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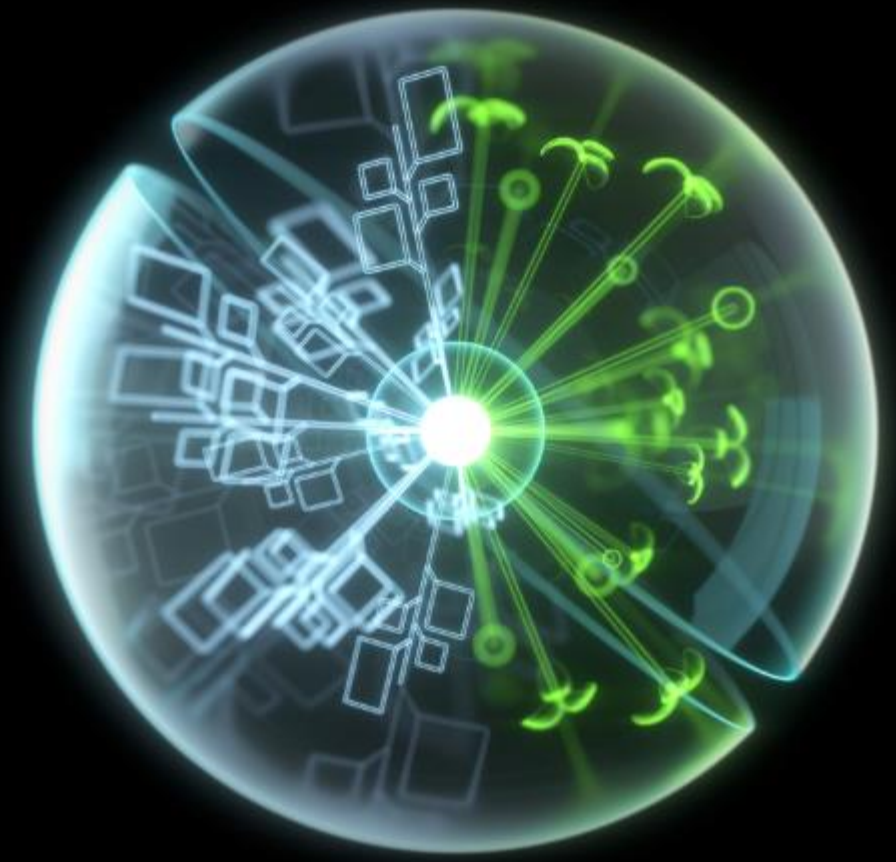

Case Studies & War Stories

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Deloitte Center *for* Process Bionics

Your experts today

Deloitte Center *for* Process Bionics

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Agenda

Deloitte Center *for*
Process Bionics

- **Who we are**
- **How we deliver process mining projects**
- **Case studies & War stories**
- **Gap between theory and reality**

Who we are

Center for Process Bionics (CPB)

Deloitte Center for Process Bionics (CPB)

Market-leading service provider for Process Mining and more...

Who are we?

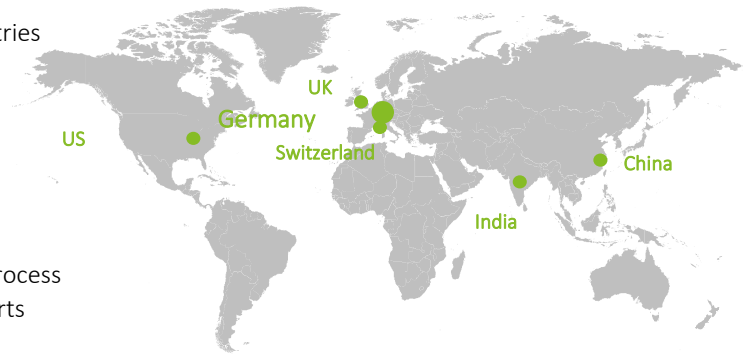
- 8+ years experience of process mining solution design and implementation
- Cross-functional business process expertise and know-how
- Innovative research and collaboration towards new technology and industry standard

What is Process Mining?

- Complete transparency and visualization of as-is processes
- Identification of non-compliant behavior
- Internal benchmarking and harmonization of processes
- Identification of automation potential
- Continuous process optimization and support for daily operation

Where to find Deloitte CPB?

15+
Active countries



200+ Process Mining facilitators

50+
Dedicated Process Mining Experts

4000+ Process Bionics Community

Why to choose Deloitte CPB?

- Excellent project experience on various business processes, e.g. SAP Order-to-Cash (O2C), SAP Procure-to-Pay (P2P), Product Lifecycle Management (PLM), Clinical Trial Process, IT Service Management (ServiceNow), Automotive Production Process, etc.
- Solid technical skills on multiple process mining software, e.g. Celonis, UiPath Process Mining, Mehrwerk, etc., and the unique Deloitte Process Mining Framework
- Accelerator: Process Bionics Platform

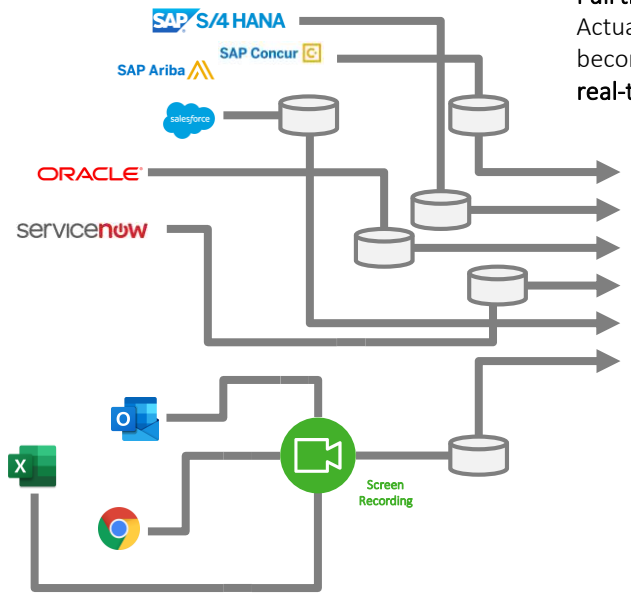
Commercial Process Mining Data Flow

Mining your data to provide transparency, and identify hidden inefficiencies.

