

Process Mining:

A DATABASE OF APPLICATIONS

2021 Edition



HSPI Management Consulting

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Process Mining: A Database of Applications 2021

Acknowledgements

The idea of creating the present database of applications came up within HSPI in 2016, during an informal meeting about process mining technology and its spread over several business – and not only – situations.

The *need to collect, to put into an ordered system* all the historical information about process mining techniques implementations has led the creation of the very first version of "Process Mining: A Database of Applications".

Thanks to all the Firms, the Universities and Institutions, managers, consultants and the researchers involved.

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Introduction

The basic idea of process mining is to **extract knowledge from event logs** recorded by an information system. Until recently, the information stored into these event logs were rarely used to analyse the underlying processes. Process mining aims at improving the control over business processes by providing techniques and tools for discovering performance, organizational and social, information from event logs.

There are three classes of **process mining techniques**. This classification is based on whether there is a prior model and, if so, how the prior model is used during process mining.

- **Discovery:** Previous models do not exist. Based on an event log, a new model is constructed or discovered based on low-level events.
- **Conformance checking:** Used when there is an a priori model. The existing model is compared with the process event logs and discrepancies between the log and the model are analysed.
- **Enhancement:** Used when there is an a priori model. The model is extended with a new aspect or perspective, so that the goal is not to check conformance, but rather to improve the existing model.

Our Purpose

The reason for carrying out this research is to create the most complete **list of all the adoptions of process mining techniques** and to collect, directly from who has been involved, basic information about the utilization of this methodology.

The purpose of the study is to create a database of practical cases, no matter the specific industries and the final results, with the only aim of *completeness* and *validity*.

The intended audience includes all those **researchers, data scientists, managers and firms that are willing to implement process mining solutions** or simply **explore business potentials of process mining** in improving business processes or in developing new performance management practices based on real data, extracted from IT systems.

Therefore, the final goal of this knowledge endeavour remains the same of the first edition, which is to contribute to **build awareness and confidence about process mining methods**.

Please note that HSPI Management Consulting is a **vendor-independent** public company.

Scope of the Study

The cases collected and listed come from companies which operate **in very different industries and markets**. Specifically, the present industry categories have been identified:

- Basic Materials
- Consumer Goods
- Consumer Services
- E-learning
- Financials
- Healthcare
- Industrials
- Public
- Services
- Technology
- Telecommunications
- Utilities

The Industries are then divided among several *sectors* that allow to obtain a further level of categorization of the process mining case studies considered. More in depth, the industries are composed by the following sectors:

- Banking
- Insurance
- Chemicals
- Forestry & Paper
- Food & Beverage
- Manufacturing
- Public Administration & Government Bodies
- Education
- Utilities
- Professional Services
- Industry Services
- Retail & E-Commerce
- Wholesale

The firms analysed do their businesses in many countries, each characterized by **significant differences and unique aspects in terms of competitive scenarios, political, legal and tax environments**. So far, the most frequent countries are:

- Australia
- Belgium
- Canada
- Denmark
- Finland
- Germany
- Italy
- Netherlands
- South Korea
- USA

Definition and Parameters

The database consists of some mandatory features (Industry, Organization, Internal Process, Description, Date, Partner) which characterize each of the projects collected.

- 1) "**Industry**" refers to the specific industry in which the company operates;
- 2) "**Sector**" is a sub classification of industry. In particular, it is a category defined by the kind of product or service produced;
- 3) "**Company**" indicates the name of the firm where process mining techniques were adopted in a project;
- 4) "**Process**" is the specific process - or group of activities - in which process mining was used;
- 5) "**Description**" contains a brief overview of the project: the context, objectives and results (if present);
- 6) "**Year**" / "**Hypotetical Year**" indicates the year in which the project was conducted or the hypothetical year. If not present, the date was assumed to be the same of the working paper or the conference in which the cases were described the first time;
- 7) "**Partner**" refers to the institution (university, firm) or the resource (researcher, scientist) that has supported the organization during the project.

The evaluation of sources of information is an important step in any research activity. All the elements collected have been validated by **HSPI Process Mining Laboratory** taking into account all the working papers, conference acts and relevant evidences and/or via mail and conference calls with the contacts directly involved into the process mining applications listed.

If you are a Company, a University, or a researcher and you want to report a new application of process mining techniques, please contact us to: *process-mining@hspi.it*

From the following page it is possible to examine the complete database

Process Application

INDUSTRY	SECTOR	COMPANY	PROCESS	DESCRIPTION (Goals, Results)	PARTNER	YEAR	HP YEAR
Public	Public Authority	UDI (Utlendingsdirektoratet Norwegian Directorate of Immigration) (Norway)	Application processes for asylum seekers	<p>UDI was in the process of developing a dashboard to monitor application processes for asylum seekers and other foreign residents in Norway. The application process is complex and involved a number of actors in addition to UDI: The police, health officials, an NGO and several others. The project's aim was therefore to integrate data from various sources, to visualise the application process and to monitor compliance with process design and time goals. Process Mining would play a key role in discovering, visualising and monitoring the application process. Furthermore Process Mining should contribute to a culture of data awareness and data driven decisions, resulting in process improvement and reduced lead times. Thanks to MPM ProcessMining, the following results were achieved:</p> <ul style="list-style-type: none"> - Qlik® & MPM ProcessMining for complete process transparency - Simple self-service analyses - Easy connection of data sources 	MEHRWERK GmbH	2020	-
Healthcare	Healthcare Equipment	NA	Customer journey experience	<p>This case study applied process mining techniques for the following goals: Solution for process visualization and analysis, integrate traditional BI with process mining, leverage existing data & models in Qlik and quick implementation and turnaround. Thanks to MPM ProcessMining, the following results were achieved:</p> <ul style="list-style-type: none"> - Understanding of message flows - Revealed bottlenecks that were not known - Significantly minimized churn rates - Quick implementation time 	MEHRWERK GmbH	2020	-

Telecommunications	Telecommunications	A1 Telekom Austria (Austria)	Purchase-to-pay/Sales-to-activation	In purchase-to-pay they significantly decreased approval time for purchase requests in their approval chain. Is a nice example from service, where they improved “malfunction clearance” meaning malfunctions that happen to their customers. The second use case is from sales-to-activation, where they use the Action Engine to accelerate our customer’s connection with the fixed network.	Celonis (München, Germany)	2020
Public	Education	Universidad de Granada (Spain)	IT support process	Previously, the logs from the IT systems were only used for the purpose of occasional checks triggered by inquiries from citizens. The transaction records were never used to visualize, analyze or audit the process in a systematic way before. They have found that process mining can significantly help to improve administrative processes in our government agency, and they believe that this method is extensible beyond the department of resources and claims collection. For example, areas where they will explore process mining in the future are the social services processes, subsidies, tax collection and management, sports concession fees and licenses, etc. They have learned that the exploratory analysis of the business process through process mining can reveal issues of concern that are unknown, and that it can impact the performance of the organization and performance of their employees.	Fluxicon (Netherlands)	2020
Financials	Credit Card	KB Card (South Korea)	Credit Card Issue Process	<ul style="list-style-type: none"> - Card Issue Process Detail Analysis - Bottle Process and time consuming activity Analysis - Defining Improvement Points through Process Mining - Detail Issue Delaying Point Analysis - Work Efficiency Analysis per Employee - Analyzing the optimum task amount(example, No. of Employee) 	Puzzle Data (Republic of Korea), EY (Ernst & Young)	2020

Industrials	Manufacturing	KAI(Korea Aerospace Industries)(South Korea)	Material Purchasing Process	Process Mining for Manufacturing Material Shortage Prevention - Purchasing Process Analysis per Material Group / Purchasing Type - Abnormal Process Analysis by analyzing Pattern based Process Mining - Document Approval Lead time Analysis - Most Frequent Process vs Other Process Comparison (conformance check)	Puzzle Data (Republic of Korea), Deloitte	2020
Financials	Securities	KB Securities (Finance: Securities Company) (South Korea)	Retail Store Employee Task Process	Retail Store Work Process Mining for Store Work Process Improvement - Work Process Analysis by Store/Job Level/Day - Cluster Analysis based on employee work process and UI/UX improvement recommendation based on cluster analysis result.	Puzzle Data (Republic of Korea), EY	2020
Industrials	Chemicals	LG Chemical (Manufacturing: Global Chemical Manufacturing Company) (South Korea)	Chemical Manufacturing Process	Process Mining for analyzing the new deployed MES(Manufacturing Execution System) to identify the bottle neck and time consuming activities - Process Analysis based on Lot Tracking : Lead time and Abnormal Process Analysis by Grade and Line - Work Process Tracking : Manufacturing Status Analysis vs Manufacturing Plan - Material Management Analysis based on the Packaging -> Issue Activities Analysis - MES User Tracking : MES User Behavior Analysis based on the MES Usage Pattern Analysis	Puzzle Data (Republic of Korea), LG CNS	2020
Industrials	Manufacturing	Hyundai-Kia Motors (Manufacturing: Global Car Manufacturing Company) (South Korea)	Car Sales & Distribution Process(for Australia Subsidiary)	Process Mining for IT Process Analysis and Improvement Specific Issue Process Analysis - Lead time Analysis - Bottle-neck Analysis, Activity Duration Time Analysis - Repeated Process Analysis - Outlier detection and analysis - Event Analysis and Process Comparison	Puzzle Data (Republic of Korea)	2020

Industrials	Manufacturing	SK Hynix (Manufacturing: Global Semiconductor Manufacturing Company) (South Korea)	MES(Manufacturing Execution System) Process Analysis	<p>Abnormal MES Activity Detection</p> <p>Identifying the Process Pattern of the MES System based on the transaction logs</p> <ul style="list-style-type: none"> - Process Analysis of JobPrep Command Processes - Error Process Analysis per equipment, task, and OIP 	Puzzle Data (Republic of Korea), Business Insight	2020
Consumer Goods	Retail & E-Commerce	JDC(Jeju Development Center) (Retail: Duty Free Shop Company)(South Korea)	Sales Management Process of SAP and POS	<p>Process Mining for Material Management Process in order to identify the visibility of material management process and bottle-neck process based on SAP and POS(Point of Sales) management system. Also, Utilize the process mining for Information System Project renewal and Process Lead-time improvement</p> <p>1) Sales Management Process Comparison by sales divisions using SAP and Sales management system</p> <ul style="list-style-type: none"> - System Menu Usage and Frequency Analysis - Common Menu Analysis between SAP and Sales management System <p>2) Process Analysis by Sales Channel</p> <ul style="list-style-type: none"> - Lead-time and product analysis by Process Pattern - Item Comparison by total Process lead time - Product clustering by # of product order issue and sales lead-time 	Puzzle Data (Republic of Korea), BSG	2020
Telecommunications	Professional Services	LG U+ (Telecommunication: Mobile Telecommunication Company) (South Korea)	Customer Process(Mobile Phone Subscription Termination Process Analysis)	<p>Customer Behavior Analysis for Mobile Subscription Termination of Mobile Carrier(LG U+) Behavior Analysis</p> <ul style="list-style-type: none"> - Major Process Pattern Analysis - User Termination Process Behavior Analysis - Dropped User vs. Normal User Process Comparison Analysis - Process Comparison Analysis based on the remaining contract period 	Puzzle Data (Republic of Korea)	2020

Consumer Goods	Retail & E-Commerce	Amway Korea (Retail: Global Network Sales Company) (South Korea)	On-line Shopping Process of Amway Korea Users	<p>Process Mining for Mobile/Web Customer Behavior Analysis by analyzing the web site usage pattern analysis with Adobe Analytics Data</p> <ul style="list-style-type: none"> - Process Comparison by the customer level(Business Builder vs. End-User) - KPI Analysis by customer segment - Customer Behavior Analysis by customer segment - Key Pattern Analysis by customer segment - Statistic modeling for identifying the business builder/customer segregation 	Puzzle Data (Republic of Korea)	2020
Construction		BDO Netherlands	Order to Cash	<p>"Admin-admin" account was used in 20% of the cases, which was too high</p> <p>Multiple payments were made with the same ID</p> <p>Bank accounts were changed prior to the payments and after the payments were made</p>	Minit	2020
Chemical manufacturing		Confidential (Netherlands)	Order to Cash	<p>Transactional costs minimized due to elimination of Sales Order changes; annual savings approx \$390K</p> <p>Hidden potential standardization unlocked; annual savings approx \$325K</p> <p>Opportunities for Payment Collections streamlining defined; annual savings approx \$350K; potential savings approx \$490K</p> <p>Lowering the risk of Operational issues due to 100% process transparency and compliance; annual savings approx \$2K</p>	Minit	2020

Manufacturing	Manufacturing	NDA Customer (Finland)	Account management	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Account management process in the Manufacturing industry.	QPR (Finland), Sofigate	2020
Healtcare	Service	NDA Customer (Finland)	Accounts Payable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Healtcare industry.	QPR (Finland), Sofigate	2020
Pharmaceuticals	Manufacturing	NDA Customer (Finland)	Accounts Payable	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Pharmaceuticals industry.	QPR (Finland), Sofigate	2020
Banking & Finance	Service	NDA Customer (Finland)	Accounts Payable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Banking & Finance industry.	QPR (Finland), Digital Workforce	2020

Pharmaceuticals	Manufacturing	NDA Customer (USA)	Accounts Payable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Pharmaceuticals industry.	QPR (Finland)	2020
Pharmaceuticals	Manufacturing	NDA Customer (France)	Accounts Payable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Pharmaceuticals industry.	QPR (Finland)	2020
Pharmaceuticals	Manufacturing	NDA Customer (China)	Accounts Payable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Pharmaceuticals industry.	QPR (Finland)	2020
Services	Service	NDA Customer (Finland)	Accounts Payable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Services industry.	QPR (Finland)	2020

Automotive	Manufacturing	NDA Customer (Germany)	Accounts Payable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Automotive industry.	QPR (Finland)	2020
Automotive	Manufacturing	NDA Customer (India)	Accounts Payable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Payable process in the Automotive industry.	QPR (Finland)	2020
Government	Service	NDA Customer (Finland)	Accounts Receivable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Receivable process in the Government industry.	QPR (Finland), Cap Gemini	2020
Pharmaceuticals	Manufacturing	NDA Customer (USA)	Accounts Receivable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Receivable process in the Pharmaceuticals industry.	QPR (Finland)	2020

Pharmaceuticals	Manufacturing	NDA Customer (France)	Accounts Receivable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Receivable process in the Pharmaceuticals industry.	QPR (Finland)	2020
Pharmaceuticals	Manufacturing	NDA Customer (Malaysia)	Accounts Receivable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Receivable process in the Pharmaceuticals industry.	QPR (Finland)	2020
Pharmaceuticals	Manufacturing	NDA Customer (UK)	Accounts Receivable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Receivable process in the Pharmaceuticals industry.	QPR (Finland)	2020
Pharmaceuticals	Manufacturing	NDA Customer (Brazil)	Accounts Receivable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Receivable process in the Pharmaceuticals industry.	QPR (Finland)	2020

Pharmaceuticals	Manufacturing	NDA Customer (Germany)	Accounts Receivable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Receivable process in the Pharmaceuticals industry.	QPR (Finland)	2020
Pharmaceuticals	Manufacturing	NDA Customer (China)	Accounts Receivable	Deployment of process mining tool (QPR ProcessAnalyzer) to Accounts Receivable process in the Pharmaceuticals industry.	QPR (Finland)	2020
Government	Service	NDA Customer (Saudi Arabia)	Benefit application processing	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Benefit application processing process in the Government industry.	QPR (Finland)	2020
Financial services	Service	NDA Customer (Germany)	Contract management	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Contract management process in the Financial services industry.	QPR (Finland)	2020

Financial services	Service	NDA Customer (Germany)	Contract termination	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Contract termination process in the Financial services industry.	QPR (Finland)	2020
Manufacturing	Manufacturing	NDA Customer (Finland)	Customer complaint	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Customer complaint process in the Manufacturing industry.	QPR (Finland), Sofigate	2020
Energy & Utilities	Information Service	NDA Customer (Finland)	Customer service	Deployment of process mining tool (QPR ProcessAnalyzer) to Customer service process in the Energy & Utilities industry.	QPR (Finland)	2020
Manufacturing	Manufacturing	NDA Customer (Belgium)	Customer service	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Customer service process in the Manufacturing industry.	QPR (Finland), Delaware Consulting	2020

Government	Service	NDA Customer (Saudi Arabia)	Customer service	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Customer service process in the Government industry.	QPR (Finland)	2020
Government	Service	NDA Customer (Saudi Arabia)	Customs clearing	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Customs clearing process in the Government industry.	QPR (Finland)	2020
Energy & Utilities	Raw Materials	NDA Customer (Finland)	Document approval	Deployment of process mining tool (QPR ProcessAnalyzer) to Document approval process in the Energy & Utilities industry.	QPR (Finland)	2020
Pharmaceuticals	Manufacturing	NDA Customer (France)	E-contracting	Deployment of process mining tool (QPR ProcessAnalyzer) to E-contracting process in the Pharmaceuticals industry.	QPR (Finland)	2020

Banking & Finance	Service	NDA Customer (Finland)	Home loan change request	Deployment of process mining tool (QPR ProcessAnalyzer) to Home loan change request process in the Banking & Finance industry.	QPR (Finland), Digital Workforce	2020
Government	Service	NDA Customer (Finland)	Housing benefit processing	Deployment of process mining tool (QPR ProcessAnalyzer) to Housing benefit processing process in the Government industry.	QPR (Finland)	2020
Information Technology	Service	NDA Customer (Finland)	Incident Management	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Incident Management process in the Information Technology industry.	QPR (Finland)	2020
Telecommunications	Information Service	NDA Customer (Finland)	Incident Management	Deployment of process mining tool (QPR ProcessAnalyzer) to Incident Management process in the Telecommunications industry.	QPR (Finland)	2020

Government	Service	NDA Customer (Finland)	Law preparation process	Deployment of process mining tool (QPR ProcessAnalyzer) to Law preparation process process in the Government industry.	QPR (Finland)	2020
Services	Service	NDA Customer (Finland)	Lead to Cash	Deployment of process mining tool (QPR ProcessAnalyzer) to Lead to Cash process in the Services industry.	QPR (Finland)	2020
Telecommunications	Manufacturing	NDA Customer (Sweden)	Lead to deal	Deployment of process mining tool (QPR ProcessAnalyzer) to Lead to deal process in the Telecommunications industry.	QPR (Finland)	2020
Services	Service	NDA Customer (Finland)	Lead to Deal	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Lead to Deal process in the Services industry.	QPR (Finland)	2020

Manufacturing	Manufacturing	NDA Customer (Finland)	Lead to Deal	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Lead to Deal process in the Manufacturing industry.	QPR (Finland), Sofigate	2020
Banking & Finance	Service	NDA Customer (Russia)	Loan application	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Loan application process in the Banking & Finance industry.	QPR (Finland)	2020
Banking & Finance	Service	NDA Customer (Russia)	Loan application	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Loan application process in the Banking & Finance industry.	QPR (Finland)	2020
Manufacturing	Manufacturing	NDA Customer (Finland)	Opportunity to Invoice	Deployment of process mining tool (QPR ProcessAnalyzer) to Opportunity to Invoice process in the Manufacturing industry.	QPR (Finland)	2020

Pulp & Paper	Manufacturing	NDA Customer (Finland)	Order Management	Deployment of process mining tool (QPR ProcessAnalyzer) to Order Management process in the Pulp & Paper industry.	QPR (Finland)	2020
Chemical	Manufacturing	NDA Customer (Latvia)	Order to Cash	Deployment of process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Chemical industry.	QPR (Finland)	2020
Telecommunications	Information Service	NDA Customer (Finland)	Order to Cash	Deployment of process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Telecommunications industry.	QPR (Finland)	2020
Manufacturing	Manufacturing	NDA Customer (Czech Republic)	Order to Cash	Deployment of process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Manufacturing industry.	QPR (Finland)	2020

Telecommunications	Manufacturing	NDA Customer (USA)	Order to Cash	Deployment of process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Telecommunications industry.	QPR (Finland)	2020
Manufacturing	Manufacturing	NDA Customer (Sweden)	Order to Cash	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Manufacturing industry.	QPR (Finland)	2020
Wholesale	Service	NDA Customer (Finland)	Order to Cash	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Wholesale industry.	QPR (Finland), Sofigate	2020
Wholesale	Service	NDA Customer (Finland)	Order to Cash	Deployment of process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Wholesale industry.	QPR (Finland)	2020

Industry Services	Service	NDA Customer (France)	Order to Cash	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Industry Services industry.	QPR (Finland), SIA Partners	2020
Automotive	Manufacturing	NDA Customer (Germany)	Order to Cash	Deployment of process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Automotive industry.	QPR (Finland)	2020
Automotive	Manufacturing	NDA Customer (India)	Order to Cash	Deployment of process mining tool (QPR ProcessAnalyzer) to Order to Cash process in the Automotive industry.	QPR (Finland)	2020
Government	Service	NDA Customer (Finland)	Processing of tax decision	Deployment of process mining tool (QPR ProcessAnalyzer) to Processing of tax decision process in the Government industry.	QPR (Finland)	2020

Semiconductor	Manufacturing	NDA Customer (Netherlands)	Product lifecycle management	Deployment of process mining tool (QPR ProcessAnalyzer) to Product lifecycle management process in the Semiconductor industry.	QPR (Finland)	2020
Information Technology	Service	NDA Customer (Austria)	Purchase to Pay	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Purchase to Pay process in the Information Technology industry.	QPR (Finland)	2020
Logistics	Service	NDA Customer (France)	Purchase to Pay	Deployment of process mining tool (QPR ProcessAnalyzer) to Purchase to Pay process in the Logistics industry.	QPR (Finland)	2020
Pulp & Paper	Manufacturing	NDA Customer (Finland)	Purchase to Pay	Deployment of process mining tool (QPR ProcessAnalyzer) to Purchase to Pay process in the Pulp & Paper industry.	QPR (Finland)	2020

Pharmaceuticals	Manufacturing	NDA Customer (Finland)	Purchase to Pay	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Purchase to Pay process in the Pharmaceuticals industry.	QPR (Finland), Sofigate	2020
Banking & Finance	Service	NDA Customer (Finland)	Purchase to Pay	Deployment of process mining tool (QPR ProcessAnalyzer) to Purchase to Pay process in the Banking & Finance industry.	QPR (Finland), Digital Workforce	2020
Automotive	Manufacturing	NDA Customer (Germany)	Purchase to Pay	Deployment of process mining tool (QPR ProcessAnalyzer) to Purchase to Pay process in the Automotive industry.	QPR (Finland)	2020
Automotive	Manufacturing	NDA Customer (India)	Purchase to Pay	Deployment of process mining tool (QPR ProcessAnalyzer) to Purchase to Pay process in the Automotive industry.	QPR (Finland)	2020

Manufacturing	Manufacturing	NDA Customer (Finland)	Quotation for customer specific R&D	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Quotation for customer specific R&D process in the Manufacturing industry.	QPR (Finland), Sofigate	2020
Pulp & Paper	Manufacturing	NDA Customer (Finland)	Raw material purchasing	Deployment of process mining tool (QPR ProcessAnalyzer) to Raw material purchasing process in the Pulp & Paper industry.	QPR (Finland)	2020
Financial services	Service	NDA Customer (Germany)	Sales	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Sales process in the Financial services industry.	QPR (Finland)	2020
Services	Service	NDA Customer (Netherlands)	Service invoicing	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Service invoicing process in the Services industry.	QPR (Finland)	2020

Insurance	Service	NDA Customer (Switzerland)	Service Management	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Service Management process in the Insurance industry.	QPR (Finland)	2020
Telecommunications	Information Service	NDA Customer (Spain)	Service provisioning	Deployment of process mining tool (QPR ProcessAnalyzer) to Service provisioning process in the Telecommunications industry.	QPR (Finland), Everis	2020
Telecommunications	Information Service	NDA Customer (Spain)	Service provisioning	Proof of concept project to apply process mining tool (QPR ProcessAnalyzer) to Service provisioning process in the Telecommunications industry.	QPR (Finland), Everis	2020
Pharmaceuticals	Manufacturing	NDA Customer (Denmark)	Vendor invoice management	Deployment of process mining tool (QPR ProcessAnalyzer) to Vendor invoice management process in the Pharmaceuticals industry.	QPR (Finland)	2020

Finance	Banking	NA	Loan Process	<p>End to end process transparency through more than 20 source & legacy systems. With the use of MPM ProcessMining the following goals have been achieved:</p> <ul style="list-style-type: none"> - Identify bottlenecks throughout the loan process - Self-Service ProcessMining - Identify critical process pattern within the loan process 	MEHRWERK GmbH	2020
Professional Services	Service	NA	Accounts Payable	<p>Delivering end to end process transparency and measurement for SLAs within shared service centers. Root causes for delays, like structural invoice approval problems were identified</p> <p>Thanks to MPM ProcessMining, the following results were achieved:</p> <ul style="list-style-type: none"> - Approx. 5,000 process variants identified, top 3 variants combine 90% of all documents - Complex and different approval processes with several approval stages without value added: Optimization and standardization of invoice approvals - Recording of approx. 686,000 invoices (all types of documents, including recurring entries / intercompany invoices) - If the purchase order matches the goods received and the invoice: no manual intervention 	MEHRWERK GmbH	2020
Insurance	Insurance	NA	Application processes	<p>Management of applications for different issues. Working times, productivity KPIs are calculated and inefficient process variants were identified - Process optimisation in the claims settlement process, integration of AI (natural language processing) in the loss assessment process.</p> <p>Benefits:</p> <ul style="list-style-type: none"> - Improved control and monitoring of the most common KPIs - Insights into the profitability of products and services via a central interface for customer, insurance and pricing data - More transparency in policies and premiums 	MEHRWERK GmbH	2020

3D printers	Manufacturing	Heidelberger Druckmaschinen (Germany)	Production process (final assembly)		Lana Labs GmbH (Germany)	2020
Pharmaceutical	Manufacturing	Lonza (Switzerland)	P2P O2C Accounts Receivable Accounts Payable	Ongoing first implementation project, Goal: Analyses of the processes, continuous use of Lana PM for auditing checks	Lana Labs GmbH (Germany)	2020
Engineering Consulting R&D Services	Service	AKKA Technologies (Belgium)	P2P	In general high conformance, but many maverick invoices, low automation degree for various recurring activities, identified several bottlenecks	Lana Labs GmbH (Germany)	2020
Utilities	Service	Entega Count & Care (Germany)	Meter-to-Cash	Ongoing. Goals: getting to know the benefits of Process Mining, Process transparency, (root cause) analyses of lay times and missed deadlines for process milestones	Lana Labs GmbH (Germany)	2020

Automotive	Manufacturing	Daimler (Germany)	Production (component production and car assembly)	creation of a digital twin of the shopfloor in a manufacturing plant spanning several plants, subprocess separation to provide user specific information aggregation, developed a throughput rate analysis as a first step for an exploratory detection of production bottlenecks (project still open)	Lana Labs GmbH (Germany)	2020
Aviation	Manufacturing	Rolls Royce (UK)	P2P O2C Assembly & Test	Process transparency, lay times, Reason for Rework (Return to Shop)	Lana Labs GmbH (Germany)	2020
Public	Public Administration and Government Bodies	INAIL (Italy)	Order to cash; Professional illness complaint; Incident Mangement; Request Fulfillment; Change Mangement	1)Order to cash: Process that monitors purchases based on the parameters that characterize the cycle itself: material, suppliers, payments. - Analysis on the quality and consistency of information 2)Professional illness complaint: The main objective of the process is to define the responsibilities, criteria and methods that regulate the activities necessary to define the assessment of the occupational disease and the possible provision of an economic / health service. - process re-engineering 3)The Incident Management process has as its main objective the restoring of normal operations of the service minimizing the impact on the business. - Performance Analysis 4)Request Fulfillment: The main objective of the process is to regulate the management of service requests (Service Request) coming from INAIL employees and authorized external personnel. - Performance Analysis 5)Change Mangement: Process that controls the life cycle of changes to IT services delivered with the aim of ensuring that all changes are recorded, documented and evaluated in a controlled manner.- Performance Analysis	HSPI Management Consulting (Italy); University of Melbourne	2020

Industrials	Manufacturing	NDA (Italy)	Incident Management	Goals: Inefficiency analysis of the incident process	HSPI Management Consulting (Italy)	2020
Financial	Insurance	Superannuation Funds Manager (Australia)	Funds withdrawal	The project aimed at identifying opportunities to improve the efficiency of the withdrawal claims handling process while enhancing customer-centricity. The team analyzed 17 million data points related to customer contacts and backend events to gain a detailed understanding of their claims process, including defects, rework loops, and back-and-forths. The analysis identified inefficiencies in 20% of claims and gave the organization a much clearer picture of their processes. The project led to the identification of AUD 250K (USD 190K) of measurable cost savings and an ROI of AUD 150K (USD 113K), in addition to several recommendations for improving customer service. The turnaround from discovery to improvement was 2.6 times faster than what the company had experienced in previous improvement efforts when using traditional process modeling and analysis methods.	HSPI Management Consulting (Italy)	2020
Government	Local government	Municipality (Denmark)	Permit application process for new buildings	The purpose of the project was to gain knowledge of Process Mining tools and the opportunities it provides in relation to working with fact-based and efficient process optimization and agile and ongoing change projects. The project led to the identification of data quality issues: some steps were not recorded correctly or in a timely manner. We also identified lags in certain steps, deviations, and violations of SLA and root causes.	HSPI Management Consulting (Italy)	2020

