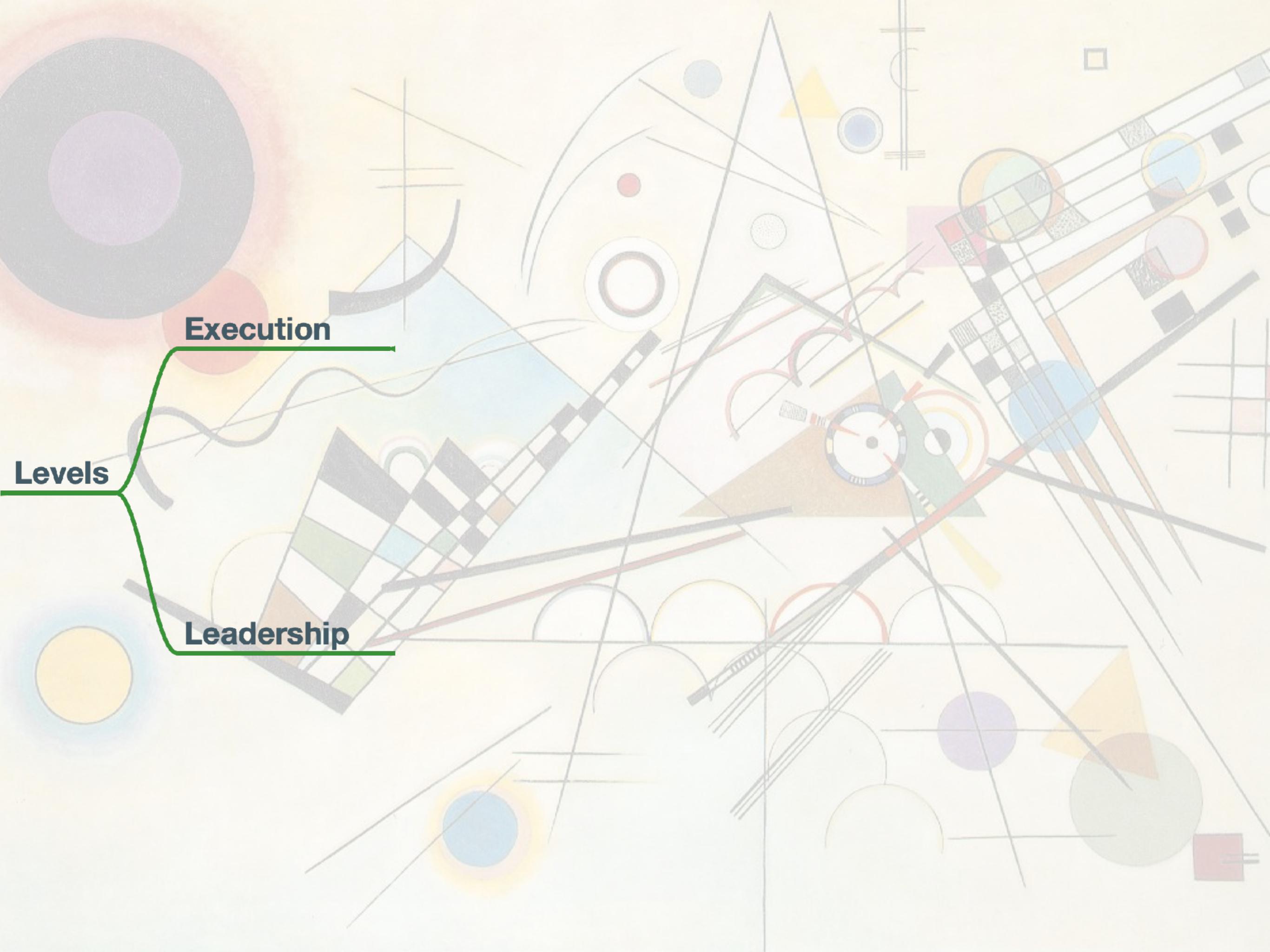




The background of the image is a vibrant, abstract composition of geometric shapes. It features a large black circle on the left, a red circle below it, and a blue triangle above the red circle. The right side of the image is dominated by a grid pattern with various colored rectangles (blue, green, yellow, orange) and circles. Black lines of different thicknesses crisscross the entire scene, creating a sense of depth and movement. The overall color palette includes shades of black, white, red, blue, green, yellow, and orange.

