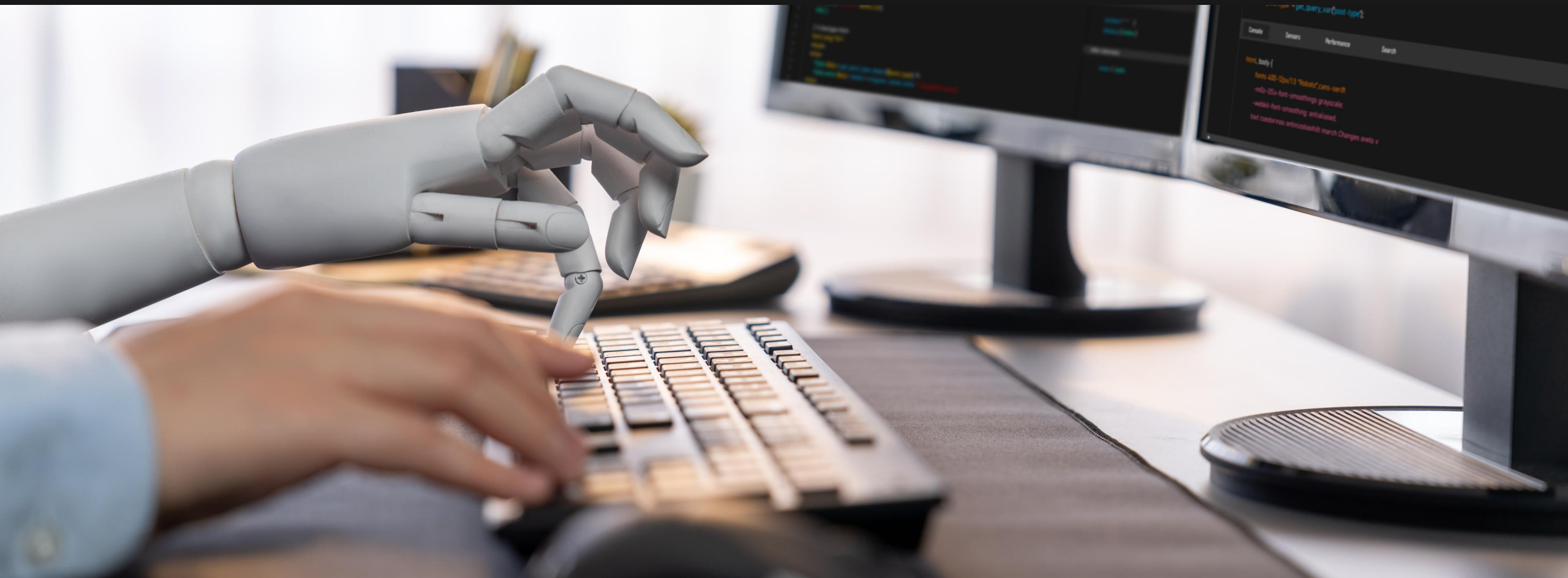