Healthcare	Healthcare Facilities, Services & Equipment	Hospital (Germany)	Patient admission and discharge	The scope of the project was to map and analyze the patient admission and discharge processes at a large hospital. The outcome was the documentation of main pathways and the identification of deviations and sources of inefficiencies, followed by internal adoption of process mining as an ongoing practice for management of patient flows.	Leonardo Consulting	2020
Industrials	Electronics	ABB (Switzerland)	Electronics	Process mining insights raise the bar for efficiency, speed and cost-savings in processes such as master data management, procurement and accounting, logistics, production. Celonis supports ABB's digital transformation and ERP migration - because, in the end, what counts is speed and reliability.	Breakawai (Denmark)	2020
Healthcare	Healthcare Facilities, Services & Equipment	Becton Dickinson (USA)	Procure-to-pay process / Vendor master	Our team has been using the Celonis tool to analyze the Procure to Pay and Vendor Master business processes, identifying the full population of transactions prior to audit fieldwork. Analysis performed on this data has allowed us to target specific risk-based scenarios for review, resulting in more value-added engagements	GBTEC	2020
Financials	Financial Services	BDO (Belgium)	Audit	BDO uses Celonis Process Mining to analyze its clients' end-to-end processes and digitize their audit services	Celonis (München, Germany)	2020

Industrials	Industrial Engineering	Bonfiglioli (Italy)	Improvement	Italian manufacturer Bonfiglioli uses Celonis to pinpoint execution gaps within their processes and identify their root causes	Celonis (München, Germany)	2020
Industrials	Automotive & Parts	Dräxlmaier (Germany)	Purchase-to-pay	DRÄXLMAIER used Celonis' Process Mining technology to identify a large number of inefficiencies in their SAP ERP (Enterprise Resource Planning) and SRM (Supplier Relationship Management) systems. With these insights, the company could then determine the best way to optimize order dispatch.	Celonis (München, Germany)	2020
Industrials	Energy	Energias de Portugal (Portugal)	Improvement	EDP Comercial created a collaborative digital environment by empowering their departments with Celonis process mining, which allowed teams to review and analyze insights across departments, and work together to take action on their analyses.	Celonis (München, Germany)	2020
Industrials	Energy	Innogy (Germany)	Optimization	Innogy can now measure the execution capacity of their processes, know the root causes of execution gaps, and take appropriate action, resulting in faster, better processes and more satisfied customers.	Celonis (München, Germany)	2020

Industrials	Transportation	Navantia (Spain)	Purchasing	Celonis Process Mining uses current information in IT systems to discover processes in a company, with the aim to provide total transparency of its execution and to measure the analytical capacities based on facts. This is easily implemented and used with data from all key source systems, whether it be with SAP or without SAP.	Celonis (München, Germany)	2020
Industrials	Energy	Neste (Finland)	Logistic process	Neste is an innovative oil and gas company headquartered in Finland and rewarded for its sustainability efforts. Visualizing and analyzing the transactional data is mandatory for them to keep track of their complex business processes. Working with Celonis Process Mining they were able to improve the business process management capabilities and to achieve a higher business process maturity – especially in logistics, accounting and purchasing.	Celonis (München, Germany)	2020
Financials	Financial Services	Post finance (Switzerland)	Customer services	The financial sector is about far more than number crunching and anonymous financial transactions. What shapes the long-term success of banks today is their interaction with the customer. Bank customers expect simple, fast and transparent transactions, but internal processes need to be optimally integrated and coordinated for this to occur. PostFinance recognized the challenge and now relies on Celonis Process Mining to analyze and optimize its business processes.	Celonis (München, Germany)	2020
Industrials	Energy	Rewarg (Germany)	Purchasing	The innovative technology brings together all data stored in the company's IT digital process chains and visualizes current processes in real time. Process mining reflects the actual state, thus bringing maximum transparency in all business processes. The ability to gather and process insights in real time was one of the decisive points for Brandl. It can easily be integrated into Celonis data sources and thus provide system-wide insights.	Celonis (München, Germany)	2020

Industrials	Automotive & Parts	Terberg (Netherland)	Supply chain	Terberg used Celonis to define a new 'Chain Process', which allows them to determine the most valuable areas to make improvements, and create synergy across departments.	Celonis (München, Germany)	2020
Financials	Financial Services	VTB bank(Russia)	IT support process	VTB Bank, the second-largest Russian bank, implemented Celonis to maximize the capacity of their processes, making them cheaper and faster and providing the best products for their customers.	Celonis (München, Germany)	2020
Industrials	Energy	Wien Energie (Austria)	Purchase-to-pay	Using Celonis' Process Mining technology, Wien Energie aimed to define qualitative and transparent KPIs and speed up analyses and reports to gain better insight into their P2P process. A key factor in the project's success was defining a Process Mining system of governance and an authorization concept with clear roles and competencies. Furthermore, BDO also provided support for Wien Energie in terms of personnel, for example, with data engineers.	Celonis (München, Germany)	2020
Financials	Insurance	AIG (US)	Process improvement	With roots that trace back to 1919, AIG is a global insurance company with operations in more than 80 countries and jurisdictions. AIG provides a range of insurance products to support clients in business and in life, including: general property/casualty, life insurance, and retirement and financial services through General Insurance, Life and Retirement and Investments business units. The cases study discusses their 'Process Wind Tunnel' framework that utilizes data analytics, visualization, process mining and discrete-event simulation	Celonis (München, Germany)	2019

optimization for improving insurance business processes within AIG.

Industrials	Manufacturing	Vanderlande, The Netherlands	Process design verification, design analysis	Vanderlande is the global market leader for value-added logistic process automation at airports, and in the parcel market. The company is also a leading supplier of process automation solutions for warehouses. Vanderlande's baggage handling systems move 3.7 billion pieces of luggage around the world per year, in other words 10.1 million per day. Its systems are active in 600 airports including 13 of the world's top 20. The case study shows how they use process mining to gain insight on how to validate and optimize test scenarios during some of the most critical phases of a project — acceptance testing and operational trials.	Celonis (München, Germany)	2019
Public	Education	NDA		This case study applies process mining to the data from the 2018 World Cup, he realized that the key to finding patterns is to make the right assumptions when preparing the data. Hadi shows that there is not just one perspective, but that the same data can be molded to explore many different angles.	Fluxicon (Netherlands)	2019

Industrials	Manufacturing	Philips Healthcare, The Netherlands	Quality improved (testing based on actual user profiles)	<p>ESI is an independent research organisation for high-tech embedded systems design and engineering. Philips Healthcare is a global maker of many healthcare products, among which are imaging systems such as X-Ray, CT, Fluoroscopy and Magnetic Resonance Imaging (MRI) machines.</p> <p>The case study shows how process mining can be used to analyze the system usage of an MRI machine. It helps to understand how the customer (the physician) uses the MRI system, and how its behavior deviates from the expected (and designed) behavior. But to get to the actual process mining analysis, the low-level technical system log data of the MRI machine first needs to be prepared in several ways.</p>	Fluxicon (Netherlands)	2019
Technology	Technology	MuyVentive (US)	User Interaction Design	<p>MuyVentive, LLC is an advanced analytics R&D company focusing on AI/ML and Conversational Analytics work. The case study shows how to leverage process mining techniques to improve natural language interfaces. Based on an example using the Microsoft Cognitive Services LUIS API, the case shows how conversational data from chatbot interactions with customers can be transformed into structured data, which in turn can then be analyzed further with process mining techniques.</p>	Fluxicon (Netherlands); JADS	2019
Financials	Insurance	PGGM (The Netherlands)	Process improvement and audit	<p>PGGM is a non-profit cooperative pension administration organization. They are founded by the social partners in the care and welfare sector and serve four million participants.</p> <p>The case study shows how process mining goes further than unveiling the bottlenecks in their processes. Discovering and analyzing the process is often the starting point to develop a solution. They show how the goal and approach of the analysis are slightly different when you decide to start a Lean Six Sigma or compliance initiative compared to, for example, the goal of automating tasks, developing a data science or robotics process automation solution.</p>	Fluxicon (Netherlands); ESI	2019

Industrials	Manufacturing	ASML (Netherlands)	Process improvement	ASML is the leading developer of photolithography systems for the semiconductor industry. The machines are developed and assembled in Veldhoven and shipped to customers all over the world. Availability of the machines is crucial and, therefore, Freerk started a project to reduce the recovery time. A recovery is a procedure of tests and calibrations to get the machine back up and running after repairs or maintenance. The ideal recovery is described by a procedure containing a sequence of 140 steps. After they identified the recoveries from the machine logging, they used process mining to compare the recoveries with the procedure to identify the key deviations. In this way they were able to find steps that are not part of the expected recovery procedure and improve the process.	Fluxicon (Netherlands)	2019	
Financials	Banking	Raiffeisen Bank International (Austria)	Process improvement	RBI started process mining 12 months ago as a part of their smart automation portfolio to derive insights from process-related data at the bank. Since then, they were able to apply process mining on various processes such as: corporate lending, credit card and mortgage applications, incident management and service desk, procure to pay, and many more. Based on their experience they have developed a standard approach for black-box process discoveries. Using process mining, they first explore and review the processes on their own (prior to the in-depth analysis with the subject matter experts). They illustrated their approach and the deliverables they create for the business units based on the customer lending process.	Fluxicon (Netherlands)	2019	
Consumer Services	IT Software and Services	Utilities' specialized software vendor (NDA, Brazil)	Utilities operation and maintenance	This company provides specialized software and services for Utilities companies. Once their software allows customers to manage maintenance and operation activities, EverFlow was applied to help those customer to identify service optimization and automation opportunities.	Fluxicon (Netherlands)	2019	---

Consumer Services	IT Software and Services	IT software vendor and service provider (NDA, Australia)	BPM	This IT solution provider develops and sells a BPM software that helps organizations to improve their Project Management efforts by automating and tracking main activities. The PoC goal was to discover their customer's project journeys and performance and conformance issues that could drive optimization initiatives.	Fluxicon (Netherlands)	2019	---
Consumer Services	Retail & E-Commerce	National coverage retailer (NDA, Brazil)	Supply Chain	The goal was to help the Supply Chain department to improve their purchasing and logistics planning in order to assure on time deliveries and the ideal stock level for every store. Product returns (rever logistic) was also analyzed - reworks, delays and their causes.	EverFlow Consulting Services	2019	---
Consumer Services	Retail & E-Commerce	National coverage retailer (NDA, Brazil)	Supply Chain	During a logistic consulting project and end-to-end view of distribution centers was needed. The goal was to map how DCs were transferring products between each other and what were the operational issues that could be tackled for cost reduction and time-to-market improvement.	EverFlow Consulting Services	2019	---
Consumer Services	Retail & E-Commerce	National coverage retailer (NDA, Brazil)	Value Chain	EverFlow discovered the whole Value Chain - from the product purchase to the end customer sale - in order to highlight the most common issues (such as warranties, returns, complaints) and allow this customer to prioritize the next business transformation efforts.	ICTS Protiviti (São Paulo, Brazil)	2019	---

Healthcare	Healthcare Facilities, Services & Equipment	Cancer Specialized Hospital (NDA, Brazil)	Purchase to Pay	With more then 120K purchase requisitions every year, many process faults were driving this company to lose money. EverFlow was applied in order to highlight efficiency opportunities (such joining different departments needs in a single purchase requisition for better prices), the best suppliers and situations where patients were impacted by the lack of medications and other supplies.	ICTS Protiviti (São Paulo, Brazil)	2019	---
Healthcare	Healthcare Facilities, Services & Equipment	Cancer Specialized Hospital (NDA, Brazil)	Internal logistic - medication and supplies	Considering there were several different departments (specialities) and each department had a dedicated pharmacy at the hospital building, EverFlow was applied in order to identify how medications and supplies were transfered between pharmacies, how restricted medication were handled and what were the purchasing optimization opportunities that could drive cost reduction and patient care improvement.	ICTS Protiviti (São Paulo, Brazil)	2019	---
Healthcare	Home Care Services	Care Services company (NDA, Brazil)	IT Incident / Change / Request Management (ITSM)	EverFlow enabled process transparency and allowed this Home Care Services company to identify ITSM flows' slow steps, reworks and bottlenecks that were causing customer complaints.	ICTS Protiviti (São Paulo, Brazil)	2019	---
Financials	Real Estate	Real Estate Tech (NDA, Brazil)	Property prospection	This company disrupted the Real Estate market in Brazil. Although they had an innovative business model their sucess relied on having a high number of premium properties. EverFlow was applied to their property prospection process and allowed the company to identify those situations where property owners did not become customers and what were the root causes.	ICTS Protiviti (São Paulo, Brazil)	2019	---

Telecommunications	Telecommunications	National Coverage Telco - Mobile and Fixed services (NDA, Brazil)	Corrective Maintenance	As Brazil has continental dimensions, every CSP spends a lot of money with field Services. When there's an outage this Telco tries to automatically solve it and when automation fails, a technician is dispatched to the field. Applying EverFlow allowed this Telco to identify both performance and conformance issues and to map the best automation opportunities.	EverFlow Consulting Services	2019	---
Telecommunications	Telecommunications	National Coverage Telco - Mobile and Fixed services (NDA, Brazil)	IT Incident Management (ITSM)	The goal was to improve the IT incident management for those cases where a third party companies were engaged for troubleshooting. As the main results it was possible to pinpoint faulty prioritization rules, service quality issues and how to change the way suppliers were paid in order to assure time to market and avoid regulatory penalties.	EverFlow Consulting Services	2019	---
Telecommunications	Telecommunications	National Coverage Telco - Mobile and Fixed services (NDA, Brazil)	Customer Activation / Provisioning	Everytime a new subscriber gets onboard, many activation activities are performed in several IT systems. PM allowed to identify fail situations, integration problems and automation opportunities.	Icaro Tech (Sao Paulo, Brazil)	2019	---
Telecommunications	Telecommunications	Call Center (NDA, Brazil)	Customer Journey	This Call Center provides customer services for several different companies. In this use case EverFlow was applied in order to improve how a Home Appliance Brand' end customer assistance for product issues, warranty, doubts and purchasing problems.	Icaro Tech (Sao Paulo, Brazil)	2019	---

Telecommunications	Telecommunications	Regional Coverage Telco - Mobile and Fixed services NDA, (USA)	ITSM	In this PoC all trouble tickets related to network outages were analyzed and allowed the company to understand how efficient different support teams were, the common issues and automation opportunities.	Icaro Tech (Sao Paulo, Brazil)	2019	---
Financials	Banking	Important Italian bank with over 20,000 employees (Italy)	Incident Management	Goals: Inefficiency analysis of the incident process	Icaro Tech (Sao Paulo, Brazil)	2019	
Utilities	Utilities	NDA	Activation and management of emergency actions	investigate the correctness of the process and verify the timing of the intervention broken down by geographical area	Icaro Tech (Sao Paulo, Brazil)	2019	
Financials	Nonlife Insurance	Unipol (Italy)	Insurance Claims (Property Branch)	The scope of the project was to analyze the claims submitted in case of water leakage in private or business buildings. The objective was to find measurable areas of improvement and anomalies inside the process. Different behaviours inside the process were isolated and different process dimensions were analyzed (e.g. different kind of settlement, geographic partitioning of claims, performance, etc...). A comparison between different region was also performed. As a result the Company was able to find emerging best practices both process wise and organization wise. The Company was	HSPI Management Consulting (Italy)	2019	

able to define KPI for measuring the process health and to set up improvement initiatives.

Industrials	Logistic	NDA	Service Desk	The Company has a multiple country organization and in each one of them, different contractors may be used as support team for incidents. The objective was to compare different countries behaviour and performance and to define KPI for evaluating process health, with a specific focus on the handover between different assignment groups.	HSPI Management Consulting (Italy); SCS Consulting (Italy)	2019
Financials	Financial Services	NDA	Full Acquiring - New Customer acquisition	The full workflow between the request for a new POS by a customer and the final delivery was analyzed. The process was reconstructed with process discovery tools and validated with the Company. The performances of the as-is process were analyzed against the Company SLAs and the percentage of non-compliant cases was measured. Two different improvement scenarios were defined and simulated after an accurate statistical modeling of the process as-is. The simulation phase was used to conduct what-if analysis on two improvement scenarios each one of them with different threshold of application. The scenarios expected benefits were measured and analyzed both individually and combined for every threshold.	HSPI Management Consulting (Italy); SCS Consulting; Melbourne University	2019

Public	Public Administration and Government Bodies	INAIL (Italy)	Billing cycle (Passive); Professional illness complaint; Incident Management; Request Fulfillment; Change Management	1)Billing cycle (Passive): Process that monitors purchases based on the parameters that characterize the cycle itself: material, suppliers, payments. - Analysis on the quality and consistency of information 2)Professional illness complaint: The main objective of the process is to define the responsibilities, criteria and methods that regulate the activities necessary to define the assessment of the occupational disease and the possible provision of an economic / health service. - process re-engineering 3)The Incident Management process has as its main objective the restoring of normal operations of the service minimizing the impact on the business. - Performance Analysis 4)Request Fulfillment: The main objective of the process is to regulate the management of service requests (Service Request) coming from INAIL employees and authorized external personnel. - Performance Analysis 5)Change Management: Process that controls the life cycle of changes to IT services delivered with the aim of ensuring that all changes are recorded, documented and evaluated in a controlled manner.- Performance Analysis	HSPI Management Consulting (Italy)	2019
Financials	Banking	NDA	Service Desk	The scope of the project was to analyze the incident process.	HESPLORA srl	2019
Healthcare	Healthcare Facilities, Services & Equipment	KUMC Hospital (US)	Outpatient clinic process	This hospital shows thousands of outpatient attendances in a month for counselling and inspections. To provide better medical service to them, this hospital asked KPC(Korea Productivity Center) and Puzzle Data to analyze their current process and provide enhanced process to them.	HSPI Management Consulting (Italy); University of Melbourne	2019

Consumer Services	Network marketing	Amway Korea (South Korea)	Online customer journey process analysis	Process Analysis between old home page and new home page to find out the improvement Process Analysis for Churn customers of Amway Korea and Stochastic modeling development to estimate ratio of churn for potential churn customers Purpose: Customer Churn Process Analysis to reduce customer churn	HSPI Management Consulting (Italy)	2019
Industrials	Manufacturing	SK hynix (South Korea)	Semiconductor manufacturing process discovery and enhancement	Process Discovery and enhancement for manufacturing fault events Purpose: Detail process discovery and process enhancement for manufacturing fault events	Puzzle Data, Korea Productivity Center	2019
Industrials	Manufacturing	Seoul Semiconductor (South Korea)	Employee Task Process Analysis for RPA	Process analysis for the employee behavior based on the PC log file Purpose: Selection of RPA process for Seoul semiconductor's internal RPA deployment Project	Puzzle Data, LG CNS	2019
Industrials	Manufacturing	LG Household & Health Care (South Korea)	Product Export Logistics process analysis	Export Logistics Process Analysis by Log data of 3PLs Purpose: Export Logistics Process Analysis to find out bottleneck and long activities	Puzzle Data, Business Insight	2019

Industrials	Manufacturing	Yupoong (South Korea)	Headwear production process	Headwear Manufacturing Process Analysis to find out standard process and manufacturing bottleneck Purpose: Headwear Manufacturing Process Analysis	Puzzle Data	2019
Consumer Services	Duty free shop	Jeju Development Center(JDC) (South Korea)	Duty free shop Sales management process	JDC Duty Free Shop Sales Management Process Analysis to find out sales process and highly used menu and functions Purpose: Sales Management Process Analysis by sales teams	Puzzle Data, LG CNS	2019
Services	E-learning	Daekyo (South Korea)	E-learning Process Analysis	On-line Learning Process Analysis by using the log of tablet PCs Purpose: On-line Learning Process Analysis to find out better learning process and on-line learning contents	Puzzle Data	2019
Consumer Services	Retail & E-Commerce	Café24 (South Korea)	On-line shopping logistics process	On-line Shopping Delivery Process Analysis Purpose: On-line Shopping Delivery Process Analysis by sellers and shipping companies to find out bottleneck of delivery processes	Puzzle Data	2019

Financials	Financial Services	Shinhan Bank (South Korea)	Employee Task Process Analysis, Bank Customer Behavior Analysis	1) Employee Task Process Analysis to find out over-working tasks and team 2) Customer Behavior Analysis to find out the customer churn Purpose: 1) Employee Task Process Analysis to find out bottlenecks 2) Customer Behavior Analysis to find out the process of customer churn	Puzzle Data	2019
Financials	Financial Services	KOSCOM (South Korea)	Online stock trading process analysis	On-line Trading Process Analysis by find out the customer behavior Purpose: On-line Trading Process Analysis to find out customer usage pattern and processes by using the log of mobile trading system	Puzzle Data	2019
Healthcare	Healthcare Facilities, Services & Equipment	Siemens Healthineers (Germany)	IoT Data: CT Workflow (Machine <> Human Interaction)	Field of application: IoT & Digitalization Industry sector: Healthcare Workforce: 1.500 Source-systems: IoT data, SQL databases STORY Siemens Healthineers Computed Tomography introduces MEHRWERK ProcessMining (MPM) as part of its digitalization strategy The agile process mining technology based on the Qlik® platform enables Siemens to quickly perform ad-hoc analyses of event logs and context information in order to identify the causes of long lead times, process deviations and bottlenecks. The applications are also used to further advance process standardization and harmonization. In addition to the user-friendliness of the integrated Self-Service Process Mining functionalities, a key success factor was the simple connection of heterogeneous data	Puzzle Data	2019

sources. Among other data, event logs from IoT data were connected.

The combination of Process Mining with Qlik Sense® made it possible to measure the acceptance of AI algorithms within processes (e.g. by evaluating automation rates) and make them visible for continuous monitoring.

The joint realization of the process mining application took place in just two days within the scope of a coaching workshop. Based on this, a fast rollout could be realized because the users had the ability to perform process analyses independently right from the start due to the native integration into the familiar and intuitive Qlik Sense® interface. A big advantage of the integration in Qlik Sense® is the optimization of the Total Cost of Ownership and the reduction of the training effort when introducing Process Mining.

QUOTATION

"MEHRWERK ProcessMining is a really innovative solution that enables us to analyze complex processes automatically. In this way, we can identify the causes of process weaknesses and generate recommendations for actions to improve processes.
Process Mining in Qlik Sense - yes we can!"
Jutta Reindler, Project Manager of Siemens Healthineers Computed Tomography

BENEFITS

Qlik® & MPM ProcessMining for complete process transparency

Simple Self-Service Process Mining

Easy connection of data sources

Industrials	Automotive & Parts	Ferdinand Bilstein (Germany)	Master Data Management	<p>Field of application: Master Data Management Industry sector: Automotive Workforce: 2.100 Source-systems: SAP ERP, PLM-system</p> <p>STORY Ferdinand Bilstein introduces MEHRWERK ProcessMining (MPM) to optimize the Material Master Data Management</p> <p>In particular, Material Master Data Management (MMDM) significantly impacts the core value creation processes of industrial companies and therefore plays an important role at bilsteingroup.</p> <p>Typical challenges in the creation & change process of material master data are heterogeneous system landscapes and the coordination of the different departments involved in the company. Delays and errors in the MMDM process often lead to problems and disruptions in related business processes, e.g. in production, sales or purchasing.</p> <p>The agile process mining tool MPM based on the Qlik® platform enabled Ferdinand Bilstein to identify process inefficiencies and automation potentials in a very short time. In addition, the applications are used to further establish and improve process standardization and harmonization. Current automation rates are visualized at a glance and important process deviations are made visible. Furthermore, lead time delays and their causes are identified. These findings and the measures derived from them have a direct influence on the important key figures order-to-cash and time-to-market.</p> <p>The joint implementation of the first process mining scenario took place within just one day as part of a coaching workshop. Thanks to the existing Qlik® know-how, Ferdinand Bilstein was directly able to further develop the application and to do the data preparation independently. The users were also able to immediately start self-service process mining in the familiar Qlik Sense® interface.</p>	Puzzle Data	2019
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Healthcare	Medical Technology	CeramTec (Germany)	Production	<p>QUOTATION</p> <p>"With MEHRWERK ProcessMining we were able to seamlessly establish our existing Qlik Sense® platform as a process mining solution. The simple deployment made it very easy for us to get started so that we could generate added value for our master data processes in a very short time."</p> <p>Ben Mahmoud, Head of Business Intelligence, Ferdinand Bilstein</p> <p>BENEFITS</p> <p>Qlik® & MPM ProcessMining for complete master data process transparency</p> <p>Simple self-service Process Mining</p>	MEHRWERK	2019
				<p>Process transparency in days instead of weeks or months</p> <p>Field of application: Production, Quality management</p> <p>Process: Production</p> <p>Industry sector: Medical Technology</p> <p>Workforce: 3.500</p> <p>Pre-systems: SAP® ERP, CAQ / MES</p> <p>STORY </p> <p>In search of an agile analysis solution to achieve process transparency – over various manufacturing steps - in production and quality management the client chose to implement MPM ProcessMining. Besides the associative engine and the high-performance In-Memory data management based on the integrated Qlik® technology, the fulfilment of the following objectives was essential:</p> <ul style="list-style-type: none"> • Flexible creation of relevant process key indicators • Analysis of actual processes for critical process sequences in interaction with reasons for scrap • Ad-hoc lead time analysis between all occurring production events • Simple self-service analyses based on governed data models, key figures for advanced questions and root cause analysis • Simple and intelligent linking between CAQ / MES & 		

				<p>SAP®-data</p> <p>RESULT</p> <ul style="list-style-type: none"> • Associative Process Mining makes production processes transparent (from customer order to production to packaging / shipping) • Full process transparency of the manufacturing processes across several manufacturing stages (Raw mixture Machining of blanks Hard machining) • Automatic calculation and evaluation of scrap / good parts and process times • Self-service analyses allow new questions to be answered without IT assistance <p>By combining MPM ProcessMining with the Business Intelligence functionalities of the Qlik® platform, the full power of Process Mining is harnessed.</p> <p>BENEFITS</p> <p>Agile Process Mining for full process transparency</p> <p>Simple, associative self-service analyses</p>		
Industrials	Automotive & Parts	NDA	End-of-Line Process	<p>In-Memory data management</p> <p>Goal: Gain insights into the degree of capacity usage of testing locations to identify irregularities. Optimize testing times of individual test groups and install benchmarking process across subsidiaries.</p> <p>Results:</p> <ul style="list-style-type: none"> - Identification and removal of bottlenecks that extended the lengths of the production process. - Reduction of process variants. - Increased transparency of testing processes and results 	MEHRWERK	2019

Telecommunications	Telecommunications	Telefónica (Spain)	SIM card activation	Goal: Realize cross-system process transparency, to fully understand the customer journey and enable improved efficiency and monitoring.	MEHRWERK	2019
Telecommunications	Telecommunications	Ericsson (Sweden)	Order to Cash		Lana Labs GmbH (Germany)	2019
Basic Materials	Chemicals	Solvay (Belgium)	Order to Cash		Lana Labs GmbH (Germany)	2019
Public	Education	The University of Melbourne (Australia)	Students admission	The scope of the project was to analyse the student admissions process within a particular faculty. The aim of the analysis was to first highlight the improvements that have already been made over the past year and showcase it to the management. Once that was achieved it was to then identify areas of improvements that can lead to shorter turnaround time for students. It also allowed to understand the different behaviour within different courses of assessment and was used as a proof to change it. It has since been expanded to encompass all	QPR (Finland)	2019

<p>faculties with similar aim to first understand the process better and then identify areas of improvement.</p>						
Public	Education	The University of Melbourne (Australia)	Research contracts	The scope of this project is to better understand the process of how research contract are executed with in the University. It has so far able to raise the awarness within the team of the complexity that currently exists and also the variation in the process. The aim of the project is to establish best practice and be able to monitor on an ongoing basis.	QPR (Finland)	2019
Financials	Banking	Payment service provider (Europe)	Customer onboarding	The scope of the project was to analyze the customer onboarding process across four countries. Strong differences in performance across these countries had been previously observed. The main goal of this project was to determine which steps or pathways of the process were determining these differences in performance. Performance mining of the entire process and variant analysis with filtering, side-by-side comparison, and multi-log animations allowed us to find specific pathways that explained lower performance in some countries.	Service Improvement Team at The University of Melbourne (Australia), Dr Abel Armas-Cervantes, The University of Melbourne (Australia)	2019
Telecommunications	Telecommunications	Network provider (Australia)	Network incident management	The project aimed at identifying possible anomalies (non-compliant cases) in the management of network incidents. Further, variants analysis (between different case variants) as well as conformance checking against a normative process model were carried out.	Service Improvement Team at The University of Melbourne (Australia)	2019