System Landscape

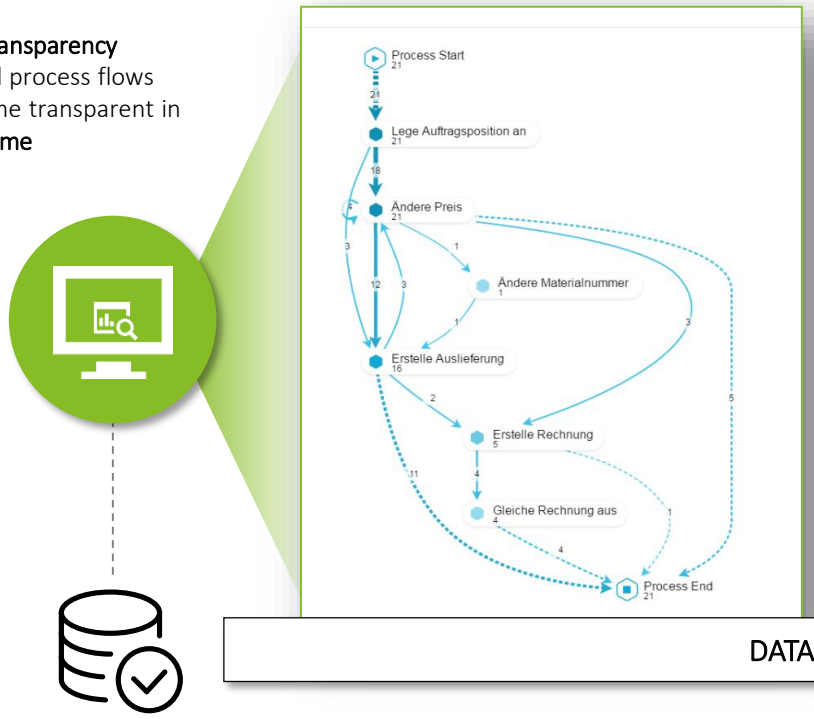
Standard Process Mining

Digital Discovery



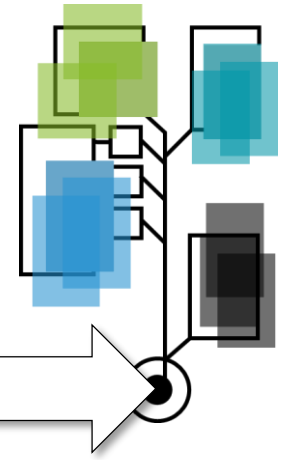
Transparency & Insights

Full transparency
Actual process flows become transparent in **real-time**



Business Value

- ✓ **End-to-End Process Transparency** & Time Saving in Data Provisioning
- ✓ **Efficiency Gain** through
  - ✓ Process Improvement (**Eliminate, Simplify, Standardize, Automate**)
  - ✓ Cutting-Edge Technology
  - ✓ Change in People's Mindset & Behaviour
- ✓ New **Strategic Opportunities** through Advanced Data Insights
- ✓ Increased **Customer Centricity and Innovation Potential**



DATA-TO-VALUE

Cross-Functional

IT & Service Mgmt. | Finance & Accounting | Procurement | SCM / Production | Sales & Marketing

Selected Experience in different Industries

Industries

- Automotive
- Life Science
- Financial Services
- Industrial
- Governmental Child Protection

Processes

- Purchase-to-Pay Process
- Clinical Trial Process
- Product Lifecycle Management
- Order-to-Cash Process
- Record-to-Report Process
- IT-Service-Management
- Logistics
- Human Resources
- Master Data Management

Use Cases

- Securities Trading
- Value-added Tax
- Clinical Trial Monitoring
- Compliance of change control
- RCA of “non-movers”
- Cash Discount
- Payment Behaviour
- Credit Checks
- Transfer Pricing
- Extended Warehouse Management
- Quality Management
- Manufacturing Execution System
- Engineering Change

- Multi-Entity / Triangulation
- S/4 HANA Migration
- Poster Merger Integration

Technologies

Robotic Process Automation

Predictive Analytics

Digital Discovery

Artificial Intelligence

Way of Working

How we deliver projects

Demands from Our Clients

Process mining engagements could be driven by different functions for different purposes

1 Business Process Owners

- Internal process performance benchmarking
- Identification of internal best-practices
- Pinpointing of process bottlenecks and root cause analysis
- Continuous fact-based process optimization

2 Internal Audit or Quality Management

- Real time monitoring of process conformance
- In time detection of non-conforming behaviors
- Conformance check of historic activities
- Drill-downs for investigation on non-conforming cases

3 Innovation or Digital Transformation

- Make the best use of a huge amount of data
- Provide deep insights to ensure a successful digital transformation
- Improve the efficiency of innovation/R&D teams on daily operations

4 Leadership team

- Support dynamic decision-making
- All hands capability uplift
- Create a Center of Excellence (CoE) to control all process optimization activities