# Skill Levels

Execution  
Leadership  
Knowledge Level  
Influence Scope



**Levels**

**Execution**

**Leadership**



no experience,  
task focus

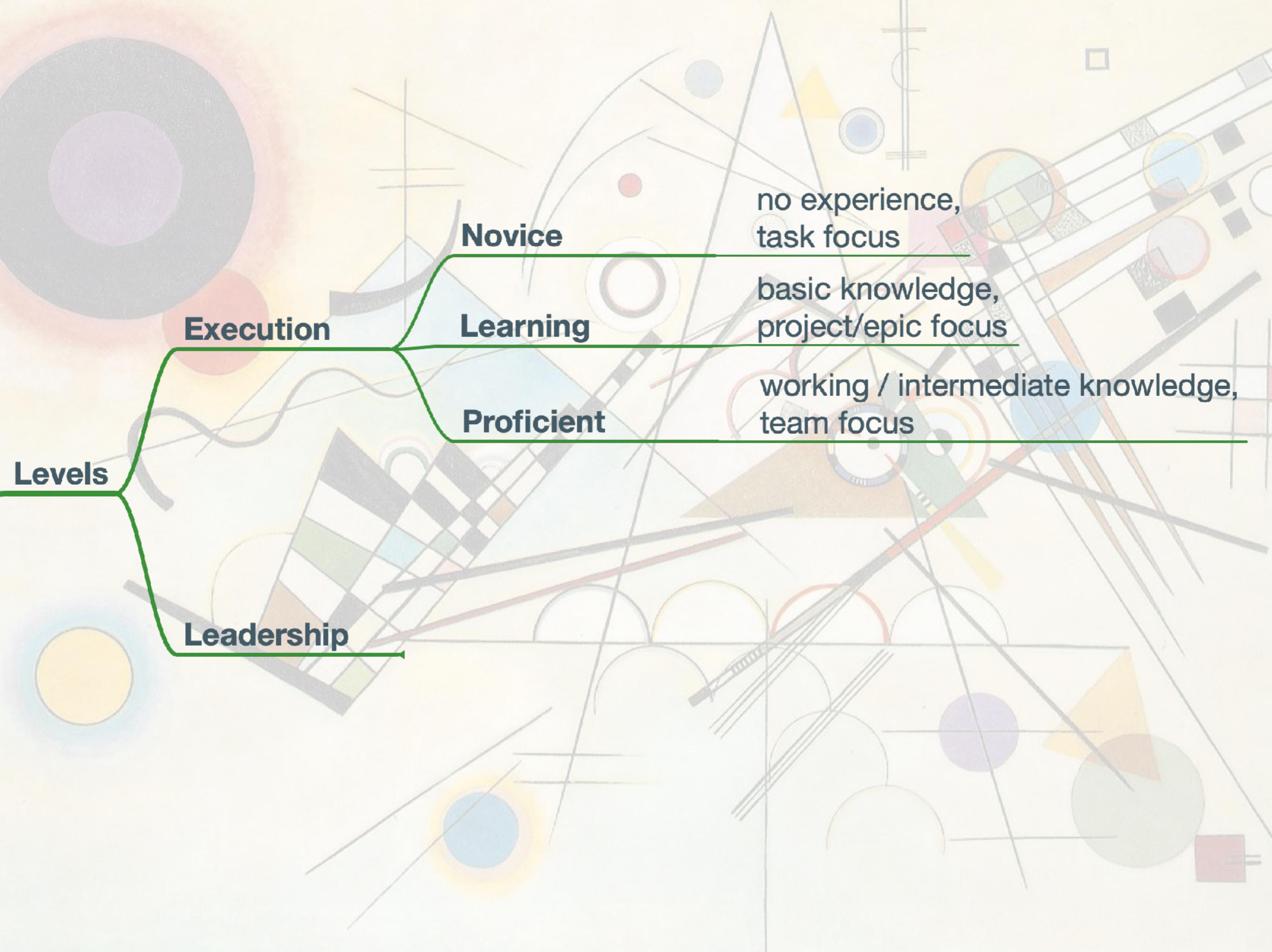
**Novice**

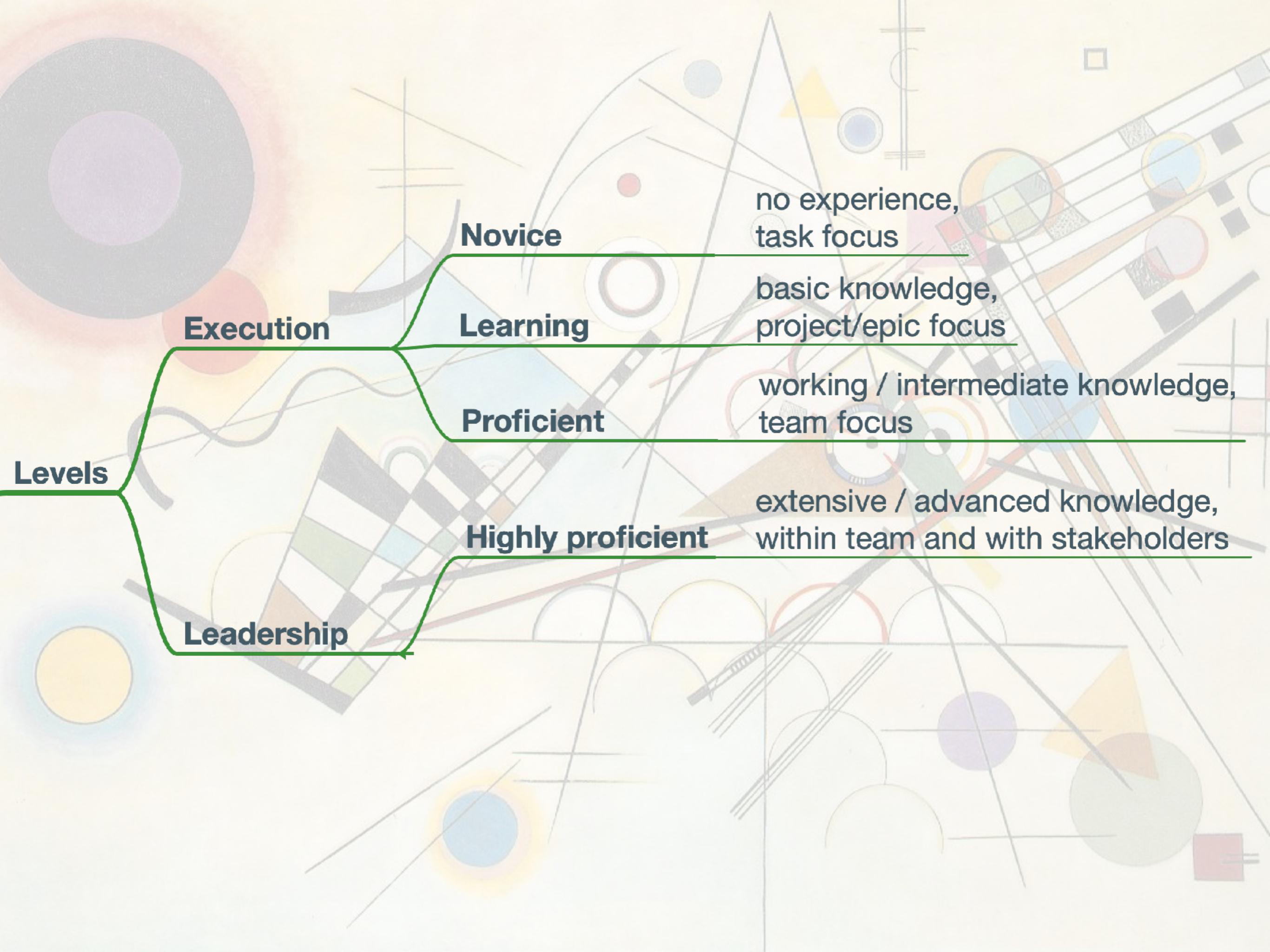
**Execution**

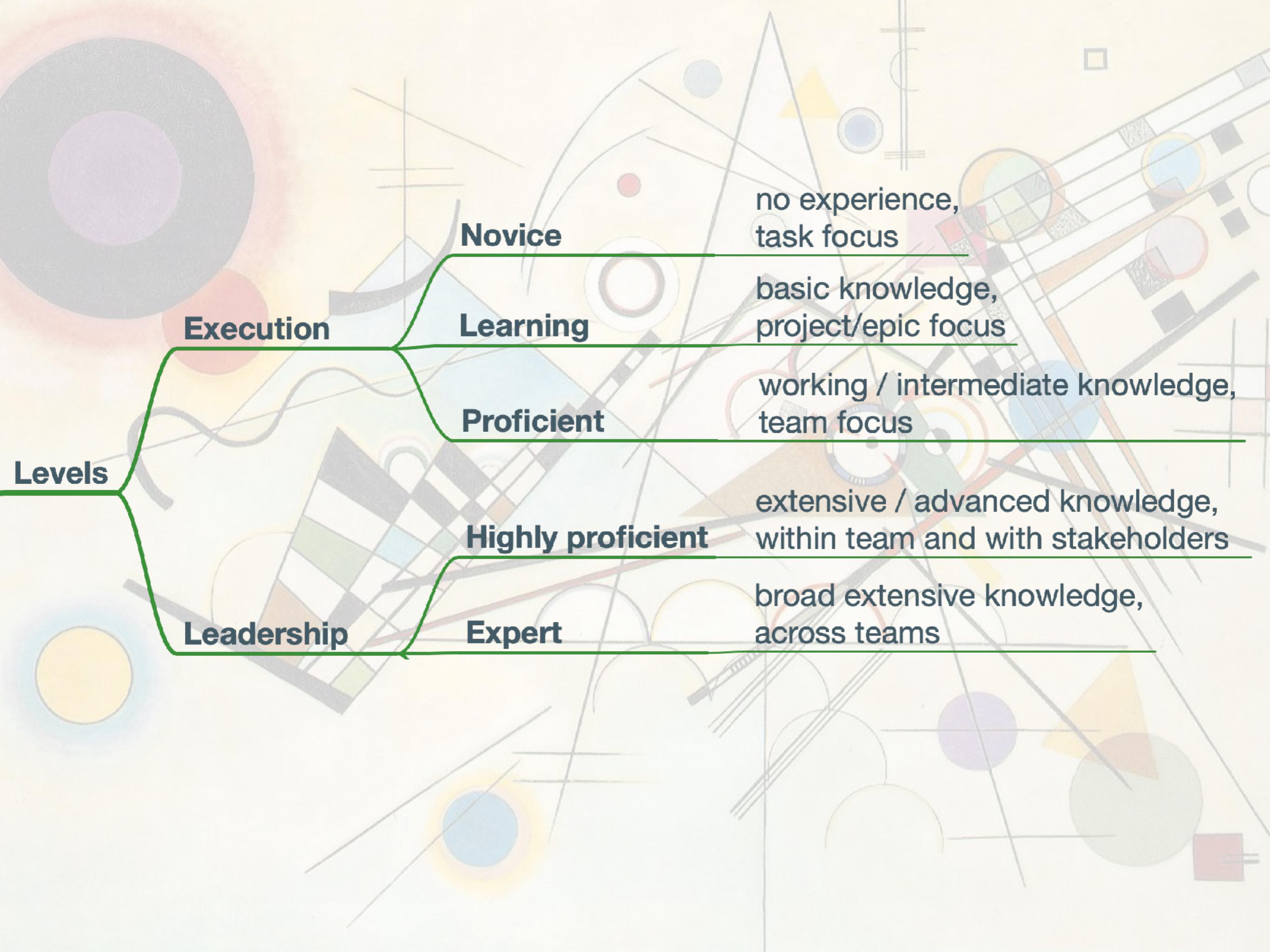
**Levels**

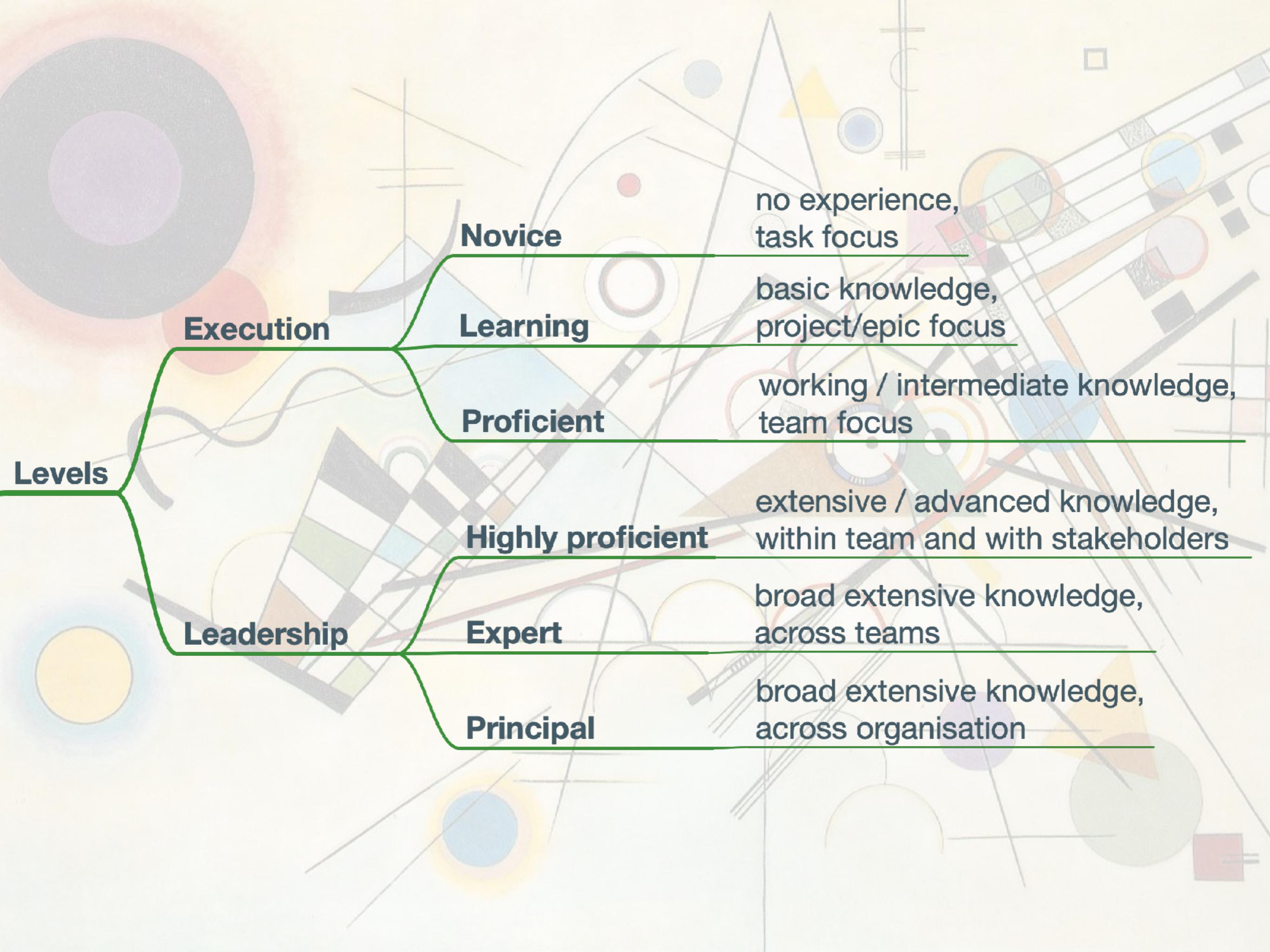
**Leadership**













# “Hard” Skills

Mathematics / Statistics / Algorithms

Data Engineering and wrangling

Software Engineering

Data Visualisation

DevOps & Security

Domain / Business Knowledge

Law



# Data Engineering and wrangling

Data Modeling