Telecommunications	Telecommunications	Network provider (Australia)	Infrastructure change management	The project aimed at identifying possible anomalies (non-compliant cases) in the management of change requests to the network infrastructure. Further, variants analysis (between different case variants) as well as conformance checking against a normative process model were carried out. The project concluded with a feasibility analysis for predictive process monitoring.	University of Tartu (Estonia) and Breakawai (Denmark)	2019
Consumer Goods	Food & Beverage	Meat manufacturer (Australia)	Meat Production and Distribution Lifecycle	<p>The scope of the project included:</p> <ol style="list-style-type: none"> 1. Analyse and visualise carton movements throughout 5 production plants and a central coldstore 2. Analyse the carton movements from in-feeding plants to central coldstore 3. Identify primary and preferred process flows 4. Identify and compare variants and associated flows 5. Identify re-loops and bottlenecks and quantify effect on target efficiencies 6. Identify process inefficiencies and opportunities for change 7. Support business requirements gathering and generation of critical business rules required for configuration of automated logistics and loadout software 8. Visualise and present real-time/near real-time production and process data to selected management and decision-making personnel 9. Develop internal business teams' capability to navigate Apromore, load data, analyse processes and extract insights. 10. Develop internal IT capability to install, configure, maintain, and monitor the software. 11. Evaluate the datasets required and identify any changes to data structure and extraction capabilities. 12. Deliver a "Process Mining Readiness Evaluation" to identify potential requirements to enable successful progression to BAU. 	The University of Melbourne (Australia)	2019

Public	Defense	Regulator (Australia); Federal government (Australia)	ICT procurement	The scope of the project was to discover and analyze the ICT procurement process, across different types of requests and territorial units (regions). Additionally, a historical analysis of 2018 vs 2019 process was performed. Some significant behavioral and performance differences were identified across process variants. A predictive model was also trained to predict the completion time of requests.	The University of Melbourne (Australia)	2019
Financials	Insurance	PGGM (Netherlands)	Audit / Assurance	PGGM provides Assurance Standard 3402 and Assurance Standard 3000 reports that are specific for each customer. Within PGGM, process mining is used to show that a number of processes can also be tested for multiple clients at once because these processes are generic for multiple pension funds. The case study describes the experiences of PGGM with regard to process mining based on a practical example. Specifically, the impact on the work of the auditor for the Assurance Standard 3402 and Standard 3000 report and the conditions are described. We also outline how process mining can be deployed to perform the audit more efficiently and with a higher quality in the future.	Leonardo Consulting (Australia); The University of Melbourne (Australia)	2019
Utilities	Utilities	NDA	Commercial subscription	investigate the correctness of the process and verify the timing of the completion of subscription	Holocentric (Australia)	2019

Public	Public Administration and Government Bodies	Regulator (Australia)	Dispute Resolution; Claims Assessment; Licence Assessment; Compliance Assessment	Analysis of 9 regional branches across the state, and identification of common process Variants, and detailed Time and Cost to Serve. Identification of most suitable and compatible processes to be applied consistently across the state to enable state-wide distribution of workloads. Identification of process optimisation opportunities. Evaluation of Predictive Insight opportunities and Data Suitability	Fluxicon (Netherlands)	2019
Industrials	Transportation	Finland	Aircraft turnaround process		HSPI Management Consulting (Italy); SCS Consulting (Italy)	2019
Financials	Financial Services	Finland	Customer service		Leonardo Consulting (Australia); The University of Melbourne (Australia)	2019
Telecommunications	Telecommunications	Finland	Customer Service		QPR (Finland)	2019

Telecommunications	Telecommunications	Finland	Order to Cash	QPR (Finland)	2019
Technology	Technology	Finland	Order to Cash	QPR (Finland)	2019
Services	Professional Services	Finland	Order to Cash	QPR (Finland)	2019
Industrials	Manufacturing	Finland	Purchase to Pay	QPR (Finland)	2019

Telecommunications	Telecommunications	Finland	Purchase to Pay		QPR (Finland)	2019
Industrials	Manufacturing	Finland	Purchase to Pay		QPR (Finland)	2019
Industrials	Transportation	Airbus (France)	NA	Airbus is using the Celonis ERP Solution Center to gain a better understanding of its processes, and maximize improvement.	QPR (Finland)	2019
Healthcare	Pharmaceuticals & Biotechnology	AstraZeneca (UK)	NA	AstraZeneca describes Celonis Process Mining as the main “catalyst” to their Digital Transformation and operational excellence journey.	QPR (Finland)	2019

Basic Materials	Chemicals	AkzoNobel (Netherlands)	NA	Celonis enables AkzoNobel's Global Business Services to drive efficient, effective, and compliant transactions.	Celonis (München, Germany)	2019
Industrials	Automotive & Parts	BMW (Germany)	NA	BMW is supercharging their production process to accelerate finance operations, and improve customer experience	Celonis (München, Germany)	2019
Industrials	Manufacturing	Chart Industries (USA)	NA	Chart is realizing enormous working capital opportunities by improving Accounts Payable and Accounts Receivable processes with Celonis	Celonis (München, Germany)	2019
Basic Materials	Chemicals	Chemours (USA)	NA	Chemours gained a better understanding of their Order-to-Cash (O2C) process to remove friction, accelerate working capital, and achieve Frictionless Finance	Celonis (München, Germany)	2019

Healthcare	Medical Technology	Medtronic (USA)	NA	Medtronic implemented process mining for transformation with a value-driven and scalable approach, based collaboration between Finance & Supply Management, Enterprise Excellence, BI and IT.	Celonis (München, Germany)	2019
Industrials	Waste Management	NDA (France)	Procure to Pay	This company's main objective is to ensure that suppliers are paid within a reasonable period based on the Sapin regulation in France. If this regulation is not respected, high penalties have to be paid. To avoid this kind of financial risks, it is necessary to identify where P2P loses time (late payments) and low automation They use process mining to discover process violation regarding P2P and accounts payables, discover non complaint process behaviors with the help of conformance check and monitor P2P and payment related issues with a defined set of KPIs.	Celonis (München, Germany)	2019
Technology	Technology	Partner NDA	Procure to Pay Order to Cash ...more	The partner has leveraged Signavio Process Intelligence to create their own process improvement offering to their ERP customers.	Celonis (München, Germany)	2019
Telecommunications	Telecommunications	Deutsche Telekom AG (Germany)	Procure-to-pay process	Celonis helped Deutsche Telekom Services Europe save over €66M by gaining full transparency into their Procure-to-Pay process to tackle duplicate payments and cash discount losses. Thanks to process mining, DTSE established a fully data-driven organization within the Procure-to-Pay area. Results: -Maximizing cash discounts -Paying on time -Increasing automation -Avoiding duplicate payments -Enforcing contractual penalties	Signavio (Germany)	2019

Industrials	Transportation	Lufthansa (Germany)	Improvement	Lufthansa is using Celonis to accelerate on-ground operations, and deliver ever-better customer experiences for their passengers.	Signavio (Germany)	2019
Healthcare	Pharmaceuticals & Biotechnology	GSK (UK)	Process improvement	Process mining with other data science techniques can use ERP data to understand costs of processes and variations, the challenge is how to bring together both structured and unstructured data to re-use valuable data that is often only used for a primary purpose. With this re-use of data, we were able to better understand how to drive performance, whilst at the same time transforming continuous improvement to be further data driven and empirical.	Celonis (München, Germany)	2019
Manufacturing		Stora Enso (Finland)	Purchase to Pay Order to Cash	<p>Issues:</p> <ul style="list-style-type: none"> - unclear business problems, which led to stagnation and uncertainty when trying to solve them - scattered data - too many process variants <p>Results</p> <ul style="list-style-type: none"> - pinpointed areas for Robotic Process Automation (RPA) to better streamline the processes - reduced process variants in all factories and mills, leading to better harmonization and overall process efficiency - updated customer classification – helped revisit and improve approach to customer service 	Celonis (München, Germany)	2019

Finance	BDO Netherlands	Analysis and fixing of the finance function	<p>Over 2000 variants of the process existed, while the first 20 variants accounted for less than 30% of all cases, which is a quite high number</p> <p>Over 200 resources were involved and it was unclear if they were actual individual employees or whether one employee was using multiple accounts;</p> <p>Even though the organization was not keen on using purchase orders (PO) as they thought it would slow the process, one particular variant used PO and showed that the process ran quicker in the end</p>	Fluxicon (Netherlands)	2019
Telecommunications	Telecom Argentina	Purchase to Pay	<p>Process improvement by rework elimination, change avoidance, PO (Purchase Order) bundling; annual savings approx \$3M</p> <p>Process efficiency by eliminating no action POs; annual savings approx \$52K</p> <p>Process automation: PO closed manually, low-value invoices automation; annual savings approx \$2.3M</p> <p>Optimize working capital via early payments, late payments; annual savings approx \$2K</p>	Minit	2019
Logistics	Confidential (Netherlands)	Invoice approval for RPA purposes	<p>3 hour reduction in mean case duration: before RPA > 2d 8h 32m, after RPA < 2d 5h 41m</p> <p>5 months savings approx €466K</p>	Minit	2019

Public	Public Administration and Government Bodies	INAIL (Italy)	Billing cycle (Passive); Professional illness complaint; Incident Management; Request Fulfillment; Change Management	In this project, automated discovery and performance mining were applied to the four following business processes: 1)Billing cycle (Passive): Process that monitors purchases based on the parameters that characterize the cycle itself: material, suppliers, payments. - Analysis on the quality and consistency of information 2)Professional illness complaint: The main objective of the process is to define the responsibilities, criteria and methods that regulate the activities necessary to define the assessment of the occupational disease and the possible provision of an economic / health service. - process re-engineering 3)The Incident Management process has as its main objective the restoring of normal operations of the service minimizing the impact on the business. - Performance Analysis 4)Request Fulfillment: The main objective of the process is to regulate the management of service requests (Service Request) coming from INAIL employees and authorized external personnel. - Performance Analysis 5)Change Management: Process that controls the life cycle of changes to IT services delivered with the aim of ensuring that all changes are recorded, documented and evaluated in a controlled manner.	Minit	2019
Public	Government agency	Federal Government (Australia)	Portable Electronic Device fulfilment	The scope fo the project was to understand the variations of process for the fulfilment of various portal electronic devices including Mobile Phones, iPads, Tablet PCs and Notebooks and then to identify the causes for fulfilment delays and design process improvements. Significant variations in process were identified and compared, enabling a hybrid common process to be designed that drew on the best elements of each process variation.	Minit	2019

Consumer Goods	Media	Market Research Company (USA)	Data Curation`	The scope of the project was to analyze a periodic data curation process in order to identify patterns correlated with delays (missed deadlines). The process involves a large number steps, making manual analysis impractical. The process is executed across several countries, with some countries performing better in terms of timeliness relative to others. By using performance mining and variant analysis, the team identified patterns of positive deviance and negative deviance across countries, leading to concrete recommendations for reducing missed deadlines. An entire team was trained to perform process mining in an ongoing manner in order to monitor and control the quality and timeliness of this core process.	HSPI Management Consulting (Italy)	2019	
Financials	Banking	One of the Big Five Banks in Canada with over 40,000 employees, NDA	LOB: Shared Services Area: IT Group	Use Cases: <ul style="list-style-type: none"> Discovery and Documentation of Legacy Mainframe Processes Generation of Process Maps for Systems Transformation Project Results: 5X Acceleration of Business Process Mapping	Holocentric (Australia)	2018	
Telecommunications	Telecommunications	National Coverage Telco - Mobile and Fixed services (NDA, Brazil)	Robotic Process Automation (RPA)	This Telco began an RPA initiative to improve service quality and customer journey, and added Process Mining (Accelera Labs EverFlow, previously Icaro Tech EverFlow) to their automation strategy in order to verify operational tasks that could be automated and rank them by ROI. Use cases include ITSM (service desk), customer interactions (tickets from different sources), remote troubleshooting, field services and operators/workforce AI Advisors.	University of Tartu (Estonia)	2018	---

Consumer Goods	Media	LOEN Entertainment (South Korea)	Customer Journeys	<p>LOEN Entertainment runs Melon, which is the largest online music streaming service in South Korea. They adopted process mining with Disco to analyze their mobile app's log data. LOEN analyzed new users' journeys during the day when they signed up with a KakaoTalk account.</p> <p>KakaoTalk is a free mobile instant messaging application for smartphones with free text and free call features. KakaoTalk is used by 93% of smartphone owners in South Korea. They categorized new users into five segments based on their behavioral pattern and clearly identified the reason why each segment signed up. Furthermore, building on the analysis results, it is planning to conduct a targeted marketing campaign for increasing each segment's CVR (Conversion Rate). The company is judging that their process mining analysis using Disco plays a key role in understanding new customers and is likely to contribute to maximizing earnings.</p>	StereoLOGIC (Canada)	2018
Financials	Insurance	PGGM (Netherlands)	Process Improvement	<p>PGGM, one of the largest pension providers in the Netherlands, wants to make her processes more efficient and reduce the costs of the accountant. To do this, the company has researched the added value of process mining. And with success: the organization expects time savings of 66% for the first, second and third line checks of the processes which were studied in the experiment.</p>	Icaro Tech (Sao Paulo, Brazil)	2018
Telecommunications	Telecommunications	National Coverage Telco - Mobile and Fixed services (NDA, Brazil)	Robotic Process Automation (RPA)	<p>This Telco began an RPA initiative to improve service quality and customer journey, and added Process Mining (Accelera Labs EverFlow, previously Icaro Tech EverFlow) to their automation strategy in order to verify operational tasks that could be automated and rank them by ROI. Use cases include ITSM (service desk), customer interactions (tickets from different sources), remote troubleshooting, field services and operators/workforce AI Advisors.</p>	Fluxicon (Netherlands)	2018

Healthcare	Healthcare Facilities, Services & Equipment	Severance hospital (Republic of Korea)	Outpatient clinic process	This hospital shows thousands of outpatient attendances in a month for counselling and inspections. To provide better medical service to them, this hospital asked KPC(Korea Productivity Center) and Puzzle Data to analyze their current process and provide enhanced process to them.	Fluxicon (Netherlands) KPMG	2018
Financials	Financial Services	Securities company	Non-face-to-face account opening process	Nowadays, securities companies are adopting non-face-to-face account opening through non-face-to-face customer identification by their app. This is very quick and easy way to open security account without visiting offline branches. However, large portion of mobile app users seem to quit the account opening process and exit the app. To analyze user's activity and their pattern in the app, Puzzle Data provided process mining consulting with 2e Consulting.	Icaro Tech (Accelerate Labs partner) (Brazil)	2018
Technology	Technology	Semiconductor business company over \$27B revenue in 2017	Semiconductor manufacturing process discovery and enhancement	Semiconductor manufacturing process is so complex that lots of approaches have been applied to enhance the process for better yield. However, the state of the art approaches were based on statistics and data analysis.	Puzzle Data (Republic of Korea), Korea Productivity Center	2018
Industrials	Construction & Materials	POSCO E&C (Republic of Korea)	Production outsourcing management process	This company adopted process mining to analyze and improve production outsourcing management process and purchase order process.	Puzzle Data (Republic of Korea), 2e Consulting	2018

Technology	Technology	PC Online/Mobile gaming company over \$1.6 B revenue in 2017	Mobile game user analysis process	This company's mobile game hits more than \$900 million revenue in 2017, and it shows 300,000 DAU(Daily Active User) in a day. Game user's response and behavior are key success factors to the game. To analyze game user's activity pattern, this company applied process mining integrated with their big data system. It shows user's activity pattern, cheating signal of bad users, and user's response to weekly event.	Puzzle Data (Republic of Korea), EY (Ernst & Young)	2018
Financials	Banking	US Bank with over \$30B US Assets, NDA (USA)	LOB: Anti Money Laundering Area: Back Office, Transaction Review and Reporting	Use Cases: <ul style="list-style-type: none"> ● Process Discovery and Documentation ● Validation of Anti Money Laundering Procedures ● Identification of Opportunities for Robotic Process Automation (RPA) ● Generation of Specifications for Robotic Process Automation (RPA) Results: <ul style="list-style-type: none"> ● Increased Process Discovery Capacity by 6X ● Increased the Process Improvement Capacity by 2X ● Non-Post and Branch Validation Processes detected inefficiencies and potential savings – up to 60% ● Funding and Onboarding Processes: detected inefficiencies and potential savings – up to 40% ● Documents Production Process (HELOC Processes) - list of data fields transferred between applications - time wasted on transferring data fields between applications - detected inefficiencies and potential savings – up to 33%	Puzzle Data (Republic of Korea)	2018
Financials	Real Estate	Canadian Real Estate Finance Company, NDA (Canada)	LOB: Mortgage Processing Area: Back Office	Use Cases: <ul style="list-style-type: none"> ● Process Discovery and Documentation ● Identifying Opportunities for Robotic Process Automation (RPA) ● Generation of Specifications for Robotic Process Automation (RPA) Results (In less than 1 month): <ul style="list-style-type: none"> ● Identified Opportunities for Automation reducing 17 FTE ● Generated Process Specifications for RPA Automation (50 Processes) 	Puzzle Data (Republic of Korea)	2018

Financials	Insurance	Global Mortgage Insurance Company with offices in the US, Canada and Australia, NDA (USA)	LOB: Appraisals, Underwriting Area: Call Center Operations, Back Offices	Use Cases: <ul style="list-style-type: none"> ● Process Discovery ● Productivity Management ● Improvement Recommendations Results: 33.6 % process efficiency gain in less than 3 months	StereoLOGIC (Canada)	2018
Financials	Insurance	Canadian Health Insurance Company (One of Canada's leading life insurance providers), NDA	LOB: Customer Onboarding Area: Back Offices	Use Cases: <ul style="list-style-type: none"> ● Process Discovery and Improvement ● Identifying Opportunities for Robotic Process Automation (RPA) ● Generation of Specifications for Robotic Process Automation (RPA) Results (Revealed Opportunities for Process Automation): <ul style="list-style-type: none"> ● New Business Application Set-up (5 agents) - 42% FTE Savings ● New Business Issue Process (5 agents) - 66% FTE Savings 	StereoLOGIC (Canada)	2018
Financials	Insurance	(US) Health Insurance Company with over 20,000 employees, NDA	LOB: Enterprise Area: Back Offices, Claims, Customer Onboarding, Call Centers	Use Cases: StereoLOGIC has replaced staff interviews with automated capture of the employee activities in real-time and producing the End-to-End process visualizations and measurements Results: 88% time savings for process analysis improvement work	StereoLOGIC (Canada)	2018
Financials	Insurance	Menzis (Netherlands)	Customer declaration process	Menzis wanted to increase their first time right process activities. Therefore they needed insight in all variations of the process. Insight was delivered on how to increase their first time right from 63% to 80% of their declaration process.	StereoLOGIC (Canada)	2018

Utilities	Utilities	Eneco (Netherlands)	Onboarding, delivery process of smart meter, maintenance process.	The goal was to reduce 1% of unnecessary customer phone calls and to increase their First Time Right also with 1%. With the ProcessGold Platform we showed Eneco that it was possible to reduce the number of phone calls with the minimum of 2,8% and maximum of 25,1%. Eneco is now working on improving the process. FTR could be improved with maximal 7,7%.	StereoLOGIC (Canada)	2018
Telecommunications	Telecommunications	KPN (Netherlands)	All relevant business processes starting with Source to Pay and Order to Cash	KPN is convinced of the value of process mining for continuous improvement of their whole organization. KPN selected ProcessGold as a platform for continuous monitoring and improvement of their business processes starting at their finance department (S2P and O2C).	ProcessGold (Netherlands) and First Consulting	2018
Basic Materials	Chemicals	Extrafarma (Brazil)	Purchase to Pay	Extrafarma want to use process mining capabilities to make their processes more efficient. Therefore they asked Grupo Assa to prove they can connect their SAP data to the ProcessGold Platform. Once that has been realized a new project will start to implement ProcessGold and define new goals.	ProcessGold (Netherlands) and First Consulting	2018
Industrials	General Industrials	NDA (Denmark)	Order-to-cash	Analysing the order-to-cash process to identify optimization points and find the differences between the same process being executed in different countries/regions. Identify the level of resource allocation/overallocation.	ProcessGold (Netherlands) and KPMG	2018

Industrials	General Industrials	NDA (Spain)	Order-to-ship	Overall on-going process discovery across the whole organization with the help of kaizen and lean six sigma process improvement techniques with process mining as a baseline tool for process discovery and improvement esp. in the manufacturing of goods and supply chain areas.	ProcessGold (Netherlands) and Grupo Assa	2018
Consumer Services	Retail & E-Commerce	NDA (Portugal)	Customer journey and customer support	Continuous analysis and monitoring of sales performance in correlation with customer support quality based on customer satisfaction. Analysis of return customer sales and up-selling.	Minit j. s. a (Slovakia), Bizcon ApS. DK	2018
Industrials	General Industrials	NDA (USA)	Order-to-cash	Analysing order-to-cash process to understand how customers' changes in orders are impacting production schedule and bottom line revenue while. Identifying main factors that prolong the duration of the process with regards to delivery and clearing payments.	Minit j. s. a (Slovakia), Xolyd PT	2018
Telecommunications	Telecommunications	NDA (India)	Procure-to-pay	Analysis of the procure-to-pay process to get an understanding of how bad a shape it is in currently. Main objective though is to use Minit as a near-real-time monitoring tool for their process.	Minit j. s. a (Slovakia), Xolyd PT	2018

Telecommunications	Telecommunications	NDA (Slovakia)	Customer journey	Analysis of the customer journey in one of the new flagship product going through a number of systems such as web portal, CRM, ERP, and proprietary systems.	Minit j. s. a (Slovakia), Cognition Analytics US	2018
Telecommunications	Telecommunications	NDA (Germany)	SIM Card activation	Understanding the activation process and investigating potential fraud cases with regards to internal stores and partner vendors looking for patterns that could indicate fraudulent behavior.	Minit j. s. a (Slovakia), KPMG IN	2018
Industrials	General Industrials	NDA (Germany)	Order-to-cash	Analysis of the compliance level and violations in the order-to-cash process esp. with regards to internal audit and financial analysis.	Minit j. s. a (Slovakia)	2018
Financials	Insurance	NDA (Greece)	Insurance issuance	Analysis of the life insurance policy issuance process with regards to target key performance indicators set up at division level as well as identification of factors leading to their violation.	Minit j. s. a (Slovakia)	2018

Financials	Banking	NDA (Greece)	Product bundling	Process analysis of banking product bundling with the goal of achieving a higher rate of repayment of these products.	Minit j. s. a (Slovakia), dab:Daten - Analysen & Beratung GmbH	2018
Industrials	General Industrials	NDA (Denmark)	Sales Quotes Process	Quoting process to identify steps and bottlenecks, improvement potential / automation opportunities, a "live" overview of how the processes are actually running, where the outliers and where people are not following the process. Overview of throughput time per process / process steps.	Minit j. s. a (Slovakia), Gnosis Management Ltd. GR	2018
Healthcare	Pharmaceuticals & Biotechnology	NDA (Denmark)	Procure-to-pay	G: Visualize the real process, locate automation candidates (RPA) highlight the deviations from standard process, how much rework is being done because of vendors and / or NN employees, how much time is spent on updating information already in the system (change the quantity, delivery date, etc.), what is the lead time between different steps in the process. R: process revealed, rework revealed, automation candidates identified, vendors & NN employees qualified. Improvement effort outside of scope.	Minit j. s. a (Slovakia), Gnosis Management Ltd. GR	2018
Industrials	Logistic	NDA (Russia)	Procure-to-pay	Monitor the load/unload process across the transport network to increase the rolling stock utilization levels and limit the downtimes	Minit j. s. a (Slovakia), Bizcon ApS. DK	2018

Consumer Services	Retail & E-Commerce	NDA (Czech Republic)	Customer support and return logistics	Analysis of the return shipping process with regards to customer returns together with the customer support process.	Minit j. s. a (Slovakia), Bizcon ApS. DK	2018
Industrials	General Industrials	NDA (Denmark)	Procure-to-pay	Visualize end-to-end process (re-scoped for approving steps), find average handling times between approvers, loops between authorizers, which are most ineffective resources, who is bouncing responsibility more often	Minit j. s. a (Slovakia), Rondem, RU	2018
Financials	Insurance	NDA (USA)	Car policy renewal customer journey	Analysis of the full process after a car insurance policy has run out and what actions lead to highest probability rates for renewal from customers, identifying factors such as individual customer groups characteristics on probability and increase in scope or size of the policy.	Minit j. s. a (Slovakia)	2018
Industrials	General Industrials	NDA (Switzerland)	Order-to-ship	Investigating the compliance and variation of the process across multiple plants globally, identifying driving factors for delays for individual products as well as rework happening in the process.	Minit j. s. a (Slovakia), Bizcon ApS. DK	2018

Industrials	General Industrials	NDA (Russia)	Procure-to-pay, Order-to-cash	Monitoring of the compliance with the defined as-is process and identification of process inefficiencies like bottlenecks and rework.	Minit j. s. a (Slovakia), Cognito Analytics LLC, US	2018
Financials	Financial Services	NDA (Russia)	IT support process	Reduction of support case resolution time, discovery of process dynamics, identification and elimination of reworks in the process.	Minit j. s. a (Slovakia)	2018
Telecommunications	Telecommunications	NDA (Slovakia)	Debt Collection	General investigation of the debt collection process, identifying customer payment habits, factors driving successful collection of debt.	Minit j. s. a (Slovakia), KPMG RU	2018
Healthcare	Healthcare Facilities, Services & Equipment	UW Health (US)	Process improvement, decision support	<p>UW Health is a large academic medical center associated with the University of Wisconsin-Madison located in Midwestern United States. More than 600,000 patients are served annually at 7 hospitals and 87 outpatient clinics.</p> <p>The case study shows the challenges and successes of introducing process mining to UW Health. She also demonstrates how process mining was used to analyze the flow of urgent and emergent surgical cases added to the schedule and how this technology provided a new way of using the data.</p>	Minit j. s. a (Slovakia), I-Teco RU	2018

Financials	Banking	Deutsche Bank, (UK)	Process improvement	<p>Deutsche Bank is Germany's leading bank with a strong presence in Europe and significant presence in Americas & Asia Pacific.</p> <p>The case study discusses how the bank has fared in its process mining journey and which lessons they have learnt along the way. One of the things he will show is how they balanced the exploratory and the targeted parts of their process mining analyses.</p>	Minit j. s. a (Slovakia), Accenture SK	2018
Industrials	Transportation	KLM, The Netherlands	Development support	<p>Founded in 1919, KLM Royal Dutch Airlines is the oldest scheduled airline in the world still operating under its original name. In 2016, the KLM Group operated worldwide flights with over 200 aircraft, generating €10 billion in revenue and employing 32.000 staff from its Amsterdam basis.</p> <p>The case study shows how process mining was used to help the development teams to learn how to get the most out of each sprint.</p>	Fluxicon (Netherlands)	2018
Technology	Technology	Microsoft, (USA)	Process improvement and operational support	<p>Microsoft is the worldwide leader in software, services, devices and solutions that help people and businesses realize their full potential.</p> <p>The case study shows the converge of digital technologies with machine learning and cognitive solutions gives him the opportunity to reimagine everything every day. He believes that process mining can be a silver bullet to accelerate the digital transformation and is passionate to share his experience.</p>	Fluxicon (Netherlands)	2018
Financials	Financial Services	Euroclear, Belgium	Audit	<p>Euroclear is one of the largest Financial Market Infrastructure providers in the world. Many of Euroclear's business processes rely on sophisticated IT services developing a large variety of reliable, scalable, and secured solutions.</p> <p>The case study shows how, with the goal to make internal controls more efficient, process mining has been applied to the code testing process of the Component and Data Management IT division. Olga will share the main steps of dealing with complex data and tips for finding the most</p>	Fluxicon (Netherlands)	2018

useful angles from which the process should be looked at.