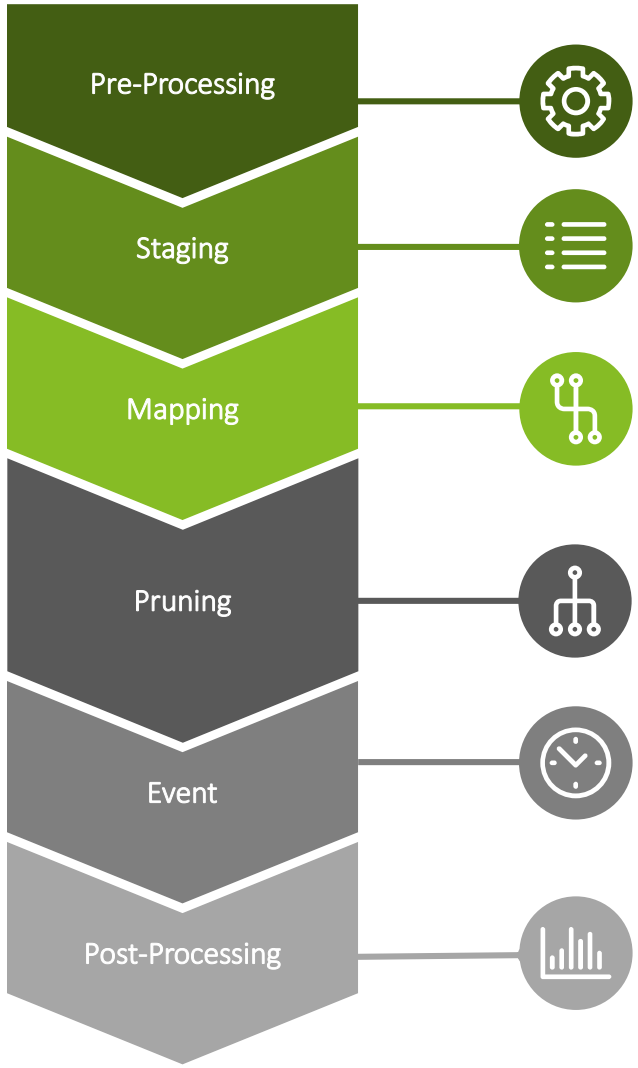
How we deliver – Service offerings

The offer is comprised of three buildings blocks which will deliver the foundation to enable evaluation and use of process mining

		Health Check	Process Diagnostic	Continuous Evolution
		Know your process performance and optimization levers through a quick scan (2~4 weeks)	*Identify root-causes of your process bottlenecks and define your action plan (6~12 weeks)*	*Embed process transparency for continuous improvement into your organizational DNA (>12 weeks)*
Core Services	Strategic (Organization)	**Benchmarking** – High-level internal (e.g. BU / Region / Products) benchmarks	**Best Practice** – Process Redesign approaches – Strategic approach to set-up a Process Mining unit	**Target Operating Model** – Process mining Roll-out Strategy – Optimization roadmap – Governance Concept
	Operational (Optimization)	**First Insights** – Process Efficiency and Quality – Process Heterogeneity – Bottlenecks for Deep-Dive analysis	**Tangible Return** – Deep-dive root cause assessments – Process Optimization Levers – Action Plan	**Process Excellence** – Process Optimization Implementation – Process Performance Monitoring – Change Management
	Technical (Process mining)	**Prototype** – Visualization of Core Processes – High-level Performance KPIs	**End to End Process analysis** – End-to-end Process Visualization – Tailored Analysis Dashboards	**Enterprise Integration** – Process mining Roll-out Implementation – Enterprise Architecture – Authorization Concept
Enabling	Training	Process mining Dashboard Viewer, Designer & Analyst, Data Scientist, Deloitte Process Mining Framework, Target Operation		
	PMO	Project Management, Technical and Functional Documentation		

How we deliver - Technical Methodology

Main steps in our Deloitte Process Mining Framework



Pre-Processing

Understanding the process & identification of available data

Staging

Identification of object types and creating artificial objects & assigning unique IDs to entities

