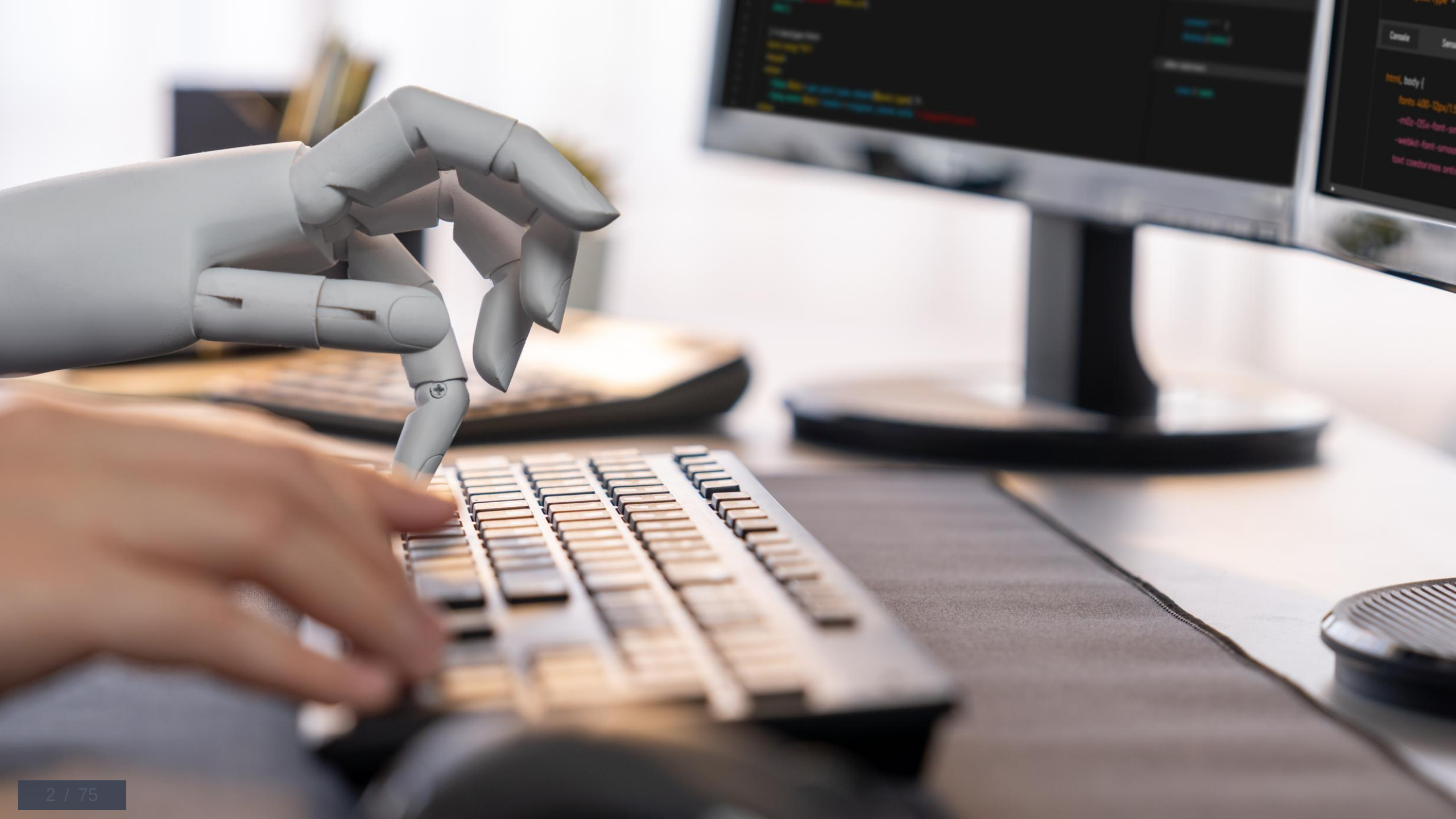


BUSINESS AUTOMATION

A PRACTITIONER'S VIEW ON IMPLEMENTING STRATEGY WITH PROCESS AUTOMATION

Tiese Barrell [tiese.barrell@group9.nl]





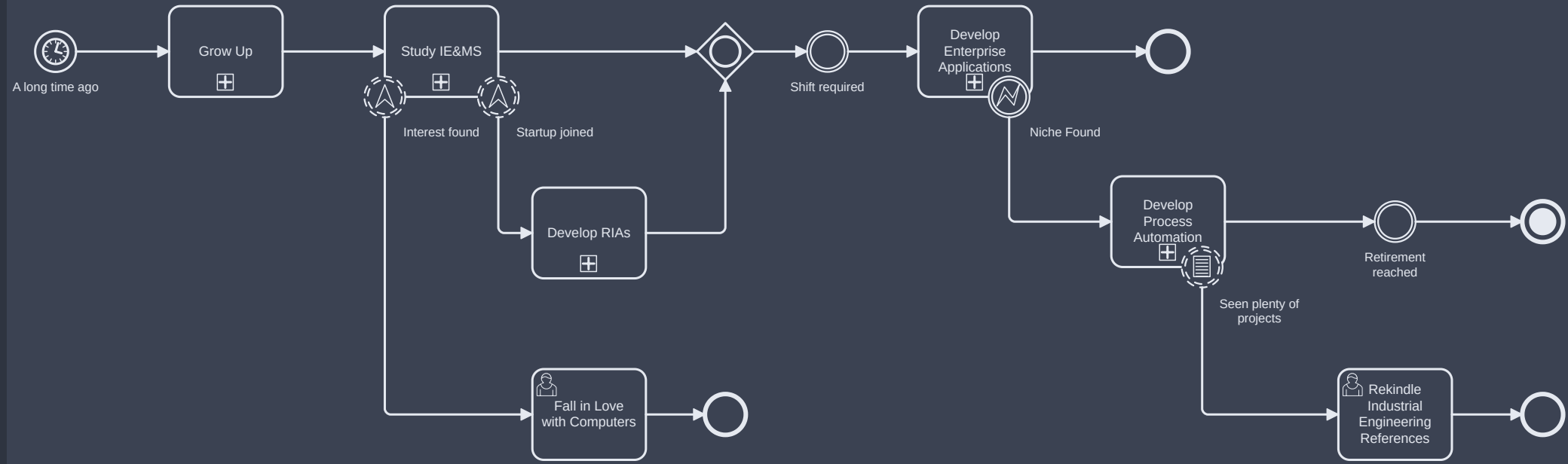
ABOUT ME

- Consultant at group9
- Applying OSS BPM in (enterprise) projects since 2009
- Public, Pension, Energy and Mobility sectors
- Camunda Champion

 <https://airquill.io>



ONCE UPON A TIME... [1]

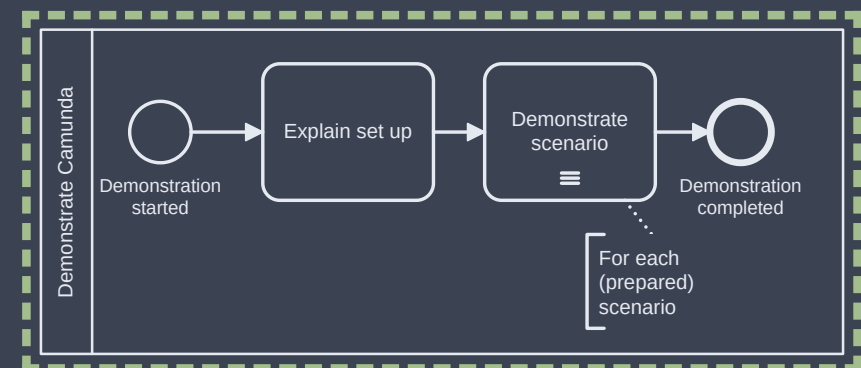
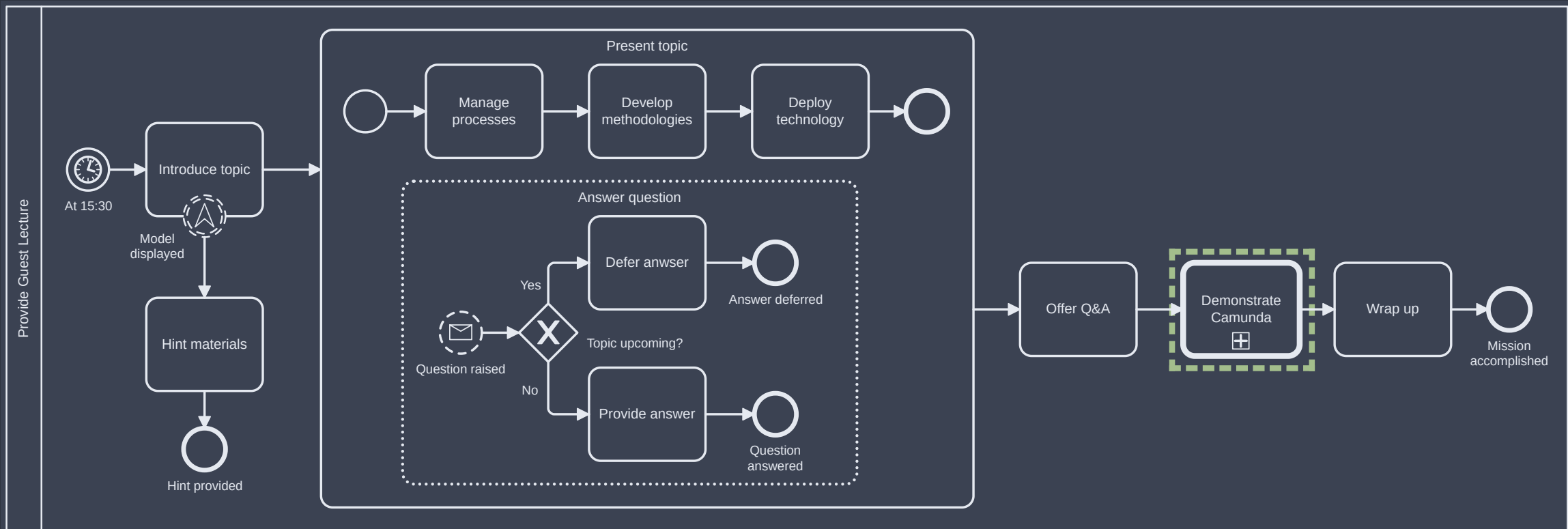