Public	Public Administration and Government Bodies	City of Amsterdam, The Netherlands	Process improvement	Amsterdam is well-known as the capital of the Netherlands. The city itself has a population of more than 850,000, with about 1.5 million people living in the entire Amsterdam city region. The municipality is responsible for defining and enforcing local policies regarding areas like poverty, taxes, sports, parking, and many more. The case study shows which change traits were critical for them to get most out of their process mining projects, so that they could actually improve the financial function and get the city of Amsterdam on the move.	Fluxicon (Netherlands)	2018
Consumer Goods	Media	LOEN Entertainment (South Korea)	Customer Journeys	LOEN Entertainment runs Melon, which is the largest online music streaming service in South Korea. They adopted process mining with Disco to analyze their mobile app's log data. LOEN analyzed new users' journeys during the day when they signed up with a KakaoTalk account. KakaoTalk is a free mobile instant messaging application for smartphones with free text and free call features. KakaoTalk is used by 93% of smartphone owners in South Korea. They categorized new users into five segments based on their behavioral pattern and clearly identified the reason why each segment signed up. Furthermore, building on the analysis results, it is planning to conduct a targeted marketing campaign for increasing each segment's CVR (Conversion Rate). The company is judging that their process mining analysis using Disco plays a key role in understanding new customers and is likely to contribute to maximizing earnings.	Fluxicon (Netherlands)	2018

Financials	Insurance	PGGM (Netherlands)	Process Improvement	PGGM, one of the largest pension providers in the Netherlands, wants to make her processes more efficient and reduce the costs of the accountant. To do this, the company has researched the added value of process mining. And with success: the organization expects time savings of 66% for the first, second and third line checks of the processes which were studied in the experiment.	Fluxicon (Netherlands)	2018	
Telecommunications	Telecommunications	National Coverage Telco - Mobile and Fixed services (NDA, Brazil)	Change Management	Network and service changes happen all the time and the challenge is to keep services available to all subscribers. Applying PM to Change Management flows allowed this Telco to optimize their process and the Change Advisory Board responsibilities in order to avoid rework and service disruption.	Fluxicon (Netherlands)	2018	---
Telecommunications	Telecommunications	National Coverage Telco - Mobile services (NDA, Brazil)	Field Services	Although there was no third party field technicians and trouble ticket prioritization was customer-centric, many corrective actions were not effective. EverFlow helped this company to identify potential root causes.	Fluxicon (Netherlands) KPMG	2018	---
Telecommunications	Telecommunications	National Coverage Telco - Mobile, Fixed services and Media (NDA, Brazil)	Interactive Voice Response (IVR) Customer Journey	As the main customer service channel, the IVR had more than 500,000 daily calls and most of them could not be solved during the automated steps and had to be forwarded to the Call Center. EverFlow mapped this Telco's customer journey and the potential improvement opportunities that could reduce human interaction and increase customer satisfaction.	Icaro Tech (Sao Paulo, Brazil)	2018	---

Utilities	Utilities	Fennovoima (Finland)	Document Handling	Gain visibility and lead time analysis on documents handling process. Now understands bottlenecks and how to improve upon them. Dashboards for process performance follow-up.	Icaro Tech (Sao Paulo, Brazil)	2018
Financials	Banking	Komerční banka (Czech)	Finance	Visualization of processes. Lead time improvement. Process statistics with root cause analysis. Combining data across variety of systems for an end-to-end view.	Icaro Tech (Sao Paulo, Brazil)	2018
Consumer Services	Retail & E-Commerce	Stark (Denmark)	Order to Cash	Identify process rework & repetition points. Find which cases deviate from the designed process. Found out major deviations and gained insight on where to begin to improve	QPR (Finland)	2018
Industrials	Construction & Materials	NDA (Germany)	Payable & Invoice processes; Data from SAP ERP (FI, MM) and SAP Workflow	Analyzing and improving the accounts payable processes, incl. the invoice check, functional approval, etc. The results derive process improvements, show compliance deviations and show automation potential using RPA. Invoice processing is split among multiple service centers. Data was extracted from all involved IT systems and loaded into Signavio Process Intelligence. The	QPR (Finland)	2018

approach
identified cost saving potential of ca. 3 mio. € per year by
both
automation (esp. RPA and enforcement of rules in SAP
Workflow),
as well as optimized work distribution and
communication
between service centers.

Industrials	Construction & Materials	NDA (US)	Go-Live Monitoring of harmonized processes & new Supply Chain Software; Data from Oracle Cloud SCM system	In parallel to a global process harmonization campaign and introduction of a new software, system adoption and compliance with new processes are monitored, eg monitor the usage of the new procurement system and whether the process (purchase requisition, order with preferred supplier, goods receipt) is followed or whether compliance violations or lack of information/integration are identified. Work in close collaboration with the process management & Quality assurance organization that uses Signavio Process Manager and Collaboration Hub for process definition, agreement and adoption, as well as Signavio Workflow Accelerator for harmonizing manual-IT-processinteractions.	QPR (Finland)	2018
Financials	Insurance	NDA (Germany)	Optimize taskforce for process “application for care”; Data from highly customized and industrysolution of SAP system	The process “application for care” is highly standardized and monitored with existing reporting functionality. The goal was to add additional insights into the process execution to optimize priority setting and avoid penalties for delays as defined by law. The process involves interaction with external parties, such as health providers, that prolong the process. The users are	Signavio (Germany)	2018

				able to analyze their highly regulated process end-to-end, instead of partial views as with existing reporting. Data and views can be created on the fly to drill down into specific process behavior. With existing reporting, this always required an IT change request, that took multiple weeks to be implemented.		
Industrials	Automotive & Parts	NDA (Italy)	Procure to Pay	<p>Goals: By the use of Process Mining techniques the management team wanted to discover and analyze Maverick Buyings within their Procure-to-Pay processes.</p> <p>Results: The Team successfully exposed all Maverick Buyings and initiated the trajectory to eliminate them from their processes.</p>	Signavio (Germany)	2018
Industrials	Automotive & Parts	NDA (Italy)	Accounts Payable	<p>Goals: By using Process Mining, NDA wanted to:</p> <ul style="list-style-type: none"> - Account Management dynamics. - Discover and analyze process inefficiencies. - Reduce invoice processing time, by reducing the inefficient activities. - Analyze and Monitor the payment behavior. <p>Results: myInvenio successfully</p> <ul style="list-style-type: none"> - Exposed the critical suppliers relative to the processing time. - Identified all inefficient activities and bottlenecks. - Implemented the continuous monitoring of the account payable process. 	Signavio (Germany)	2018

Financials	Banking	NDA (Italy)	ICT Service Management	Goals: By the use of Process Mining the bank wanted to reduce their service time and reduce the number of ticketing managed by outsourced services. Results: NDA	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Account Opening	NDA	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Current Account Closure	Closure of the services connected to the account and - after the appropriate checks - reservation of the closure on the procedures.	Cognitive Technology (Italy)	2018
Financials	Banking	NDA (Italy)	Compilation of Guarantees	Preparatory checks of the Compilation of the Guarantees and once completed make the prints available to the network	Cognitive Technology (Italy)	2018

Financials	Banking	NDA (Italy)	Credit Card Remote Selling	Credit checks on the customer's credit card upon request, selling or rejection of the card.	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Balance and average deposit	Creation of a document with current account balance and average deposit	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Large-Scale Retailers Withdrawal	Credits and charges related to the large-scale retail distribution channel.	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Future Verification	Verification of the positions and executions among FUTURE, the bank and the Broker.	Cognitive Technology (Italy)	2018

Financials	Banking	NDA (Italy)	Mortgage Settlements	<p>Process Mining was used to identify the ideal activities for automation of the bank's Tax Office, and to constantly monitor the automation levels and continuously optimize its process.</p> <ul style="list-style-type: none"> - The 'updating of the database' activity was identified. The activity is relative to the mortgage settlements due to the closure of the related financing. - Expected Saving 1 FTE 	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Updating Financial Tools	<p>With automated process discovery, get an objective overview of the business process to identify from the data-derived model the ideal activities for automation. Automating the data updates on the procedure of external data sources.</p> <ul style="list-style-type: none"> - Estimated saving 0,4 FTE - saving reached 0,4 FTE 	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Central Credit Registers - first information	<p>Conduct a data-derived performance analysis through Process Mining, to identify the costly and repetitive tasks that are ideal for Robotic Process Automation. Thereafter, monitor if the optimal outcome is reached. Automation of the 'acquisition' activity of the Central Credit Registers (Banca d'Italia- database on protested or non-performing loans) of the customer ID and their balance sheet.</p> <ul style="list-style-type: none"> - Expected saving 0,5 FTE - saving reached 0,5 FTE 	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Mortgage Check	<p>Optimizing the consistency of the data quality through the discovery of non-conformant behavior of the Mortgage Check process.</p> <ul style="list-style-type: none"> - Automation of the 'consistency check' of the available data on the IT procedures and relative documentation (integration with an OCR system) to avoid unexpected behavior. - Expected saving 5 FTE, Saving reached 7,5 FTE. - Improving the consistency of the data quality. 	Cognitive Technology (Italy), OT Consulting	2018

Financials	Banking	NDA (Italy)	Data Quality	<p>Use Process Mining to detect anomalies and monitor the corrective actions that will be taken to optimize the process.</p> <ul style="list-style-type: none"> - Automation of the 'correct anomalies' activity within the production environment relative to incorrect/incomplete censuses of the users. - Expected Saving 0,6 FTE - Reached Saving 0,6 FTE - Consistent improvements of the data quality 	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Corporate Events - events reconciliation	<p>Automation of the internal purchase/sale of stocks accounting activity.</p> <ul style="list-style-type: none"> - Expected Saving 0,5 FTE - Saving Reached 0,5 FTE 	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Corporate Events - attestation creation	<p>With the use of Process Mining acquire complete transparency of the attestation creation process and discover process weaknesses and automation opportunities.</p> <ul style="list-style-type: none"> - Automation of the attestation creation for customers relating to the holding/handling of stocks in the portfolio. - saving expected 0,2 FTE - saving reached 0,2 FTE 	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Foreclosures	<p>Process Discovery, Analysis, and monitoring of the information extraction process, to identify any irregular activities and inefficient behavior to drive continuous process improvements.</p> <ul style="list-style-type: none"> - Automation of information extraction from PDF files (foreclosure documents). - expected saving 3 FTE - saving reached 3 FTE 	Cognitive Technology (Italy), OT Consulting	2018

Financials	Banking	NDA (Italy)	Liquidity Management Euro and Divided	<p>Obtain complete transparency of bank transfers with performance indicators through Process Mining in order to monitor and improve the end-to-end process.</p> <ul style="list-style-type: none"> - Automation of transfers between bank accounts: Transfers must be performed several times a day (monitoring 3 times per day) in order to always maintain a proper stock. - estimated saving 0,15 FTE - saving reached 0,15 FTE 	Cognitive Technology (Italy), OT Consulting	2018
Financials	Banking	NDA (Italy)	Funds - phone records and e-mail management	<p>Monitor and analyze the process variants of the financial office with Process Mining and Intelligence to reduce the costs and repetitive tasks.</p> <ul style="list-style-type: none"> - Automation of the recovery and the balancing of phone-records and e-mails relative to the operability of the financial office (purchase/sale of stocks). - expecting saving 0,9 FTE - saving reached 0,9 FTE 	Cognitive Technology (Italy), OT Consulting	2018
Utilities	Utilities	NDA (Italy)	"Sales Management" Order Management	<p>Under the scope of energy services, NDA wanted to analyze their client acquisition process that specifically include the new clients that switch to NDA from another vendor.</p> <p>With Process Mining techniques the company wanted to:</p> <ul style="list-style-type: none"> - Identify and analyze the critical activities. - Reduce the process leadtime. - Identify channel inefficiencies. - In-depth analysis of the process inefficiencies. <p>Results: NDA</p>	Cognitive Technology (Italy), OT Consulting	2018

Industrials	General Industrials	NDA (Italy)	Procure to Pay	<p>Goals: Monitor the performance, reliability, and costs of the suppliers. Improve the effectiveness and efficiency of the process. Monitor the compliance and violations of the activities with a monitoring tool that would also provide insight on Maverick Buying activities. Analyze the Spend Under Management.</p> <p>Results: Identified all Maverick Buying activities with the Root Cause Analysis. Discovered the key suppliers. Improved the performance.</p>	Cognitive Technology (Italy), OT Consulting	2018
Consumer Services	Retail & E-Commerce	NDA (Italy)	Order to Invoice	<p>Goals: NDA's aim was to monitor the impact of the change and block activities on their order to invoice lead time, analyze the shipment delays (service time), and get an in-depth analysis of rework activities.</p> <p>Results: NDA</p>	Cognitive Technology (Italy), BIP	2018
Public	Education	NDA	account payable (Ciclo passivo)	analysis of process variants to verify the correctness of the various departments and verify workloads and organizational sizing	Cognitive Technology (Italy), Mind The Value	2018

Financials	Nonlife Insurance	Unipol (Italy)	Insurance Claims (motor vehicle branch)	The scope of the project was to analyze the claims submitted with a single signed accident report. The objective was to find measurable areas of improvement and anomalies inside the process. Different behaviours inside the process were isolated and analyzed (e.g. for different kind of settlement). A comparison between different region was also performed. As a result the Company was able to find emerging best practices both process wise and organization wise. Hot spots inside of the process were identified and addressed with specific initiatives, change requests for the it systems that supported the process were also scheduled.	Cognitive Technology (Italy), Horsa	2018
Financials	Nonlife Insurance	Unipol (Italy)	Insurance Claims (motor vehicle branch)	The scope of the project was to analyze the claims submitted with a double signed accident report (an accident report signed by both the Company customer and the counterpart). The objective was to find measurable areas of improvement and anomalies inside the process. Different behaviours inside the process were isolated and different process dimensions were analyzed (e.g. different kind of settlement, geographic partitioning of claims, compliance with regulatory deadlines, etc...). A comparison between different region was also performed. As a result the Company was able to find emerging best practices both process wise and organization wise. Hot spots inside of the process were identified and addressed with specific initiatives, change requests for the it systems that supported the process were also scheduled.	HSPI Management Consulting (Italy); Cineca	2018
Utilities	Utilities	E.ON (Germany)	Purchase to Pay (P2P)	Field of application: Audit, Governance & ICS Process: Purchase to Pay (P2P) Industry sector: Electric utility Workforce: 42.000 Pre-systems: SAP ERP, Excel STORY In search of a powerful solution for the analysis of actual processes in the area of purchasing and accounts payable, the MEHRWERK customer has chosen MPM ProcessMining. Besides the certified connectivity to SAP® and powerful In-Memory data management based on the integrated Qlik® technology, the fulfilment of the following objectives was crucial:	HSPI Management Consulting (Italy); SCS Consulting; Queensland University of Technology (Brisbane, Australia)	2018

- Flexible creation of relevant process key figures and required risk indicators
- Automated analysis of actual processes for critical process sequences (e.g., changes to bank accounts before and after payments, goods receipt posting after invoice posting, functional separation conflicts, etc.)
- Marking of critical processes and events for quick analysis by auditors
- Simple self-service analyses based on governed data models and key figures for advanced questions and cause analyses
- Reduction of false positives through associative analysis

MPM ProcessMining was implemented after a joint pilot phase in which important requirements could be mapped within a few days.

RESULT

- Ensuring and complying with corporate governance, rapid identification of possible compliance violations
 - Full actual process transparency of purchasing processes (from purchase requisition to payment), across multiple company codes and purchasing organizations if required
 - Automatic calculation and evaluation of risk indicators
- By combining MPM ProcessMining with the Business Intelligence functionalities of the Qlik® platform, the full power of Process Mining is harnessed

BENEFITS

Qlik® & MPM ProcessMining for complete process transparency
Simple self-service analyses
Easy connection of data sources

Healthcare	Healthcare Facilities, Services & Equipment	Alexianer GmbH (Germany)	Emergency hospitalization	<p>Goal: Gain insights of current process flows and further improve the quality of patient-centered care and the communication among different functions within the institution.</p> <p>Results:</p> <ul style="list-style-type: none"> - Optimization of the quality of patient care processes - Reduced waiting times for patients by up to 80% - Improved communication across different departments 	HSPI Management Consulting (Italy); SCS Consulting, Queensland University of Technology (Brisbane, Australia)	2018
Telecommunications	Service Provider	Telefónica (Spain)	SIM Card Process	<p>Goal: Gain 100% transparency into all customer centric processes and develop a solution that allows an in-depth monitoring of all actions that include customer contacts. Identify bottlenecks and deviations and improve and speed up customer service.</p> <p>Results:</p> <ul style="list-style-type: none"> - Full control and transparency of the customer centered processes - Customer Journey is completely mapped and can be optimized precisely - Solution established to monitor the performance of the process - Improved service quality 	MEHRWERK	2018
Industrials	Production	Hoerbiger / Altronic (Switzerland)	Production of control units for compressor motors	<p>Goal: discover process steps for better process transparency across departments; Identification of inefficiencies and related savings potentials</p> <p>Results: Detection of unnecessary extensions of the process duration; Cause for non-compliance with production planning determined; Data-based basis created for sustainable business optimization</p>	Lana Labs GmbH (Germany)	2018

Utilities	Utilities	Berliner Wasserbetriebe (Germany)	Cross-media network construction (MÜN)	<p>Goal (and result): Development of an innovative, demand-oriented controlling system</p> <p>Further results:</p> <p>Realization of cross-system process transparency</p> <p>Identification of important process characteristics and key figures</p> <p>Results:</p> <ul style="list-style-type: none"> • Increased data consistency across the various systems (Camunda, SAP, ASS, Gimba) • Enablement of an end-to-end perspective and insights into the real actual processes • Cross-departmental transparency with fast drill down to process key figures • Unification and standardization of controlling, the realization of cross-system and cross-departmental monitoring 	Lana Labs GmbH (Germany)	2018
Financials	Banking	Banca Intesa Sanpaolo (Italy)	Forex exchange	<p>The scope of the project was to discover and analyse the paths of different forex exchange deals at the client. Data was extracted from different systems and aggregated into a single event log (each deal can embrace several systems). Next, different variants of a deal were segregated based on logical drivers (e.g. type of deal, broker/no broker) and performance driver (e.g. average number of activities, or average cycle time). The variants were then used as input for variant analysis in order to identify root causes for deviations.</p>	Lana Labs GmbH (Germany)	2018
Technology	Technology	Information Technology provider (Israel)	Purchase-to-pay process	<p>The scope of the project was to do an initial process discovery and apply predictive monitoring to predict the occurrence of "Late supply" instances, and severity of delays (if any). As a result, several predictive models were trained, and custom operational dashboard was created to visualize real-time predictions for ongoing (incomplete) process instance</p>	Lana Labs GmbH (Germany)	2018

Telecommunications	Telecommunications	NDA (Australia)	Multiple customer facing processes (multiple legacy systems)	The large offering and customer experience transformation initiative required this organisation to assess hundreds of processes with a data-based approach. They have used process mining to address issues with internal structure across business units and reach consensus on processes and process owners. This company uses process mining on top of a larger cx and opex initiative driven by an end-to-end process management approach.	P4I (Italy); The University of Melbourne (Australia)	2018
Telecommunications	Telecommunications	NDA (Australia)	Asset maintenance (Legacy)	This company used process mining on top of a larger opex initiative driven by an end-to-end process management approach	Nools (Israel); The University of Melbourne (Australia)	2018
Consumer Goods	Food & Beverage	NDA (Germany)	Opportunity Management (Salesforce)	This company has launched a process standardisation and optimisation initiative touching multiple areas of the business both on the operational and customer experience side. They have leveraged process mining to identify inefficiencies, bottlenecks and closure issues in their opportunity management process. This company used process mining on top of a larger opex initiative driven by an end-to-end process management approach	Signavio (Germany)	2018
Industrials	General Industrials	Koch (USA)	Purchase-to-pay	Koch Industries has significantly increased its performance on ServiceNow and highly reduced associated costs.	Signavio (Germany)	2018

Banking		Confidential (Netherlands)	Loan Acceptance: findings for future RPA implementation	<p>Recommendations based on Process Mining findings:</p> <p>Calling customers to complete documentation has a positive impact on acceptance rates: mandatory call to customers for documentation completion</p> <p>Acceptance ratio increases when multiple offers are made over multiple conversations: multiple offers over multiple conversations as mandatory process</p> <p>Loan acceptance rates increase when multiple offers are made: make more than one offer</p>	Signavio (Germany)	2018
Public	Higher Education	University of Parma (Italy)	Student's administrative career & General Accounting mgmt.	University of Parma, in a very important phase of reviewing and centralizing many of its administrative processes, decided to start a Process Mining Assessment to further investigate its processes. The aim of the project was to assess the organization and the activities performed by different faculties, to map processes, capture differences, examine performance and implement best practice from the results obtained, with the ultimate goal of gaining operational efficiency by centralizing and standardizing the best-fit process flows.	Celonis (München, Germany)	2018
Public	Healthcare	Public hospital (Australia)	Patient discharge	This project analyzed the path of patients affected by acute coronary syndrome from admission to discharge (and potential readmission), in a large public hospital in Australia. The study in particular delved into the causes for ineffective discharge, which leads patients to be readmitted within a given timeframe. Via comparison of the two patient cohorts (effectively discharged vs readmitted), using Apromore's C-BPMN support, it was possible to identify the specific paths and activities performed, that determine the effective discharge of patients. The results were completed by a longitudinal study of patients treatment via interviews, and discussed with relevant healthcare practitioners, via a final focus group, to ensure transfer of insights to practice.	Minit	2018

Industrials	Logistic	NDA	Credit & Collections Management	<p>Goal: Gain a competitive advantage by automating and optimizing the process beyond the capabilities of the established process management systems.</p> <p>Results:</p> <ul style="list-style-type: none"> - Saved more than 100,000 Euros and 1,600 man hours per year on extra manual work - Reduced execution times and idle periods in the process by up to 80% - Identified compliance risks in over 70% of all cases 	HSPI Management Consulting; The University of Melbourne (Australia)	2017	
Financials	Banking	(US) Federal Bank with over \$70B US Assets, NDA	LOB: Finance Area: Finance, Back Office	<p>Use Cases:</p> <ul style="list-style-type: none"> ● Discovery and Documentation of As-Is Business Processes ● Generation of Process Maps for Systems Transformation Project <p>Results: 6X Acceleration of Process Analysis and Documetation</p>	The University of Melbourne (Australia)	2017	
Healthcare	Home Care Services	Care Services company (NDA, Brazil)	Workforce Management	<p>This company's core business relies on field dispatches of different skilled technicians to meet customer requests. As the customer satisfaction varied according to location and service expertise, this company needed to identify the customer journey's top offenders and positive highlights in order to improve their process.</p>	Lana Labs GmbH (Germany)	2017	---
Telecommunications	Telecommunications	National Coverage Telco - Mobile and Fixed services (NDA, Brazil)	Operational Efficiency	<p>EverFlow helped this Telco to understand any network/APM fault alarm lifecycle, from the moment it was generated to the final resolution. This allowed operation managers to easily identify how alarms were impacted by operators (re)classification, (re)categorization and other actions, improving the decision making process for fast troubleshooting and MTTR reduction.</p>	StereoLOGIC (Canada)	2017	---

Financials	Insurance	Interroll Group (Switzerland)	Production Process	<p>Goal: Gain comprehensive insights into the production process that were not accessible through the regular Manufacturing Execution System.</p> <p>Results:</p> <ul style="list-style-type: none"> - Identified unexpectedly high process variance with over 3,000 distinct variants - Determined cause for the extension of process duration by over 700% - Created data-based foundation for the internal continuous improvement process 	Icaro Tech (Sao Paulo, Brazil)	2017
Healthcare	Healthcare Facilities, Services & Equipment	NDA	Invoice Verification	<p>Goal: Gain a deeper understanding of process challenges and deviations and identify opportunities for process automation.</p> <p>Results:</p> <ul style="list-style-type: none"> - Saved 900 man hours per year through process automation - Identified the cause for 97% of process deviations - Revealed over 1,000 internal violations of the Service-Level Agreement - Achieved higher degree of standardization 	Icaro Tech (Sao Paulo, Brazil)	2017
Telecommunications	Telecommunications	National Coverage Telco - Mobile and Fixed services (NDA, Brazil)	Operational Efficiency	<p>Considering Fault Management is critical to network based services, Accelera Labs EverFlow (previously Icaro Tech EverFlow) helped this Telco to understand any network/APM fault alarm lifecycle, from the moment it was generated to the final resolution. This allowed operation managers to easily identify how alarms were impacted by operators (re)classification, (re)categorization and other actions, improving the decision making process for fast troubleshooting and MTTR reduction.</p>	Lana Labs GmbH (Germany)	2017

Healthcare	Healthcare Facilities, Services & Equipment	Care Services company (NDA, Brazil)	Workforce Management	As a care service provider with a wide variety of expertises, this company's core business relies on field dispatches of different skilled technicians to meet customer requests. As the customer satisfaction varied according to location and service expertise, this company needed to identify the customer journey's top offenders and positive highlights in order to improve their process. Accelerera Labs EverFlow (previously Icaro Tech EverFlow) provided the expected answers by analyzing logs from this company's Workforce Management system.	Lana Labs GmbH (Germany)	2017
Financials	Banking	The largest Bank in Canada, NDA	LOB 1: Credit Cards Area: Back Office and Business Process Outsourcing Groups LOB 2: Payments Area: Back Offices (Toronto, Montreal) LOB 3: Personal Banking Operations Area: Back Office and Business Process Outsourcing Groups	LOB 1 Use Cases: <ul style="list-style-type: none"> ● Monitoring of Offshore BPO Processes for conformance to Best Practices; ● Analysis of Inefficiencies and Process Improvement LOB 1 Results: <ul style="list-style-type: none"> ● Detected and corrected non-conformance to best practices in Offshore BPO Centers (60%); ● 22% Performance Improvement LOB 2 Use Cases: <ul style="list-style-type: none"> ● Process Discovery & Documentation ● Process Improvement ● Generation of Standard Operating Procedures LOB 2 Results: 5X Acceleration of Business Process Documentation and SOP Development LOB 3 Use Cases: <ul style="list-style-type: none"> ● Process Discovery ● Productivity Management ● Process Improvement ● Detection and Prioritization of RPA Opportunities LOB 3 Results: <ul style="list-style-type: none"> ● Up to 90 % process efficiency gain for the Outsourced Processes in scope ● Detected automation opportunities for over 50% of processes 	Icaro Tech (Accelerera Labs partner) (Brazil)	2017

Financials	Banking	One of the Big Five Banks in Canada with over 1000 branches, NDA	<p>LOB 1: Documentation and Training Group Area: Back Office</p> <p>LOB 2: Retail Banking Area: Customer Services, Branches, Nationwide</p> <p>LOB 3: Credit Adjudication Area: Back Offices, Mortgage Processing</p> <p>LOB 4: Process Management Group Area: Call Center Operations</p> <p>LOB 5: Finance Area: Finance, Back Office</p>	<p>LOB 1 Use Cases:</p> <ul style="list-style-type: none"> ● Process Discovery & Documentation ● Generation of Standard Operating Procedures <p>LOB 1 Results: 5X Acceleration of Business Process Documentation and SOP Development</p> <p>LOB 2 Use Cases:</p> <ul style="list-style-type: none"> ● Process Discovery and Time Measurement ● Detection of Errors and Inefficiencies ● Process Improvement and Standardization ● Customer Experience Measurement <p>LOB 2 Results:</p> <ul style="list-style-type: none"> ● Accelerated Customer Services by 22.5% and Reduced Errors and Delays by 95% in less than 6 months ● \$15MM operational savings across all branches in less than 1 year <p>LOB 3 Use Cases:</p> <ul style="list-style-type: none"> ● Process Discovery and Time Measurement ● Detection of Employee Errors and Inefficiencies ● Customer Experience Measurement <p>LOB 3 Results:</p> <ul style="list-style-type: none"> ● Measured: 1) Total No of Cases reviewed by each Adjudicator; 2) Number of times each Case was re-opened by the Adjudicator; 3) Review Start / End Time; 4) Number of Approved Cases ● 30% Customer Service Acceleration <p>LOB 4 Use Cases:</p> <ul style="list-style-type: none"> ● Process Discovery and Analysis ● Detection of Employee Errors and Inefficiencies ● Customer Experience Measurement <p>LOB 4 Results: 5X Acceleration of Process Analysis and Documentatation</p> <p>LOB 5 Use Cases:</p> <ul style="list-style-type: none"> ● Process Discovery and Documentation ● Generation of Standard Operating Procedures (SOP) <p>LOB 5 Results: 6X Acceleration of Process Analysis and Documentatation</p>	Icaro Tech (Accelerate Labs partner) (Brazil)	2017
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Financials	Banking	Large European Bank with over 90,000 employees, NDA	LOB: Back Office Operations Area: BPO Processing in Eastern Europe	Use Cases: <ul style="list-style-type: none"> ● Remote capture of As-Is business processes from local branch offices ● Variation analysis and process optimization Results: <ul style="list-style-type: none"> ● Compressing the time to gather business process by 60% ● Process optimization by an average of 16%. ● Some processes optimized by as much as 70%. ● 4 month ROI 	StereoLOGIC (Canada)	2017
Public	Public Administration and Government Bodies	NDA (Netherlands)	Logistic flow of ships	Organization wanted to improve the quality of controlling ships on hazardous substances. Based on the visualization of the routes it is now possible to perform the controls based on places and ships with the highest risks.	StereoLOGIC (Canada)	2017
Utilities	Utilities	Shell (UK)	Purchase to Pay and Order to Cash	SAP HANA data was connected direct into the ProcessGold platform. Focus was on efficiency. Non-compliant proceses, early and late payments and fraud were discovered.	StereoLOGIC (Canada)	2017
Consumer Services	Retail & E-Commerce	Heineken (Netherlands)	Segregation of Duties and Manual Journey Entries	Organization wanted to be audit ready. Controls were defined and put in the ProcessGold Platform. 100% insight on violations of these controls was delivered. Roll-out was globally.	ProcessGold (Netherlands)	2017