Mapping

Identification of relations between object types and its entities

Pruning

Creation of comprehensive graph representing all entities relationships

Event

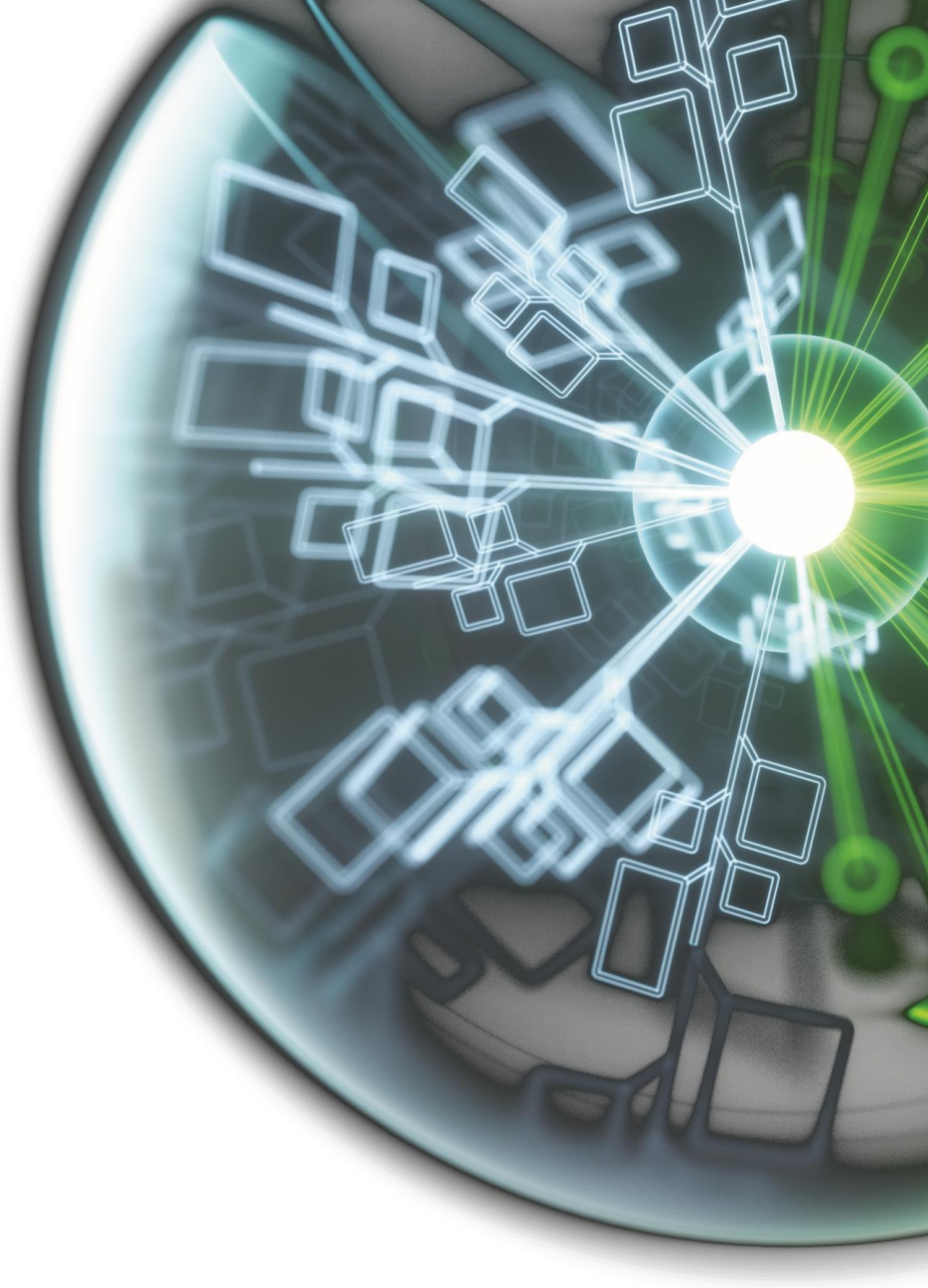
Creation of standardized event log table & extraction of event data from base tables

Post-Processing

Enhancement of base table attributes with pre-calculated measures

Customer War Stories & Use Cases

1. Customer Example:
   Leading Global Tech. Company
2. Customer Example:
   Engineering Change Management
3. Customer Example:
   Sports Goods Company



Customer Example

Process Bionics at large scale.
(Leading Global Technology Company)

Project Starship – Our Client

Leading Global Technology Company

Key Figures 2018

>200k
Employees

5
Business Units

>50B€
Revenue

>40
SAP ECC Systems

Acquisition

- In October 2017 the COO decided to purchase a **globally unlimited Celonis Process Mining** license worth >5M€
- The client's board formulated the goal that **every business unit** should implement at least one **pilot Celonis** project in the first half of 2018
- As the IT services department could not deliver these projects on short notice **Celonis recommended the Deloitte Center of Process Bionics** as there preferred partner

Reasons for the Win

Proven Methodology

Our **Process Mining methodology** has proven to deliver **cost savings**, increase **transparency**, reduce lead time and much more (**Process Mining Framework**).

Innovation

Dedicated Research towards integrating **new technology** in order to **enhance** Process Mining **capabilities**
(e.g. simulation and deep learning)

Team Experience

- ✓ Above 7 years project experience
- ✓ Global Process Mining Roll-out projects
- ✓ Prescriptive Analytics
- ✓ Data Mining / Engineering
- ✓ ERP Backend Knowledge
- ✓ Business Process Know-how

Project Starship – Our Client

Goals & Requirements

„Celonis shall become our central tool for process analysis. We want to use it to get full transparency of all business processes, benchmark our IT systems and derive optimization potentials.“

1. Rollout Strategy: The internal consulting department needs support in coordinating Celonis pilots between all business units
2. Implementation: The client's IT department needs support to deliver Celonis pilots to all business units as soon as possible
3. Technical Deployment: In the long run, the IT department should be able to deliver large scale Celonis projects dynamically with a developer team based in India
4. User Enablement: Business units need user trainings for the Celonis software
5. Analysis Support: The internal consulting department to be supported in using Celonis to find optimization potentials in the the processes
6. Process Mining Competence Center: The long term goal is to establish a central organ that coordinates and optimizes all process mining activities in the company

Reference: Rollout for Global Engineering Company

Company overview & results after the first year

Key Figures 2018

The company is divided into 5 business units that focus on different product lines such as consumer electronics or industrial technology.