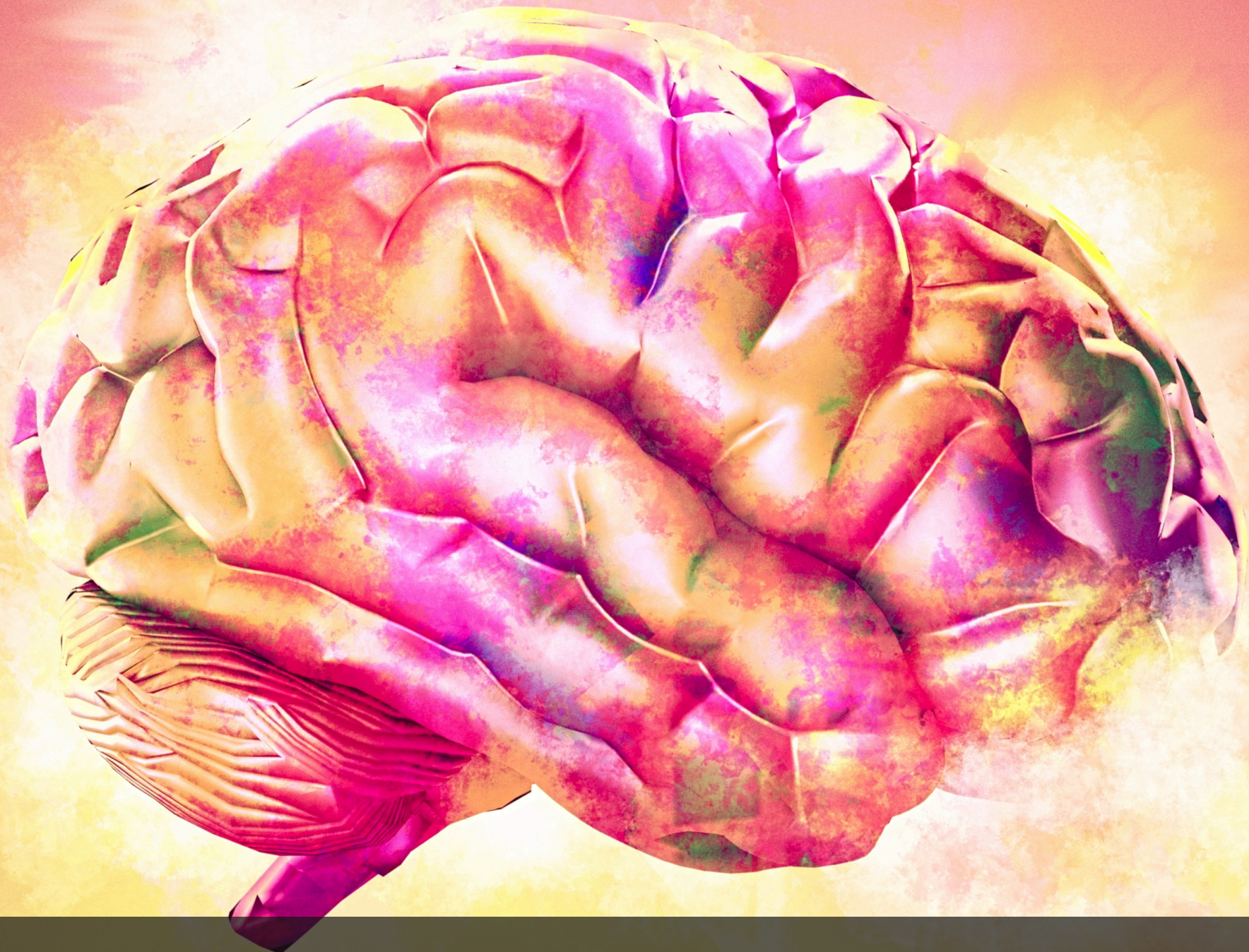