WHAT I'VE BEEN UP TO

- Application Development with Java
- Application Integration
- Software / Solution / Process Architecture
- Process Orchestration and Automation
- PoV: IT projects as part of digital transformation







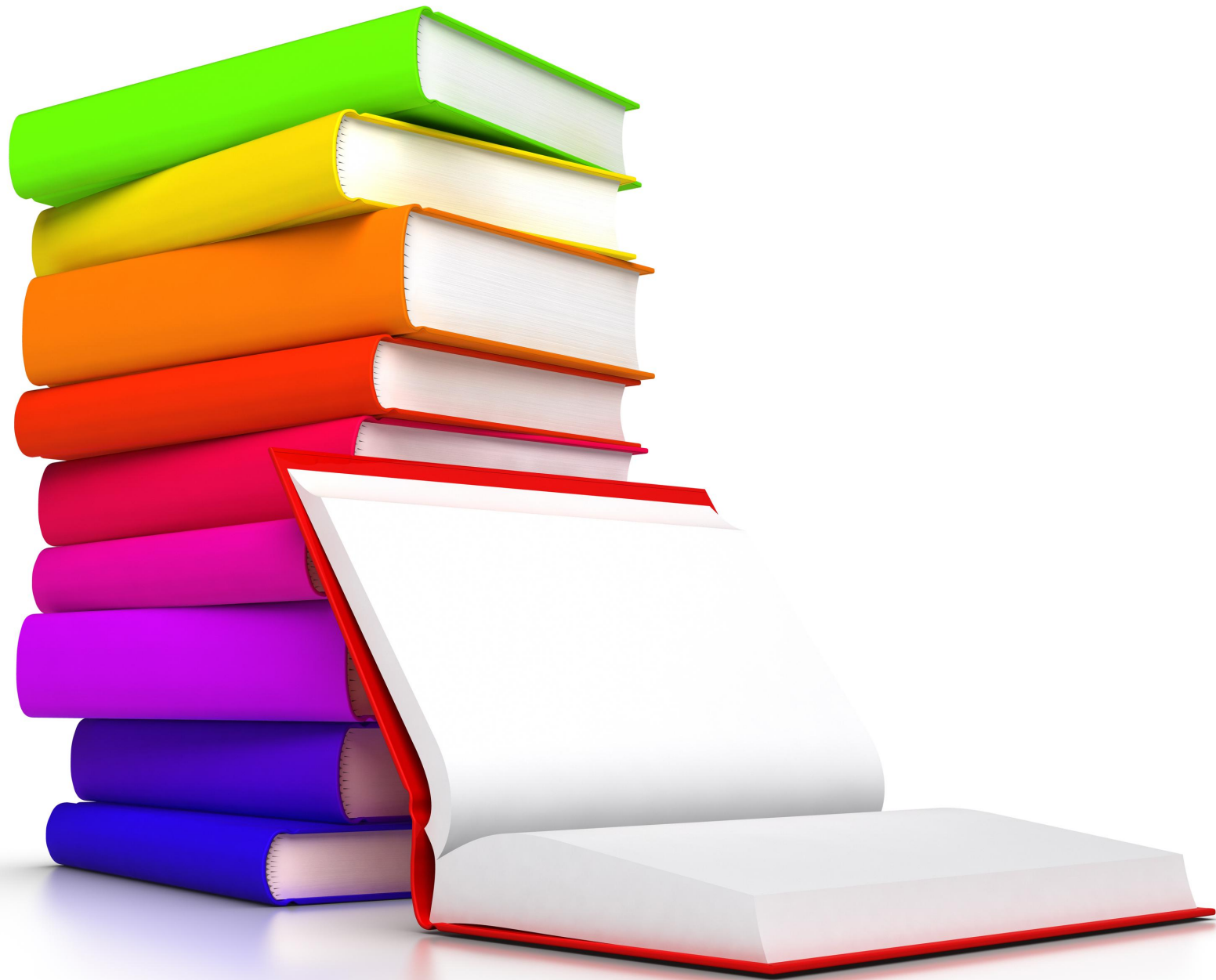
INTRODUCTION

TECHNOLOGY







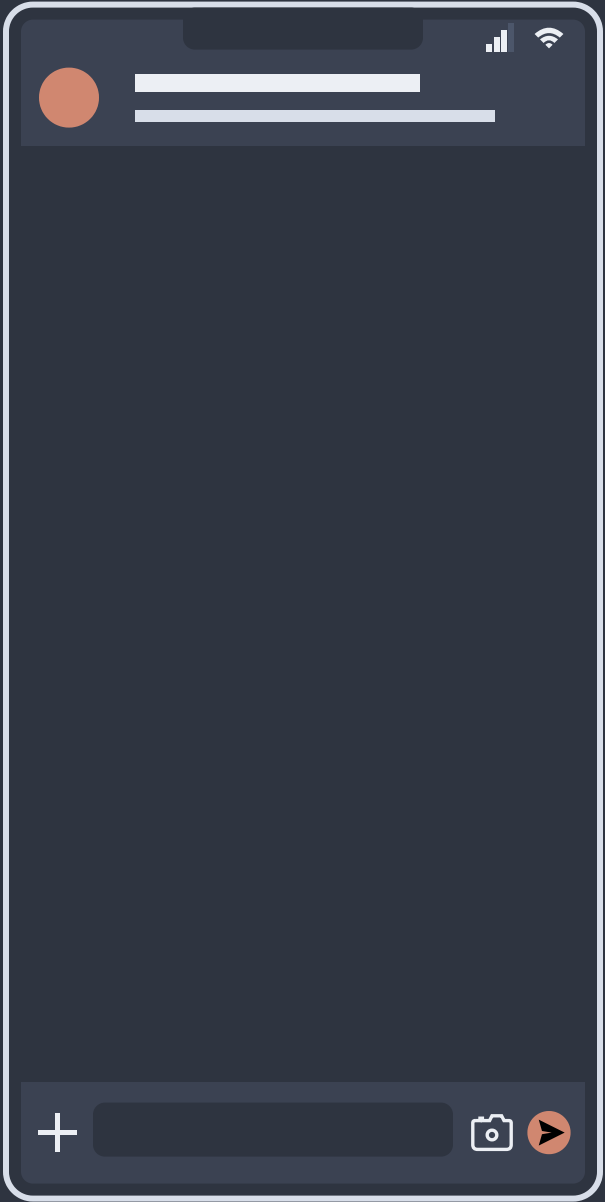


WHAT IS A...

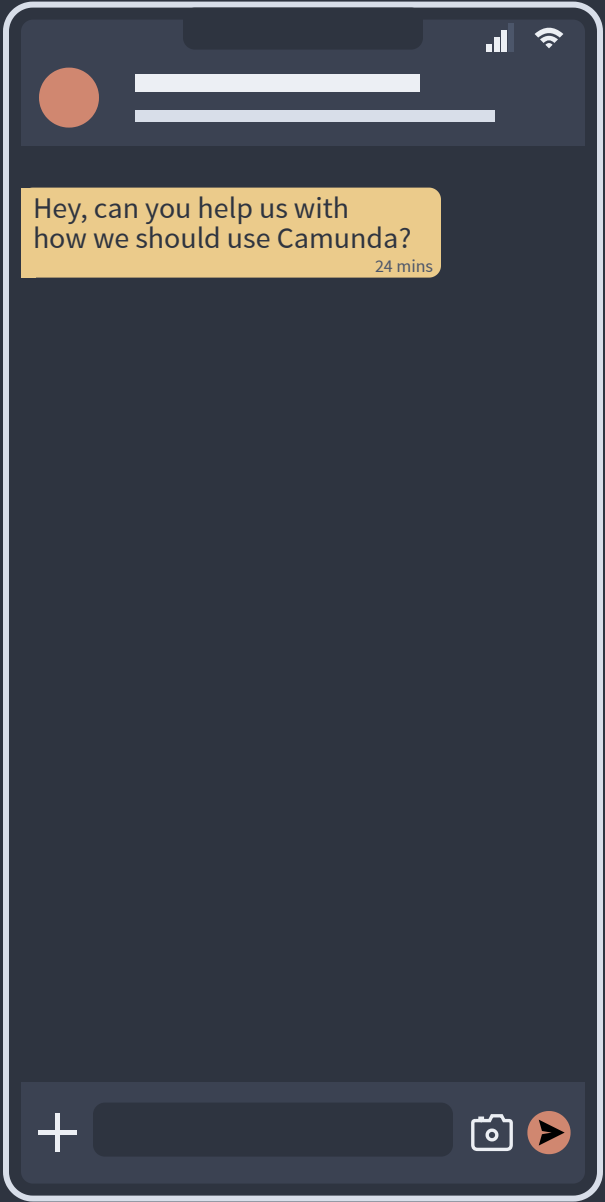
- Straight-forward, *pragmatic* approach, that is...
 - ... a **deliberate** way to take process as a fundamental starting point for **creating value** [17, 13]...
 - ... **simple** enough to get started quickly but **powerful** enough to work in **complex contexts**...
 - ... driven by **data** and aimed at **continuous improvement**...
 - ... an enabler for **directing** automation efforts towards **measurable impact** on the organisation's **goals**...
 - ... helpful to **answer** that one vexatiously difficult question...
 - ...?