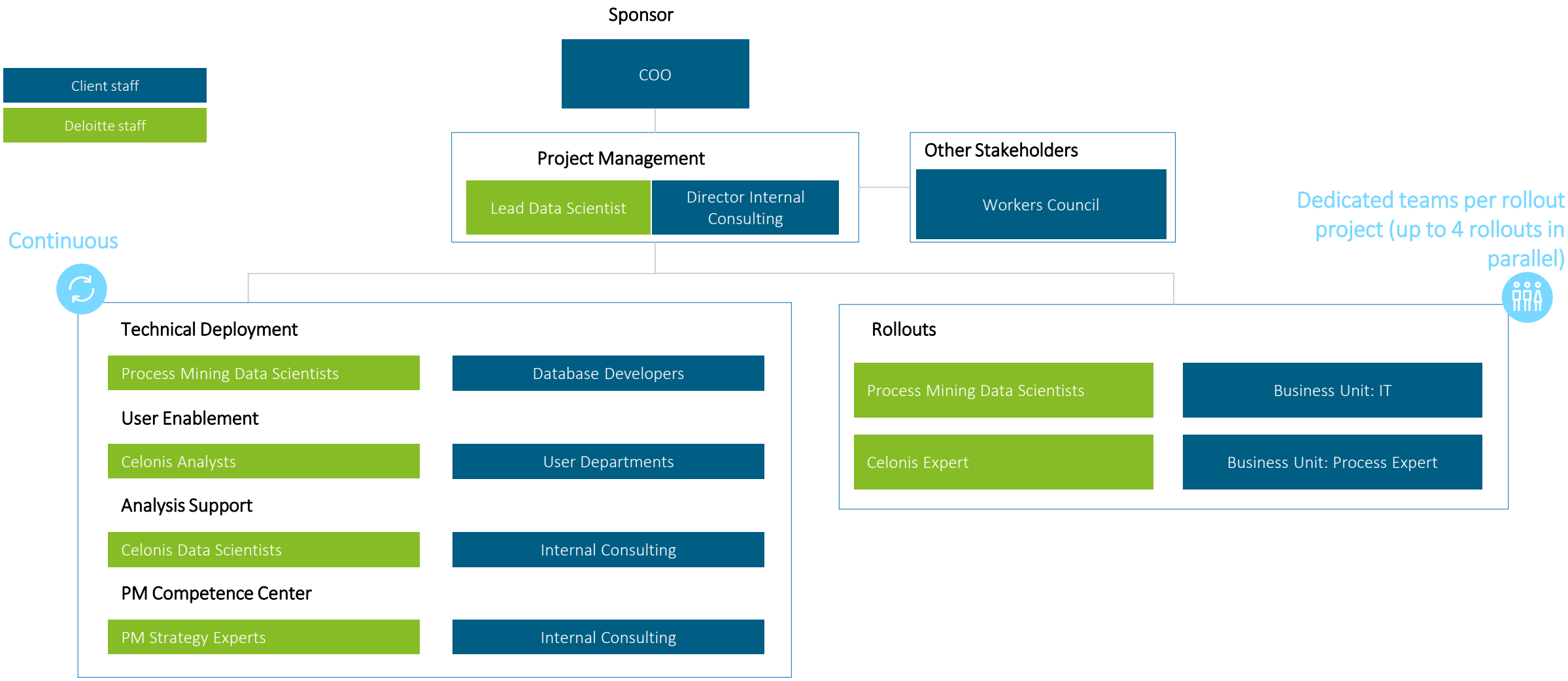
Value Generation:

- >10 Mio savings communicated by internal consulting after 12 months
- Identified potentials:
  - Waste activities due to incorrect master data
  - Complicated communication channels due to misconfiguration of EDI interfaces to customers
  - Working capital improvement as a result of optimized throughput times
  - Implementation of an advanced automation concept

	P2P					O2C						
	Budget Management	Vendor Management	Order Processing	Goods Intake	Accounts Payable	Order Management	Credit Management	Order Fulfillment	Shipping & Transportation	Accounts Receivable	Countries covered	Systems Covered
BU1						x	x	x	x		50	1
BU2	x	x		x							70	5
BU3			x	x	x						70	2
BU4 - Europe						x		x	x	x	25	1
BU4 - India						x		x	x	x	4	1
BU5						x		x	x		15	2

Reference: Rollout for Global Engineering Company

Organization



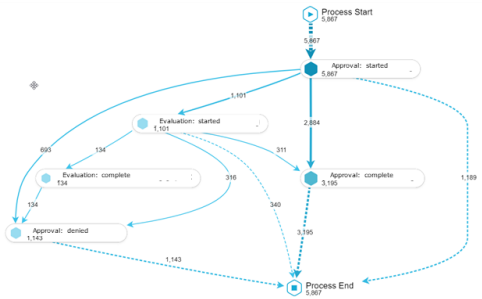
Customer Example

Process Bionics for engineering change management.
(DAX30 Automotive Company)

Process Mining Use Case for Engineering Change Management

Timely data-driven decision-making by providing visibility to all process levels from strategical to operational

Process Mining for ECM



Areas of Impact

Efficiency
- Avoid wasted efforts
- Identify bottleneck

Process Accuracy
- Identify illicit approval actions
- Identify anomaly

Compliance
- IT system monitoring
- Documentation error identification

Punctuality
- Root-cause analysis

Savings
- Reduce purchase cost
- Decrease waiting time

Estimated Outcomes

- Avoid 15 % unnecessary workflows
- Reduce time to implementation by 10%
- Decrease risk of approval counterfeit
- Reduce process violations and inconsistency
- Improvement potentials of IT system as well as continuous backtracking for increased process accuracy
- Reduce missed deadlines by 20%
- Decrease working capital for achieving planned changes

Project Reference

Project Target:

The end-to-end change management process was analyzed

Multiple change management systems are connected to obtain an overall transparency

Consistency of status transitions between different systems was inspected

Duration:

7 months

Participants:

IT, Change Management, Process Excellence

Results:

- Process Mining implemented and PoC was **transferred to productive** IT solution
- **Key user** have been enabled to use process mining and to enhance application
- System and process **silos have been connected**
- Various findings in connected systems helped to **identify noncompliance in process** and to **avoid redundant work** e.g. pre-evaluation of change request

Why Engineering Change Management Needs Process Bionics

Engineering Change Management is core to every product lifecycle in automotive and is one of the major drivers in effort.