BUSINESS AUTOMATION

A PRACTITIONER'S VIEW

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

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 <https://airquill.io>




ONCE UPON A TIME...



[Help & FAQ](#)

[Home](#) [Researchers](#) [Research output](#) [Organisational Units](#) [Activities](#) [Projects](#) [Prizes](#) [...](#)


Search... 

Rich E-services: leveraging service oriented architectures for conducting electronic business with rich Internet applications

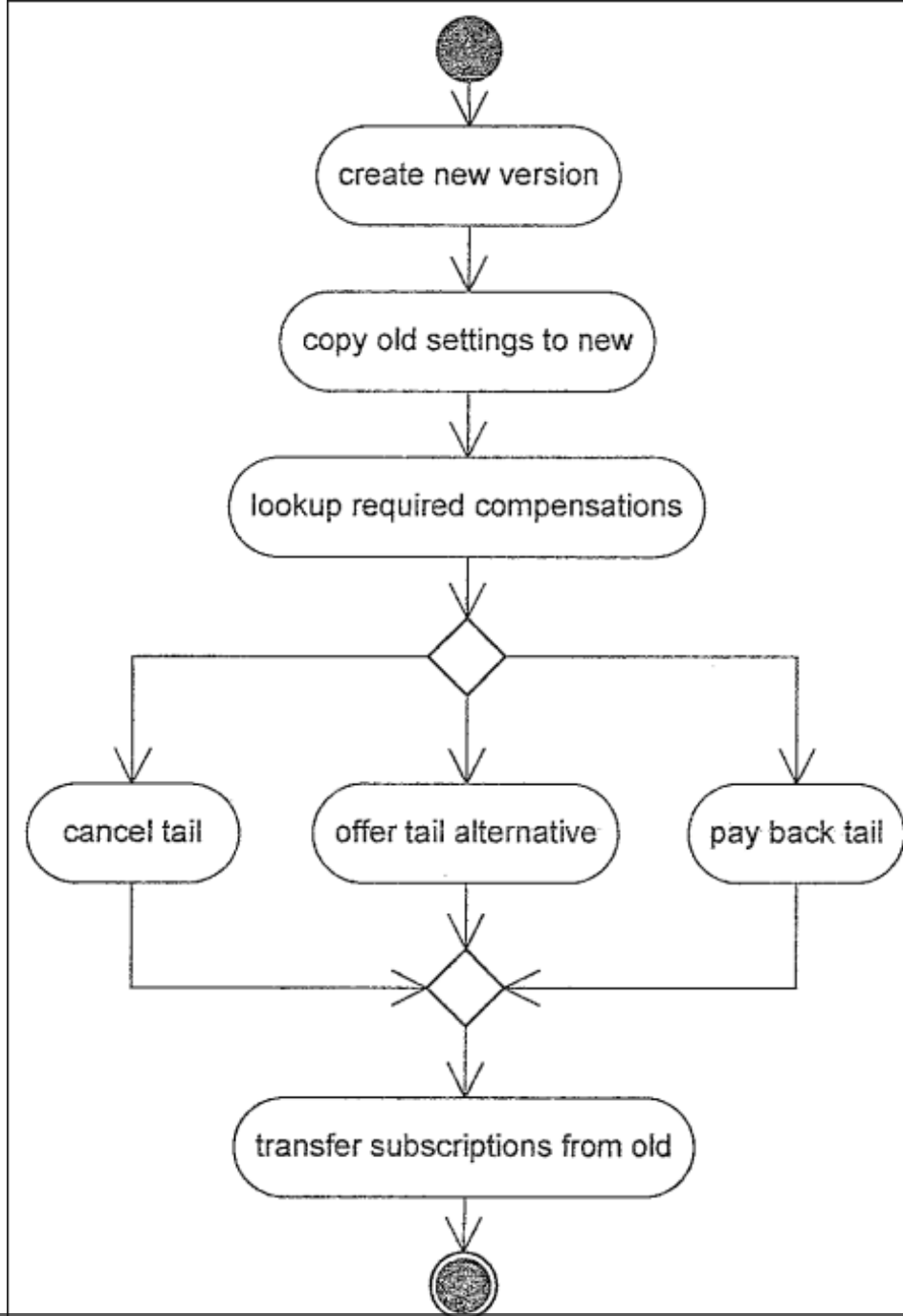
T. Barrell

Industrial Engineering and Innovation Sciences

Student thesis: Master

Date of Award	31 Aug 2005	<h3>Documents</h3> <p> full text File: application/pdf, 7.73 MB Type: Thesis</p>
Original language	English	
Supervisor	Paul W.P.J. Grefen (Supervisor 1)	

Source: <https://research.tue.nl/en/studentTheses/rich-e-services> [1]



WHAT I'VE BEEN UP TO

- Application Development with Java
- Application Integration
- Software / Solution Architecture
- Process Automation
- PoV: IT projects