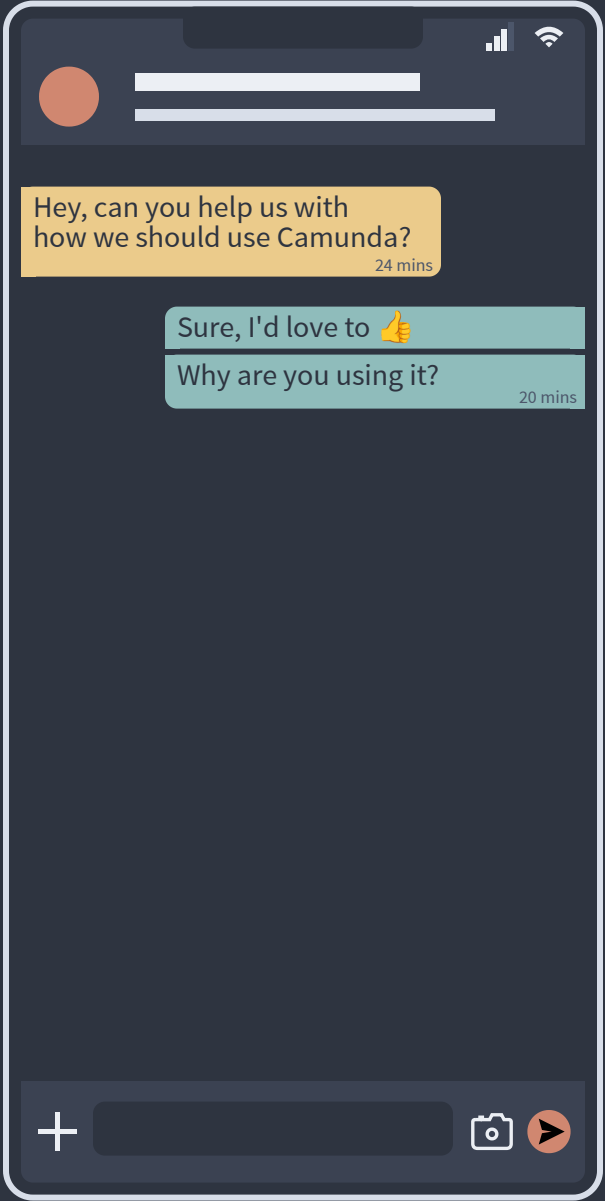
A CONVERSATION



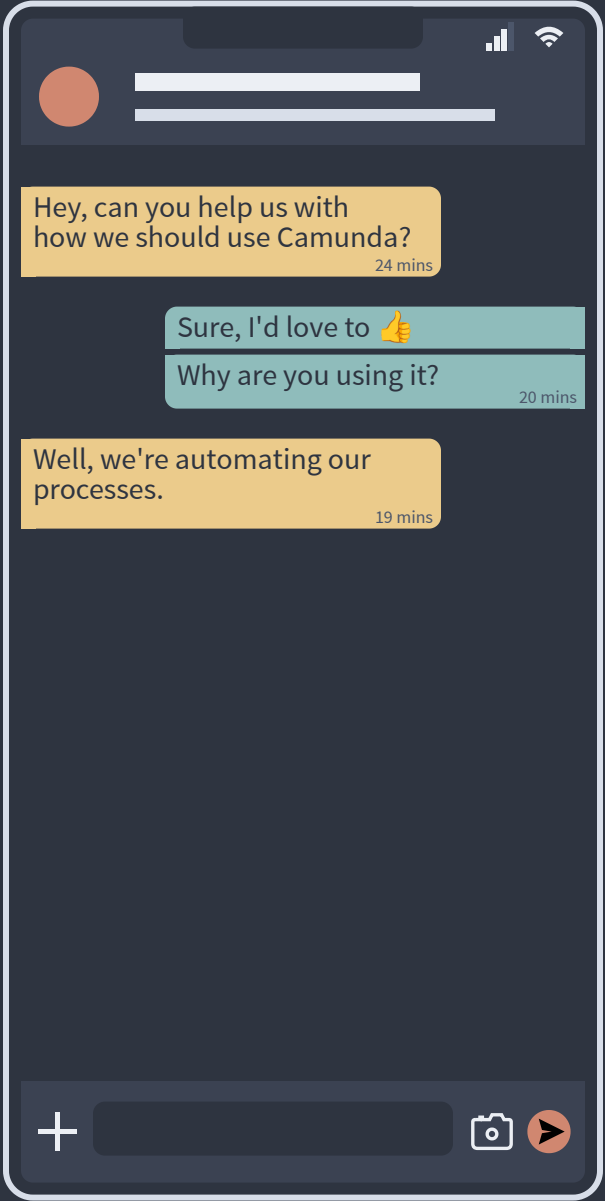
A CONVERSATION



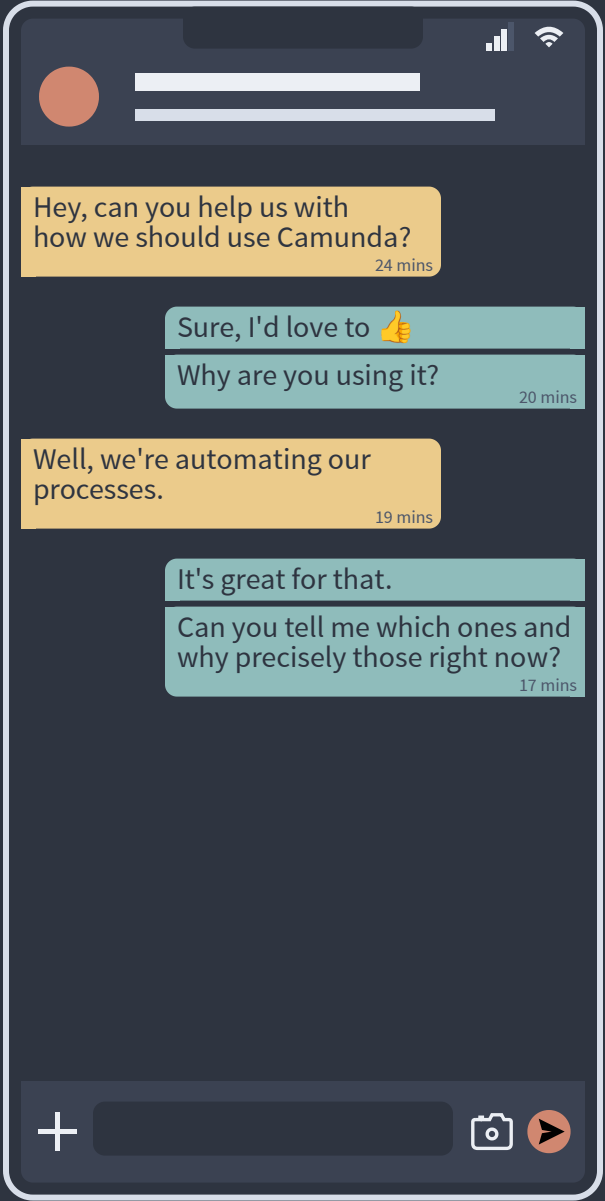
A CONVERSATION



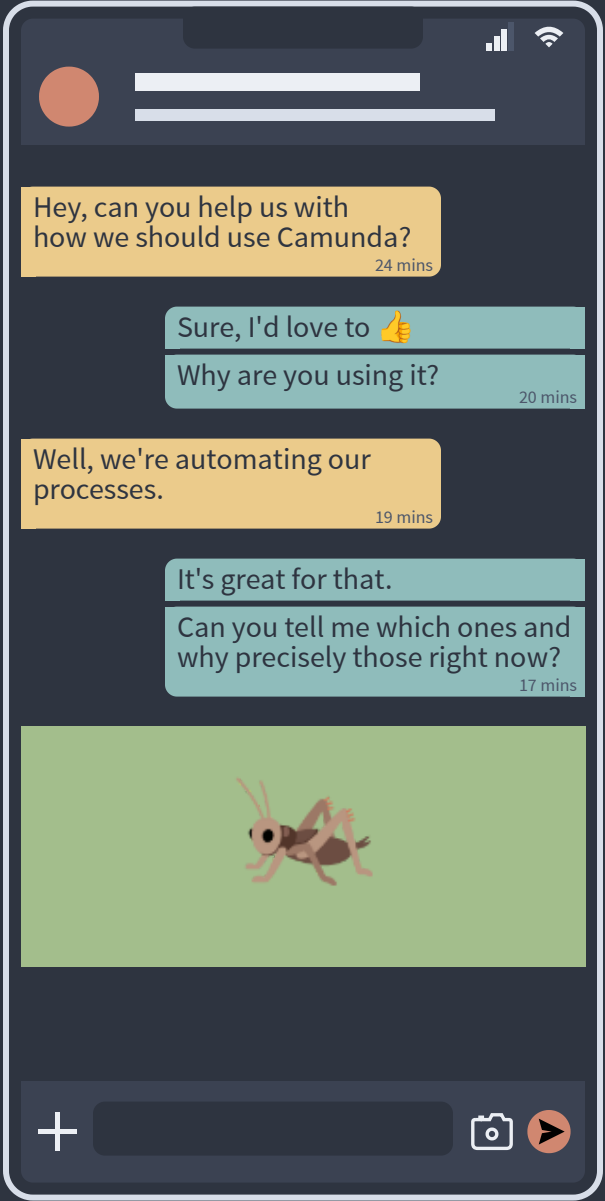
A CONVERSATION



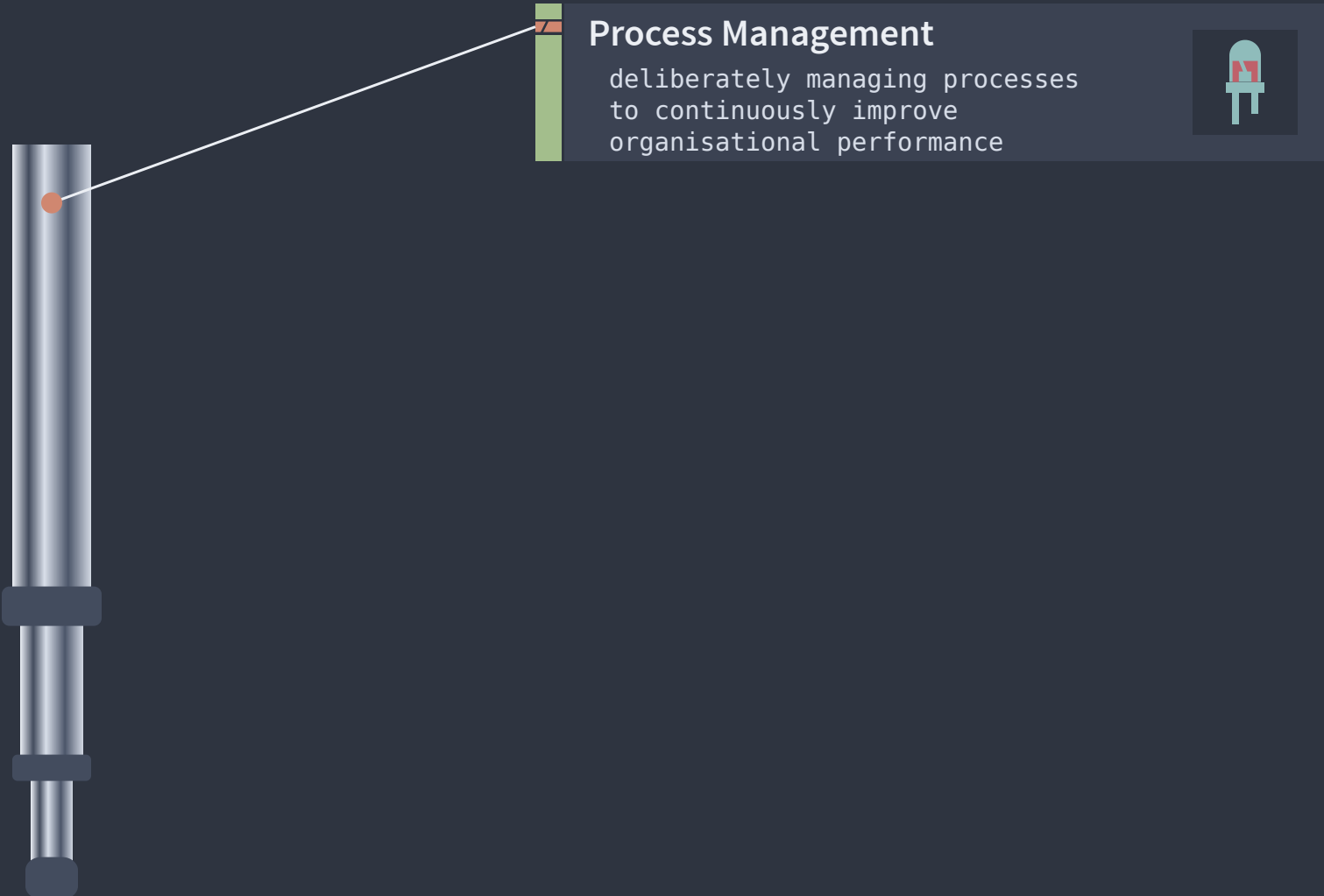
A CONVERSATION

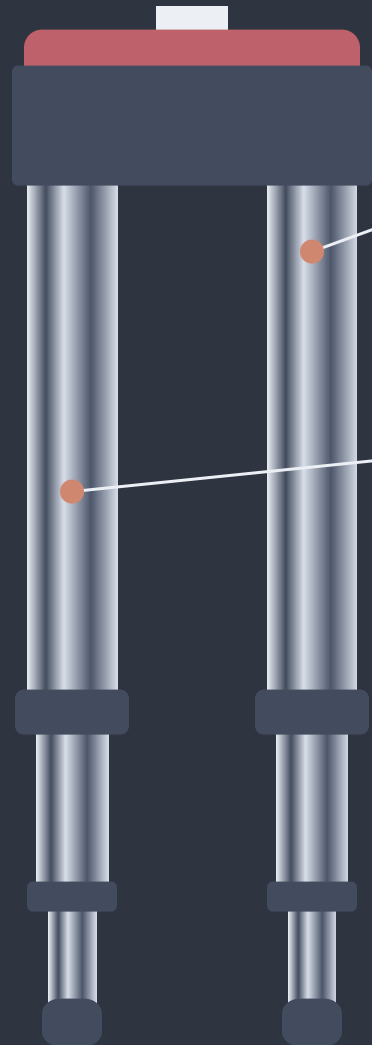


A CONVERSATION









Process Management

deliberately managing processes
to continuously improve
organisational performance

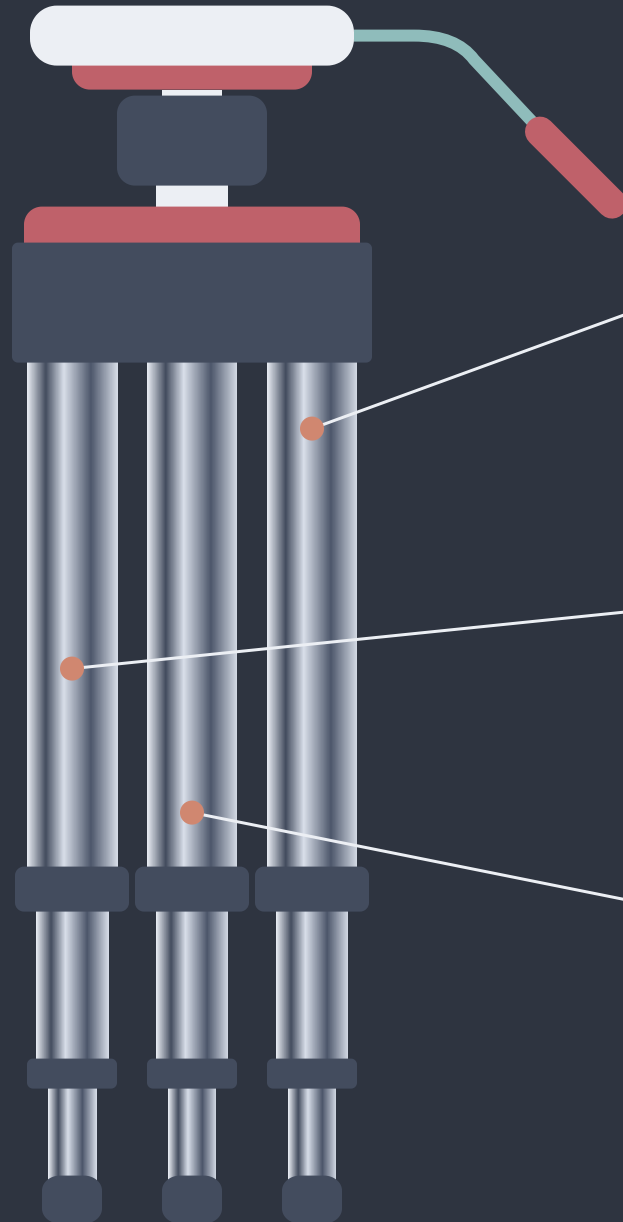


Methods & Techniques

developing capabilities, mindsets
and structured approaches
to deliver solutions with impact



TRIPOD



Process Management

deliberately managing processes to continuously improve organisational performance



Methods & Techniques

developing capabilities, mindsets and structured approaches to deliver solutions with impact

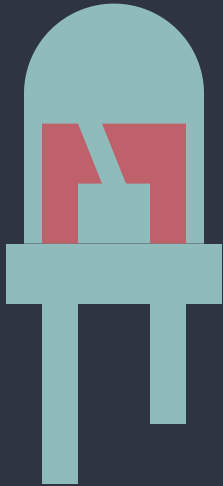


Technology

applying and deploying (digital) tools to execute automatically as designed with intent and at scale