Data Validation

ETL

Map Reduce

Streaming Data ETL

User and load  
management

# **Software Engineering**

Writing code

Debugging

Testing

Observability

Understanding code

Architecture





# Data Visualisation

Exploratory  
Visualisation

Explanatory  
Visualisation

Storytelling

D3

Typography

Color Theory

Visual Design

Interactive Design



**DevOps & Security**

Cloud Deployment  
Continuous Integration  
Infrastructure as Code  
Information Security  
Threat Monitoring

## KPI design

Identifying business problems and opportunities

Transforming business problems and opportunities into data problems

Economics

Marketing

Business Models

Finance

Sales

Purchasing

Customer Support

Organisational Structure

HR

Product

Market Research

Domain/Market Specific Knowledge

PR

B2B, B2C

Subscription / Micro-payments / Service Provider / eCommerce / etc.

Enterprises / Star-ups

Functional / Cross functional

Remote / Distributed / Single location

**Business Knowledge**





**Law**

**GDPR**

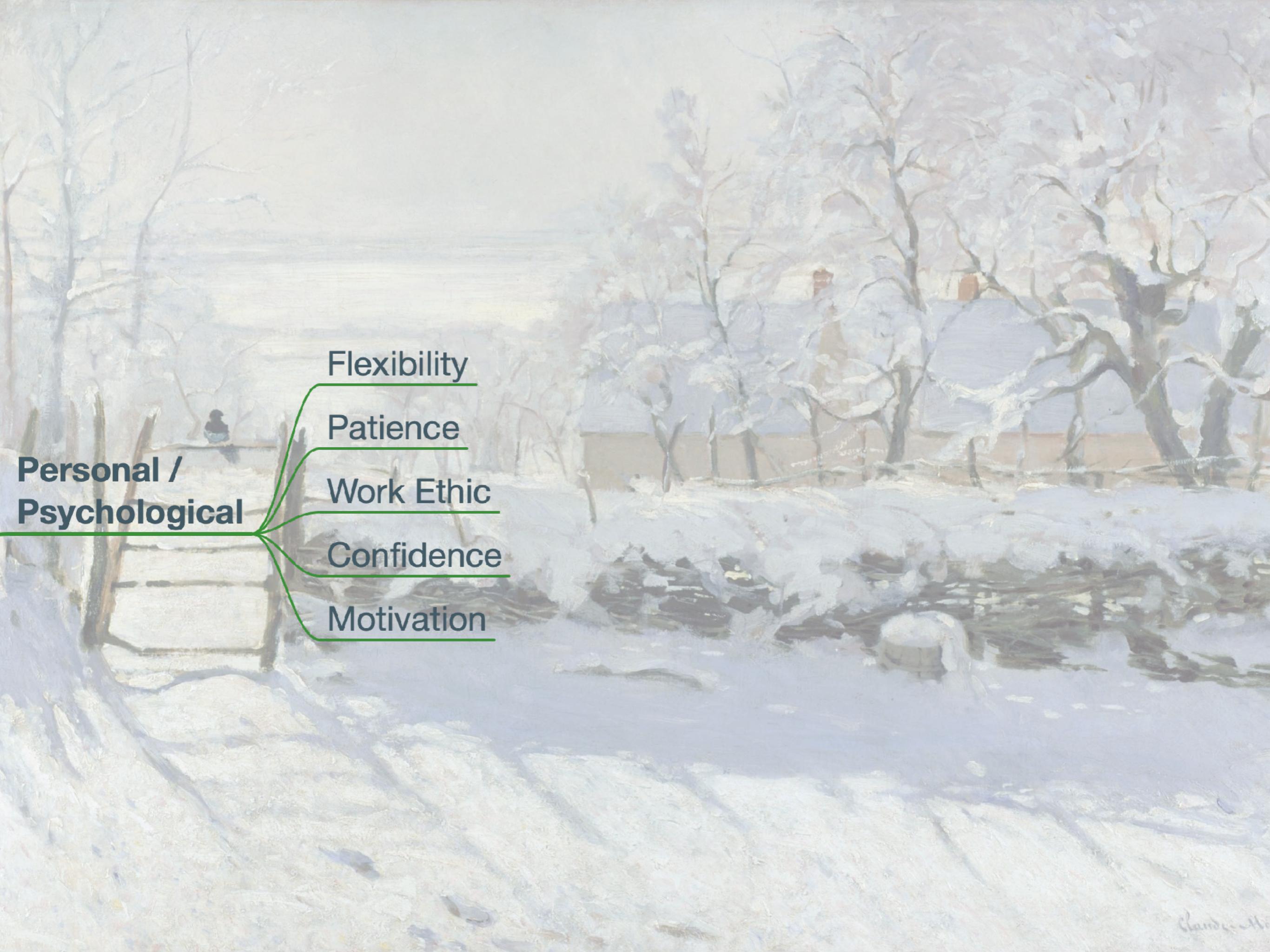
**Ethics**

**Human Rights**



# “Soft” Skills

Personal / Psychological  
Feedback, Communication, Collaboration  
Delivery  
Project Management  
Leadership  
Strategy