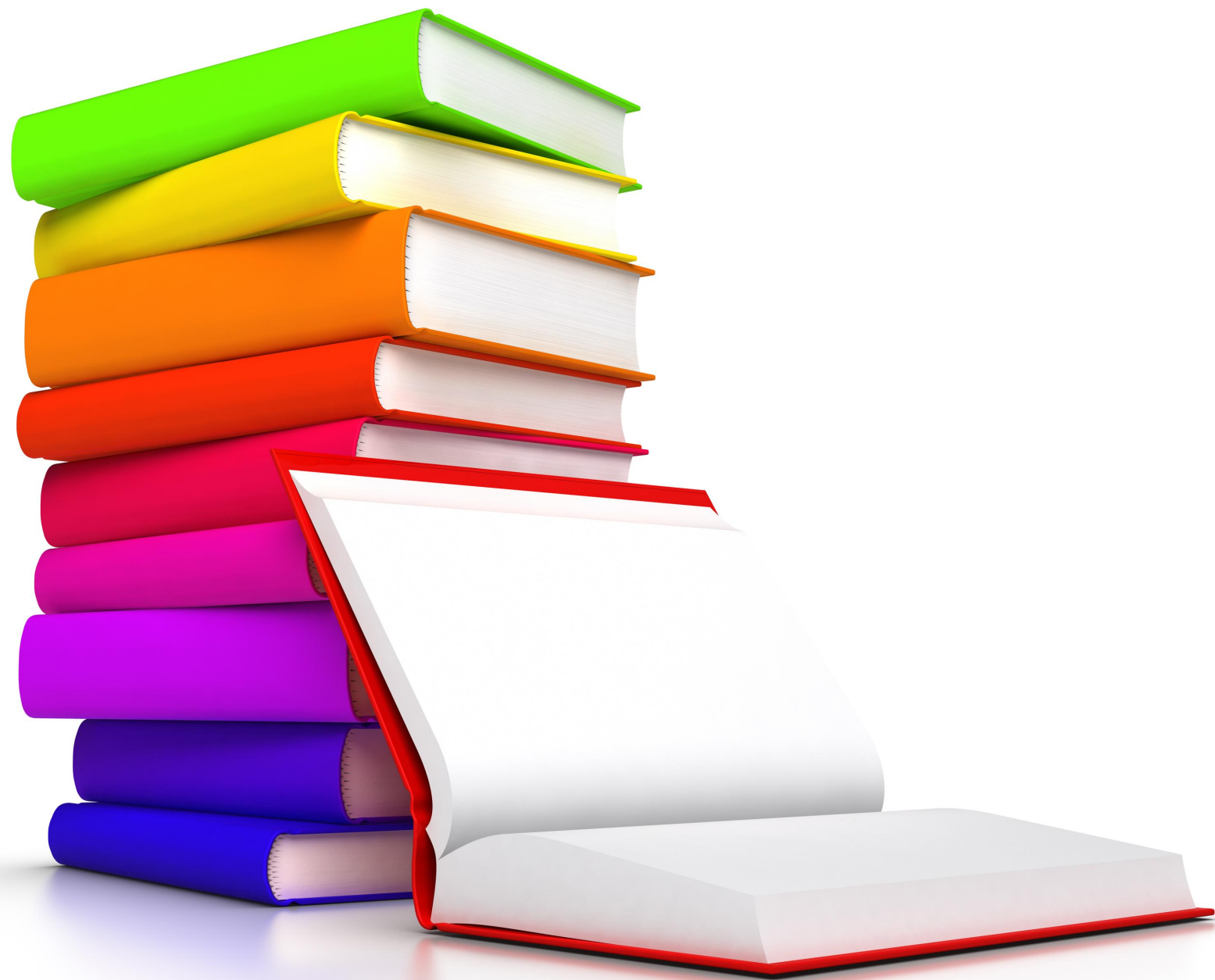
INTRODUCTION

TECHNOLOGY









A PRAGMATIC APPROACH

- Taking a *pragmatic approach*
- It **can** be straight-forward, if you keep a few things in mind
- A **deliberate** approach to taking process as a fundamental starting point for creating value [14, 12]
- Simple is best and is complicated enough 😊
- Automation comes later and is easier when we are better prepared



WHY NOT?

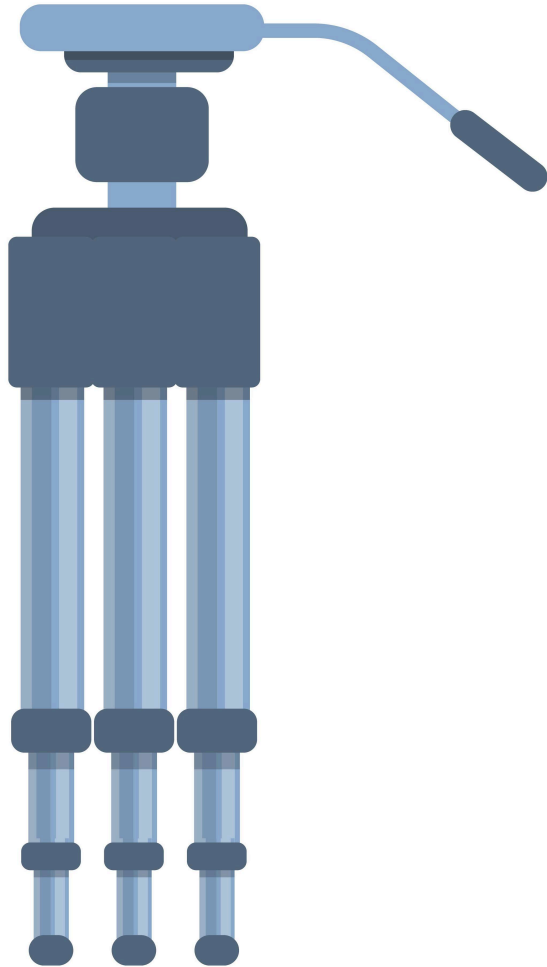
- Why aren't we focussing on value creation?
- Why aren't our continuous improvement efforts data-driven?
- Why aren't we gaining efficiency from our automation efforts?

☐ It simply ain't that simple...





TRIPOD



- Process Management
- Methods & Techniques
- Technology

□ It's a balancing act to get the best picture!