Public	Public Administration and Government Bodies	General Prosecution Service (Netherlands)	All internal processes (Criminal Cases)	Customer wants to improve their internal processes by shortening throughput times, minimizing risks and fully comply to internal and external laws and regulations. Customer is implementing the so called DMAIC improvement cycle with the help of the ProcessGold platform.	ProcessGold (Netherlands) and CGI	2017
Services	Support Services	SIAV S.p.A. (Italy)	Order to Cash, Help Desk	The company aimed to map Order to Cash process (supported by SAP, Microsoft Dynamics and Siav Archiflow document management system) and Help Desk process (supported by Microsoft Dynamics CRM). The OTC process was particularly challenging, because it involves many different information systems; despite this, a consistent mapping between different identifiers has been found during ETL phase, and consistent end-to-end process instances have been extracted. An internal Process Discovery tool has been used to analyze the processes. The result of the study was a detailed report on the real processes, underlining unexpected behaviour and performance issues, valuable information to develop an improvement plan.	ProcessGold (Netherlands) and Agilos	2017
Industrials	Transportation	NS Dutch Railways (Netherlands)	Dataset Analysis	Analysis of all the datasets with Process Mining demonstrated that by waiting a few more days before emptying abandoned station lockers would bring to the company a lot of time and effort saved. In addition, Process Mining let NS noticed that some of the OV bikes that were reported as stolen were actually not stolen at all.	ProcessGold (Netherlands)	2017

Financials	Insurance	Nationale Nederlanden (Netherlands)	Transactions analysis	<p>The company got pushback because results were not always aligned with the viewpoints of all stakeholders. For instance, for one process the operational teams experienced a lot of variation - while IT was managing a Straight Through Process. With process mining, it was ultimately possible to get a deeper understanding of how the process was actually working and to take both perspectives into account. Results:</p> <ul style="list-style-type: none"> - 225.000 process ID obtained, from 600.000 records - Straight Through Processing (STP) Rate= 87% - Non STP processes (#44) could ranked based on % of variants an lead time 	SIAB S.p.A. (Italy)	2017
Financials	Insurance	CZ (Netherlands)	IT Audit	<p>By using process mining techniques, CZ Health Insurance was able to obtain different results from the traditional approach in the preparation, fieldwork, reporting, and follow-up steps in its audits. Results:</p> <ul style="list-style-type: none"> - Changes 'out of the blue' - Quality of work measured - Automated compliancy 	Fluxicon (Netherlands)	2017
Utilities	Utilities	Essent NC (Netherlands)	Credit Management	<p>Discovering why the firm was losing so much money in the payment collection process: the termination of contracts took too long time to be performed. By visualizing the problem, the company was able to understand the actual root causes. Therefore, process mining proved to be so much more meaningful than just a snake plot and a ping-pong factor.</p>	Fluxicon (Netherlands)	2017

Financials	Insurance	VGZ (Netherlands)	Dental care process analysis	Solving of many operational problems much quicker by combining Lean tools with process mining. Using process mining, VGZ was able to visualize the flow of the dental care process within weeks. This directly pointed out bottlenecks and it demonstrated that there were long waiting times when the work was handed over from medical advisors to experts and vice-versa. By applying the traditional Lean tools, such as 5x Why, CZ was able to pinpoint the actual root causes. Results: - Reduction of the throughput time by 40%	Fluxicon (Netherlands)	2017
Industrials	Industrial Engineering	Veco (Netherlands)	Customer journey analysis	Obtaining a clear visualization of the journey of the customer. Looking into the visualization, a new product development process was discovered. Instead of only producing a sample, in the new product development process pieces needed to be designed, produced and delivered quickly. By shifting priorities, Veco was able to produce customer samples quicker without impacting the regular production lead times. This allows Veco to grow their business, while keeping up the delivery performance for their existing customers.	Fluxicon (Netherlands)	2017
Telecommunications	Telecommunications	Telefónica (Spain)	IT Service Management	With logs analysis carried out by process mining techniques Telefonica discovered that the incidents were not registered properly in the trouble ticketing tool, as well as that the internal information/reports could be misleading. Results of the project: - A correct incident recording in the trouble ticketing tool used - Improvement in the relationships with the interested parties - Updating and improving of operational reports	Fluxicon (Netherlands)	2017
Utilities	Utilities	Coal mine (Poland)	Process analysis	Gaining insights about operation process of selected devices in hard coal mine (mechanized roof support) as example of possible extension of data usage from monitoring systems installed into longwall face.	Fluxicon (Netherlands)	2017

Services	Support Services	Barona (Finland)	Invoicing	Identify organizational difference to drive process and operations harmonization. Discover the invoicing procedures. Communicate process related knowledge.	Fluxicon (Netherlands)	2017
Consumer Goods	Personal & Household Goods	Nokia (Germany)	Order to Cash	Visualization of processes. Lead time improvements. Process harmonization. Measuring & communicating process performance. Reduced rework. Continuous data driven development.	AGH University of Science and Technology (Poland)	2017
Industrials	Aerospace & Defense	Patria (Finland)	Order to Cash	Visual process intelligence. Visibility to operations. Ensuring ontime delivery with first time right execution. Minimizing rework.	QPR (Finland)	2017
Industrials	Logistic	NDA (Germany)	Order-to-cash & procure-to-pay processes of multiple sub-organizations; Prepare Implementation & Go-Live of a global ERP system	Assess current Order-to-cash and procure-to-pay processes of multiple sub-organizations. Per organization, analyze deviation of process from the global template by using Signavio Process Intelligence. The global process definition and communication is done using Signavio Process Manager and Collaboration Hub. After the go-live of the global ERP system, a continuous	QPR (Finland)	2017

				<p>monitoring of the processes in the new ERP system are established.</p> <p>Outcomes:</p> <p>Faster project, better requirements definition, improvement of ongoing operations after Go-Live.</p>		
Telecommunications	Telecommunications	NDA (Europe)	product delivery for a new internet service	<p>The demand for a new corporate internet product is high, but delivery projects are taking much longer than expected, even resulting in many cancelations of orders. Among other things, the analysis unveiled additional revenue potential of several million EUR by delivering earlier and therefore starting the subscription earlier.</p>	QPR (Finland)	2017
Industrials	Automotive & Parts	NDA (Italy)	MRP	NDA	Signavio (Germany)	2017
Consumer Goods	Personal & Household Goods	NDA (Italy)	E-Commerce BtoC analysis	<p>NDA's aim was to monitor the O2C e-commerce process with the objective to compare the brands, retail chains, and commercial areas to finally increase the efficiency of the order management, shipment, and any processes related to deliver to final customer.</p> <p>Results: myInvenio exposed differences between logistics centers, and in some cases important process deviations caused by order reassignments. The intra-brand</p>	Signavio (Germany)	2017

differences were used for a subsequent detailed analysis, always for efficiency purposes.						
Consumer Goods	Food & Beverage	NDA (Italy)	Order to Cash	Goals: Apply process mining to provide insights into the Order to Cash process, to ultimately reduce the delivery time and the payment time by identifying the optimal delivery routes and the root causes of bottlenecks. Results: NDA	Cognitive Technology (Italy), OT Consulting	2017
Healthcare	Healthcare Facilities, Services & Equipment	NDA (Germany)	Order to Cash	Goals: Apply process mining to provide insights into the Order to Cash process, to ultimately reduce the delivery time and the payment time by identifying the optimal delivery routes and the root causes of bottlenecks. Results: NDA	Cognitive Technology (Italy)	2017
Industrials	General Industrials	NDA (Italy)	Order to Cash	Goals: Apply process mining to provide insights into the Order to Cash process, to ultimately reduce the delivery time and the payment time by identifying the optimal delivery routes and the root causes of bottlenecks. Results: NDA	Cognitive Technology (Italy), OT Consulting	2017

Industrials	General Industrials	NDA (Italy)	Shipment Management	<p>Process Mining was used to deliver the advanced insight on the orders that were necessary to optimize the shipment process.</p> <p>Results: NDA</p>	Cognitive Technology (Italy)	2017
Industrials	General Industrials	NDA (Italy)	Order to Cash	<p>A Warehouse Management System Analysis was conducted in order to discover process inefficiencies.</p> <p>Results: By the use of myInvenio, NDA discovered a critical inefficiency in the process: material that was produced in Italy was send to a warehouse located in Spain, and thereafter send back to a different warehouse in Italy to finally be distributed in Italy.</p>	Cognitive Technology (Italy)	2017
Industrials	General Industrials	NDA (USA)	Order to Delivery	<p>Goals: Apply process mining to provide insights into the Order to Cash process, in particular:</p> <ul style="list-style-type: none"> - Analyze Process Behaviour and Identify any Improvement opportunities! - Identify the Critical Activities in terms of costs and time. - Monitor the Customers Lead Time Variability - Discover the Key Users of the process and check the Segregation of Duties <p>Results:</p> <ul style="list-style-type: none"> - Redesigning of the process in order to drastically reduce “Logistics Block”. Cost Saving of at least 100k\$ and 2 days of average leadtime. - Reducing the number of “Change of Delivery Date” with an expected cost and time saving of about 50k\$ and 3 days. - Increase of the Orders within KPI boundaries of 25% 	Cognitive Technology (Italy)	2017

Consumer Services	Retail & E-Commerce	NDA (Italy)	Order to Cash	Goals: By analyzing data from the different corporate IT systems, NDA wanted to discover the segregation of duties; find what activities were performed by the specific resources and roles of the organization's Order to Cash process. Results: NDA	Cognitive Technology (Italy)	2017
Healthcare	Healthcare Facilities, Services & Equipment	NA	Department Transfers		Cognitive Technology (Italy), Mind The Value	2017
Technology	Technology	NA	Game development		Cognitive Technology (Italy), OT Consulting	2017
Services	Industry Services	NA	Invoicing	Identify organizational difference to drive process and operations harmonization. Discover the invoicing procedures. Communicate process related knowledge.	QPR (Finland)	2017

Public	Public Administration and Government Bodies	NA	ITIL Service Management	Find out how the ticketing system is performing. Set up a continuous Process Mining environment	QPR (Finland)	2017
Consumer Goods	Food & Beverage	NA	Manufacturing	Gain an understanding over each process and their performance. Identify bottlenecks. Created documentation based on the as-is proces that can be used for development support.	QPR (Finland)	2017
Utilities	Utilities	NA	Marketing & Sales		QPR (Finland)	2017
Utilities	Utilities	NA	Marketing & Sales		QPR (Finland)	2017

Utilities	Utilities	NA	Meter to Cash	Researched how the process is currently and used that information to create an ideal version of the process.	QPR (Finland)	2017
Telecommunications	Telecommunications	NA	Order Handling	Improving Order Handling accuracy and efficiency.	QPR (Finland)	2017
Basic Materials	Chemicals	NA	Order to Cash		QPR (Finland)	2017
Basic Materials	Chemicals	NA	Order to Cash	Measure how process is performing, create a basis for process monitoring	QPR (Finland)	2017

Consumer Goods	Food & Beverage	NA	Order to Cash	QPR (Finland)	2017
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2017
Consumer Services	Retail & E-Commerce	NA	Order to Cash	QPR (Finland)	2017
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2017

Basic Materials	Forestry & Paper	NA	Order to Cash		QPR (Finland)	2017
Telecommunications	Telecommunications	NA	Order to Cash		QPR (Finland)	2017
Telecommunications	Telecommunications	NA	Order to Cash	Visualization of processes. Lead time improvements. Process harmonization. Measuring & communicating process performance. Reduced rework. Continuous data driven development.	QPR (Finland)	2017
Telecommunications	Telecommunications	NA	Order to Cash		QPR (Finland)	2017

Industrials	Manufacturing	NA	Order to Cash	Visual process intelligence. Visibility to operations. Ensuring ontime delivery with first time right execution. Minimizing rework.	QPR (Finland)	2017
Utilities	Utilities	NA	Order to Cash		QPR (Finland)	2017
Healthcare	Medical Technology	NA	Order to Cash		QPR (Finland)	2017
Consumer Services	Wholesale	NA	Order to Cash	Identify SLA conformance and deviations, possible causes for breaches. Gained an insight on where to focus on improving the levels of SLA.	QPR (Finland)	2017

Services	Professional Services	NA	Professional Services		QPR (Finland)	2017
Industrials	Manufacturing	NA	Project Management	Visual process intelligence. Visibility to operations. Ensuring ontime delivery with first time right execution. Minimizing rework.	QPR (Finland)	2017
Financials	Banking	NA	Purchase to Pay		QPR (Finland)	2017
Basic Materials	Chemicals	NA	Purchase to Pay		QPR (Finland)	2017

Industrials	Manufacturing	NA	Purchase to Pay		QPR (Finland)	2017
Basic Materials	Industrial Metals & Mining	NA	Purchase to Pay	Understand process mining capabilities	QPR (Finland)	2017
Basic Materials	Industrial Metals & Mining	NA	Purchase to Pay	Transparency into processes and find out Maverick Buying incidents. Found out a significant amount of Maverick Buying. Saw how maverick buying occurred on a organizational group basis	QPR (Finland)	2017
Telecommunications	Telecommunications	NA	Purchase to Pay		QPR (Finland)	2017

Healthcare	Medical Technology	NA	Purchase To Pay		QPR (Finland)	2017
Industrials	Manufacturing	NA	Sales	Visual process intelligence. Visibility to operations. Ensuring ontime delivery with first time right execution. Minimizing rework.	QPR (Finland)	2017
Consumer Services	Retail & E-Commerce	NA	Service tickets		QPR (Finland)	2017
Telecommunications	Telecommunications	NA	Software Development		QPR (Finland)	2017

Financials	Banking	NA	Banking & Finance		QPR (Finland)	2017
Technology	Technology	NA	Information Technology		QPR (Finland)	2017
Technology	Technology	NA	Information Technology		QPR (Finland)	2017
Public	Education	University of Parma (Italy)	Student's administrative career & General Accounting mgmt.	University of Parma, in a very important phase of reviewing and centralizing many of its administrative processes, decided to start a Process Mining Assessment to further investigate his processes. The aim of the project is to assess the organization and the activities performed by different faculties, to map processes, capture differences, examine performance and implement best practice, with the final target to gain efficiency centralizing and standardizing the best-fit process flow.	QPR (Finland)	2017

Public	Education	The School of Management (VSM) City University of Seattle (USA)	Paths discovery	<p>The School of Management (VSM) implemented a modern e-learning platform to facilitate more convenient and personalized form of studying. The application for automated processes analysis Minit was used to compare the utilization of the e-learning platform Moodle by different student groups.</p> <p>Aim of the project: discovering new paths to student success</p> <p>Findings from the project led to the implementation of rules for continuous analysis of processes in the Moodle platform, creation of methodology and best practice guide for usage of the e-learning system, and improved student onboarding.</p> <p>The School of Management succeeded in putting in action an individual approach to students, and improving their journey to outstanding academic results.</p> <p>This progressive approach to students brings greater renown to VSM and increases students' interest in attending.</p>	QPR (Finland)	2017
Financials	Banking	Bank 2b under NDA	Process Analysis	<p>Analysis of Mortgage Approval process.</p> <p>Analysis of communication between frontoffice and backoffice.</p> <p>Preparation of inbank methodology that organizes work in both front and back office.</p>	HSPI Management Consulting ; University of Melbourne (Australia)	2017
Industrials	Transportation	DSME (Republic of Korea)	Shipbuilding block assembly location process	This company adopted process mining to analyze and enhance shipbuilding block assembly location process.	Minit j. s. a (Slovakia)	2016

Public	Public Administration and Government Bodies	Supreme prosecutors' office (Republic of Korea)	Prosecutors' work process and workload	This government organization adopted process mining to analyze and enhance prosecutor's working process and workload.	InHouse analysis / support by Minit j. s. a (Slovakia)	2016
Consumer Goods	Personal & Household Goods	Samsung Heavy Industries (Republic of Korea)	Pipe production process	This company adopted process mining to analyze and enhance pipe production process.	Puzzle Data (Republic of Korea), Xinnos	2016
Financials	Insurance	Aegon (Netherlands)	Call center and retirement insurance process	Need to work more efficient in order to save costs. Serve their customers better. RPA bottlenecks were detected. Dramatic reduction in response times were achieved. Substantial savings in first 3 months after implementing the ProcessGold platform.	Puzzle Data (Republic of Korea)	2016
Industrials	Logistic	Smart Coat Inc. (Belgium)	Logistic	-Real business processes discovery -Removing unnecessary and divergent process activities -Benchmark various departments, plants, products or sales channels within your company -Identification of the bottlenecks -Visualizing the interactions amongst your employees -Reporting the exact cost prices of activities -Predicting and preventing process errors	Puzzle Data (Republic of Korea)	2016

Public	Public Administration and Government Bodies	IT Service Provider company (Italy)	Help Desk for Universities	<p>This case study applied process mining techniques to help desk data collected to expose performance issues. Specifically, the study involved process discovery and comparison of execution traces associated with various cohorts of customers including (i) requiring assistance, (ii) presenting malfunctioning with their system, and (iii) requiring changes.</p> <p>Aim of the project: improving Service Desk and ticket management and understanding how the real processes are performed inside the company.</p> <p>Thanks to process mining, the following results were achieved:</p> <ul style="list-style-type: none"> - Real process map was identified - Origins of bottleneck and reloop were detected - More transparency about the ticket processes was obtained in order to improve customer orientation of its Service Desk 	ProcessGold (Netherlands)	2016
Public	Public Administration and Government Bodies	Copyright mediator company (Italy)	Event Licence Approval	<p>This case study applied process mining techniques to event licence approval process to expose deviations and performance issues. Specifically, the study involved process discovery of the "as is" model and the conformance checking of the "as is" process to the expected process.</p> <p>Aim of the project: finding out the root of the problem that was affecting company's core processes.</p> <p>Process mining was used to conduct a conformance and performance analysis, which enable the firm to achieve the following objectives:</p> <ul style="list-style-type: none"> - Anomalies and bottlenecks were clearly detected - Was found that core processes didn't perform well because of the lack of quality data and transparent communications. <p>As a result, improvements could be made with measurable effects on the internal quality of the service.</p>	Horsum - Accelerating technology companies (Belgium)	2016

Telecommunications	Telecommunications	Vodafone (UK)	Process Improvement	<p>Vodafone deals with copious amounts of data, and needs a robust process mining solution to keep up to speed and scale.</p> <p>Vodafone deeply looks into its process variations, non-compliances, workarounds, and more to compare their results to goals.</p> <p>-Process Mining facilitates Vodafone's existing SAP infrastructure – enabling continual real-time analytics and seamless transition to new process mining functions.</p> <p>-Vodafone mentions their new process mining also enables faster GTM; they can resolve things faster and more proactively because they have more visibility into their processes and operations.</p>	HSPI Management Consulting (Italy); Queensland University of Technology (Brisbane, Australia)	2016
Consumer Goods	Personal & Household Goods	Xerox (India)	Process Optimization	<p>Xerox is currently starting to use process mining in order to develop new technology projects. The focus of these projects will be on characterizing and analyzing complex business processes, designing cost and performance optimized policies for execution, monitoring, and identifying scope for process improvements</p>	HSPI Management Consulting (Italy) Queensland University of Technology (Brisbane, Australia);	2016
Industrials	Industrial Engineering	Production Company in a B2B environment	Production Process	<p>Goal: to reduce throughput time from 3 months to 1 months (later further reduction was anticipated).</p> <p>Process mining was used for:</p> <p>-Analysing bottlenecks, which revealed also unexpected ones.</p> <p>-Measuring “as-is” situation (throughput/waiting time per resource). Improvements to be performed based on event data were identified.</p>	Celonis (München, Germany)	2016

Services	Support Services	Lassila & Tikanoja (Finland)	Order to Cash	Better visibility to the new ERP system. Reduced ERP Implementation costs. Increased data quality. Reducing risks in ERP deployment.	Xerox Algorithms & Optimization group	2016
Industrials	Automotive & Parts	NDA (Italy)	After Sales Car Maintenance	<p>Goals:</p> <ul style="list-style-type: none"> - Discover and analyze process inefficiencies and critical activities. - Get a holistic overview of all activities from different legacy IT systems, and unstructured and structured data. <p>Results:</p> <ul style="list-style-type: none"> - myInvenio discovered the process involved in the system in its entirety, inclusive of the smallest variance. - myInvenio immediately displayed the visual comparison between the data-derived and the reference model. - The "As is" Process Analysis was completed at a fraction of the estimated budget, slashing 70% of the predicted man-hours and leading to important savings on the overall project's phases. 	Novo Consilium B.V (Netherlands)	2016
Financials	Banking	NDA (Italy)	Loan Management	<p>Goals: Making the right and corrective actions to decrease the lead time.</p> <p>Results: NDA</p>	QPR (Finland)	2016

Healthcare	Healthcare Facilities, Services & Equipment	NDA (USA)	Sales & Order to Delivery	NDA	Cognitive Technology (Italy), OT Consulting	2016
Industrials	General Industrials	NDA (Italy)	Order to Delivery	Goals: The project aimed to apply process mining to provide insights into the Order to Delivery process, to ultimately reduce the delivery time by identifying the optimal delivery routes. Results: NDA	Cognitive Technology (Italy)	2016
Consumer Services	Retail & E-Commerce	NDA (Italy)	New Product Rollout	Goals: The project aimed to define, analyze, monitor, and improve the ideal path, also known as happy path, of the company's New Product Rollout process, to ultimately increase the rollout quantity. Every 6 months NDA has a new product rollout. Results: The company found the Happy Path of its New Product Rollout process by the use of Process Mining and found the insight that drove the increase in their new product rollout.	Cognitive Technology (Italy)	2016
Consumer Services	Retail & E-Commerce	NDA (Italy)	Claim Management	Goals: Process mining techniques were used to obtain meaningful information about the Claim Management process provided by multiple corporate IT systems to expose any inefficiencies of the handling to reduce the response time to the claims of their customers. Results: NDA	Cognitive Technology (Italy), OT Consulting	2016

Healthcare	Healthcare Facilities, Services & Equipment	NA	Hip Surgery	Cognitive Technology (Italy)	2016
Technology	Technology	NA	Invoicing	Cognitive Technology (Italy), OT Consulting	2016
Industrials	Manufacturing	NA	ITIL Service Management	QPR (Finland)	2016
Industrials	Construction & Materials	NA	ITIL Service Management	QPR (Finland)	2016

Basic Materials	Forestry & Paper	NA	ITIL Service Management	QPR (Finland)	2016
Public	Defense	NA	ITIL Service Management	QPR (Finland)	2016
Industrials	Manufacturing	NA	ITIL Service Management	QPR (Finland)	2016
Healthcare	Healthcare Facilities, Services & Equipment	NA	Joint Replacement	QPR (Finland)	2016

Industrials	Manufacturing	NA	Marketing & Sales	QPR (Finland)	2016
Technology	Technology	NA	Marketing & Sales	QPR (Finland)	2016
Basic Materials	Chemicals	NA	Material management	QPR (Finland)	2016
Telecommunications	Telecommunications	NA	Order Handling	QPR (Finland)	2016

Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2016
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2016
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2016
Basic Materials	Chemicals	NA	Order to Cash	QPR (Finland)	2016

Industrials	Manufacturing	NA	Order to Cash		QPR (Finland)	2016
Consumer Services	Retail & E-Commerce	NA	Order to Cash		QPR (Finland)	2016
Technology	Technology	NA	Order to Cash		QPR (Finland)	2016
Services	Industry Services	NA	Order to Cash	Better visibility to the new ERP system. Reduced ERP Implementation costs. Increased data quality. Reducing risks in ERP deployment.	QPR (Finland)	2016

Technology	Technology	NA	Order to Cash	QPR (Finland)	2016
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2016
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2016
Basic Materials	Chemicals	NA	Plant Maintenance	QPR (Finland)	2016

Industrials	Construction & Materials	NA	Purchase to Pay		QPR (Finland)	2016
Services	Industry Services	NA	Purchase to Pay	Better visibility to the new ERP system. Reduced ERP Implementation costs. Increased data quality. Reducing risks in ERP deployment.	QPR (Finland)	2016
Telecommunications	Telecommunications	NA	Purchase to Pay		QPR (Finland)	2016
Technology	Technology	NA	Purchase to Pay		QPR (Finland)	2016

Industrials	Manufacturing	NA	Purchase to Pay	QPR (Finland)	2016
Basic Materials	Forestry & Paper	NA	Purchase To Pay	QPR (Finland)	2016
Industrials	Manufacturing	NA	Purchase to Pay	QPR (Finland)	2016
Telecommunications	Telecommunications	NA	Quote to Cash	QPR (Finland)	2016

Services	Industry Services	NA	Service Delivery	Better visibility to the new ERP system. Reduced ERP Implementation costs. Increased data quality. Reducing risks in ERP deployment.	QPR (Finland)	2016
Telecommunications	Telecommunications	NA	Service Repair		QPR (Finland)	2016
Consumer Services	Wholesale	NA	Supply Chain Management		QPR (Finland)	2016
Financials	Banking	NA	Workflow management		QPR (Finland)	2016


Consumer Services	Wholesale	NA	Wholesale	QPR (Finland)	2016
Industrials	Electronics	NA	Electronics	QPR (Finland)	2016
Services	Professional Services	NA	Services	QPR (Finland)	2016
Telecommunications	Telecommunications	NA	Telecommunications	QPR (Finland)	2016

Telecommunications	Telecommunications	Telefónica (Spain)	Digital Operations	-Identification the sources of delays, inefficient communication patterns, and bad practices such as work orders performed out of the scheduled window. As a result, improvements could be made with measurable effects on both the operation costs and the quality of the services.	QPR (Finland)	2016
Industrials	Logistic	Deutsche Post DHL Group (Germany)	Audit	Integration of process mining into DHL's audit process to improve both the time spent for the analysis and the depth of the information audited. -They found that process mining helps to reduce the audit time by 25% in comparison to classical data analytics. In addition, they are now able to identify unknown risks in processes, which helps to add more value to the audits.	QPR (Finland)	2016
Technology	Technology	Zig Websoftware (Netherlands)	Housing allocation process	-Improving the housing allocation process. Every day that a rental property is vacant costs the housing association money. After process mining analysis, these vacancy costs could be reduced by 4,000 days within just the first six months.	Fluxicon (Netherlands)	2016
Utilities	Utilities	SPARQ Solutions (Australia)	Root case analysis	-Improving of the operations. -Discovering the actual problems and involve the relevant people in the root cause analysis. -Analyzing the overall dispatching process as well as the maintenance process for a single machine.	Fluxicon (Netherlands)	2016

Healthcare	Healthcare Facilities, Services & Equipment	Zimmer Biomet (Switzerland)	Value Stream Mapping	- Creating the value stream mapping with a process mining-based analysis of the manufacturing flow in a easier and effective way	Fluxicon (Netherlands)	2016
Financials	Banking	ALFAM Consumer Credit (Netherlands)	Sales Process	They analyzed variation, re-processing, waiting times, and service levels. -By visualizing the processes and the process problems, improvement opportunities could be crystallized in a powerful way	Fluxicon (Netherlands)	2016
Services	Support Services	Dimension Data (South Africa)	Compliance	Each region was responsible for running their own operations with very little enforced standards from a group perspective. The changing business landscape made it necessary for Dimension Data to standardize all their processes across all continents and process mining permitted it.	Fluxicon (Netherlands)	2016
Financials	Insurance	UWV (Employee Insurance Agency) (Netherlands)	Correlation analysis	Authors presented such a framework and its implementation in ProM by defining an analysis use case composed of three elements (one dependent characteristic, multiple independent characteristics and a filter), and they can create a classification or regression problem. -The results of performing an analysis use case is a decision or a regression tree that describes the dependent characteristic in terms of the independent characteristics. -The evaluation has demonstrated the usefulness of		2016

performing correlation analyses to gain insight into processes as well as of clustering event logs according to the results of performing analysis use cases.