Situation

1. Changes in ongoing production are costly due to the many involved parties (including highly paid authorities) as well as regulatory requirements. They are also key in improving **profitability** by cost reductions in direct & after sales.

2. Engineering changes in automotive carry are subject to highest security standards. In turn they also imply enormous **legal risks** in worst case scenarios (e.g. failing airbags).

3. Due to the many affected parties in ECM, processes are distributed across isolated systems. In tandem with highly limited responsitbilities this often causes intransparencies as well as monetary **inefficiencies**.

Solution

1. Process Mining provides transparency over which changes are successfully implemented in time. For changes that are not implemented, it can analyze how the effort is spread across the many different departments involved in the process.

2. Process Mining can help identify and monitor risk potentials to avoid changes which are not revision-proof.

3. Process Mining can provide an end-2-end view across all key systems in change management. This holistic view can show where changes are not propely implemented resulting in idle effort and missed cost reductions as well as legal risks.

Legal Risks Use Case: Insufficient Approvals

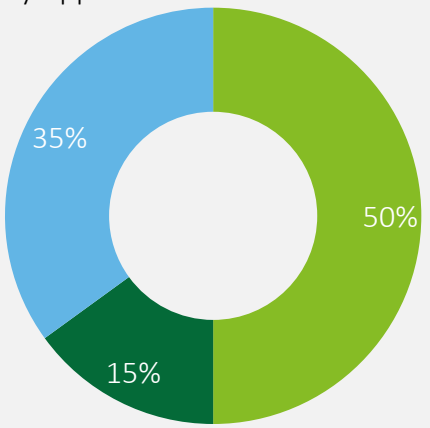
We found the approval process to be partly incomplete. This results in incomplete approvals translating to legal risks and questions the very existence of costly approval rounds.

Should-be process

1 In order to fulfill a 4 eye principal, changes need to be approved by two different parties.

Findings in the reality

2 Too many Approvals



1 Missing Approvals

Proper Approvals

1 **15%** of changes were not approved by the necessary parties, resulting legal risks.

2 **35%** of changes were approved by more parties then necessary. This identified duplicate responsibilities in key management personal translating to 1-2 unnecessary FTEs with above average income idle in unnecessary approvals.

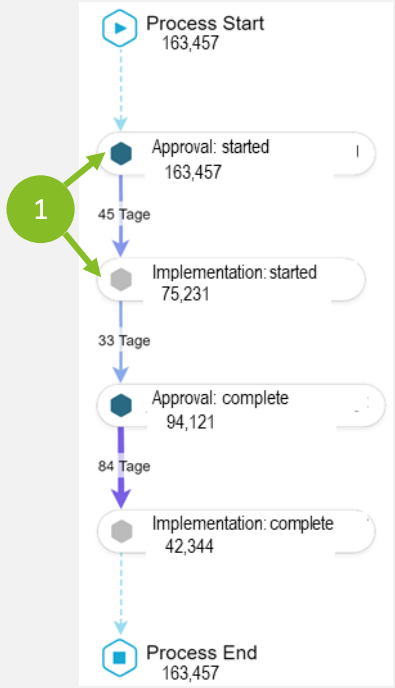
Inefficiencies Deep Dive: Intransparent Process

Engineering Change Management is usually implemented in multiple systems. Due to silo-thinking in large organizations ECM is not implemented consistently causing major inefficiencies.

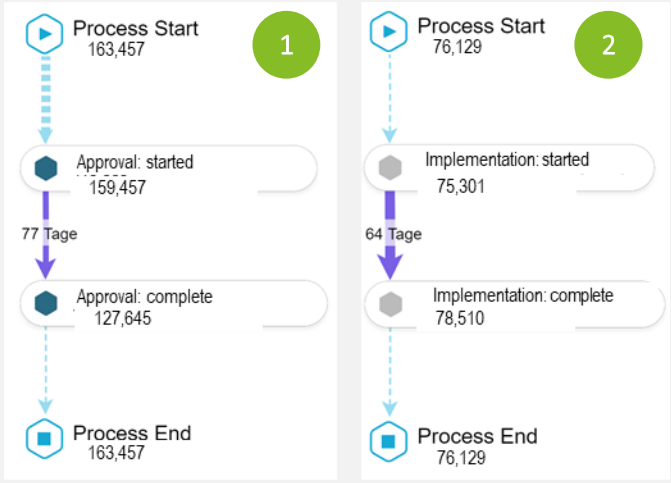
Should-be process

1 Change approval and change implementation are covered by 2 different systems and responsibilities.

For every change the ECM process should work across these 2 systems



Findings in the reality



1 15% of approved changes have no tracked implementation resulting in risks (missing implementation for security relevant changes) and wasted effort (leadership FTEs spending time on decisions that never get implemented).

2 20% of implemented changes have no approval, posing risks in case of erroneous or security relevant parts. These changes are implemented without proper budgets planned.