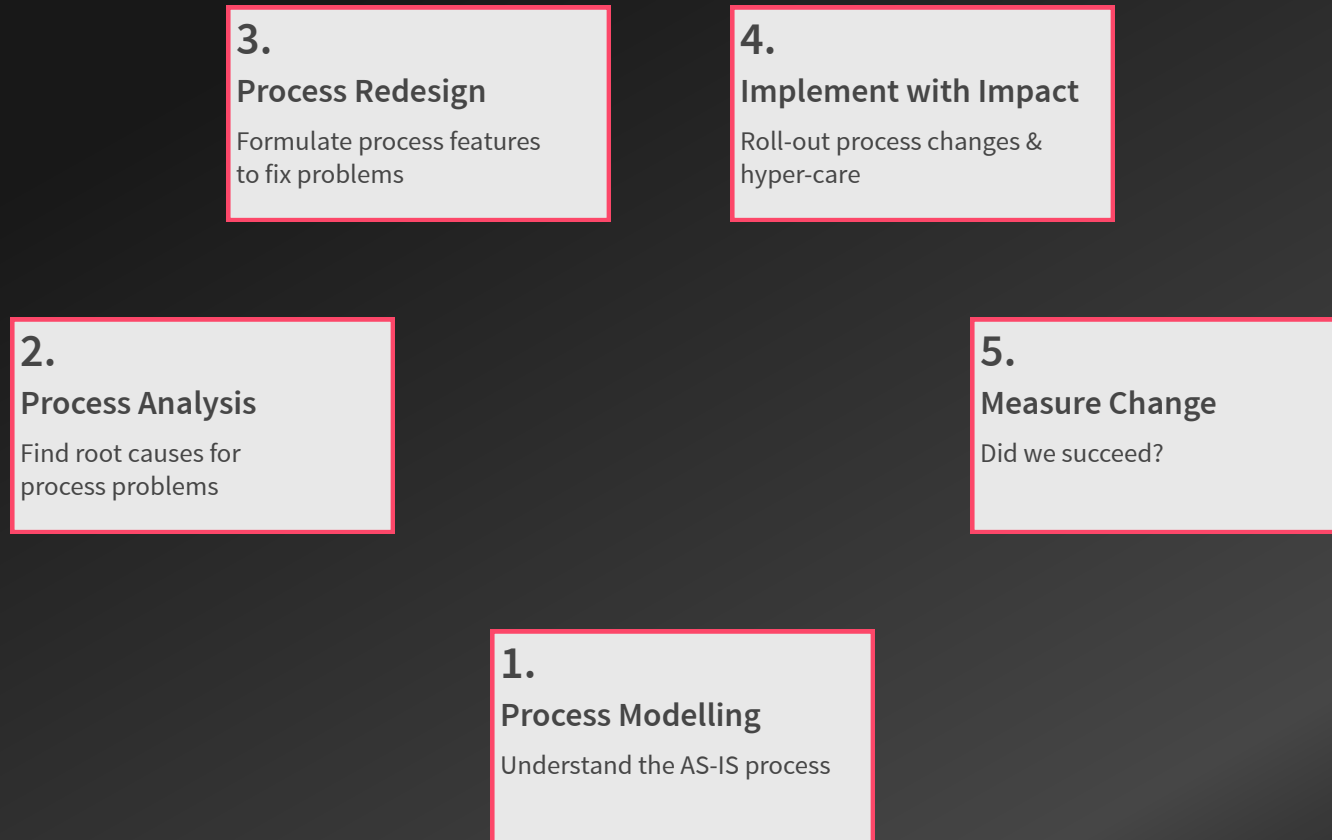
PROCESS MANAGEMENT



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]



1. © Manu De Backer - the masterlabs consulting. The content of the original slide was recreated here with kind permission from the original author.

THE STRATEGY [1]

2.

Structure & culture

Clear roles and responsibilities about process ownership

1.

Process Identification

What are our organization's processes?

3.

Performance Mgt.

How do we measure success?
How healthy are our processes?

0.