Industrials	Logistic	GEFCO (France)	Order and Invoice Process management	The aim of the project was to analyze the existing automated processes in play and based on this analysis, identify bottlenecks overburdened human resources, process variants due to their attributes and in latter cases, propose areas in which could benefit from additional optimizations. Gefco utilized Minit to reveal optimization opportunities in its automated business processes, resulting in 60% productivity increase.	Fluxicon (Netherlands)	2016
Financials	Banking	Bank 1 under NDA	Process Analysis	Analysis of Payment Order Processing process. Analysis of correction/verification team performance. Identification of infrastructural problems in the involved bank infrastructure.	Eindhoven University of Technology (Eindhoven, Netherlands)	2016
Financials	Banking	Bank 2 under NDA	Process Analysis	Analysis of Payment Order Processing process. Analysis of correction/verification team performance. Identification of infrastructural problems in the involved bank infrastructure.	Minit j. s. a (Slovakia)	2016

Financials	Banking	Financial Institution 1 under NDA	Mortgage Approval Process	Analysis of Mortgage Approval process. Data preprocessing from 10 internal systems.	Minit j. s. a (Slovakia)	2016
Financials	Insurance	Financial Institution 2 under NDA	Claim Processing	Analysis of the work load of teams of claim processing team and claim preparation team in order to answer the question: why do the teams need to perform working Saturdays once in a while.	Minit j. s. a (Slovakia)	2016
Technology	Technology	One of the biggest online games providers under NDA	Online game clickstream processing	Analysis aimed at monetization in online gaming, trying to answer questions: - what is the behaviour of people leaving the game at a certain moment - which people and why buy certain extension packs in the game	Minit j. s. a (Slovakia), KPMG CZ	2016
Public	Public Administration and Government Bodies	Vysoka skola manazmentu / City University of Seattle programs (Slovakia)	Compare the utilization of the e-learning platform by different student groups.	Monitor behavior of Moodle users by visualizing the process map Display platform usage in a dynamic animation of the process Analyze statistics and metrics of the process and its variants Analyze the success of individual online activities, evaluate their attractiveness and replace those with low attendance.  The project also led to the creation of ideal study roadmaps for each subject. Minit identified an	Minit j. s. a (Slovakia), Trask	2016

				optimal course of study and time requirements for online activities for prospective students.		
Financials	Insurance	ALFAM (Netherlands)	Process improvement	<p>ALFAM is a subsidiary of ABN AMRO specializing in consumer credits. In the sales process, customer applications need to be assessed effectively and efficiently. For example, it is not worth to put a lot of time into an application when it is clear early on that the application cannot be granted.</p> <p>The case study shows how process mining was used to analyze ALFAM's processes from many different angles. She has analyzed variation, re-processing, waiting times, and service levels. By visualizing the processes and the process problems, improvement opportunities could be crystallized in a powerful way.</p>	Minit j. s. a (Slovakia)	2016
Technology	Technology	Basware (Finland)	Invoice Management	<p>The analysis was conducted for the invoicing process and for a number of selected customers, all using Basware's invoicing system. Analyze the process such as number of open invoices and comparisons between different invoice types or vendors</p>	Minit j. s. a (Slovakia)	2015

Consumer Services	Retail & E-Commerce	EDEKA (Germany)	IT Service Management	<p>The Aim: Scalable on-demand visualization of processes to fully exploit the hidden potential of the ticket data, for optimizing the efficiency and thereby costs of the process. The solution had to meet the following requirements:</p> <ul style="list-style-type: none"> -Quick identification of main sources of error and critical deviations from the to-be processes -Better workforce planning based on the number of incidents in a given period -Support for the standardization of the process. 	Fluxicon (Netherlands)	2015
Healthcare	Healthcare Facilities, Services & Equipment	AMC Hospital (Netherlands)	Conformance analysis from Billing system	<ul style="list-style-type: none"> -Mining the complex hospital processes giving insights into the process -Deriving the understandable models for large groups of patient - Comparing results with a flowchart for the diagnostic trajectory of the gynaecological oncology healthcare process, and where a top-down approach had been used for creating the flowchart and obtaining the logistical data 	QPR (Finland)	2015
Industrials	Transportation	Dockwise (Netherlands)	Procure-to-Pay processes	<p>By using Process Mining was Dockwise able to:</p> <ul style="list-style-type: none"> - Discover that 15% of the orders go through a different process. - Determine that are not always adhered to certain rules and procedural arrangements. - Optimize the quality and usefulness of the KPIs. - Business cases for improvement to establish the process based on facts . - To prepare the BI environment for the use of Process Mining. 	Celonis (München, Germany)	2015
Healthcare	Healthcare Facilities, Services & Equipment	Atrium Hospital (Germany)	Conformance analysis	<p>Process Mining was used in many ways, to obtaining many results:</p> <ul style="list-style-type: none"> -Visualizing the pathway "Malignant Lymphoma " . -The duration of the different patients can easily be fixed and then analyzed . -Finding the difference in fixed times for patients in whom a case manager is involved . 	Eindhoven University of Technology (Eindhoven, Netherlands)	2015

Public	Education	Latin American University (Colombia)	Risk evaluation	Quantifying the level of financial risk associated with each IT service supporting the business process, taking into account different scenarios (optimistic, stable, pessimistic) -Measuring the expected incomes of business processes, the probability for IT threats, and the changes on the performance of its quality attributes. -Analyzing historic events to quantify the impact of IT failures depending on different time horizons (i.e. daily, n-day) and confidence levels (occurrence probability).	Zuiver ICT (Netherlands)	2015
Public	Community, Social and Personal Services	Opéra de Lausanne (Switzerland)	Users accesses analysis	Analysis of the users accesses of the Opera's Storage Area Network (SAN) in order to refine the organisation of the SAN.	Zuiver ICT (Netherlands)	2015
Basic Materials	Chemicals	Kemira (Spain)	Order to Cash		Systems and Computing Engineering Department, School of Engineering, Universidad de los Andes, Bogota (Colombia)	2015
Basic Materials	Chemicals	Kemira (Austria)	Purchase to Pay		Ville de Lausanne (Switzerland)	2015

Consumer Goods	Media	NA	Accounts Payable	QPR (Finland)	2015
Industrials	Transportation	NA	Aircraft turnaround process	QPR (Finland)	2015
Healthcare	Healthcare Facilities, Services & Equipment	NA	Algoneurodystrofia	QPR (Finland)	2015
Healthcare	Healthcare Facilities, Services & Equipment	NA	Cancer Treatment	QPR (Finland)	2015

Healthcare	Healthcare Facilities, Services & Equipment	NA	Cerebrovascular	QPR (Finland)	2015
Financials	Banking	NA	Customer Service	QPR (Finland)	2015
Healthcare	Healthcare Facilities, Services & Equipment	NA	Facial Pain	QPR (Finland)	2015
Healthcare	Healthcare Facilities, Services & Equipment	NA	FirstAid	QPR (Finland)	2015

Healthcare	Healthcare Facilities, Services & Equipment	NA	Hip Fracture	QPR (Finland)	2015
Services	Professional Services	NA	Invoicing	QPR (Finland)	2015
Services	Professional Services	NA	Invoicing	QPR (Finland)	2015
Public	Public Administration and Government Bodies	NA	Invoicing	QPR (Finland)	2015

Technology	Technology	NA	Invoicing	QPR (Finland)	2015
Technology	Technology	NA	ITIL Service Management	QPR (Finland)	2015
Technology	Technology	NA	ITIL Service Management	QPR (Finland)	2015
Healthcare	Healthcare Facilities, Services & Equipment	NA	Laboratory	QPR (Finland)	2015

Industrials	Logistic	NA	Mailman working day	QPR (Finland)	2015
Industrials	Manufacturing	NA	Manufacturing	QPR (Finland)	2015
Industrials	Manufacturing	NA	Manufacturing	QPR (Finland)	2015
Consumer Services	Retail & E-Commerce	NA	Marketing & Sales	QPR (Finland)	2015

Services	Professional Services	NA	Marketing & Sales	QPR (Finland)	2015
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2015
Technology	Technology	NA	Order to Cash	QPR (Finland)	2015
Basic Materials	Chemicals	NA	Order to Cash	QPR (Finland)	2015

Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2015
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2015
Basic Materials	Chemicals	NA	Order to Cash	QPR (Finland)	2015
Basic Materials	Forestry & Paper	NA	Order to Cash	QPR (Finland)	2015

Telecommunications	Telecommunications	NA	Order to Cash	QPR (Finland)	2015
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2015
Consumer Goods	Food & Beverage	NA	Order to Cash	QPR (Finland)	2015
Utilities	Utilities	NA	Order to Cash	QPR (Finland)	2015

Industrials	Manufacturing	NA	Order to Cash		QPR (Finland)	2015
Services	Professional Services	NA	Production		QPR (Finland)	2015
Industrials	Manufacturing	NA	Project Management		QPR (Finland)	2015
Technology	Technology	NA	Purchase to Pay	The analysis was conducted for the invoicing process and for a number of selected customers, all using Basware's invoicing system. They managed to analyse the number of open invoices in order to make comparisons between different invoice types or vendors	QPR (Finland)	2015

Industrials	Manufacturing	NA	Purchase to Pay	QPR (Finland)	2015
Industrials	Manufacturing	NA	Purchase to pay	QPR (Finland)	2015
Basic Materials	Chemicals	NA	Purchase to Pay	QPR (Finland)	2015
Basic Materials	Forestry & Paper	NA	Purchase to Pay	QPR (Finland)	2015

Basic Materials	Forestry & Paper	NA	Purchase to Pay	QPR (Finland)	2015
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Basic Materials	Forestry & Paper	NA	Purchase to Pay	QPR (Finland)	2015
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Basic Materials	Forestry & Paper	NA	Purchase to Pay	QPR (Finland)	2015
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Basic Materials	Forestry & Paper	NA	Purchase to Pay	QPR (Finland)	2015
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Public	Public Administration and Government Bodies	NA	Purchase to Pay	QPR (Finland)	2015
Technology	Technology	NA	Information Technology	QPR (Finland)	2015
Consumer Goods	Food & Beverage	NA	Food	QPR (Finland)	2015
Technology	Technology	NA	Information Technology	QPR (Finland)	2015

Industrials	Industrial Engineering	Veco (Netherlands)	Quality Management (Six Sigma Analysis)	Veco is a precision metal manufacturer. With more than 15 years of experience in supply chain management, Joris is the operations manager and Six Sigma expert at Veco. He has used Minitab to statistically analyze the processes and drive improvements. According to him, Process mining can leverage the human process knowledge in a powerful way that classical Six Sigma analyses can't.	QPR (Finland)	2015
Healthcare	Healthcare Facilities, Services & Equipment	Radboudumc (Netherlands)	Process improvement	Radboud university medical center is an academic hospital that is quite advanced in their adoption of electronic patient record systems, among other things, but process analysis and improvement remains as big a challenge as in all other hospitals as well. Process mining gave advantages to the improvement of healthcare processes based on the example of the Intensive care unit and the Head and Neck Care chain at Radboudumc.	QPR (Finland)	2015
Public	Public Administration and Government Bodies	DUO (Netherlands)	Process improvement of finance request	Unlike typical workflow or BPM systems, event-driven architectures are set up as loosely-coupled process steps (which can be either human or automated tasks) that are combined in a flexible way. The new system was introduced with the goal to improve the speed of DUO's student finance request handling processes and to save 25% of the costs. Process mining can be used to very quickly uncover technical errors in the pilot phase of a new system, as well as gain transparency in the business KPIs for the new process.	Fluxicon (Netherlands)	2015
Healthcare	Healthcare Facilities, Services & Equipment	4 South Australian Hospitals (Australia)	Emergency Department Patient Treatment	This case study applied process mining techniques to patient flow data collected from patients presenting with chest pain at four South Australian hospitals. In particular, the study was a cross-organisational, comparative analysis that aimed to utilise routinely collected patient and treatment data to describe differences in the care processes associated with management of Acute Coronary Syndrome (ACS) practiced in the four hospitals.	Fluxicon (Netherlands)	2015

Telecommunications	Telecommunications	Telecommunication Company (Indonesia)	Customer fulfilment analysis	<p>The aim of process mining implementation is firstly to discover the typical customer fulfilment business process. It is also aimed at assessing the current rate of completed customer fulfilment, the typical component required for the process and the lead time for different types of customer requests.</p> <p>-The company can use the findings as a foundation to improve their business process. First the fact that the completion rate of the customer requests are found to be very low deserves further investigation. Findings regarding typical processes can be used to set standard sets of services which will be useful for prediction and planning of capacity</p>	Fluxicon (Netherlands)	2015
Healthcare	Healthcare Facilities, Services & Equipment	General Hospital of Valencia (Spain)	Health Process Tracking	<p>Performing a detailed review of how the surgery protocol is happening at the hospital is out of the scope of this paper. The main objective of this paper is to demonstrate the potential of the combination of indoor location systems with process mining techniques. Process mining techniques provides an easy to use way to achieve a view of the deployed process. The algorithm perfectly captures the features of the processes, showing them in an easy and understandable view that is accepted by the medical staff in a real environment.</p> <p>-With this information, the health professionals and managers can achieve a real view of the problems that are currently happening. This enables them the improvement of protocols with a better knowledge of the problems, increasing their efficiency and the probability of success for their further deployment in the real context.</p>	Queensland University of Technology (Brisbane, Australia)	2015
Healthcare	Healthcare Facilities, Services & Equipment	Toulouse Hospital (France)	Outpatient clinic redesign	<p>Toulouse Hospital has decided to redesign an outpatient clinic in order to mutualize the 11 consulting services of 6 medical specialties.</p> <p>-Process Mining clearly appears as a good solution to support continuous improvement of complex and continuous (24/24) hospital processes. Furthermore, it could be a relevant tool in diagnosis phase and also to monitor activities.</p>	Institut Teknologi Sepuluh Nopember, Sukolilo, Surabaya, (Indonesia)	2015

Healthcare	Healthcare Facilities, Services & Equipment	Integrating the Healthcare Enterprise (IHE) (US)	Audit and node authentication	Integrating the Healthcare Enterprise (IHE) defines in its Audit Trail and Node Authentication (ATNA) profile how real-world events must be recorded. Since IHE is used by many healthcare providers throughout the world, an extensive amount of log data is produced. In the research they investigate if audit trails, generated from an IHE test system, carry enough content to successfully apply process mining techniques. Furthermore they assess the quality of the recorded events in accordance with the maturity level scoring system.	Instituto Universitario de Investigación de Aplicaciones de las Tecnologías de la Información y de las Comunicaciones Avanzadas (ITACA), Universitat Politècnica de Valencia (Spain); Instituto de Investigación Sanitaria del Hospital Universitario y Politécnico La Fe (Spain)	2015
Healthcare	Healthcare Facilities, Services & Equipment	Hospital in Mainkofen (Germany)	Care station for elderly people	The ward is an intensive care station for elderly people suffering from dementia and similar old-age diseases. Each of the patients needs care around-the-clock -Studied what real-world processes are executed -The process exhibit a relatively high repetition rate The process can be documented directly and time-saving in comparison to the current way	Quelques réflexions autour des métiers de l'Excellence Industrielle, du Supply-Demand Chain Management et de la Gestion du Changement (France); 2015 IEEE International Conference on Automation Science and Engineering (Sweden)	2015

Public	Public Administration and Government Bodies	City of Lausanne (Switzerland)	Process improvement	<p>Administrative processes are typically based on public laws and regulations. As such, you might think that they must be quite simple and well-structured, especially when compared to customer journey or hospital processes. The truth, though, is that administrative processes can become very complicated as well.</p> <p>Léonard and his colleague Ines analyzed the construction permit process at the City of Lausanne, which is regulated by 27 different laws from Swiss federal law, cantonal law, and communal regulation. It takes an average of six months to obtain a construction permit in Lausanne, from when the demand is filed. The administrative and technical employees already handle a heavy workload, while external clients like architects and construction businesses have put pressure on the public works department to speed up the process.</p> <p>The objective of the study was to identify bottlenecks and inefficiencies in the process, of course without changing or removing any of the legally required steps. Léonard will take us on a journey through the project, with all its challenges, highlights, and findings. One of the problems was that there was no proper activity name and Léonard will show hands-on how he used text mining to pre-process the data.</p>	Integrating the Healthcare Enterprise (IHE)	2015
Healthcare	Healthcare Facilities, Services & Equipment	Isala Hospital (Netherlands)	Patients' records management	<p>- Compliance analysis of the whole patients' records management. In average, 30 medical steps have been saved.</p> <p>-Reduction of the emergency management total duration</p>	Institut für Parallele und Verteilte Systeme (IPVS) der Universität Stuttgart (Germany)	2014

Industrials	Construction & Materials	Caverion (Finland)	Performance Management	<ul style="list-style-type: none"> -Measure process performance based on ready defined indicators to ensure proactive actions to any discrepancies - Quicker invoicing and improved cash flow from discovering and removing process bottlenecks - Ability to continuously compare and value process performance and variations per country 	Fluxicon (Netherlands)	2014
Consumer Goods	Personal & Household Goods	Electronical Manufacturer (Netherlands)	Service Refund Process	<ul style="list-style-type: none"> -A critical bottleneck at a subcontracting forwarding company could be detected. -Discoverig that additional documents were requested due to incomplete information at the beginning of the process if it was started through a particular channel. Understanding the problem could reduce this wasteful activity by more than 85% and significantly speed up the process for the customer and reducing customer complaints as well. 	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands)	2014
Financials	Insurance	Bridge Loans (South Africa)	Loan Processes	<ul style="list-style-type: none"> -Making right corrective actions and make the loan application process 40% faster - Gaining a better understanding of how their planned and actual processes may differ and measure the performance of their system processes. They can continuously improve their processes with: -Monthly reports for comparing and analyzing process performance -Proactive process management via quick discovery of problem areas 	QPR (Finland)	2014
Public	Public Administration and Government Bodies	Ville de Lausanne (Switzerland)	Construction permit process	Analysis of construction permit process in order to find bottlenecks.	Fluxicon (Netherlands)	2014

Basic Materials	Industrial Metals & Mining	A steel manufacturer (UK) Strip Products (UK) NDA	Process improvement	Objective: -To investigate the flows of material through the route. -To get insights and practicable knowledge on the approach by using our own data. Results: -Shows issues with the flows -Shows the large number of processes actually undertaken -Shows issues with interpretation of the process.	QPR (Finland)	2014
Basic Materials	Forestry & Paper	MetsäBoard (Finland)	Order to Cash		Ville de Lausanne (Switzerland)	2014
Financials	Banking	NA	Finance		Tata Steel UK (UK)	2014
Financials	Banking	NA	Finance		QPR (Finland)	2014

Consumer Services	Wholesale	NA	Invoicing	QPR (Finland)	2014
Industrials	Manufacturing	NA	ITIL Service Management	QPR (Finland)	2014
Technology	Technology	NA	ITIL Service Management	QPR (Finland)	2014
Public	Education	NA	ITIL Service Management	QPR (Finland)	2014

Financials	Banking	NA	Loan Approval	-Making right corrective actions and making the loan application process 40% faster. - Gaining a better understanding of why actual processes may differ, and measuring the performance of the system processes. - Monthly reports for comparing and analysing process performances. -Proactive process management via quick discovery of problem areas.	QPR (Finland)	2014
Consumer Goods	Food & Beverage	NA	Logistics		QPR (Finland)	2014
Industrials	Construction & Materials	NA	Marketing & Sales		QPR (Finland)	2014
Industrials	Construction & Materials	NA	Order to Cash	-Measuring process performance based on ready defined indicators to ensure proactive actions to any discrepancies. - Quicker invoicing and improved cash flow from discovering and removing process bottlenecks. - Ability to continuously compare and value process performances and variations per country.	QPR (Finland)	2014

Consumer Goods	Food & Beverage	NA	Order to Cash	QPR (Finland)	2014
Technology	Technology	NA	Order to cash	QPR (Finland)	2014
Consumer Services	Wholesale	NA	Order to Cash	QPR (Finland)	2014
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2014

Basic Materials	Forestry & Paper	NA	Order to Cash		QPR (Finland)	2014
Industrials	Manufacturing	NA	Order to Cash	Process Transparency and finding out the ideal process. Process Development.	QPR (Finland)	2014
Industrials	Manufacturing	NA	Order to Cash		QPR (Finland)	2014
Consumer Goods	Food & Beverage	NA	Order to Cash		QPR (Finland)	2014

Industrials	Manufacturing	NA	Purchase to Pay	QPR (Finland)	2014
Public	Public Administration and Government Bodies	NA	Purchase To Pay	QPR (Finland)	2014
Industrials	Manufacturing	NA	Supply Chain Management	QPR (Finland)	2014
Basic Materials	Forestry & Paper	NA	Supply Chain Management	QPR (Finland)	2014

Consumer Goods	Food & Beverage	NA	Warehouse Management		QPR (Finland)	2014
Technology	Technology	NA	Information Technology		QPR (Finland)	2014
Telecommunications	Telecommunications	Norddeutscher Rundfunk (NDR) (Germany)	IT Service Management	-Analyzing Service Desk processes and building the foundation for an optimized Services Management	QPR (Finland)	2014
Telecommunications	Telecommunications	Fiducia (Germany)	IT Service Management	Thousands of requests, service tickets and service calls need to be handled on a daily basis and must be responded to and kept track of immediately. Fiducia wished to implement automatic reporting. Results: -Reconstructed the entire dataset based on HP Service Manager (and SAP Solution Manager in the future). Now possible to perform long-time evaluations and process reconstructions based on the data saved in archives of the last 2-10 years. -Using live process reconstruction, the identification and elimination of bottlenecks, long-running tickets and	QPR (Finland)	2014

process inefficiencies is now possible. To keep track of current trends, live monitoring dashboards have been established

Telecommunications	Telecommunications	Hessischer Rundfunk (Germany)	IT Service Management	-Analyzing Service Desk processes and building the foundation for an optimized Services Management	Celonis (München, Germany)	2014
Consumer Goods	Personal & Household Goods	Siemens AG (Germany)	Service Process Management	With the continuously monitoring and analysis of new data from a multitude of SAP systems around the world, they obtained: - Evidence of weak points - Enabling constant improvement, harmonization and standardization of processes.	Celonis (München, Germany)	2014
Healthcare	Healthcare Facilities, Services & Equipment	Berufsgenossenschaftliche Unfallkrankenhaus Hamburg stands (Germany)	Service Process Management	Clearly assigned tasks, optimized flows of information as well as communication and collaboration across departments and occupation groups result in smooth work flows, short decision making processes and individual solutions. This enables the best possible treatment and rehabilitation of patients across all medical fields. A lean and highly focused organizational structure is an important factor in guaranteeing the best possible treatment.	Celonis (München, Germany)	2014

Healthcare	Pharmaceuticals & Biotechnology	Bayer (Germany)	Process compliance	<p>Bayer AG possesses a highly complex system landscape with hundreds of millions of process instances within more than thirty SAP and Non-SAP systems. The goal of the project BayPat was to bring global transparency to the core processes (procurement, sales and logistics) in order to identify efficiency potentials and ensure process compliance.</p> <p>The solution: process mining is used to reconstruct and monitor global processes in relation to efficiency and risk beyond country, system and company borders. Processes as well as performance and risk indicators can be dynamically analyzed by users creating a completely unseen level of transparency.</p>	Celonis (München, Germany)	2014
Healthcare	Healthcare Facilities, Services & Equipment	Kliniken Südostbayern (Germany)	Performance management for medicinal treatment	<p>The hospitals work efficiently and are conscious of costs as well as revenues in order to stay successful and capable to act.</p> <p>Any profit is solely reinvested into the development of the clinics. Medicinal treatment is not performed based on profit but based on patient need.</p> <p>In order to maintain their good performance and efficiency the Kliniken Südostbayern constantly analyze their structure, organization, systems and processes and adjust their service offer and provision according to demands and changes. Such a consistent development can only be pursued based on solid data. The Kliniken Südostbayern have decided to use the Process Mining solution for hospital management as a tool to obtain all needed information. With Process Mining extracts all necessary data from the hospital information system (HIS) and provides a detailed view of treatment and management processes.</p>	Celonis (München, Germany)	2014
Financials	Banking	DZ-Bank (Germany)	Process data analysis	<p>Research, according to DZ Bank, has to be independent, customer-oriented, transparent and objective. This is why DZ Bank uses quantitative methods that have been scientifically approved when undertaking analyses and making recommendations.</p> <p>Of course business processes also require the highest possible level of transparency. Especially in the banking sector, the analysis of process data from source systems plays a very important role. Employees of the banking sector work with IT-systems every day, for example in relation to electronic files, creating process data</p>	Celonis (München, Germany)	2014

continuously. Process mining permits the improvement of the analysis required.

Services	Support Services	IG Metall (Germany)	IT Service Management	IG Metall places high expectations on its customer service and internal IT Service Management. That's why the IG Metall has opted for the use of Process Mining. Process Mining makes it possible to significantly improve efficiency and quality in the handling of customer requests by visualizing how inquiries are being processed in reality and thus uncovering process weaknesses.	Celonis (München, Germany)	2014
Telecommunications	Telecommunications	SWR (Germany)	IT Service Management	The SWR makes the people in the Southwest of Germany the focus of its program: their stories, their way of life and their topics. The decision of multiple public German broadcasting companies to use Process Mining in the early phase of the company underlines the practical orientation our product concept is based on. The SWR uses the software as its service desk solution and has now integrated the Process Mining for IT service management in order to analyze its service processes. This enabled the company to substantially improve its Service Management.	Celonis (München, Germany)	2014
Industrials	Logistic	Schukat Electronic (Germany)	Order Process management	As a catalog distributor of electronic components, the company puts high emphasis on the ability to deliver and on speed in processing orders. This requires an efficient warehouse, delivery and order management, which can only be accomplished through constant and high-quality IT support. Since complete transparency of business processes is also an important component of constant optimization, Process Mining is part of the IT landscape of the company. In conjunction with SAP HANA, Process Mining	Celonis (München, Germany)	2014

every day creates real-time transparency over the actual processes of Schukat Electronic.						
Industrials	Automotive & Parts	Essmann Automotive (Germany)	Production process system	By using and process mining the Essmann production system, Essmann creates efficient production processes. Integrated into lean corporate processes and into the management system, these represent a key pillar of its long-term success. By involving suppliers at an early stage in the product creation process and promoting team-oriented partnerships, Essmann achieves products which are both excellent and competitive.	Celonis (München, Germany)	2014
Public	Public Administration and Government Bodies	Centraal Bureau voor de Statistiek (Netherlands)	Statistic analysis	Statistics Netherlands is responsible for collecting and processing data in order to publish statistics to be used in practice, by policymakers and for scientific research. With process mining they have improved their performances	Celonis (München, Germany)	2014
Financials	Banking	ING (Netherlands)	Website and call center improvements	Making sure a customer has the best possible experience when interacting with your company is one the most important goals many companies strive for. In light of this ING DIRECT Australia asked for an in-depth analysis of the behavior of their customers on their website before they called the call center. Using process mining they were able to get valuable business insight to make better decisions on how to further develop both their website and call center.	Celonis (München, Germany)	2014

Industrials	Automotive & Parts	Volvo (Germany)	Paths discovery	A first dataset provides data about factory orders for the construction of trucks. The second dataset contains customer orders of trucks. It was discovered that the attribute 'ORDERNUMBER' of any event in a trace of the first event log was also displayed in the attribute 'Omnumber' of the event 'Accepted' in the second event log.	Fluxicon (Netherlands)	2014
Healthcare	Healthcare Facilities, Services & Equipment	Scottish Rite Emergency Department of Children's Healthcare of Atlanta (US)	Pediatric asthma emergency department (ED) processes	Process mining's visual analytics can play an important role in healthcare process analysis. The interactive visual approach enables users to gain insight into the complexity of pediatric asthma care processes. It could help with care quality improvement programs, provider comparison and benchmarking, and analysis of conformance to existing care protocols. An extension that "matches" patients based on a selected care process could potentially make cohort identification far more efficient and possibly even more accurate. Similarly, if certain activities are deemed to be "markers" for a specific clinical condition analysis of the care patterns of all patients with those markers might be used to identify clinical care process variations and their relative impacts on outcomes and costs.	Fluxicon (Netherlands)	2014
Healthcare	Healthcare Facilities, Services & Equipment	EU project's MOSAIC	Datasets of Type 2 Diabetes analysis	Process mining methods in order to derive healthcare pathways. The approach starts by processing raw data, derived from heterogeneous data sources, and create event logs, which contain meaningful healthcare activities. Once event logs have been obtained and tasks and transitions defined, it is possible to explore how state-of-art process mining techniques can be used to gain insights into patients care.	Ghent University, Department of Business Informatics and Operations Management, (Belgium)	2014

Healthcare	Healthcare Facilities, Services & Equipment	Chicago Outpatient Clinic (US)	Analysis of Workflows in Clinical Care	<p>Process Mining was used for workflows analysis for outpatient clinic center, admitting high-risk patients and low-risk patients.</p> <p>Based on the results from process mining, a discrete event simulation model is proposed to quantitatively analyze the clinical center. Sensitivity analyses have also been carried out to investigate the care activities with limited resources such as doctors and nurses. The results suggest that this methodology is a useful and flexible tool for healthcare process performance improvement.</p>	School of Interactive Computing & Tennenbaum Institute, Georgia Institute of Technology (US)	2014
Financials	Banking	Rabobank (Netherlands)	Process improvement	The Rabobank has performed dozens of process mining projects over the past years. Today, it is one of the most successful companies in using process mining for driving change and continuous improvement.	International Conference on Biomedical and Health Informatics (Spain)	2014
Financials	Insurance	MLP Finanzdienstleistungen AG, Germany	Process improvement	The IT at MLP is facing the same challenges as other IT departments everywhere: Delivering excellent IT support for the business, while keeping an eye on costs and demonstrating the value they deliver. Process mining can help to achieve just that by making the actual processes transparent, highlighting waste, and measuring compliance. The case study discusses the benefits such as objectifying the discussion and challenges like getting the data.	Department of Mechanical and Industrial Engineering, University of Illinois at Chicago (US)	2014
Financials	Compliance	KPMG (Netherlands)	Audit	Process mining can not only be used for process improvement, but also for compliance purposes. Are the controls that are in place to reduce risk and fraud actually working? Processes are often documented on paper but running differently in reality. The case study shows the results of multiple client projects, where process mining was applied as an additional auditing tool.	Fluxicon (Netherlands)	2014