PROCESS MANAGEMENT

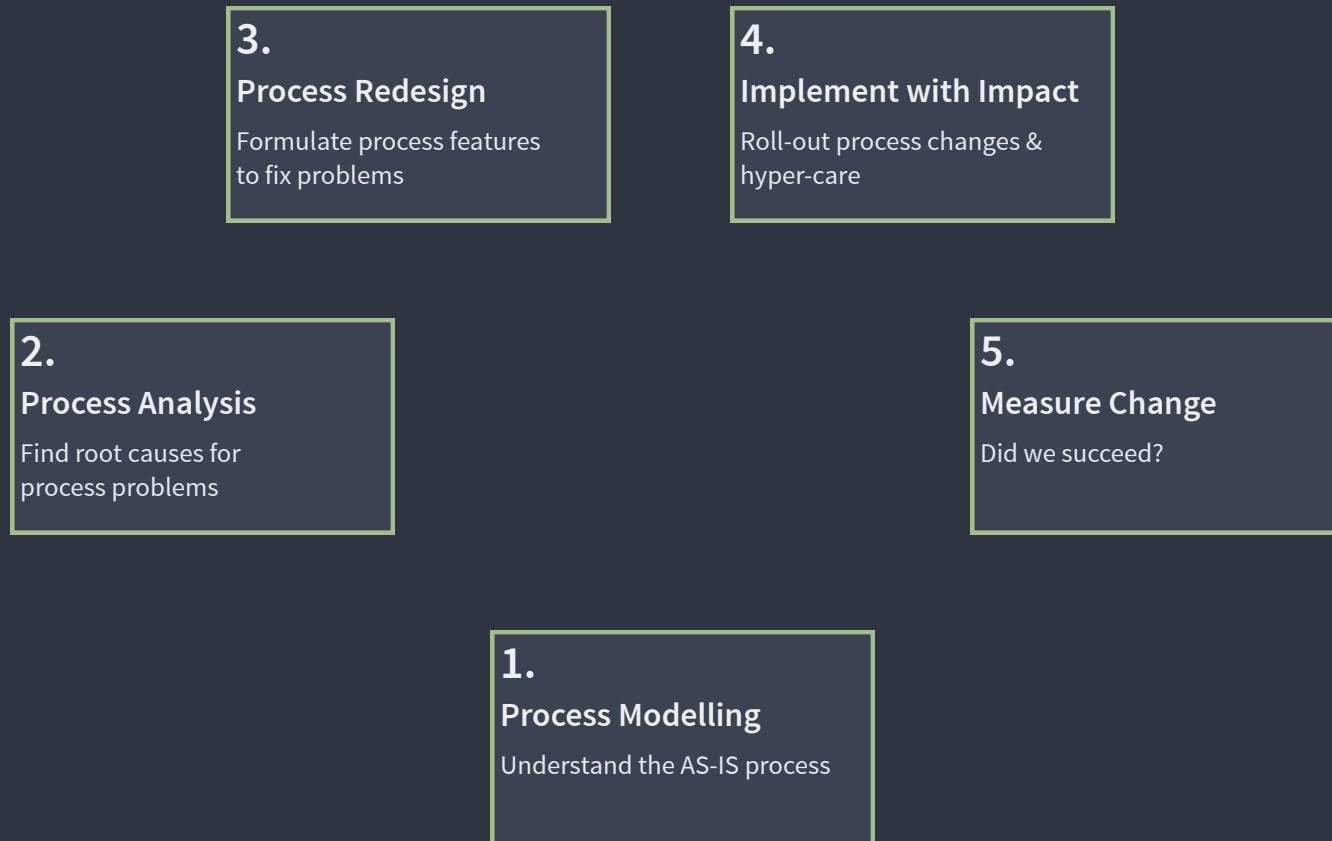




PRIMACY OF PROCESS

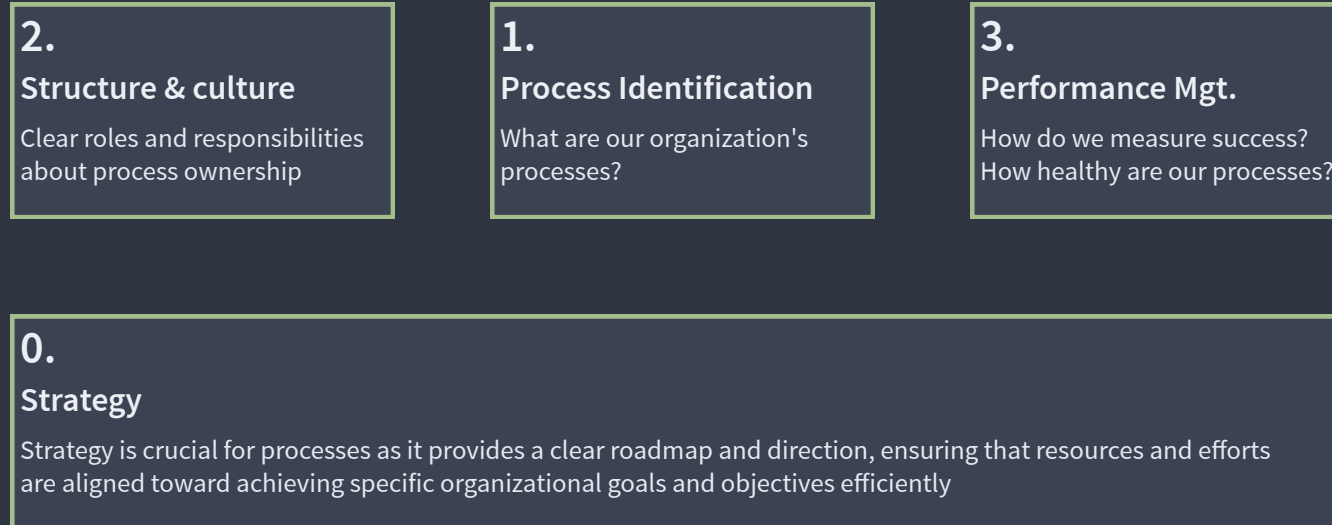
- We have digitalisation efforts, digital transformations, servicification, customer intimacy ...
- It all starts with *not just saying* but actually *internalising* the **Primacy of Process**
- Delivering cross-functional value to stakeholders **only** happens with **end to end** processes
- So you **have** them for free! You can choose whether you actively **manage** them

THE CYCLE ^[1]



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THE STRATEGY ^[1]



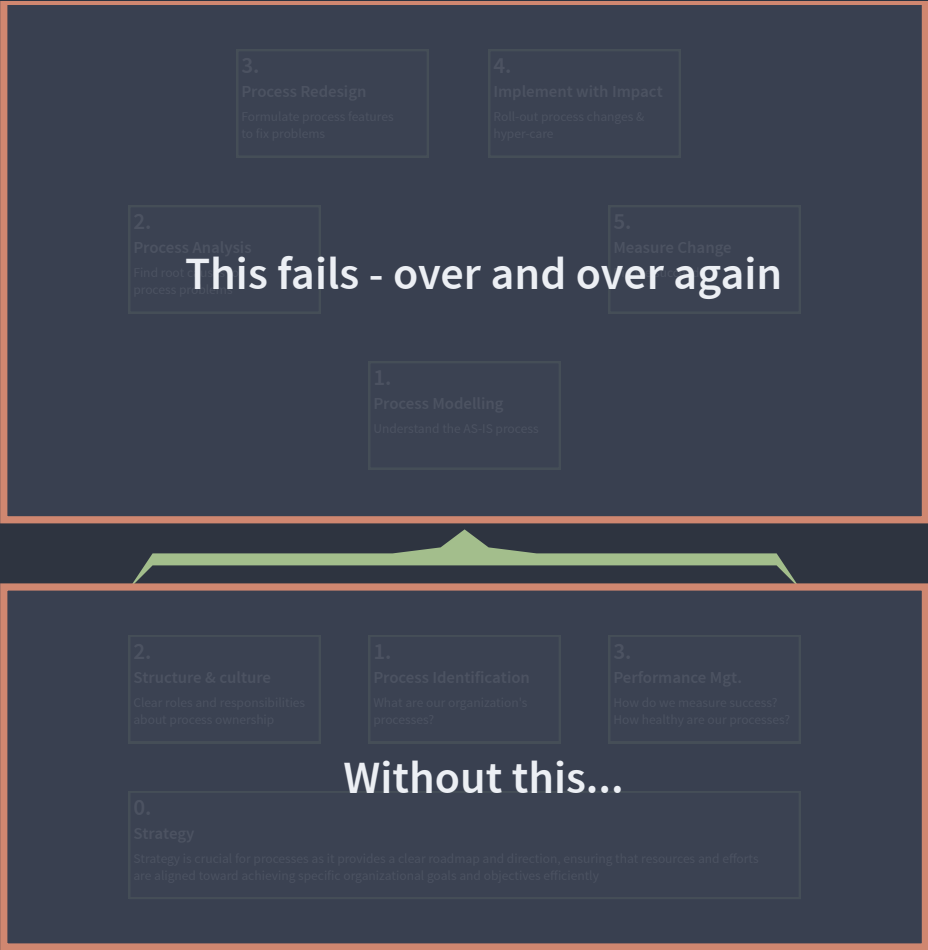
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THE CYCLE AND THE STRATEGY [1]



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THE CYCLE AND THE STRATEGY IN PRACTICE [1]



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LET'S AGREE TO AGREE: THIS IS WHAT WE DO AROUND HERE

- The essential tool: the **Process Architecture** [17]
 - Identifies our processes that **execute** the strategy
 - Provides useful **definitions** for each of them, including **intent** [4]
 - Shows the relationships (hierarchy and sequence)
- Big picture thinking
 - Customer journeys are composed of touchpoints with the process architecture