Strategy

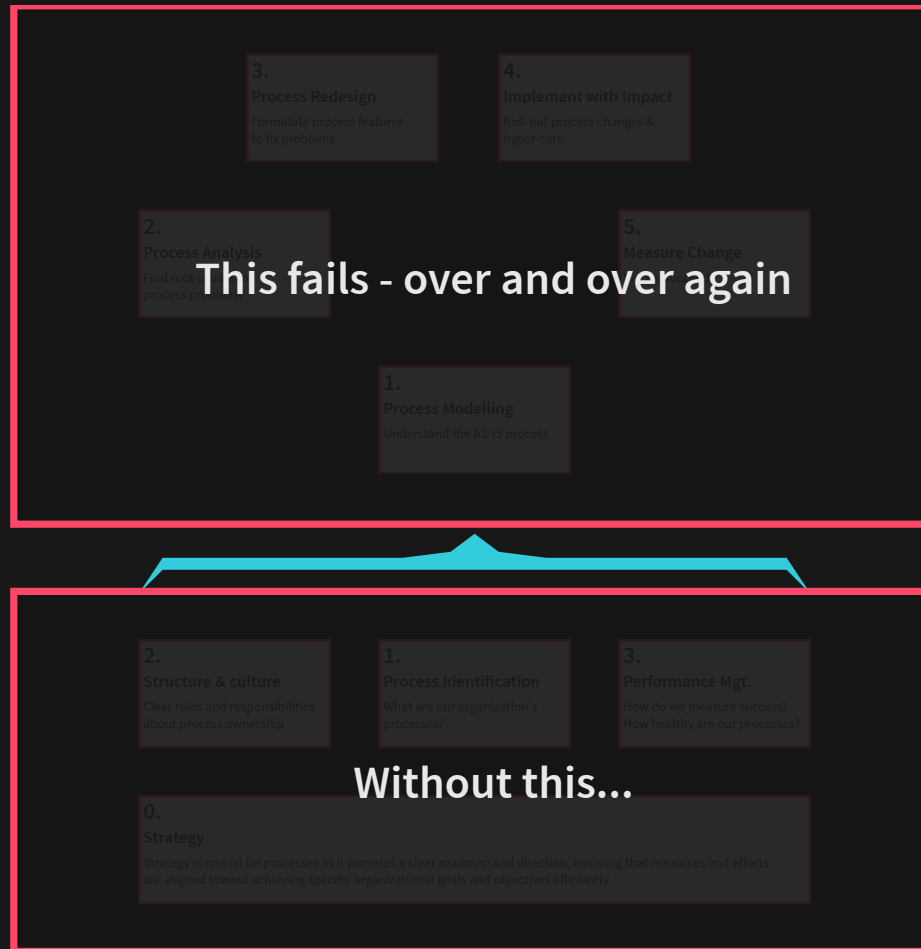
Strategy is crucial for processes as it provides a clear roadmap and direction, ensuring that resources and efforts are aligned toward achieving specific organizational goals and objectives efficiently

THE CYCLE AND THE STRATEGY [1]



1. © Manu De Backer - the masterlabs consulting. The content of the original slide was recreated here with kind permission from the original author.

THE CYCLE AND THE STRATEGY IN PRACTICE ^[1]



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YOU WHAT?

(with a Cumbrian accent)

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

- The essential tool: the **Process Architecture** [14]
 - 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



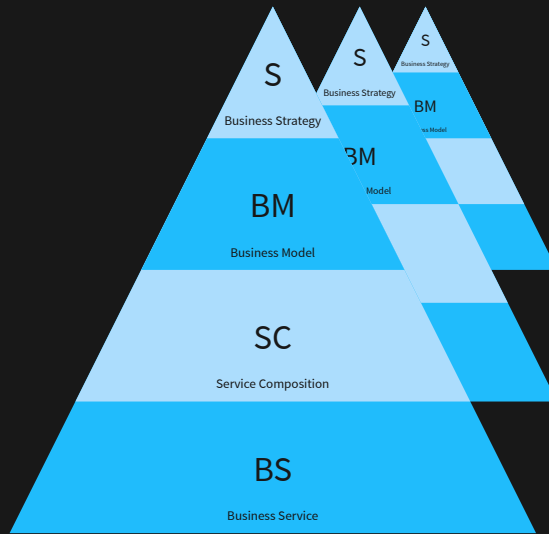
Maintain IT Systems

Employ Shedders

WHICH ONES DO WE NEED?

- A way to find out which processes should be in the architecture
 - Workshops with stakeholders and experts [14]
 - Not a multi-month project 🤔
 - Heuristics to determine whether to split a process into multiple processes [7 pp. 42-57, 6]
- Not set in stone!

BASE/X



- A business engineering framework [10, 9]
 - Who **are we** and what's our vision?
 - What can we **do**?
 - 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

WHO'S IN CHARGE?

you build it, you own it

PROCESS OWNERSHIP

- Cross-functional processes should be **owned**
 - They're how we deliver value, after all
- Vertical responsibility vs. horizontal responsibility
 - With *primacy of process*, the need for governance is a no-brainer
 - Responsibility for monitoring and reacting
 - All the way across, **and** all the way "down"
- Making changes **explicit** and **deliberate**
- And what about **decisions**?