Telecommunications	Telecommunications	Pitney Bowes Inc. (USA)	LOB: Customer Service Area: Call Center	Use Cases: <ul style="list-style-type: none"> ● Customer Satisfaction Improvement and Cost Reduction in a very short period of time ● In just 2 weeks after deploying StereoLOGIC, the team has revealed the Average Wasted Time of 43.5% and Average Error Rate of 20% Results: <ul style="list-style-type: none"> ● Cut customer service response time by 56% ● Reduced operational costs by 30% ● Reduced the error rates (errors in servicing customers) from 20% to ~0% ● Achieved 8 consecutive months above 65% NSAT (Global Corporate Target for Customer Satisfaction – first team to achieve globally) 	Fluxicon (Netherlands)	2013
Financials	Insurance	Suncorp (Australia)	Home Insurance Claim	This project aimed to apply process-oriented data mining (process mining) to Home Insurance Claims processing records provided by Suncorp with a view to find insight into the reasons behind lengthy processing times. <ul style="list-style-type: none"> - Evidence of two major loops, which represented bottlenecks for the entire process. - Processing time reduction from 30-60 days to 5 days (within the SLA conditions) 	Fluxicon (Netherlands)	2013
Consumer Services	Travel & Leisure	Copenhagen Airports A/S (Denmark)	Bag-tag Analysis	<ul style="list-style-type: none"> - Identification the reasons for KPI discrepancies. - Finding areas with potential process challenges prior to a more in depth, the analysis could be concentrated on areas with possible process challenges, as opposed to the traditional approaches where the process areas analysed in detail, are not necessarily those having the most challenges. - The easy and fast way of looking at the process from two different perspectives revealed many new insights. The perspective could shift from KPIs and bottlenecks, to process performance related to locations 	StereoLOGIC (Canada)	2013

Consumer Goods	Personal & Household Goods	Samsung Electro-Mechanics (South Korea)	Conformance analysis and machine performance analysis	<p>Process modeling and conformance analysis and the machine performance analysis. Results:</p> <ul style="list-style-type: none"> -The derived process model shows real process flows in the factory and is used to understand the manufacturing process. -The conformance checking shows how traces fit with the derived model. -The machine performance analysis shows the utilization of their resources. -The analysis results were presented to the managers of SEM, who were impressed by the obtained results. -The results will be used to improve their processes. In particular, the performance parameters will be used for a factory simulation in the e-FEED system that is the integrated design and analysis system for optimized manufacturing line development. 	Queensland University of Technology (Brisbane, Australia)	2013
Consumer Services	Travel & Leisure	Ana Aeroports de Portugal (Portugal)	Service Process Management	<ul style="list-style-type: none"> -Finding a more effective method to balance the workforce so that resources can ensure performance levels -Changing the process to be much more lean for particular technical categories. It was clearly identified that certain process models that were normalized to several technical categories did not provide the best results for other categories. -Eliminating non-value-add tasks, as well as making changes to the task sequence in order to bring agility and speed in execution. -Identifying unambiguous performance metrics for the process as a whole, as well as for particular tasks, which sparked improvement opportunities based on the performance measured. -Making changes in the way Change Orders are created and recorded in order for technical people to focus on what is really important and improve how they identify execution priorities. -Applying the same practices ("Process patterns") to other ITIL processes, i.e., it was possible to extend the scope of the improvements to other processes that are part of the ITIL reference framework. -Making sure that no Change Order was implemented without being previously authorized 	Fluxicon (Netherlands)	2013

Technology	Technology	IBM i (US)	Database management	For IBM i users, the event data that's perhaps most prolific and most commonly available is in database journals. This provides an event log of potentially thousands to millions of database events related to the files that are journaled. Mining this data for system processes and patterns of events can reveal valuable insights. -Setting Journaling Parameters -Extracting Journal Data -Creating the Animation	Ulsan National Institute of Science and Technology (South Korea)	2013
Healthcare	Healthcare Facilities, Services & Equipment	Seoul National University Bundang Hospital (South Korea)	Modeling of Outpatient Care Mega-Process	From a total of 698,158 event logs, the most frequent pattern was found. The matching rate between the expert-driven process model and the machine-driven model was found to be approximately 89.01%, and most of the processes occurred with relative accuracy in accordance with the expert-driven process model. -Was found that process mining techniques can be applied in the healthcare area, and through detailed and customized analysis in the future, it can be expected to be used to improve actual outpatient care processes.	Process Sphere - End to end BPM	2013
Industrials	Construction & Materials	Ruukki (Finland)	Order to Cash	Process mining was used to respond to the needs of both system management and business. For System Owners: - Gaining transparency to system usage and enabling more focused guideline enforcement and modifications. For Business: -Supporting prioritization of process improvement activities. -Highlighting the importance of transparent process management over functional siloes.	IBM	2013
Services	Professional Services	NA	Finance		Industrial Strategic Technology Development Program funded by the Ministry of Knowledge Economy, Korea (MKE).	2013

Public	Defense	NA	Human Resources	QPR (Finland)	2013
Financials	Banking	NA	Invoicing	QPR (Finland)	2013
Technology	Technology	NA	ITIL Service Management	QPR (Finland)	2013
Financials	Banking	NA	Loan Approval	QPR (Finland)	2013

Industrials	Logistic	NA	Marketing & Sales	QPR (Finland)	2013
Consumer Services	Wholesale	NA	Marketing & Sales	QPR (Finland)	2013
Industrials	Manufacturing	NA	Master Data Management	QPR (Finland)	2013
Industrials	Construction & Materials	NA	Order to Cash	QPR (Finland)	2013

Basic Materials	Chemicals	NA	Order to Cash		QPR (Finland)	2013
Industrials	Manufacturing	NA	Order to Cash		QPR (Finland)	2013
Industrials	Construction & Materials	NA	Order to Cash	Process mining was used to respond to the needs of both system management and business. For System Owners: - Gaining transparency to system usage and enabling more focused guideline enforcement and modifications. For Business: -Supporting prioritization of process improvement activities. -Highlighting the importance of transparent process management over functional siloes.	QPR (Finland)	2013
Industrials	Logistic	NA	Packet Handling		QPR (Finland)	2013

Healthcare	Healthcare Facilities, Services & Equipment	NA	Pregnancy to Birth	QPR (Finland)	2013
Technology	Technology	NA	Purchase to Pay	QPR (Finland)	2013
Technology	Technology	NA	Software Development	QPR (Finland)	2013
Technology	Technology	NA	Web Visitor Analysis	QPR (Finland)	2013

Technology	Technology	NA	Information Technology		QPR (Finland)	2013
Consumer Services	Wholesale	NA	Wholesale		QPR (Finland)	2013
Healthcare	Healthcare Facilities, Services & Equipment	Seoul National University Bundang Hospital (South Korea)	Performance Analysis per patient type	<p>Performance analysis to make a simulation model and analyzed the process patterns according to patient types. The results and applications are following:</p> <ul style="list-style-type: none"> -According to the result of comparing the event log and their standard process model, the matching rate was as 89.01%. That is, they relatively well understood workflows of outpatients and the process was well-managed by the hospital. -Using the performance analysis result, we generated the simulation model. The simulation shows that the 10% increase of patients makes the largest change in consultation waiting time. Thus, we recommended less than 10% of increase. -Extracted the process models and analyzed the process patterns according to patient types. The most frequent pattern of each patient type was discovered. The patterns are used to build a smart guidance app in the ubiquitous healthcare system in the hospital. 	QPR (Finland)	2013

Public	Public Administration and Government Bodies	Auditdienst Rijk (Netherlands)	Assurance on the financial statements	The Dutch National Auditing Service monitors the annual reports of all Dutch ministries and provides assurance on the financial statements that are included. In 2013 they have used process mining to perform their audits in a more efficient way.	QPR (Finland)	2013
Healthcare	Healthcare Facilities, Services & Equipment	St Andrew's War Memorial Hospital (Australia)	Emergency Department Patient Treatment	This project aimed to apply process-oriented data mining (process mining) to provide insights into St Andrew's War Memorial Hospital's (SAWMH) process for treating patients presenting at the Emergency Department (ED) with chest pain. The project conducted performance analyses and comparisons to uncover efficiencies and delays. Specifically the study involved process discovery and comparison of patient flows associated with patients whose stay in ED was less than 4 hours with those whose stay was longer than 4 hours. The study also aimed to investigate potential delays introduced to the patient flows as a result of conducting routine clinical activities (such as blood tests and X-ray imaging) and the determination of factors that influence patients' length of stay in ED.	Ulsan National Institute of Science and Technology (South Korea)	2013
Industrials	General Industrials	Boxes manufacturing unit, (India)	Process modelling and improving	The raw data includes information about events referring to an activity and a case. The information from corrugated boxes manufacturing unit is analyzed using alpha mining algorithm and heuristic mining algorithm. The alpha mining algorithm is used to construct a model which elucidates the activities observed in the event log, noise and exceptions are effectively handled by heuristic mining algorithm -The generated process model reflects the actual process as observed through real process executions. -The heuristic mining algorithm gives the clear information how the process is executed and analysis of the process can be evaluated to improve the performance of manufacturing	Fluxicon (Netherlands)	2013

Healthcare	Healthcare Facilities, Services & Equipment	Children's National Medical Center (Columbia)	Adherence to ATLS protocol analysis	<p>The traces can be compared with an ideal process model (conformance process mining) or with each other to determine the inherent process model (discovery process mining).</p> <p>-Through process mining they determine compliance with the ATLS protocol sequence, review the most commonly occurring sequence and individual deviations, detect differences in clinical behavior after the introduction of the checklist. Although the frequency of activations without notification was not reduced, the addition of the checklist to the trauma resuscitation routine helped standardize the care provided specifically for these events.</p>	Queensland University of Technology (Brisbane, Australia)	2013
Healthcare	Healthcare Facilities, Services & Equipment	IBM T. J. Watson Research Center, NY, (US)	Paths discovery	<p>Identifying care pathways correlated with outcomes from patient event data is of vital importance for gaining the insights of which specific care pathway will lead to a good/bad outcome.</p> <p>Once identified, such care pathways could be used by medical boards for refining care plan descriptions for treating particular diseases such as congestive heart failure etc.</p>	Department of Computer Science and Applications, Dayananda Sagar College of Arts (India); Science and Commerce, (India)	2013
Healthcare	Healthcare Facilities, Services & Equipment	Gynecologic Oncology Department (Belgium)	Patient treatment deviation analysis	<p>Using process mining techniques research has demonstrated that the patients' diagnosis-treatment cycles often significantly deviate from the standardized clinical pathways.</p> <p>-Analyzing these deviations might result in the further enhancement of the quality of care, the promotion of patient safety, an increase in patient satisfaction and an optimization of the use of resources.</p> <p>-Understanding pathway behavior and deviations becomes possible because of an increased availability of reliable data, which originates from the hospitals information systems.</p>	American College of Surgeon's 99th Clinical Congress, Surgical Forum (US)	2013

Healthcare	Healthcare Facilities, Services & Equipment	37 hospitals located in the Lombardia Region (Italy)	Patient treatment	The work showed that process mining and case retrieval techniques can be applied successfully to clinical data to gain a better understanding of different medical processes adopted by different hospitals (and for different groups of patients). It is interesting to analyze the differences, to establish whether they concern only the scheduling of the various tasks or also the tasks themselves. In this way, not only different practices may be discovered that are used to treat similar patients, but also unexpected behavior may be highlighted.	IBM	2013
Healthcare	Healthcare Facilities, Services & Equipment	Maastricht University Medical Centre (Netherlands)	Patient routes in a medical Treatment process	The study has used both the heuristic and the fuzzy miner for the process analysis. It is concluded that the heuristics miner is not able to show all low frequent behavior which makes it difficult to use for extension/improvement research in the medical domain. The fuzzy miner is able to show this behavior but must be accompanied by the Conformance Checker to make sure that all discrepancies are found between the original process and the acquired event log	Department of Decision Sciences and Information Management, Faculty of Economics and Business, Leuven (Belgium)	2013
Healthcare	Healthcare Facilities, Services & Equipment	Many European academic hospital	Diagnosis treatment cycle	Research has demonstrated that the patients' diagnosis-treatment cycles often significantly deviate from the standardized clinical pathways. Analyzing these deviations might result in the further enhancement of the quality of care, the promotion of patient safety, an increase in patient satisfaction and an optimization of the use of resources. Understanding pathway behavior and deviations becomes possible because of an increased availability of reliable data, which originates from the hospitals information systems.	Computer Science Institute, Università del Piemonte Orientale, Alessandria (Italy); Dipartimento di Informatica e Sistemistica, Università di Pavia (Italy); IRCCS Fondazione "C. Mondino", Pavia, (Italy)	2013

Healthcare	Healthcare Facilities, Services & Equipment	Dutch clinic (Netherlands)	Ambulant surgery process	It was used the log of a Dutch clinic for the ambulant surgery process. It is a sequential process that deals with both ambulant patients and ordered stationary patients.	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands); Maastricht University Medical Centre (Netherlands)	2013
Healthcare	Healthcare Facilities, Services & Equipment	Chania Hospital (Greece)	Clustering healthcare processes	The aim is to support decision making by providing comprehensible process models in the case of such flexible environments. Following a process mining approach, they propose a methodology to cluster customers' flows and produce effective summarizations. Then they propose a novel method to create a similarity metric that is efficient in downgrading the effect of noise and outliers. It was used a spectral technique that emphasizes the robustness of the estimated groups, therefore it provides process analysts with clearer process maps.	Department of Decision Sciences and Information Management, Faculty of Economics and Business, Leuven (Belgium)	2013
Financials	Insurance	Suncorp (Australia)	Process improvement	Suncorp, Australia's largest insurance provider, have an established BPM team and process management methodology, and a single claims-processing IT platform. Suncorp is integrating process mining into their existing process management methodology at a range of points across the process lifecycle. They have also explored connecting process mining results to service process outcome measures, like customer satisfaction.	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands)	2013

Industrials	Automotive & Parts	Volkswagen (Germany)	Process improvement	Process mining is particularly interesting when you can apply it to high-volume processes in different entities around the world. This case study talks about the experiences in an analysis project of the ordering process of Volkswagen AG, one of the biggest purchasing processes of the world. At the end of the project, the results were reviewed by different types of stakeholders in a joint workshop.	Eastern Macedonia and Thrace Institute of Technology (Greece); Technical University of Crete, University Campus (Greece)	2013
Industrials	Logistic	Package Delivery Company (Belgium)	Machine Configuration	-Evaluation of the correctness of the configuration of the state machine. -Investigation of a huge number of abnormal flows that have been identified by business users. -Link the different states and events back to the business process.	Fluxicon (Netherlands)	2012
Utilities	Utilities	Alliander (Netherlands)	Purchasing	The Challenges: -Company managers think they know how processes work, but are not sure -Find a process mining solution that can be applied to multiple processes and departments -Discover areas of inefficiency -Staff members have different ways of completing the same process The Results: -Quick insight into how processes really work -Extensive list with potential areas for improvement -Improved process insight delivers efficiency improvements -Complete picture of eight business processes allows for standardisation and staff re-training	Fluxicon (Netherlands)	2012

Basic Materials	Chemicals	AkzoNobel (Netherlands)	Procure-to-Pay processes	<p>The following results were achieved:</p> <ul style="list-style-type: none"> -Management obtained insights into exceptions where the 'First time right' principle was not realized. -Peer comparisons between countries helped to identify best practices that can be adopted on the corporate level. -The direct insights in process improvements enabled the desired 'value extraction' from the P2P processes. -Compliance control was realized to execute on corporate guidelines that must be followed. 	AE architects for business & ICT (Belgium)	2012
Industrials	Industrial Engineering	Vaisala (Finland)	Service Repair	<ul style="list-style-type: none"> -Making effective operations and improved customer satisfaction through clear visual understanding of the real process and the deviations. -Reducing operational costs and time to corrective actions by having the means for effective change management, through fast verification and follow-up of process changes. -Sales process optimization through understanding of the process flows, and the ability to benchmark performances 	Perceptive Process Mining, Lexmark (Lexington, Kentucky)	2012
Utilities	Utilities	NA	Accounts Payable		Capgemini	2012
Public	Public Administration and Government Bodies	NA	Application Management		QPR (Finland)	2012

Public	Public Administration and Government Bodies	NA	Case Management	QPR (Finland)	2012
Healthcare	Healthcare Facilities, Services & Equipment	NA	Healthcare	QPR (Finland)	2012
Healthcare	Healthcare Facilities, Services & Equipment	NA	Healthcare	QPR (Finland)	2012
Public	Education	NA	ITIL Service Management	QPR (Finland)	2012

Public	Public Administration and Government Bodies	NA	Loan Approval	QPR (Finland)	2012
Consumer Services	Car Dealership	NA	Marketing & Sales	QPR (Finland)	2012
Services	Industry Services	NA	Marketing & Sales	QPR (Finland)	2012
Financials	Real Estate	NA	Marketing & Sales	QPR (Finland)	2012

Consumer Services	Car Dealership	NA	Marketing & Sales	QPR (Finland)	2012
Consumer Services	Car Dealership	NA	Marketing & Sales	QPR (Finland)	2012
Technology	Technology	NA	Order to Cash	QPR (Finland)	2012
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2012

Consumer Goods	Food & Beverage	NA	Order to Cash	QPR (Finland)	2012
Industrials	Manufacturing	NA	Order to Cash	QPR (Finland)	2012
Industrials	Manufacturing	NA	Project Management	QPR (Finland)	2012
Healthcare	Healthcare Facilities, Services & Equipment	NA	Referral to Surgery to Discharge	QPR (Finland)	2012

Industrials	Manufacturing	NA	Service Repair	-Making effective operations and improved customer satisfaction through clear visual understanding of the real process and the deviations. -Reducing operational costs and time to corrective actions by having the means for effective change management, through fast verification and follow-up of process changes. -Sales process optimization through understanding of the process flows, and the ability to benchmark performances	QPR (Finland)	2012
Telecommunications	Telecommunications	WDR (Germany)	IT Service Management	NA	QPR (Finland)	2012
Financials	Banking	Bank of Queensland, (Australia)	NDA	NDA	QPR (Finland)	2012
Healthcare	Healthcare Facilities, Services & Equipment	Princess Alexandra Hospital (Australia)	Emergency Department Patient Treatment	This project aimed to apply process-oriented data mining (process mining) to provide insights into Princess Alexandra Hospital's (PAH) 'as is' processes for treating patients presenting at the Emergency Department with multiple traumatic injuries. Specifically, the study involved process discovery and comparison of patient flows associated with various cohorts of patients including (i) patients presenting with minor and major trauma, and (ii) patients presenting at different times of the day.	Celonis (München, Germany)	2012

Public	Education	Queensland University of Technology (Australia)	Student Services	This project aimed to apply process-oriented data mining (process mining) to analyse student behaviour (through the use of Blackboard data) in order to increase student retention.	Queensland University of Technology (Brisbane, Australia)	2012
Consumer Services	Retail & E-Commerce	Woolworths (Australia)	Logistic Process	This project aimed to apply process-oriented data mining (process mining) to provide insights into Woolworths' Delivery Process. Specifically, the study involved process discovery of the delivery process, and the identification of optimal delivery routes.	Queensland University of Technology (Brisbane, Australia)	2012
Healthcare	Healthcare Facilities, Services & Equipment	Dentistry (Netherlands)	Patient treatment	For a complex dental process, it turns out that the introduction of new digital technologies is largely beneficial for patients and dental lab owners, whereas for dentists there is hardly any benefit. -The effects of digital dentistry on the implant value chain is investigated using process mining and discrete event simulation. The implant value chain is concerned with all steps that can be associated with dental implants, covering the stages from patient diagnosis until implant placement.	Queensland University of Technology (Brisbane, Australia)	2012
Healthcare	Healthcare Facilities, Services & Equipment	Hospital of Sao Sebastiano, (Portugal)	Emergency Services	The proposed methodology was applied in the emergency service of a hospital that has its own electronic patient record system, developed in-house. Event data collected from this system was analyzed with a special- purpose tool as well as with plug-ins available in the ProM framework. Using the radiology workflow as an example, they showed how the proposed methodology can provide insight into the flow of healthcare processes, their performance, and their adherence to institutional guidelines.	Queensland University of Technology (Brisbane, Australia)	2012

Healthcare	Healthcare Facilities, Services & Equipment	Medical University of Vienna (Austria)	Compliance analysis for treatment processes	<p>The goal of the project is to analyze skin cancer treatment processes regarding their compliance with relevant guidelines.</p> <p>Focus was put on the transformation and integration of the available data sources as well as billing data of the Main Association of Austrian Social Security Institutions. The challenge was to extract and integrate the data in a process-oriented way in order to apply process mining techniques in the sequel.</p>	Eindhoven University of Technology (Eindhoven, Netherlands); Perceptive Software, (Netherlands)	2012
Healthcare	Healthcare Facilities, Services & Equipment	Department of Ophthalmology at the University Hospital of Leipzig (Germany)	Workflow Management	<p>Objective: Workflow guidance of surgical activities is a challenging task because of variations in patient properties and applied surgical techniques. The objective was the design and implementation of a surgical workflow management system (SWFMS) that can provide a robust guidance for surgical activities.</p> <p>Results: They demonstrated that a SWFMS with a workflow schema that was generated from a subset of 10 patient individual surgical process models (iSPMs) is sufficient to guide approximately 65% of all surgical processes in the total set, and that a subset of 50 iSPMs is sufficient to guide approx. 80% of all processes.</p>	Hospital de Sao Sebastiao, Santa Maria da Feira, (Portugal); Technical University of Lisbon (Portugal)	2012
Healthcare	Healthcare Facilities, Services & Equipment	Dutch Academic Hospital (Healthcare) (Netherlands)	Analysis of Patient Treatment Procedures	<p>Given the heterogeneous nature of these cases, the research first demonstrates that it is possible to create more homogeneous subsets of cases (e.g., patients having a particular type of cancer that need to be treated urgently). Such preprocessing is crucial given the variation and variability found in the event log. The discovered homogeneous subsets are analyzed using state-of-the-art process mining approaches. More specifically, they report on the findings discovered using enhanced fuzzy mining and trace alignment. A dedicated preprocessing ProM plug-in was developed for this challenge.</p>	University of Vienna (Austria); Medical University of Vienna (Austria)	2012

Healthcare	Healthcare Facilities, Services & Equipment	Royal Prince Alfred Hospital Sydney (Australia)	Patient treatment	Gaining Insight from HIV/AIDS Patient Journey Data using a Process-Oriented Analysis Approach with process mining.	University of Leipzig, Innovation Center for Computer Assisted Surgery (ICCAS) (Germany); University Hospital of Leipzig Department of Ophthalmology (Germany); University Hospital of Leipzig, Department of Neurosurgery (Germany); University of Leipzig, Innovation Center for Computer Assisted Surgery (ICCAS) (Germany)	2012
Healthcare	Healthcare Facilities, Services & Equipment	Mercy Health System St. Louis, MO (US)	Clinical workflow management	<ul style="list-style-type: none"> - Automating the method of documenting clinical workflows - Identify varying clinical workflows -Optimizing clinical workflows 	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands) Philips Healthcare	2011

Financials	Insurance	Motor Accident Insurance Commission (Australia)	Compulsory Third Party (CTP) Claim	This project aimed to apply process-oriented data mining (process mining) to historical CTP claims processing records provided by multiple CTP insurance providers with a view to exposing impediments to efficient (time & cost) claims handling and to determine the impact of various “context” factors on the process execution.	School of Information Technologies The University of Sydney, Australia (Australia)	2011
Healthcare	Healthcare Facilities, Services & Equipment	Belgium Hospital (Belgium)	Process improvement for breast cancer patients	They analyze a dataset consisting of the activities performed to 148 patients during hospitalization for breast cancer treatment in a hospital in Belgium. They expose multiple quality of care issues that will be resolved in the future, discover process variations and best practices and they discover issues with the data registration system. For example, 25 % of patients receiving breast-conserving therapy did not receive the key intervention "revalidation". They found this was caused by lowering the length of stay in the hospital over the years without modifying the care process.	The Healthcare Business Process Management Blog	2011
Public	Public Administration and Government Bodies	NA	Application Management		Queensland University of Technology (Brisbane, Australia)	2011
Healthcare	Healthcare Facilities, Services & Equipment	NA	Back Pain patient process		NA	2011

Healthcare	Healthcare Facilities, Services & Equipment	NA	Healthcare	QPR (Finland)	2011
Healthcare	Healthcare Facilities, Services & Equipment	NA	Healthcare	QPR (Finland)	2011
Healthcare	Healthcare Facilities, Services & Equipment	NA	Healthcare	QPR (Finland)	2011
Financials	Banking	NA	ITIL Service Management	QPR (Finland)	2011

Consumer Services	Wholesale	NA	Order to Cash	QPR (Finland)	2011
Consumer Goods	Food & Beverage	NA	Production	QPR (Finland)	2011
Industrials	Manufacturing	NA	Purchase to Pay	QPR (Finland)	2011
Basic Materials	Forestry & Paper	NA	Supply Chain Management	QPR (Finland)	2011

Telecommunications	Telecommunications	NA	Work Order, Delivery		QPR (Finland)	2011
Financials	Insurance	Queensland Nominal Defendant (Australia)	NA	NA	QPR (Finland)	2011
Financials	Insurance	United India Insurance Company LTD. (India)	Paths discovery	Process mining techniques was used to obtain meaningful knowledge about flows, to discover typical paths followed by particular groups of Insurance holders. -Obtaining understandable mined process models for large groups of services to identify the same and different insurance holder process -The results are not derived by human thinking, it goes as per the recorded information and hence the automated mined process model helps the insurance agent, well sufficient for the better insurance holder process.	QPR (Finland)	2011
Financials	Insurance	Association of Certified Fraud Examiners (ACFE) (US)	Transactional logs analysis	Process mining offers the ability to objectively extract a model out of transactional logs. In the light of finding flaws in the process under investigation, this open mind setting is a very important characteristic. Also the ability of monitoring internal controls is very promising. Authors presented a case study in which they applied process mining in the context of transaction fraud. Given the procurement process of an organization using SAP as ERP system, they applied the process diagnostics approach to discover the real process and to analyze flaws, i.e., to discover cases that are not compliant. -This enables the	Queensland University of Technology (Brisbane, Australia)	2011

				explicit possibility of checking internal controls and business rules in more general. This way, process mining enables auditing by not only providing theory and algorithms to check compliance, but also by providing tooling that help the auditor to detect fraud or other flaws in a much earlier stage.		
Healthcare	Healthcare Facilities, Services & Equipment	Clinical Application Domain (Hospital for Sick Children, Toronto & Women and Infants Hospital, Providence, Rhode Island) (Canada)	Patient treatment modeling	<p>This paper presents a framework for process mining in critical care. The framework uses the CRISP-DM model, extended to incorporate temporal and multidimensional aspects (CRISP-TDMn), combined with the Patient Journey Modeling Architecture (PaJMa), to provide a structured approach to knowledge discovery of new condition onset pathophysiologies in physiological data streams.</p> <p>The approach is based on temporal abstraction and mining of physiological data streams to develop process flow mappings.</p>	<p>Bharathiar University, Coimbatore</p> <p>Dept. of IT in VEL TECH, Technical University, Avadi, Tamil Nadu, (India);</p> <p>Department of Computer Science, Rashtriya Sanskrit Vidyapeetha, Tirupati, Andhra Pradesh, (India)</p>	2011
Telecommunications	Telecommunications	Bayerischer Rundfunk (Germany)	IT Service Management	<p>Aim: Establish a Service Desk control station exceeding expectations. Results:</p> <ul style="list-style-type: none"> - Analyzed data from the ticket and telephone routing systems at an hourly rate and provides them for analysis to the control station. - Pre-defined key indicators which provide a quick overview and show existing trends. - Ready-made analyses of business processes allow for a very fast rate of data analysis, drilling down to the core of discovered weak points. Due to real time data assessment implemented, the effectiveness of correction measures can be reviewed immediately. <p>This makes it possible to optimize the entire IT Service organization up to the greatest possible level of efficiency and customer orientation.</p>	<p>Faculty of Business Economics, Hasselt University, Agoralaan, (Belgium);</p> <p>Technische Universiteit Eindhoven, (Netherlands)</p>	2010

Healthcare	Healthcare Facilities, Services & Equipment	Verbeeten Institute (Netherlands)	Achieve standardization in healthcare processes	Goal: to help healthcare organizations achieving a standardized and high quality care process by using historic information gathered by registering the day-to-day operations with a healthcare information system. The research project successfully evaluates the applicability of process and data mining techniques in the context of the problem definition. However, it must be stated that the unavailability of exact activity and waiting time metrics significantly restricted simulation capabilities	University of Ontario Institute of Technology, Oshawa (Canada); The Hospital for Sick Children, Toronto (Canada) Department of Paediatrics, University of Toronto, Toronto (Canada)	2010
Healthcare	Healthcare Facilities, Services & Equipment	NA	FirstAid		Celonis (München, Germany)	2010
Healthcare	Healthcare Facilities, Services & Equipment	NA	Healthcare		Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands)	2010

Healthcare	Healthcare Facilities, Services & Equipment	Maastricht University Medical Centre (Netherlands)	Conformance analysis on clinical pathways	The researchers develop and test dynamic programming formulations for adherence measurement in clinical pathways – based on partially ordered data in medical records and pathway definitions. With these new methods at hand, they analyzed clinical pathway adherence at the Cardiovascular Center of Maastricht University Medical Center.	QPR (Finland)	2010
Healthcare	Healthcare Facilities, Services & Equipment	EncounterPRO Healthcare Resources, Atlanta, (USA)	Systematic Optimization of EHR Efficiency	<p>The goal was to improve medical practice throughput and throughput time using process mining to visualize, compare, and improve ambulatory EHR patient encounter task workflows, by:</p> <ul style="list-style-type: none"> -Generating process models of existing practices. -Comparing measures of productivity (throughput and throughput time). -Explaining differences in productivity in terms of differences in processes. -Suggesting process improvements for low productivity practices. <p>They chose nine pediatric practices relying on the same EHR workflow management system and they compared throughput and throughput times across the practices for October (traditionally a busy month for pediatricians).</p> <p>The goal was to systematically improve EHR WfMS efficiency, by using process mining as a negative feedback control model.</p>	QPR (Finland)	2010
Healthcare	Healthcare Facilities, Services & Equipment	Maxima Medical Centre (Netherlands)	Patient treatment analysis	<p>Research objectives: to find the applicability of process mining on acquiring objective process information in the healthcare domain. Several process mining objectives were set:</p> <ul style="list-style-type: none"> -Research the possibilities discovering the care flow of the rheumatoid arthritis patients -Check if the process model discovered in the first objective corresponds to the predefined care paths and to reality 	Institute of Health Policy & Management, Erasmus Medical Centre, Rotterdam, (Netherlands); Maastricht University Medical Centre, Maastricht (Netherlands); Maastricht Instruments,	2009

Maastricht, (Netherlands)						
Healthcare	Healthcare Facilities, Services & Equipment	Dutch Hospitals (Netherlands)	Process improvement for diabetes foot patients	The project was divided in three phases process visualization, process analysis, and evaluation. During these phases, two approaches, process mining and visual analytics were used to visualize and analyze a business case. Based on the outcomes of this, the method was developed. The main finding is these phases was the fact that process mining and visual analytics as such do not provide with sufficient process insight. Rather, a combination of both approaches is required	EncounterPRO Healthcare Resources, Atlanta, USA	2009
Healthcare	Healthcare Facilities, Services & Equipment	University Hospital Leipzig (Germany)	Analysis of surgical intervention populations	According to differences in patient characteristics, surgical performance, or used surgical technological resources, surgical interventions have high variability. Statistical differences between the gSPMs of ambulatory and inpatient procedures of performance times for surgical activities and activity sequences were identified	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands)	2009
Public	Public Administration and Government Bodies	Dutch governmental organization (Netherlands)	Process Diagnostics	The diversity of current research in this area makes it hard to see how to apply process mining within organizations. Authors propose a process diagnostics methodology, that gives a broad overview of the process supported by the information system. The methodology only uses some of the available analysis methods, and can be performed in a short period of time. -In the process diagnostics methodology, several perspectives of the process are highlighted. The outcome covers the control flow perspective, i.e. "how the process model actually looks like", the performance perspective,	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands)	2009

i.e. “how well does the system perform” and the organizational perspective, i.e. “who is involved in the process and how”. The outcome of the methodology can be used for further analysis on specific topics.