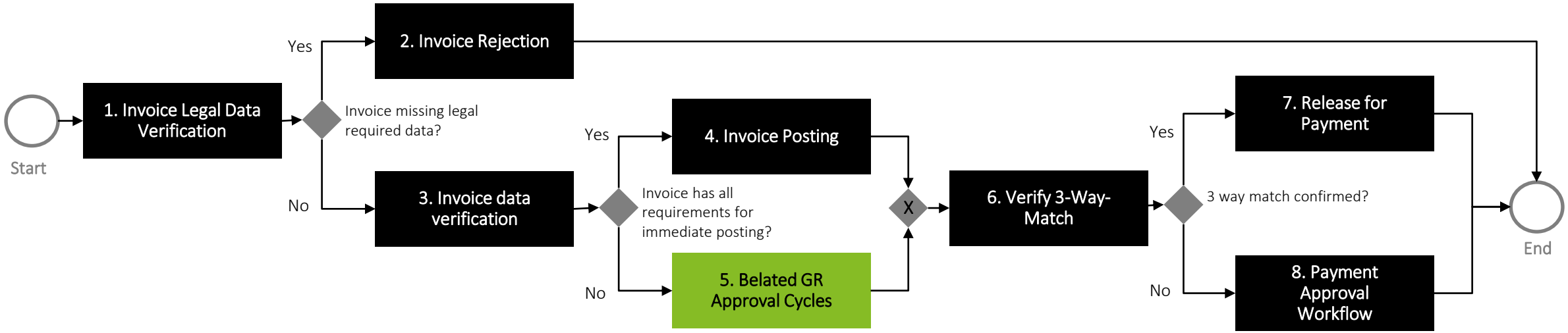
Case Study: Customer Example

Process Mining as a difference maker
in Continuous Improvement.
(DAX 30 Sports Goods Company)

Main Pain Points

Customer Example: Late Payments in Accounts Payable

Manual analysis from the continuous improvement team of a large sports goods company



Bottlenecks

Approval Workflow Structure
6-2-2 (business days) structure - inneficiency

High 3 way match failure (lack of GR)
High workload and additional days for approval

Cost Center Approval Workflow
Unrealistic thresholds and redundant layers of approval

Messages Text Optimization
Unclear automatic SAP messages

Main Issue:
Multiple Goods Receipts not booked.

4 actions identified to streamline Invoice Approval.

Solutions

Reduce WF levels to 6-2 structure

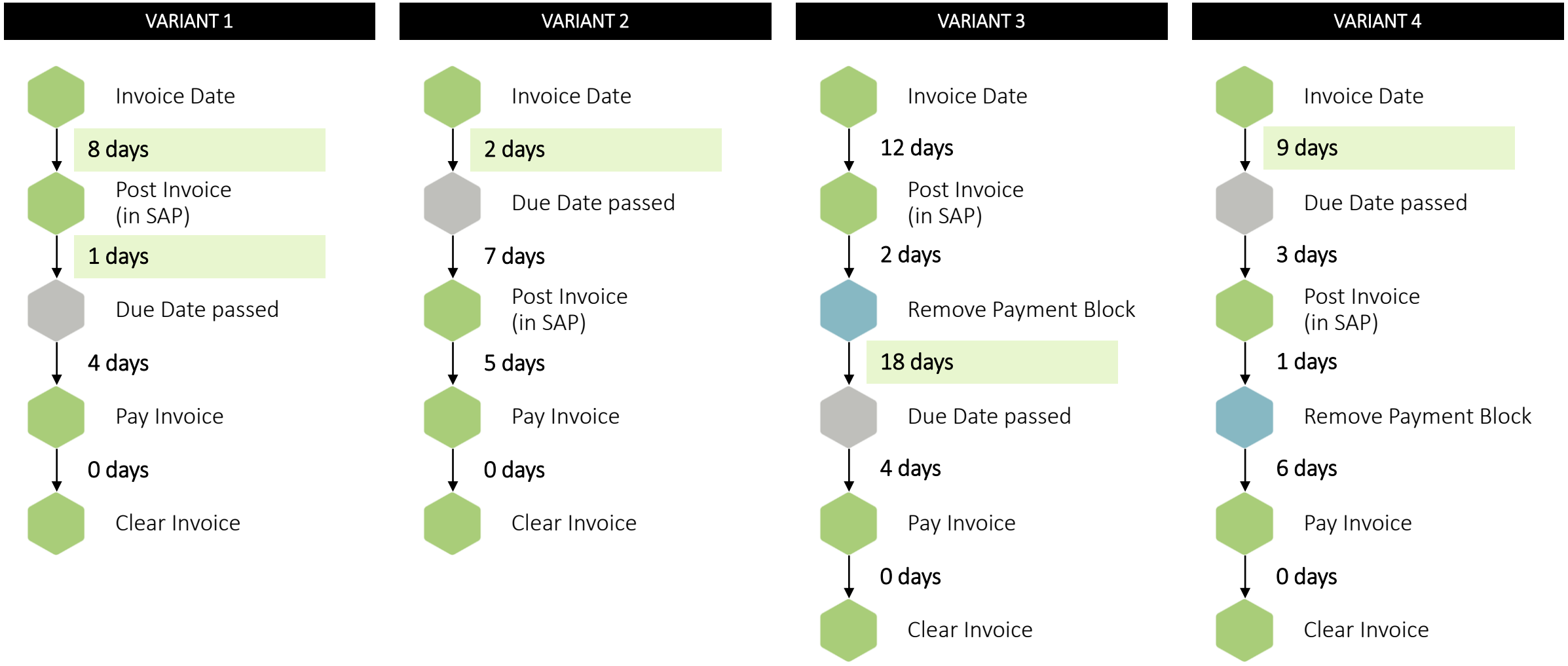
Automate GR booking (<1k)