WHERE ARE THE TOOLS?

- Where are the tools for the process owner?
 - Doesn't have to be special
 - But you need **something**







HOW ARE WE DOING?

whaddaya mean?

MEASURING

- Cycle?
 - "Oh yeah, there's some team working on that, I think."^[1]
- Continuous process improvement only works if you **measure** performance
 - And actually look at what you measured 🧐
- After identifying, we can select, then define expectations and then check against them (KPIs)
 - Just the ones that **really matter!**
- 💡 No, it's typically **not**...
 - Just *any old data* we can get our hands on
 - 100% or Not a single exception

1. luckily, not a **literal** quote.

WHY ARE WE DOING THIS AGAIN?

- **Now** we go into the cycle, armed with some purpose
- Time to use some of those methods and technological tools
- Don't forget the whole continuous improvement thing!

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**
- Who's keeping score?
- Determine what and how to **measure**
- Capture that big picture
 - Do both the **gardening** and the **landscaping**
 - Don't just clear the **rocks**, climb a **mountain** sometimes

METHODS

ELOQUENT [11]

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
- 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

DECISION MANAGEMENT WITH DMN

- An underappreciated chance to improve even further
- 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 the expertise



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

POINTING AT THE MAP

- "Trust me, I've been doing this for years."
- "We all *know* what we're working on right now."
- Do you? Why this, right now?
- Scope, scope, scope! [3, 4]
- The process architecture [6, 13, 14] as starting point for agile teams' stories
- Re-use and overuse

A TAKE ON DECISION RECORDS

- Track the **decisions** you make and the **rationale**: ADRs^[1]
- How about a **PDR** log for Process Management?
- A section of the Process Management Record, perhaps?
- Document the **trade-offs** with their **consequences**

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

CENTER OF EXCEL(LENCE)

- Spreading the word, but mostly: **enabling** everybody
- Tailor-made and ever-evolving
- Where are all the architects?
 - Vision realised...?
 - Business and technology components
- Where are all the business *engineers*, taking it **all the way**?
- Where are all the *process people*?
- Why not **everywhere**?

CONCLUSION

- Up your game and grow as a team
- Extract logic and use the process architecture as a map
- Track the choices you make
- Teamwork:
 - **T**echnologists (developers, testers,...)
 - **E**ngineers (business and technology)
 - **A**rchitects
 - **M**anagers

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

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

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



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

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

TOOL LIMITATIONS


- Is it architecturally flexible? (polyglot, API, unobtrusive)^[1]
- Can you **model** x, y and z?
- Will it **execute** x, y and z?
- Can it **migrate** from a to a'?
- Does it have an **active** and **welcoming community**?
- Does it allow developers to use *best of breed* tools?



1. And is it open source?

NIH^[1] AND PLATFORMS

- Check your business models (BASE/X): are we in the business of offering tools for process orchestration?
- You **will** need those advanced patterns, so you'll end up implementing and maintaining them
- Code generators and custom modelling tools usually underwhelm, disappoint or outright hinder your process automation initiatives
- In most cases: **don't** build your own tools

 Invest in your methods and techniques instead by building a general-purpose platform or consider creating extensions

1. Not Invented Here

JUMPING THE GUN

- It's so easy to get started: straight into automation
- Equally easy to get stuck shortly after if not thought through^[1]
- Balance that tripod and don't automate the *status quo*
- Don't be tempted too much by "low code" and "citizen developers"

1. think of matters such as data usage, data retention and archival, task-based working, testing, versioning, migrations...

LOSING THE BIG PICTURE

- Local, isolated automation efforts lack end-to-end process visibility
 - Also lead to increased complexity
- Use that process architecture to have line-of-sight to the business process

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**
- Business Service interfaces are determined by processes, **not** by the domain of the service!
- 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

REUSE TILL YOU DROP

- Let patterns emerge, don't optimize prematurely
- Re-use is fine, but not a goal
- 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
- Don't build your own tools, but build on other's tools
- Use them wisely to **automate your business**



DEMO





PROBLEM SOLVED

```
function getSelfAndParents(data, id) {  
    var self = getObj(data, id);  
    parents = [];  
    if (self) {  
        parents.push(self);  
        if (self.pId) { // If pId is not 0.  
            parents = parents.concat(  
                getSelfAndParents(data,  
                    self.pId));  
        }  
    }  
    return parents;  
}
```