Lead ToolShed

Strategise ToolShed

Maintain Strategy



Internalise Strategy



Evolve ToolShed

Educate Shedders



Resource Change Initiatives



Improve Performance



Develop Vendor Partnerships

Foster Strategic Vendor Relationships



Develop Tools



Secure Financial Resources

Acquire Credit



Manage Assets



Get Jobs Done

Rent Tools

Rent Private Tools



Rent Commercial Tools



Stock Tools

Purchase Tools



Replace Tools



Resell Tools



Teach Tool Usage

Run ToolPro Academy

Develop Courses



Teach Courses



Publish Instruction Documents



Instruct Users



Support ToolShed

Manage Office Sites

Contract Cleaning Services



Contract Catering



Maintain Office Supplies



Contract Maintenance



Manage Sites

Maintain Parking Facilities



Supply Tools



Lease Building



Manage ToolSheds

Maintain Vendor Contracts

Conduct Market Research



Contract Tool Vendor



Develop Tools

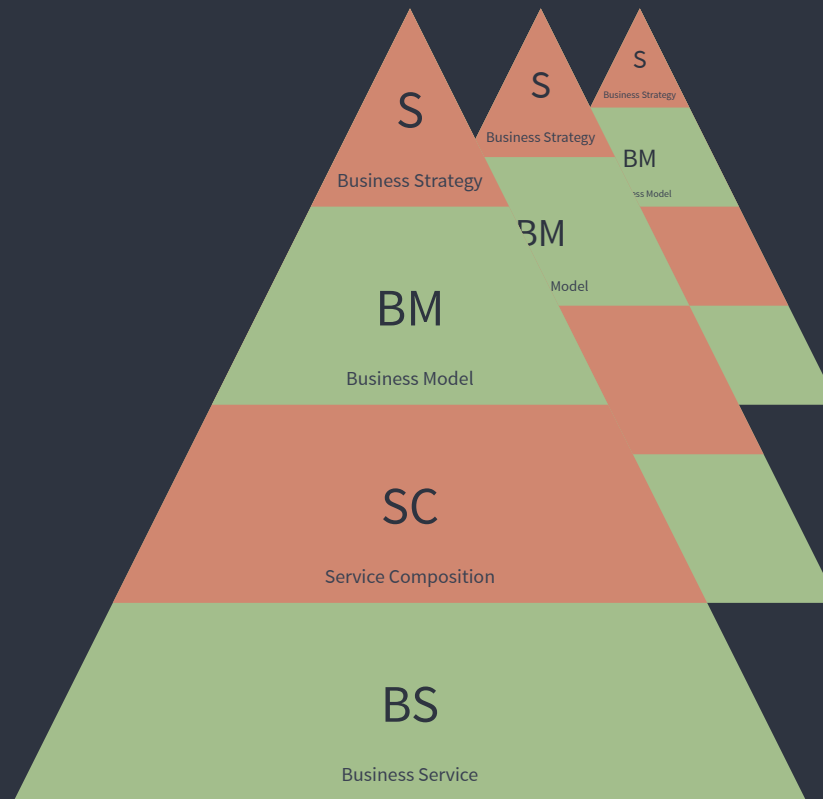


Maintain IT Systems

Employ Shedders

WHICH ONES DO WE NEED?

- The process architecture defines them, but how to get them?
 - Workshops with stakeholders and experts [17]
 - Not a multi-month project 🤔
 - Heuristics to determine whether to split a process into multiple processes [7 pp. 42-57, 6]
- A **different** view on the organisation than its **functions**! [18]
- Not set in stone!



- A business engineering framework [10, 9]
 - Who **are we** and what's our vision?
 - What can we **do** and how can we isolate changes to our way of working?
 - What do we **offer** in terms of *value-in-use*?
 - How do we **use our capabilities** to do this? ^[1]
- What happens when things **change**?
 - Which of these are **relatively stable**?
 - Which things should we prepare to **shake up** from time to time?

1. Be on the look-out for those *processes*... 00





PROCESS INTENT

- Defining *Intent* [4]
 - That which we are aiming to **achieve** as a result of executing the process;
 - The **reason for existence**, the **why?** of the process;
 - A definition of the **context** it is executed in.

*The **end** or **object** intended; **purpose**.*

 The *intent* defines boundaries for **scope** and **responsibility** of the process.

ASSIGNMENT

- Create a process intent for the *Take Exam* process of a university.
- Make sure to include any participants, resources and context you deem relevant to answer **why**, to **what end** this process is executed.
- The simplest way is to complete the sentence:
 - The *take exam* process is performed to...

MEASURING

- With the intent in hand for processes we identify, we can define **expectations** and then check against them (KPIs)
- Continuous process improvement only works if you **measure** performance
 - And actually look at what you measured 🙄
 - Just the ones that **really matter!**
- 💡 No, it's typically **not**...
 - Just *any old data* we can get our hands on: just because you can measure it, doesn't mean it's a useful metric!
 - 100% or Not a single exception

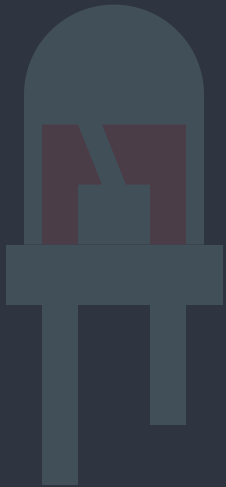
Challenging, yet achievable goals.

Organisation Theory
— Mathieu Weggeman

CONCLUSION

- Busy focussing on the details of the cycle, but...
- Establish the link to the **strategy**
- Build a **process architecture** and use it
- Know what each process is and how it **contributes**
- Determine what and how to **measure**

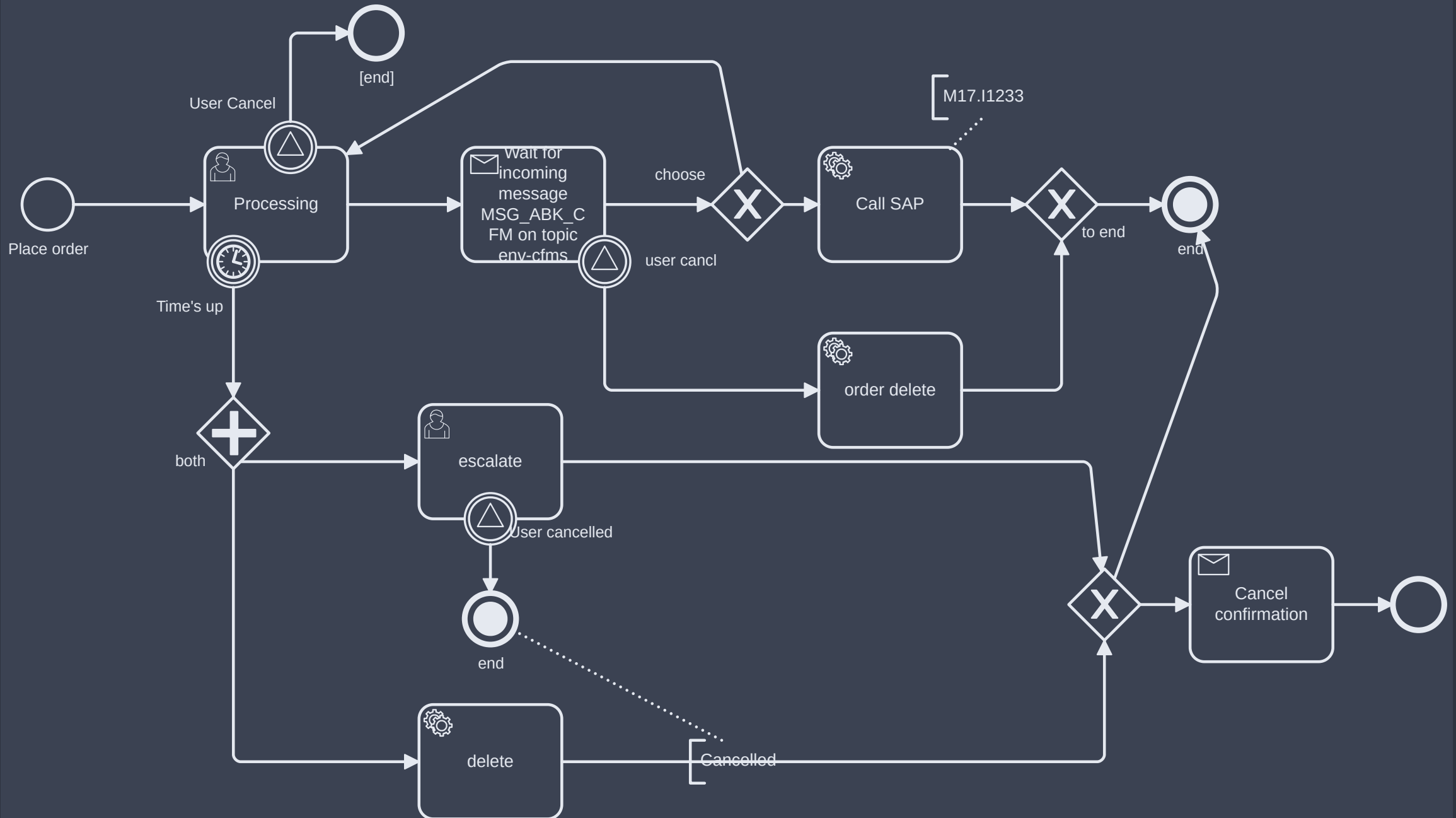
METHODS



MODELLING CAPABILITY

- Do we **need** models?
- Yes, because they enable communication. Also: accountability, consistency, transparency...
- Change is inevitable, a model is not set in stone
- "All models are wrong, but some are useful"
- Extract the **right** logic from application code: it will **change** for the right reasons too
- Invest in your base-level knowledge, then deepen it as you mature
- Practice makes perfect: readability matters but is harder to master than you might think [11, 14, 15]





DECISION MANAGEMENT WITH DMN

- An underappreciated chance to improve even further for **operational** decisions^[1]
- Relatively unknown in practice
- Extract more, but **different** logic
- Without modelling, hard to capture in code and even harder to test
- Bring in the **experts** to capture their expertise

💡 Struggling with FEEL and creating expressions? Checkout the *FEEL Playground* by Nico Rehwaldt:
<https://nikku.github.io/feel-playground/>



1. the ones we execute every day, for daily business, not strategic ones

ESSENCE OF THE APPROACH

- Process Architecture
 - The process architecture [6, 16, 17] as starting point for agile teams' stories: the **what**
 - Scope, scope, scope! [3, 4]: the **what not**
 - Re-use and overuse: the **what else**
- Documentation
 - Track the **decisions** (with trade-offs and consequences) you make and the **rationale**: ADRs or PDRs for processes^[1]: the **why**
 - How about processing the documentation elements of a process model into generated documentation?
- Supporting each other
 - Center of Excel(lence)
 - Spreading the word, but mostly: **enabling** everybody: the **help**
- But what about **how**?