Revise thresholds + Reduce layers

Revise and update SAP messages

Customer Example: Late Payments in Accounts Payable

Data driven analysis of a large sports goods company



36% - Payment Terms / Master Data

28% - Payment Terms / Master Data

12% - Issue in Payment Proposal

7% - Payment Terms & Proposal Issue

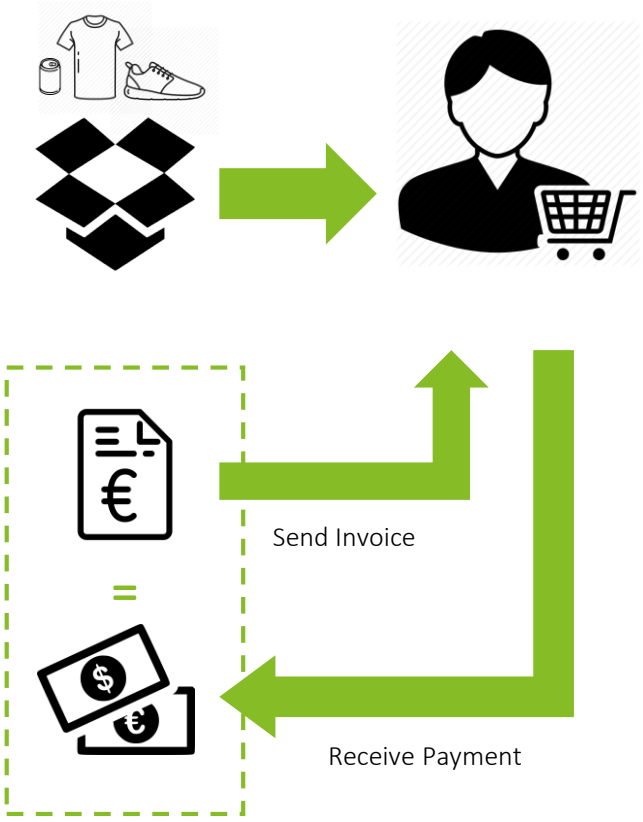
83% - No relation to Missing Approval or Missing Goods Receipt

Predictive Analytics | Customer Example

Accounts Receivable – Not-Allocated Cash (large sports goods company)

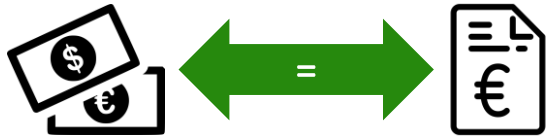
The Process

Goods sold and shipped to wholesale customers.



The Challenge

Link Payment to Invoice and Clear the Invoice.



If the Invoice is not cleared:

- Customers get blocked.
- Goods stay in the warehouse.
- Customers are not served.

This results in:

- Loss of Sales and Market Share.
- Increased Storage Cost.
- Negative Customer Experience.

20k	**Open Documents** Payment not allocated
37 Mio. €	**Sales Volume** Amount under Risk
10 FTE	**Manual Workload** in Shared Services

The Solution

Risk mitigation and operational implementation.

Impact Assessment & Root-Cause Analyses

Use of Celonis Process Mining

Monitoring Dashboard

In Celonis Process Mining

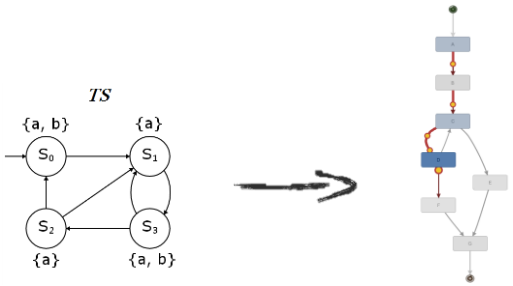
Predictive Analytics & Action Engine

- Prediction of critical items & customers
- Identification and prioritization of cases
- Use of Action Engine to take action early up

Commercial Process Mining is not as advanced as in theory…

Process Mining in Theory & Practice

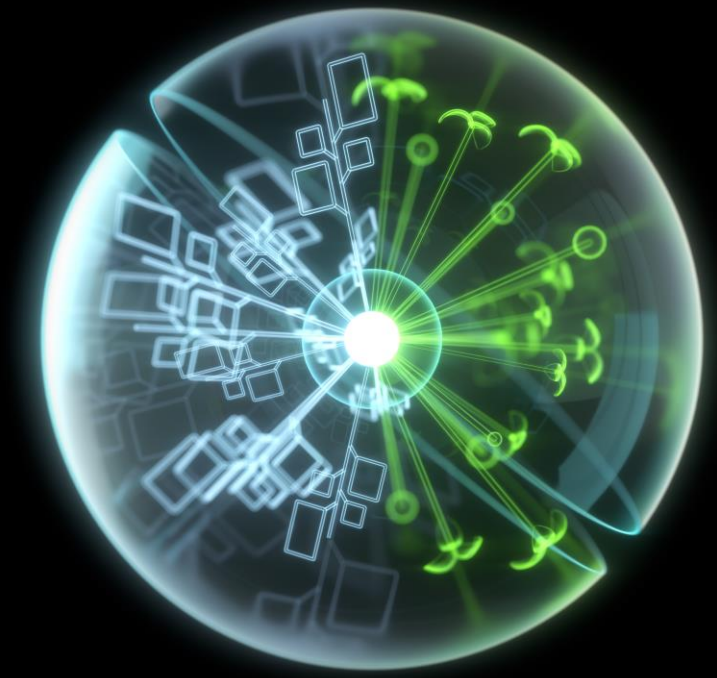
Different Focus Areas



Data extraction and cleansing	⚙	⚙⚙⚙
Automatic Process Discovery & Root cause analysis (RCA)	⚙⚙⚙	⚙
Deployment	⚙	⚙⚙⚙
Business value creation	⚙	⚙⚙⚙

Deloitte Center *for*
Process Bionics

...luckily, we‘re hiring ;-)



“If you digitize a crappy process, then you have a crappy digital process.”

Thorsten Dirks, CEO of Telefónica Deutschland AG

Your experts today

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more than 8 years experience in data analytics as well as process mining

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