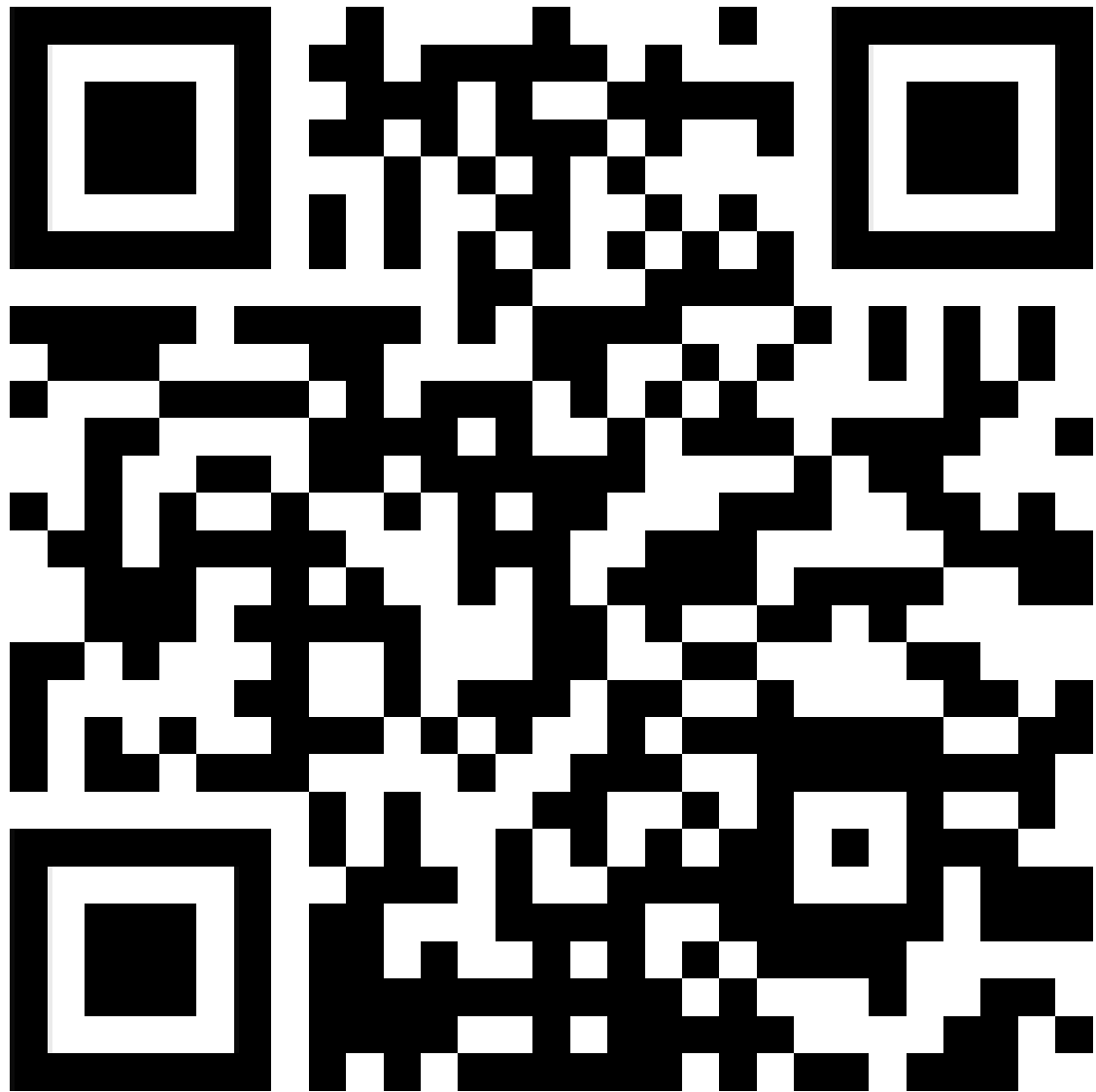
INTRODUCING LICONE

- Gelato Limone + Cones = *Licone* 😊
- A couple of parlours with lots of flavours on offer
- Standard flavours and seasonal ones

💧 How do we find out which flavours our customers like best?



VOTE NOW





WRAP UP

WRAP UP

- A process engine can automate your business by extracting your process and decision logic
- Focus its use on orchestration and choose best of breed tools around it
- Before you do, target your efforts towards organisational goals and complete the cycle afterwards!
- Balance the tripod
 - Process Management
 - Methods
 - Technology

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

THANK
YOU



SLIDES



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