1. *Architectural Decision Records* or ADRs, are a tool used in Software Architecture practice to identify, document and communicate decisions taken that affect the architecture of a system and the way the decisions were reached and choices were made

MUTATION EXCLUSIVITY

- When you perform **mutations**, make sure there's **only one way** to do that
- The process can ensure:
 - All business rules are applied
 - 4 eyes check is performed
 - Everything that needs to happen, is done and in the right order
- The *processing* logic is **in the process!** 💡



Try to eliminate the unneeded *work arounds* that so easily become *ways of working*

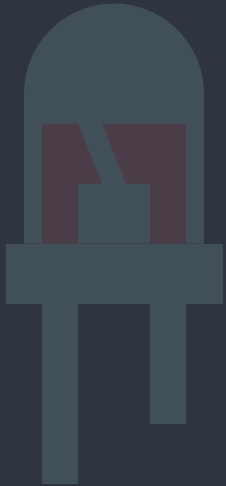
A NATURAL FIT: DDD AND PROCESS ORCHESTRATION

- Domain Driven Design [8]
- Aim for a collaboration of subject matter experts and technologists
- The **behaviour** in the domain is mapped to the **activities** in the process
- The **methods** of aggregates are mapped to the **tasks** in the process model

CONCLUSION

- Up your modelling game and grow as a team
- Extract logic and use the process architecture as a map
- Track the choices you make and share the know-how
- Works best when it's real teamwork:
 - Technologists (developers, testers,...)
 - Engineers (business and technology)
 - Architects
 - Managers

TECHNOLOGY



FINALLY, SOME FUN!



ARCHITECTURAL POSITIONING FOR PROCESS ENGINES

- A central^[1] conductor in the landscape that knows all about the **specific subset of business logic** that is processes and decisions
 - **Control** - Informs people **and** systems when work needs to happen
 - **Decide** - Reacts to events, making decisions based on input
 - **Track** - Handles state management natively
- But **why** a dedicated, general-purpose tool?
 - Suffering from NIH^[2]? Home-grown engines, code generators and custom modelling tools usually underwhelm, disappoint or outright hinder your process automation initiatives
 - You **will** need those advanced patterns, so you'll end up implementing and maintaining them
 - Specialised systems for a particular domain that can orchestrate are great, but also limit your flexibility in terms of process orchestration as you grow
 - Local, isolated automation efforts lack end-to-end process visibility
 - These tools can be architecturally flexible (polyglot, API, unobtrusive), help with **modelling, versioning, executing, monitoring, migrating**, extracting **data** for analysis...

1. From the perspective of its role, not necessarily **technically** centralised

2. Not Invented Here



HOW TO USE YOUR TOOLS

- Keep it lean and nimble: loosely coupled and **only** focussed on executing process and decision logic
- The process engine is all about **state management** ^[1] and workflow patterns
 - Durable state including versioning and data
 - Scheduling
 - Waiting
 - Retrying
 - Escalating
 - Compensating
- Compose your services landscape in models, conduct the orchestra in runtime (don't forget to look at what's happening...)



Use your process engine to **automate your business processes!**



1. state of process definition and instance data, that is (more to come)

THERE IS NO EXECUTION MODEL

- There is **no** "execution model"! [5]
- There are different levels of abstraction [1]
- There **is** an execut**able** process model
- Automate the business process, not the technical coordination of system activities (and workarounds 😞)
- Are your batches really **batches**?
 - Look for opportunities to move to *straight-through processing* (STP) instead of automating legacy

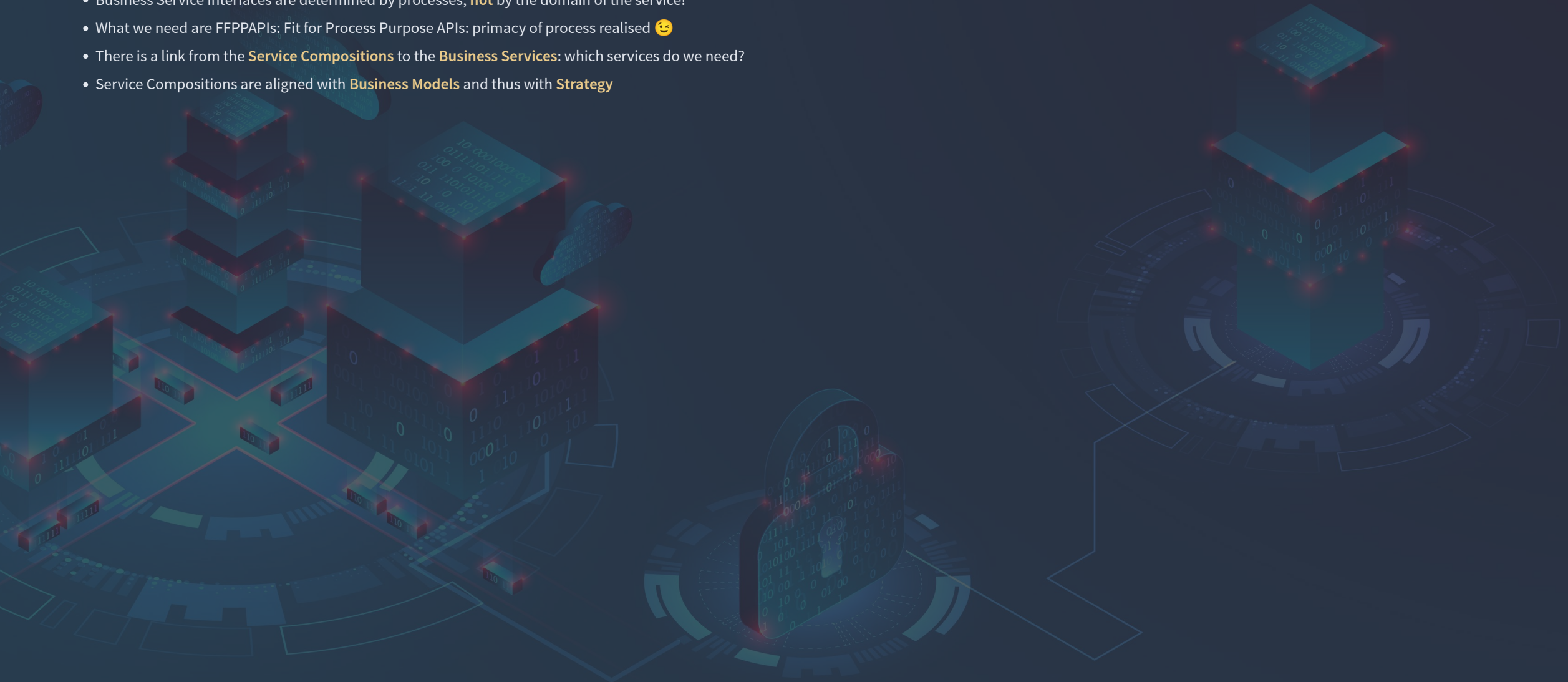


Bridge that chasm!

1. that's the whole point the process architecture makes clear

LIVING WITH LEGACY

- **Technical Services** should implement functionality of **Business Services** [12]
- Business Service interfaces are determined by processes, **not** by the domain of the service!
- What we need are FFPPAPIs; Fit for Process Purpose APIs: primacy of process realised 😊
- There is a link from the **Service Compositions** to the **Business Services**: which services do we need?
- Service Compositions are aligned with **Business Models** and thus with **Strategy**



DATA

- Be strict about data in automated processes [2]
- Three kinds of data used:
 - **Identifying** data
 - **Control** data
 - **Orchestration** data
- Otherwise, to mention a few of your potential problems...
 - Data synchronisation issues and potential data leaks
 - Data storage issues
 - Increased migration complexity
 - Service responsibility drift
 - Process versioning complexity



DATA ANTI-PATTERNS → BETTER PRACTICES

- Lots of fields in variables → manage the entity elsewhere; what is this thing?
- Large variable payloads → use a reference
- Multi-instance activities with lists of data → re-collect for each instance based on reference
- Entire documents and metadata → use a reference to a document in the DMS^[1]
- Entities in variables for control flow → duplicate the key element only
- Lots of variables to call connectors or decisions → collect outside the engine
- Forcefully aligning lifecycle of business entities with process → separate process milestones from entity mutations

1. Document Management System

REUSE TILL YOU DROP

- Let patterns emerge, don't optimize prematurely
- Re-use is fine, but not a goal and should flow from the process architecture anyway
- Don't over-engineer and *generify* everything
- Create throw-away task screens aimed at a single task
- Use *connectors* and *libraries* tactically where they add value

CONCLUSION

- Tools are extremely powerful enablers
- Even more powerful when they actually *serve* the business
- Increasingly, flexible in technical sense and easy to integrate now and in the future
- Keep the implementation light-weight and store data outside the process engine
- Don't build your own tools, but build on other's tools
- Use them wisely to **automate your business**