**Personal /  
Psychological**

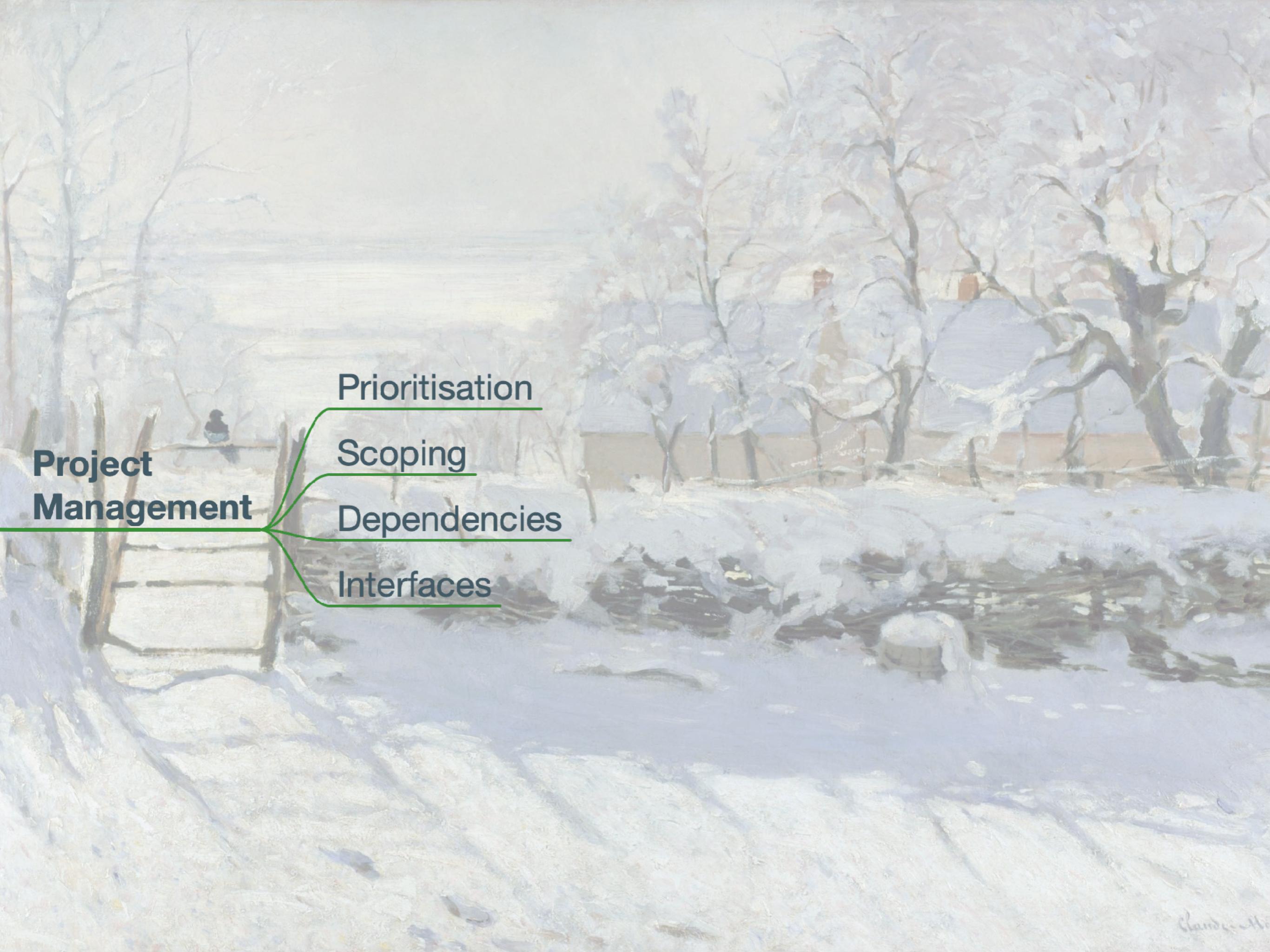
Flexibility  
Patience  
Work Ethic  
Confidence  
Motivation



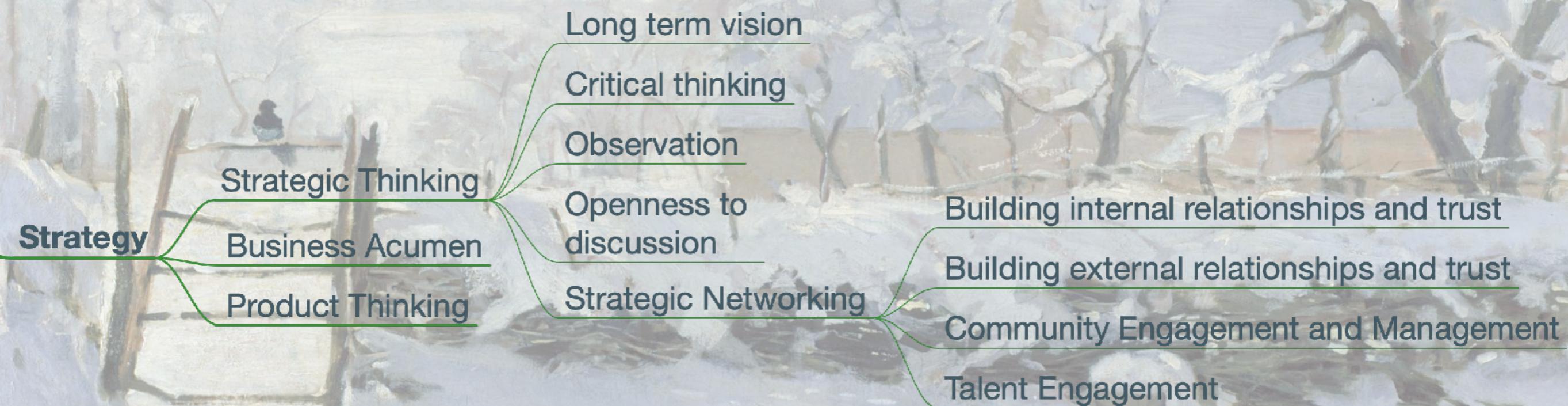
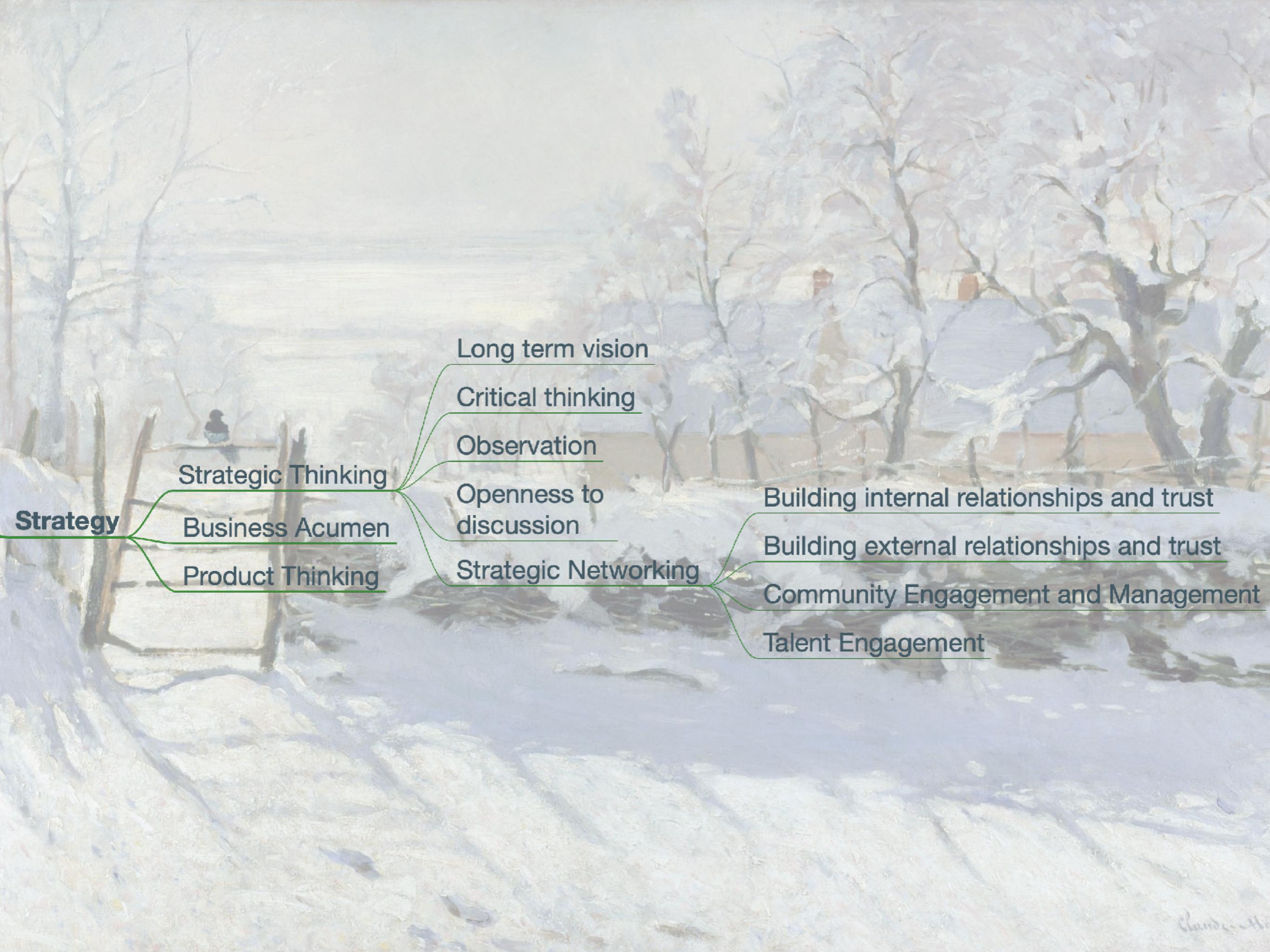