Technology	Technology	ASML (Netherlands)	Test Processes	ASML is the world’s leading manufacturer of chip-making equipment and a key supplier to the chip industry. Authors demonstrated that current process mining techniques can already answer many questions, even yield concrete suggestions for process improvement also in as complex environments as the wafer scanner qualification phase of ASML. However, due to the rapid technological advancements, the analysis results presented are likely to be outdated already for the next series of wafer scanners than the ones that we analyzed. To enable a continuous improvement of the test process in ASML, process analysis should be best carried out in an iterative manner.	Universität Leipzig, Leipzig (Germany); Faculty of Medicine, INSERM, Rennes (France); VisAGeS Unit/Project, INRIA, Rennes, (France);	2009
Financials	Insurance	ING (Netherlands)	Internal Auditing	After implementing Process Mining they gain 100% transparency by using 100% of the cases. Process Mining empowers ING to make a difference in auditing quality by providing better focus on possible risk, control and efficiency issues. -Identification of the most complicated cases -Finding out exceptions in processes -Detecting policy violations and unusual transactions -Find process needles in proverbial haystacks -Checking that processes as designed are also being executed the same way -Verifying if internal controls, such as authorizations, are performed correctly	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands)	2008

Healthcare	Healthcare Facilities, Services & Equipment	Erlangen University Clinic (Germany)	Business Process Analysis	<p>In order to support the analysis of the radiology workflows at the clinic, the authors developed a data warehouse for process mining. During the study several control-flow mining techniques were evaluated, and the authors found that none of the techniques alone was able to meet all the major challenges of healthcare processes, such as noise, incompleteness, multiple occurrence of activities, and the richness of process variants.</p> <p>Despite the limitations, the authors concluded that process mining has a great potential to facilitate the understanding of medical processes and their variants.</p>	IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS	2008
Healthcare	Healthcare Facilities, Services & Equipment	4 Italian Hospitals (Italy)	Patient treatment	<p>Process mining was used to discover how stroke patients are treated in different hospitals. First there was a need for intensive preprocessing of clinical events to build the event logs. Then the ProM framework was used along with the Heuristic Miner to gain insights about the control-flow perspective of the process. Different practices that are used to treat similar patients were discovered, together with unexpected behavior as well. The performance of the process was then analyzed by projecting performance indicators onto the Petri net. It was concluded that process mining can be successfully applied to understand the different clinical pathways adopted by different hospitals and different groups of patients.</p>	Bitz Clarity LTD (UK)	2008
Public	Public Administration and Government Bodies	Municipality in the Netherlands (Netherlands)	Modeling of social networkd and information flows	<p>Authors addressed three issues (1) Organizational model mining, (2) Social network analysis, and (3) Information flows between organizational entities. With a case study, they have shown how each of these issues can be supported. Moreover, they showed how organizational mining can benefit from creatively using approaches developed for the process perspective.</p>	International Congress of the European Federation for Medical Informatics	2008

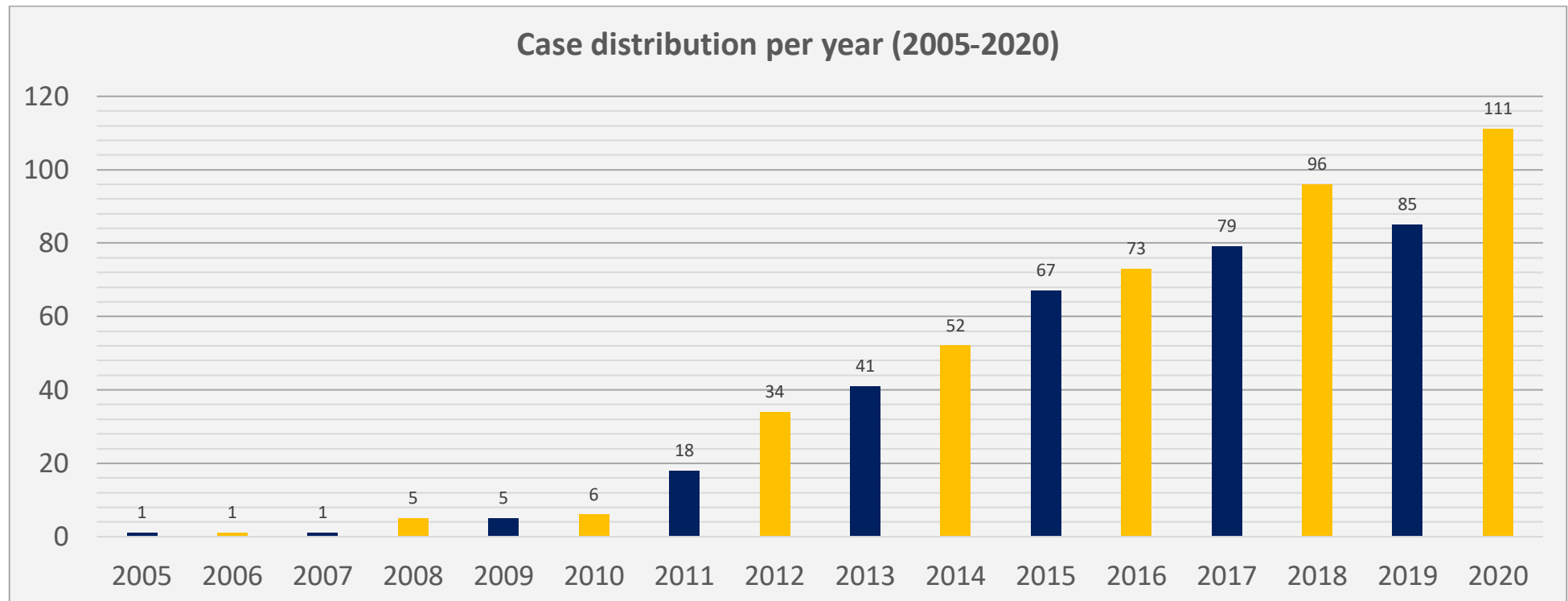
Healthcare	Healthcare Facilities, Services & Equipment	Zhejiang Huzhou Central hospital (China)	Patient workflow	This study adopts process mining to analyze clinical pathways. The key contribution of the paper is to develop a new process mining approach to find a set of clinical pathway patterns given a specific clinical workflow log and minimum support threshold. The experimental results indicate the applicability of the proposed approach, based on which it is possible to discover clinical pathway patterns that can cover most frequent medical behaviors that are most regularly encountered in clinical practice.	Eindhoven University of Technology (Eindhoven, Netherlands); Dept. Computer and System science, University of Pavia (Italy); IRCCS Casimiro Mondino Foundation, Pavia (Italy)	2008
Healthcare	Healthcare Facilities, Services & Equipment	Catharina Hospital (Netherlands)	Analyze careflows of an Intensive Care Unit	The clustering approach of the DWS Algorithm was able to discover some behavioral patterns; however, the discriminants rules were hard to understand. None of them was considered to be useful to gain insight about exceptional medical cases (that can be translated into infrequent behavior) or about variants of careflows. To handle this problem, the author introduced the Association Rule Miner (ARM) plug-in, which aims at discovering association rules and frequent itemsets in the event log. The technique has proved to be useful to obtain behavioral patterns in the event log and to group similar patients. To improve the capabilities of the algorithm in discovering exceptional medical cases, and also to obtain simpler process models, the ARM includes a clustering technique that divides the log into clusters with similar association rules and frequent itemsets.	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands)	2007
Public	Public Administration and Government Bodies	Dutch National Public Works Department (Belgium)	Invoice Management	Dutch National Public Works Department is responsible for the construction and maintenance of the road and water infrastructure. - Using a variety of process mining techniques, they analyzed the processing of invoices sent by the various subcontractors and suppliers	College of Biomedical Engineering and Instrument Science, Zhejiang University (China)	2006

Healthcare	Healthcare Facilities, Services & Equipment	Dutch hospital (Netherlands)	Logistic process of treating patients	Authors propose a knowledge management perspective to provide a strategy for modelling and redesigning a business process. The specific group of patients requires the involvement of different specialties for their medical treatment that leads to more efforts regarding the coordination of care for these patients.	Technische Universiteit Eindhoven, University of Technology (Eindhoven, Netherlands)	2005
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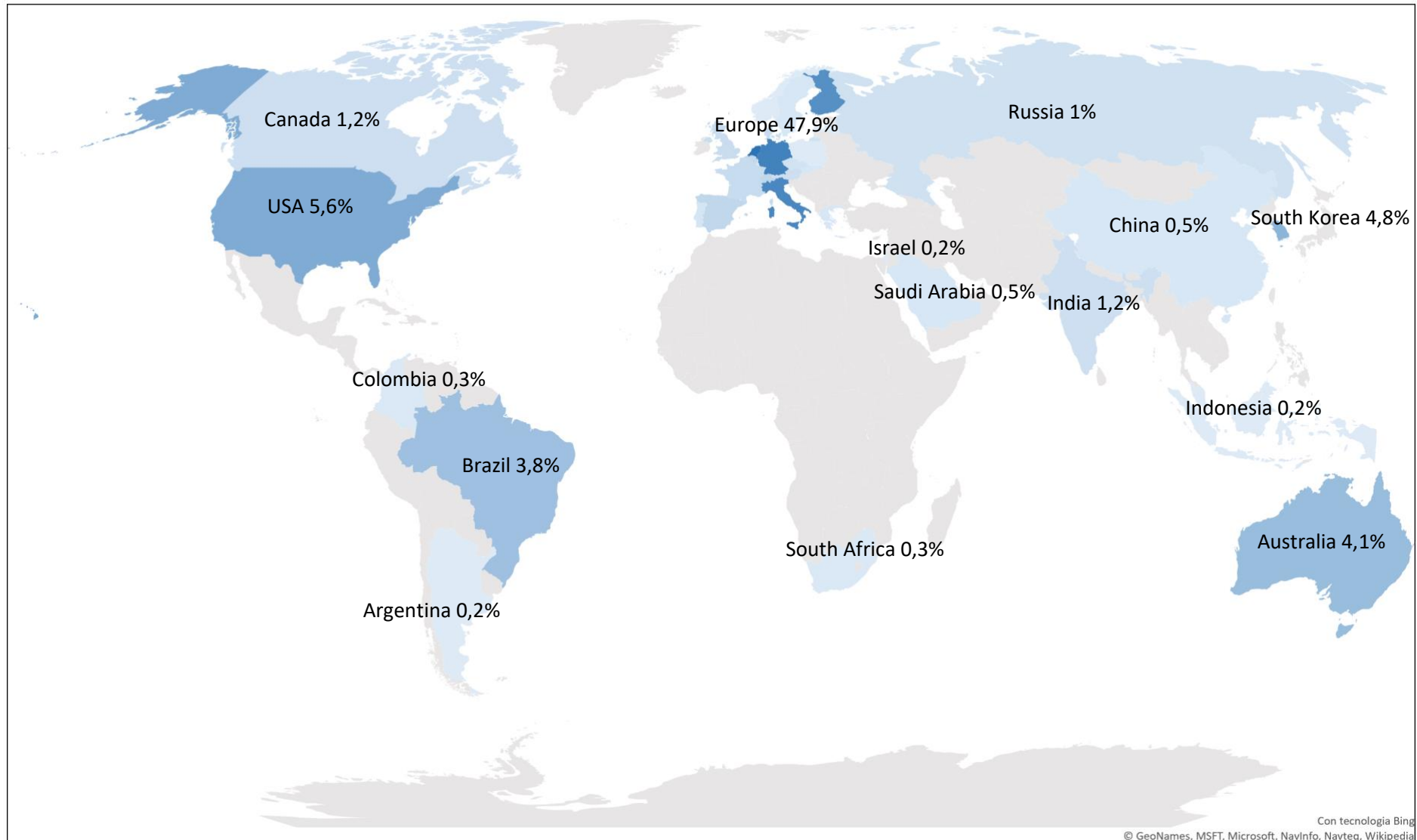
Infographics

Only cases with fulfilled description have been considered for infographics.

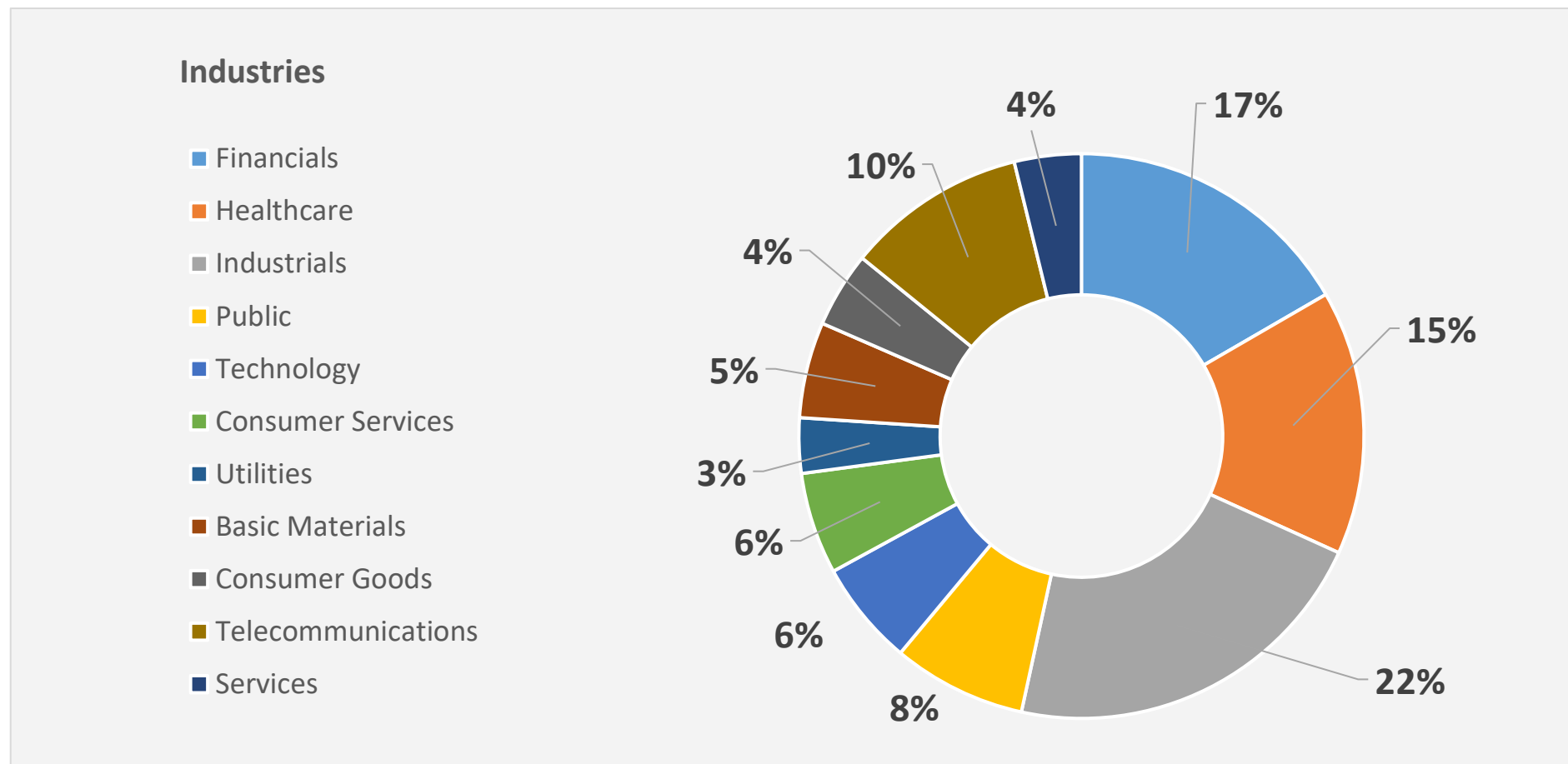
In general, the results of the study confirm that business projects relying on process mining tools and techniques are becoming more popular in recent years. The histogram shows that in the last three years there has been an increase, achieving the peak in 2020 (report has been done on November 2020, therefore it's possible to have ongoing projects, not considered in the data collection); at present, the cases collected in 2020 are 111.



Case distribution per Country



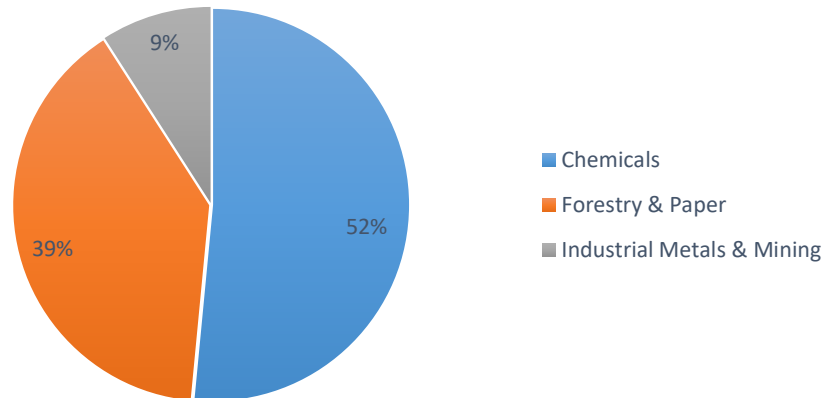
The worldwide cases distribution depicts a situation in which process mining's main users remain concentrated in Europe, North America, Brazil and Australia. Indeed, more than 47% of the global process mining applications collected are located in **Europe**, partially thank to the spread of the *Industry 4.0 master plans and initiatives* that are taking place in several European Countries in recent years.



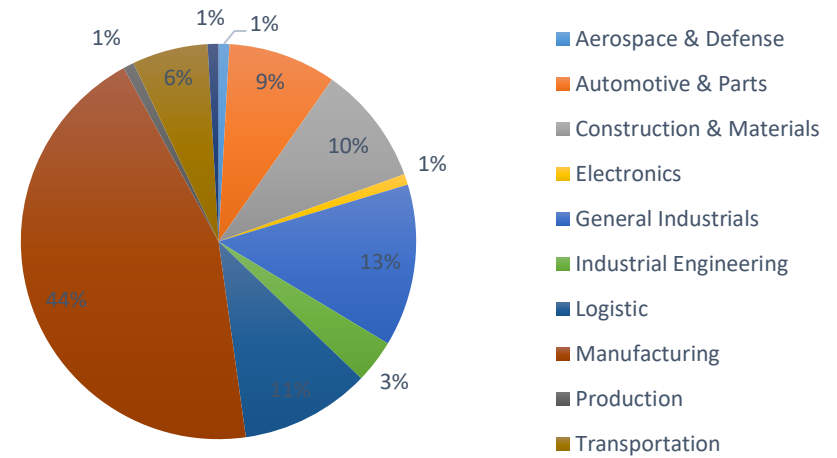
In accordance to the data the most frequent using of process mining tools and techniques are organizations operating in **Industrials** (22%), followed by the ones working in **Financials** (17%) and **Healthcare** (15%). In particular, the cases listed in the industry group are analysed more in depth in the pie charts.

Below, the focus on the main sectors.

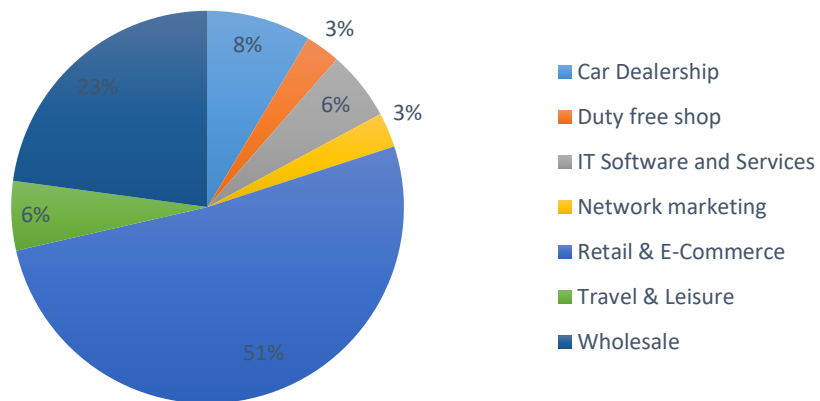
Basic Materials



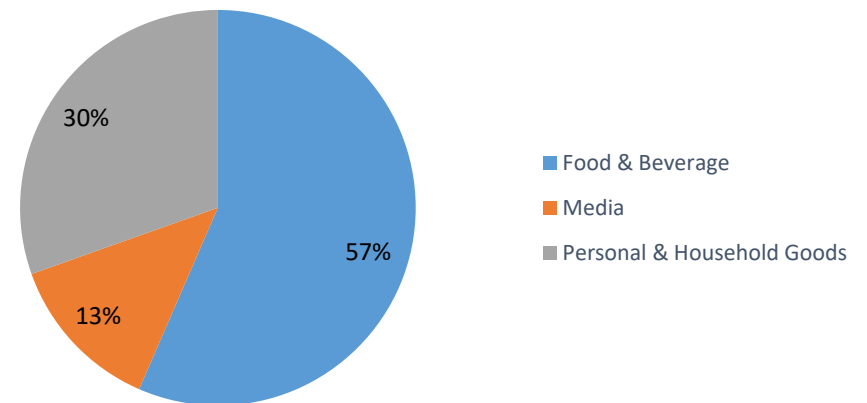
Industrials



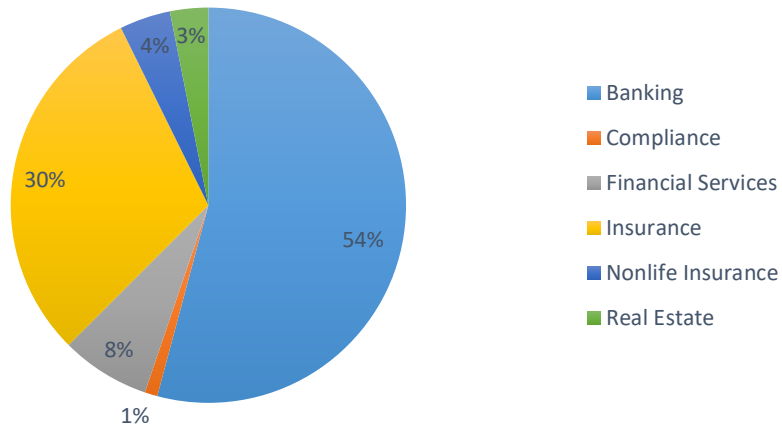
Consumer Services



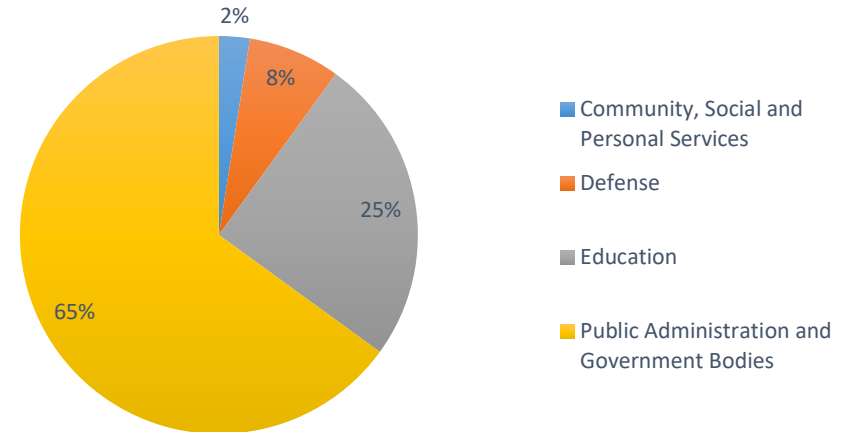
Consumer Goods



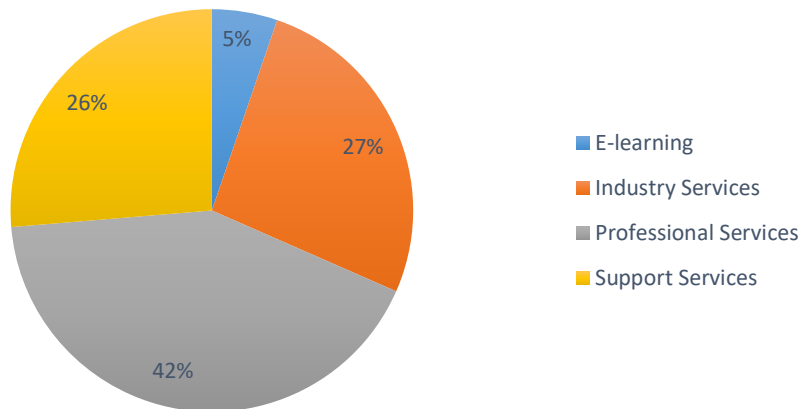
Financials



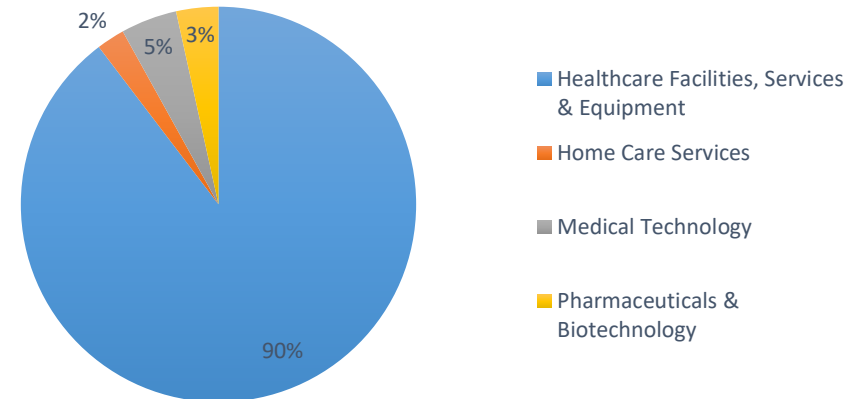
Public



Services



Healthcare



Remarks

In the last decade the field of process mining gained attention from research and practice. The current general discussions about process mining seem unoptimistic about its potentials, as the critiques mostly focus on how process mining is too technical to be a stand-alone tool **without consultancy services**, and that it is not providing real time analytics for instant actions and results. In HSPI we believe that Process Mining will become the **main process management technique** and the **decision-support tool in real time**.

References and Contacts

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