



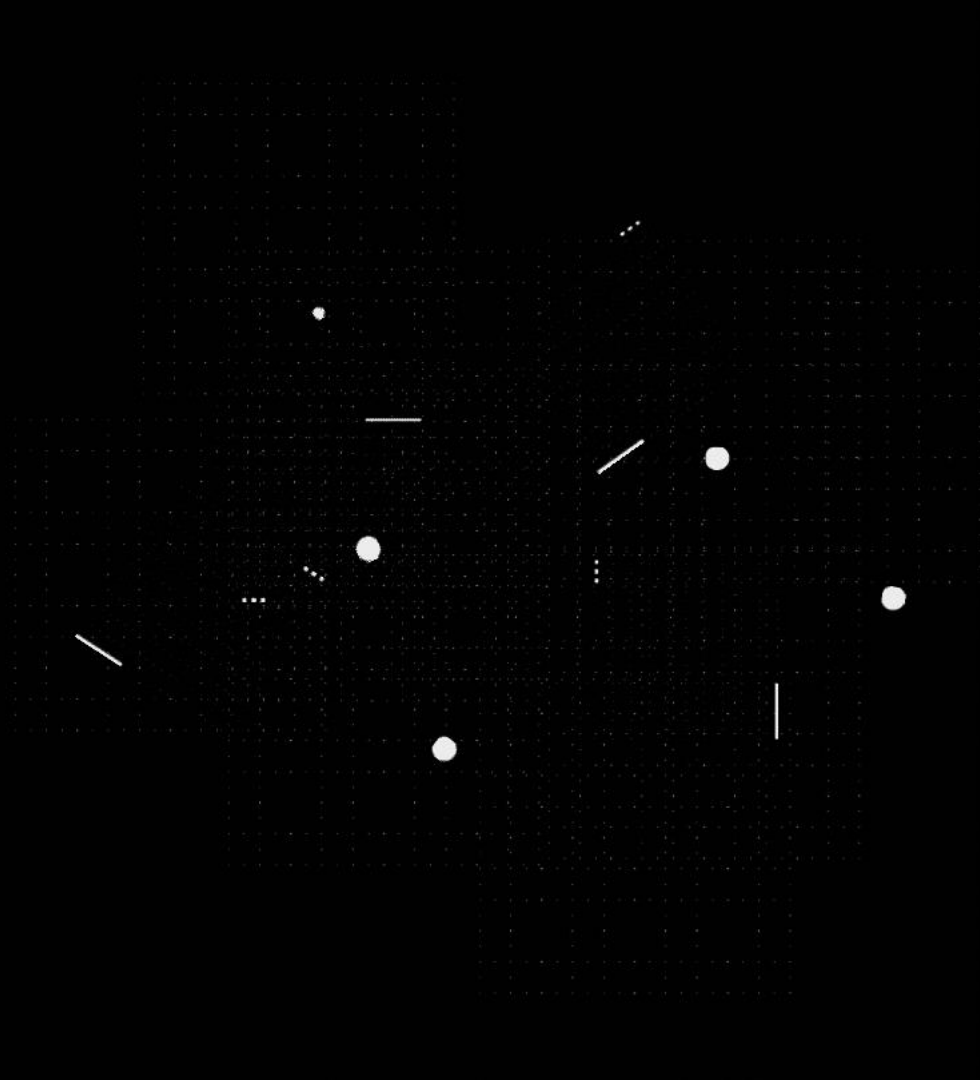
Celonis (R-)evolution

Object-Centric Process Mining in Logistics

Gerold Laue

Lead Value Engineer

Logistics Summit 2023, Düsseldorf







Picking Order



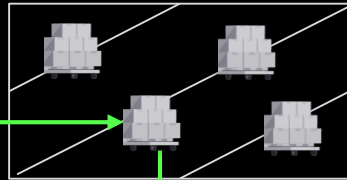
Storage



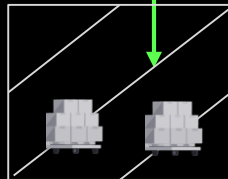
Office



Packaging



Staging



Outbound Dock



It all starts with event data



Case ID	Activity	Resource	Timestamp	Product	Prod-price	Quantity	Address
6350	order confirmed	Aiden	2018/02/13 14:29:45.000	Altbier Mai Edition 0,33l	18,99 €	24	NL-7751DG-21
6283	Order loaded	Lily	2018/02/13 14:39:25.000	Natur Radler 20x 0,5l Kasten	16,49 €	3	NL-7828AM-11a
6253	start picking	Sophia	2018/02/13 15:01:33.000	Altbier Mai Edition 0,33l	18,99 €	3	NL-7887AC-13
6257	start picking	Aiden	2018/02/13 15:03:43.000	Natur Radler 20x 0,5l Kasten	16,49 €	1	NL-9521KJ-34
6185	Rel. Shipping Wave	Emily	2018/02/13 15:05:36.000	Altbier 24x 0,5l Kasten	26,50 €	1	NL-9521GC-32
6218	Rel. Shipping Wave	Emily	2018/02/13 15:08:11.000	Kellerbier 20x 0,33l Kasten	21,49 €	2	NL-7948BX-10
6245	packing finished	Michael	2018/02/13 15:14:04.000	Altbier Mai Edition 0,33l	18,99 €	3	NL-7905AX-38
6272	Order loaded	Emily	2018/02/13 15:20:36.000	Altbier Mai Edition 0,33l	18,99 €	1	NL-7821AC-3
6269	Order loaded	Charlotte	2018/02/13 15:25:21.000	Altbier 24x 0,5l Kasten	26,50 €	1	NL-7907EJ-42
6212	start picking	Sophia	2018/02/13 15:43:39.000	Kellerbier 20x 0,5 Kasten	26,99 €	1	NL-7905AX-38
6323	End picking	Alexander	2018/02/13 15:46:08.000	Altbier Mai Edition 0,33l	18,99 €	1	NL-7833HT-15
6246	Rel. Shipping Wave	Jack	2018/02/13 15:56:03.000	Altbier 24x 0,5l Kasten	26,50 €	3	NL-7833HT-15
6347	End picking	Jack	2018/02/13 15:57:42.000	Altbier 24x 0,5l Kasten	26,50 €	3	NL-7905AX-38