# **Project Management**

Prioritisation  
Scoping  
Dependencies  
Interfaces





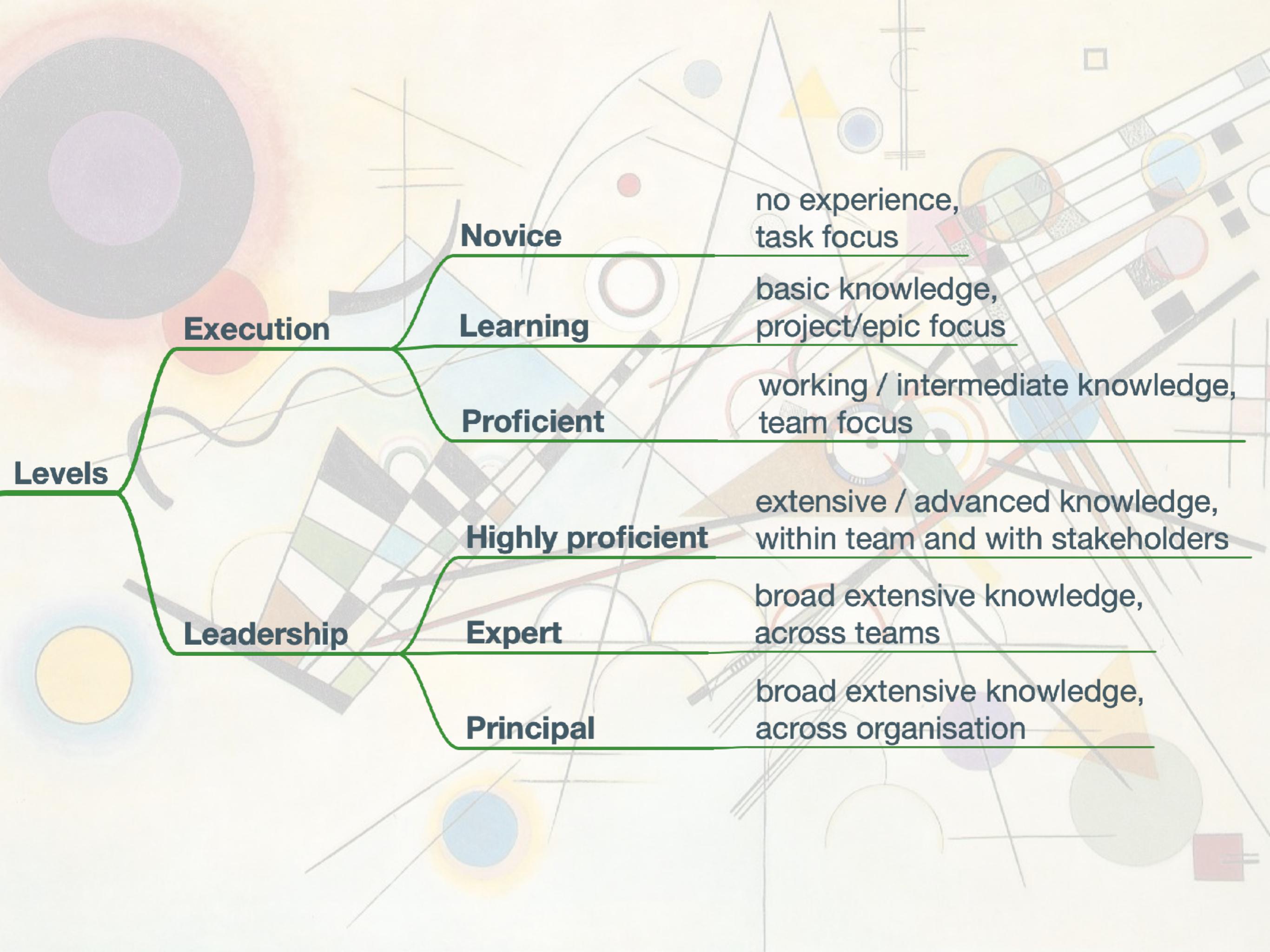


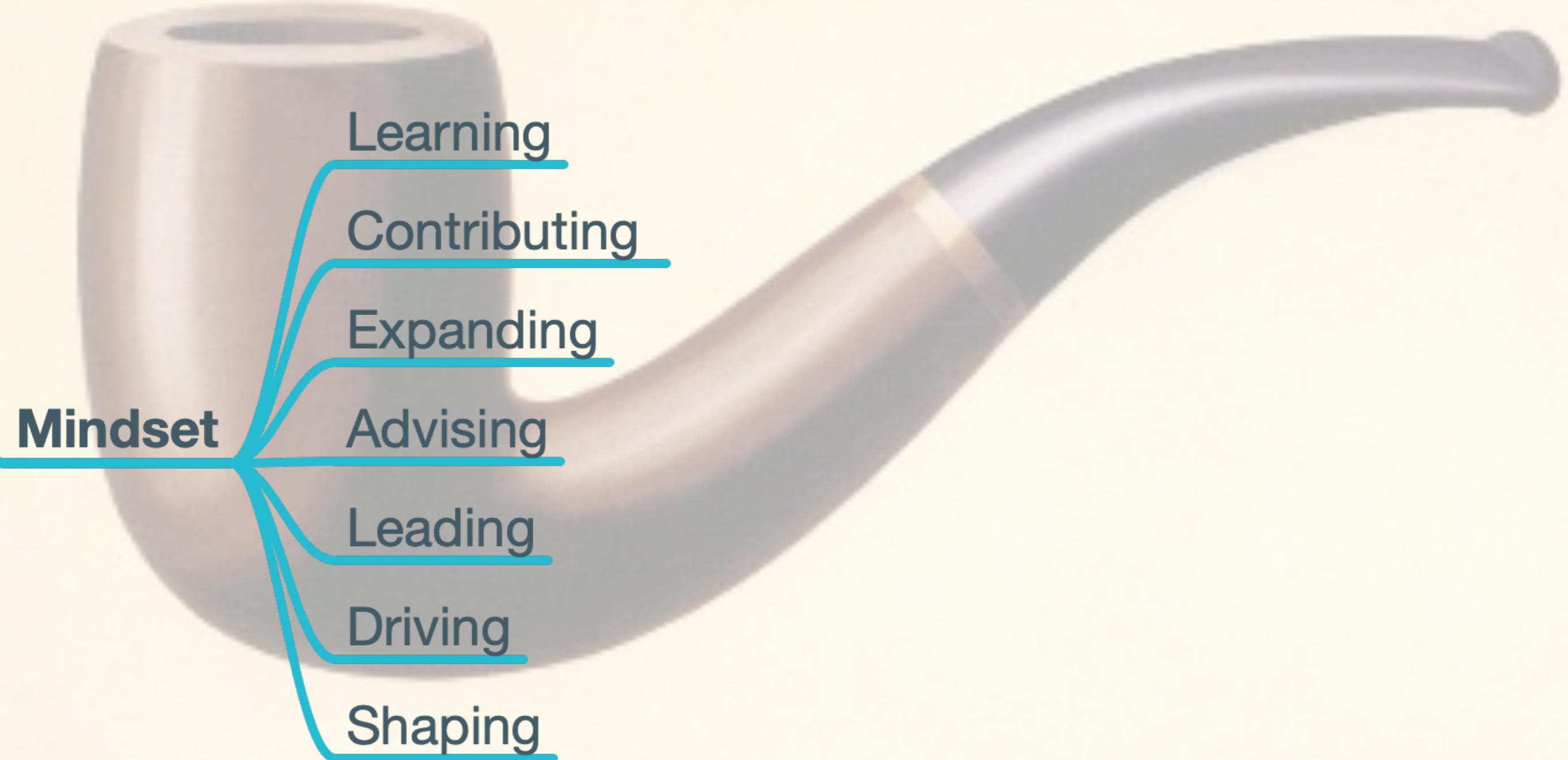


# Mindset

Let's get personal

*Ceci n'est pas une pipe.*



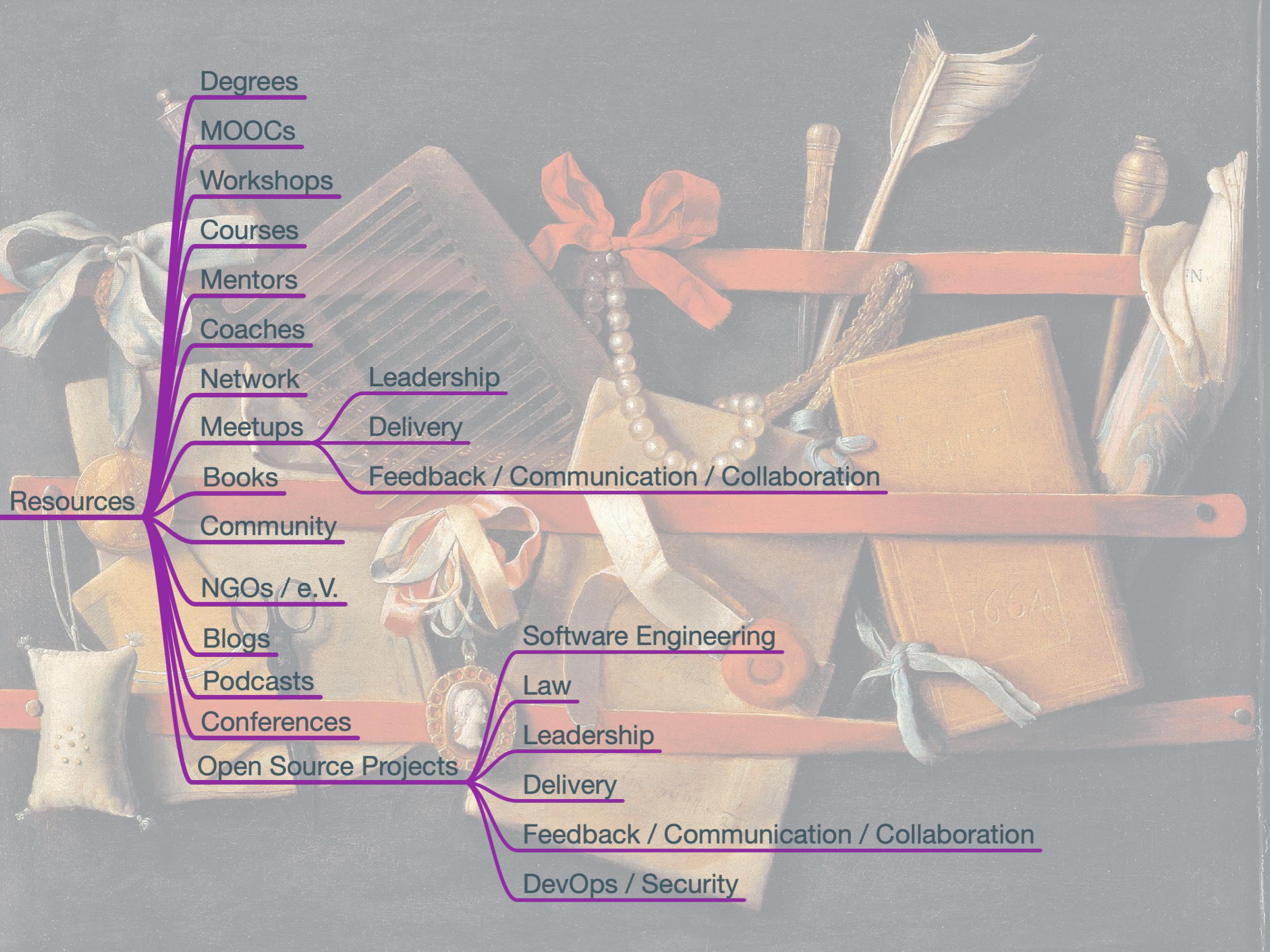


*Ceci n'est pas une pipe.*

A detailed still life painting on a dark background. It includes a large