DEMO

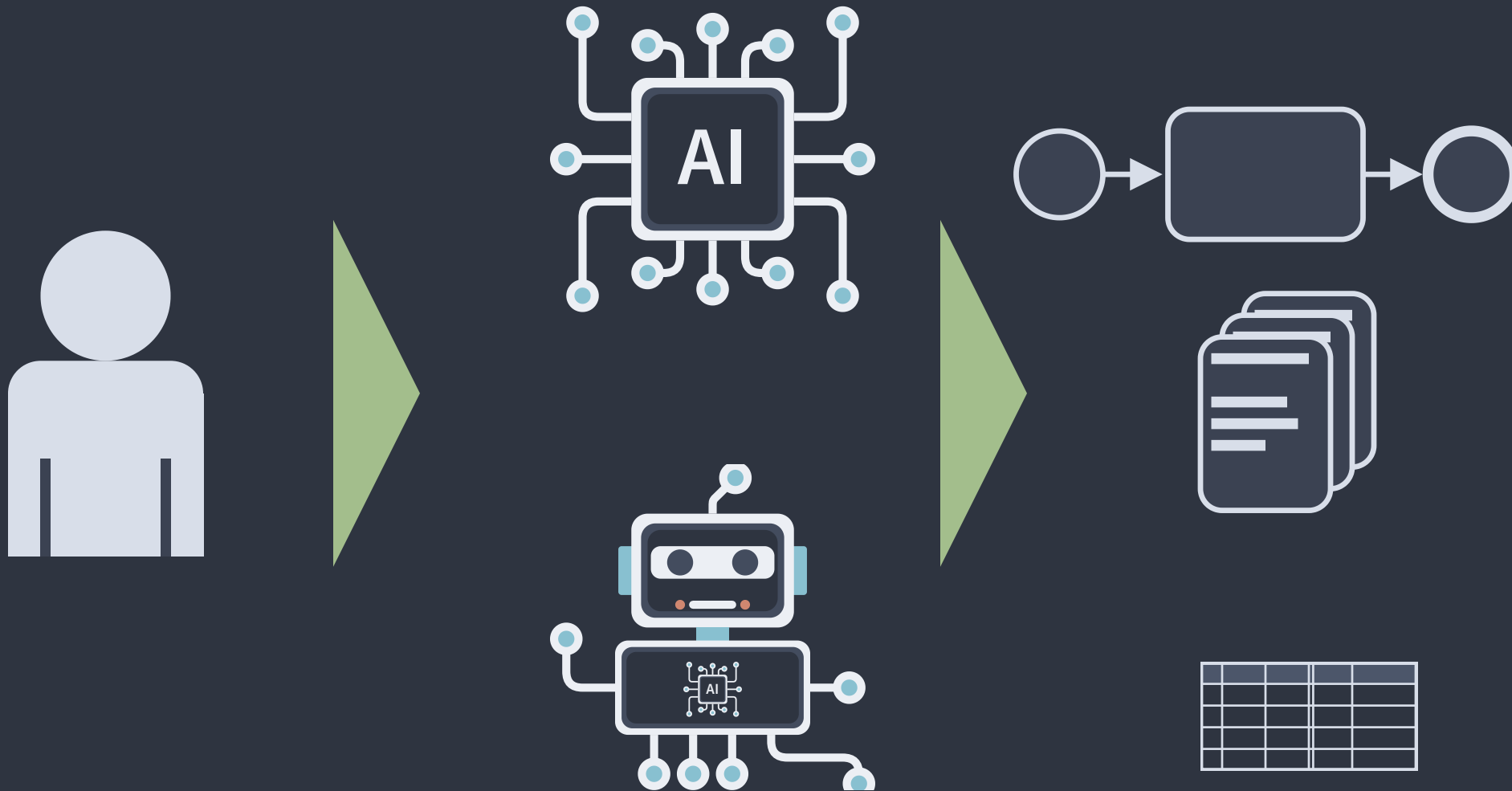




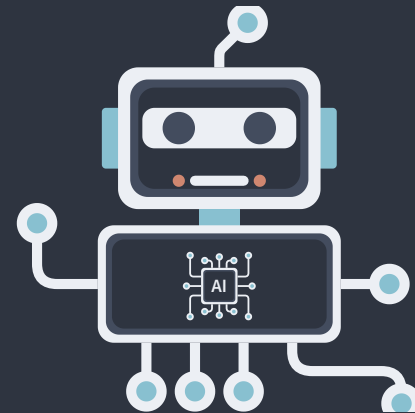
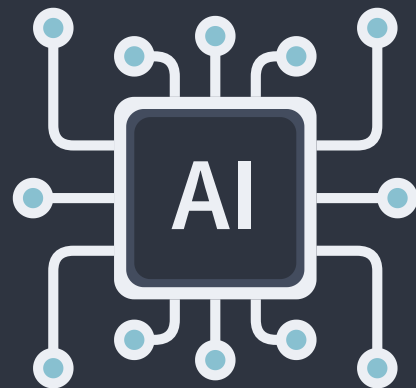
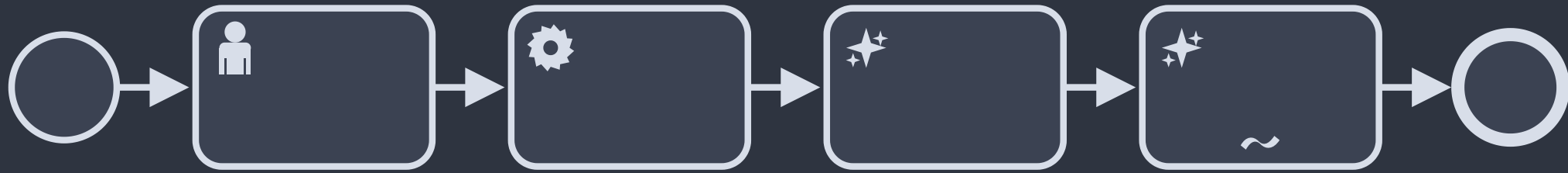


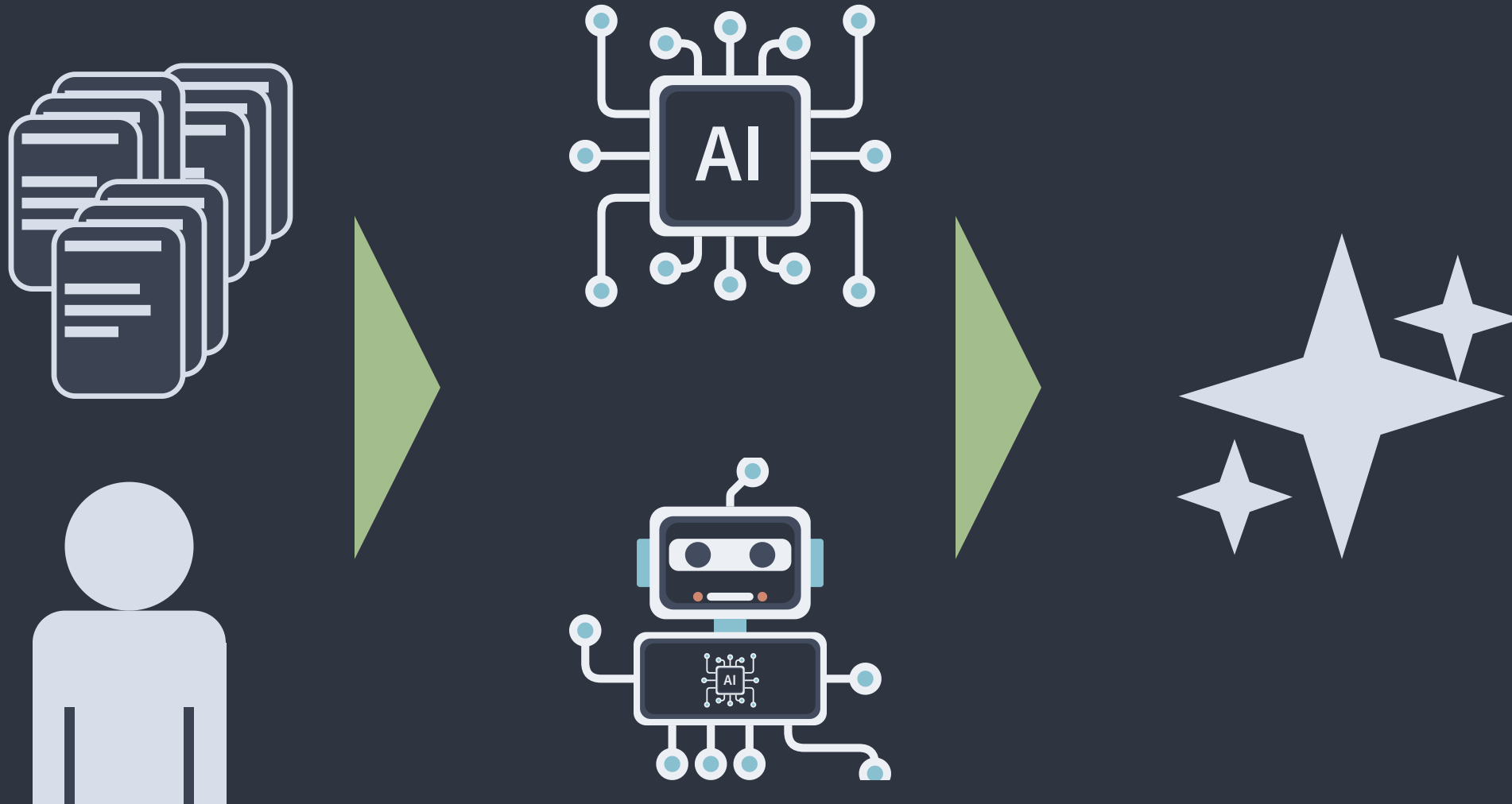
A.I. IN BPM

- Prompting
- Co-pilot
- Agent
- For authoring, documenting, executing, analysing, improving...
- Plenty of resources from Camunda:
 - [Tutorial: Use Slack Integration to Build Multi-Channel Camunda Agents](#)
 - [Tutorial: How to Build an AI Agent Workflow with Camunda](#)
 - [Building Event-Aware Agents with Camunda](#)



A.I. IN BPM: EXECUTING





QUESTIONS



WRAP UP

WRAP UP

- To automate our business, we need to balance process management, methods & techniques and technology in a practical fashion
- Start with the **primacy of process**
- Let's make sure we're **deliberate** about which processes and decisions to automate and improve
- Agree on a way of working that makes our efforts **effective**
- Leverage powerful **technological tools** to automate the right things for the right reasons

💡 There is plenty of work for technologists and business engineers - we need both **gardeners** and **landscapers** 😊

THANK
YOU

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