6351	order confirmed	Zoe	2018/02/13 16:17:37.000	Pils 24x 0,5l Kasten	22,99 €	3	NL-9521GC-32
6204	start picking	Sophia	2018/02/13 16:31:28.000	Pils 24x 0,33l Kasten	18,99 €	1	NL-7828AM-11a
6204	packing finished	Kaylee	2018/02/13 16:51:54.000	Pils 24x 0,33l Kasten	18,99 €	1	NL-7828AM-11a
6265	Rel. Shipping Wave	Lily	2018/02/13 16:55:55.000	Altbier 24x 0,5l Kasten	26,50 €	4	NL-9521GC-32
6250	Rel. Shipping Wave	Jack	2018/02/13 17:03:26.000	Weizen Alkoholfrei 24x 0,5l	26,99 €	4	NL-7942GT-2
6328	End picking	Lily	2018/02/13 17:30:16.000	Helles 24x 0,5l Kasten	25,99 €	4	NL-9514BV-16
6352	order confirmed	Aiden	2018/02/13 17:53:22.000	Altbier Mai Edition 0,33l	18,99 €	2	NL-9514BV-16
6317	End picking	Jack	2018/02/13 18:45:30.000	Helles 24x 0,5l Kasten	25,99 €	5	NL-7907EJ-42
6353	order confirmed	Sophia	2018/02/13 20:16:20.000	Pils 24x 0,5l Kasten	22,99 €	4	NL-7751AR-19

It all starts with event data



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event =
case +
activity +
timestamp +

From event data to end-to-end transparency

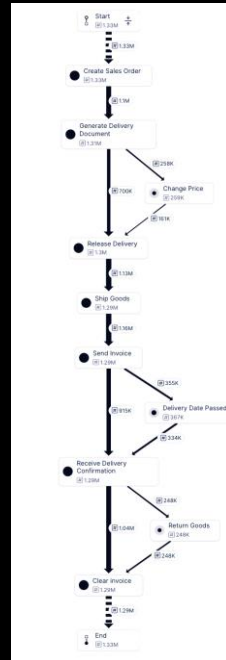
01

How the process was designed



02

How businesses think the process runs



03

How the process actually runs



But processes are dependent upon each other



2 Production Orders



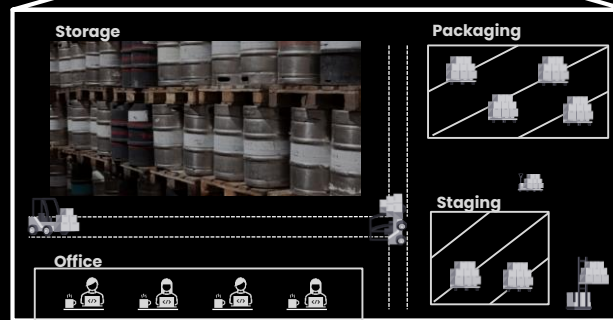
1 Sales Order



1 Invoice



3 Picking Orders



2 Shipments



Challenges

- Process reality is more complex than is reflected by single-process views
- Heterogeneity of data between source systems
- Focus on one single object does not fully capture 1:n and m:n relationships between objects



ORACLE®



Microsoft

many system-dependent
event logs



m:n relationships between objects
require many data models



Object Centric Process Mining

From Mining a Single Process to Mining your Entire Business.