open book with a red ribbon, a quill pen, a compass, a telescope, a small globe, a pair of spectacles, a gold medal, and several smaller items like beads and a small pouch.

# Resources

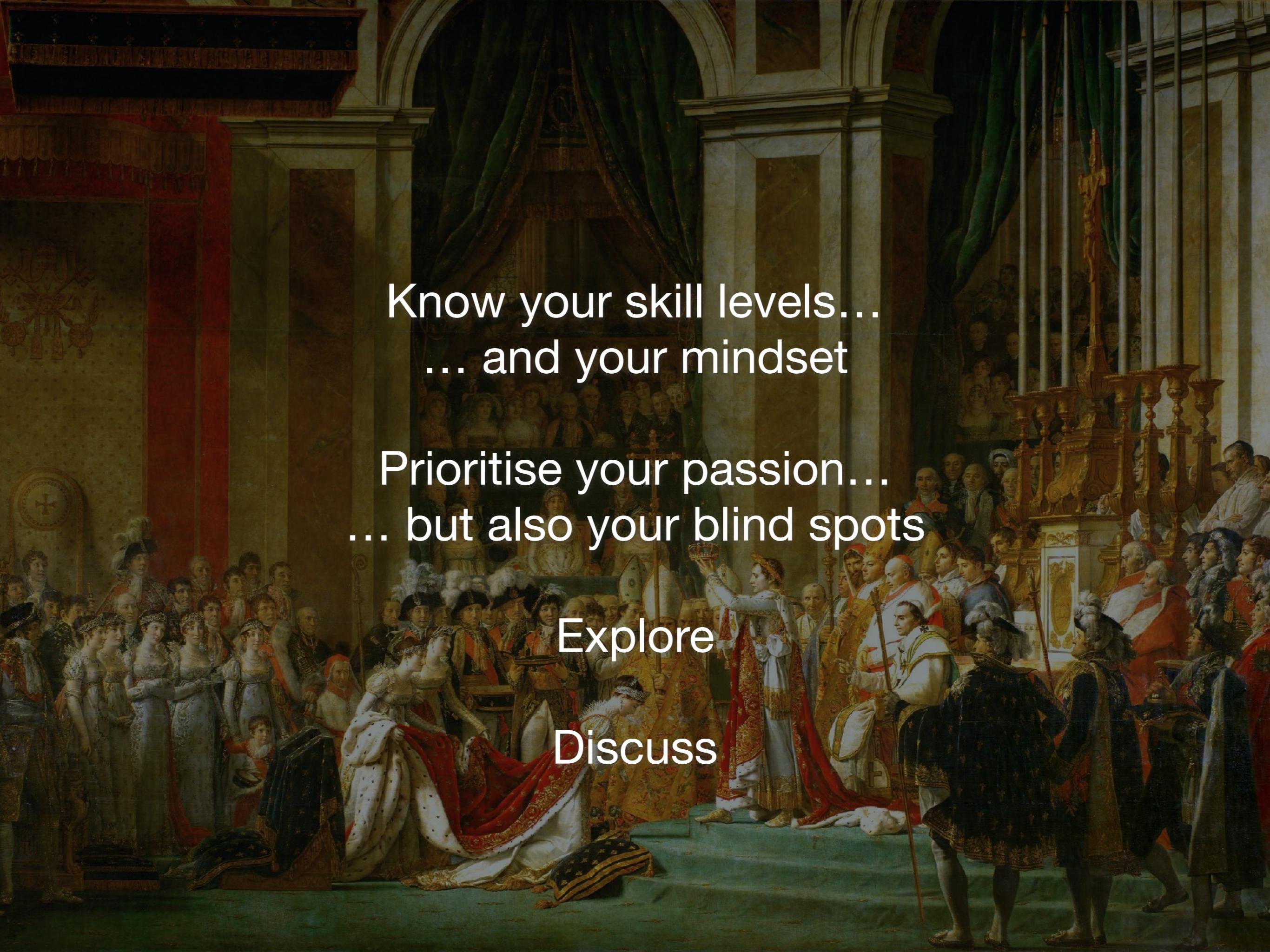
On-the-job  
Provided by work  
Independant  
Community  
Open Source



# In Practice

How do I use all of these?





Know your skill levels...  
... and your mindset

Prioritise your passion...  
... but also your blind spots

Explore  
Discuss

**Career Tracks**  
**Skills: Levels, “Hard”, “Soft”**  
**Mindset**  
**Resources**  
**In Practice**

# Thank You

[https://github.com/noatamir/Talks/blob/master/  
PyConDE2019-DSCareer-Grow.pdf](https://github.com/noatamir/Talks/blob/master/PyConDE2019-DSCareer-Grow.pdf)