01

Mining a digital twin of vs single processes

Celonis captures all business objects, their events and relations to truly analyze end-to-end processes

02

Breaking process boundaries:

Cross-process dependencies can easily be analysed through a universal object-centric data model

03

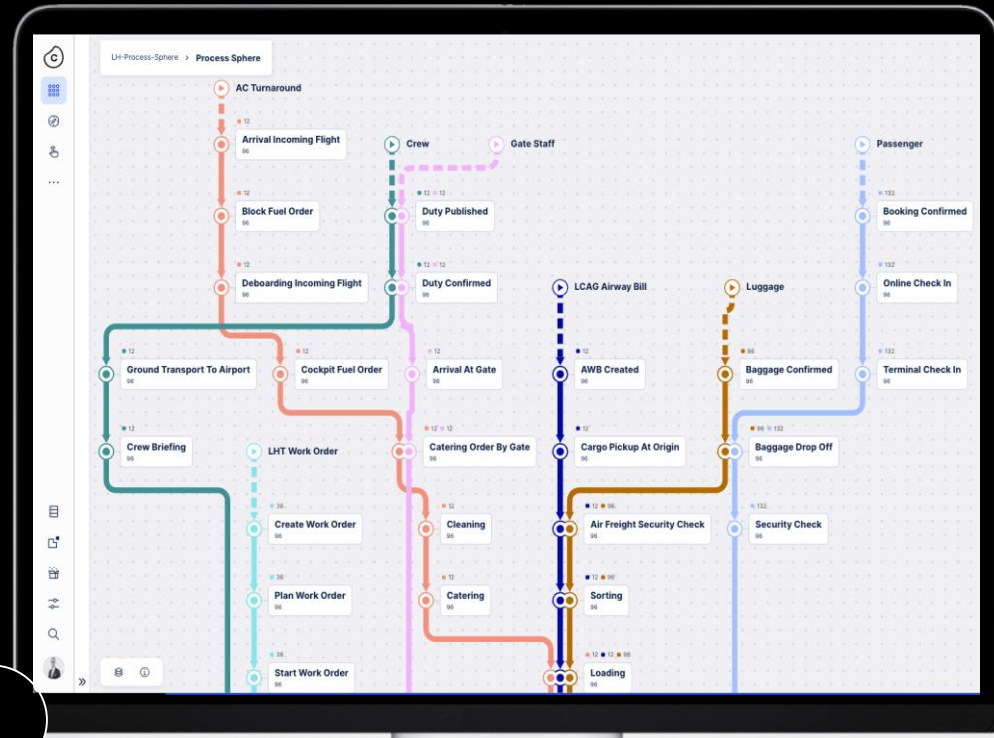
Less modeling and maintenance effort:

Single-source-of-truth for objects based on business logic & one central data model

04

Easy way to insights:

Answer more questions quicker through system-agnostic apps & guided user journeys



Achieve holistic process performance management across Logistics operations



With Celonis, ABInBev has been able to reduce transports where not necessary through end-to-end analyses, preventative measures and optimized planning

17%

Reduction in truck distance travelled



Celonis pioneers and reinvents process mining

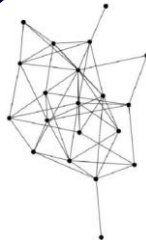
2013

Bringing
Process Mining
outside of academia

Traditional Process Mining

Reveal value opportunities in
isolated processes

Optimize and simplify
individual processes

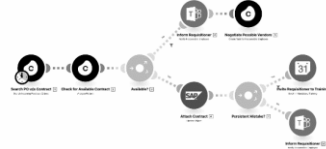


2020

Execution Management

Fix inefficiencies and execute
on insights automatically

Orchestrate your existing
technologies intelligently

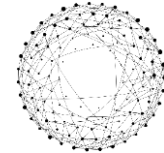


2023

Object-Centric Process Mining

Optimize end-to-end
processes across the
enterprise

Close the gap between
IT and the business



1,350+
Customers

3,000+
Employees

#1
Ranked by industry analysts

EMS 1.0

EMS 2.0



Read the whitepaper

“We can now reliably capture all the complex relationships and interdependencies that exist in modern business and provide a full picture of how processes are connected.”

Professor Wil van der Aalst



celonis

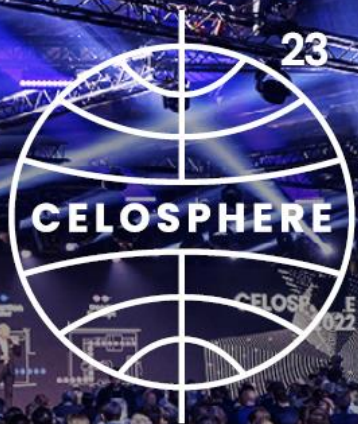
Object-Centric Process Mining

The next frontier
in business
performance

Prof. dr. ir. Wil van der Aalst
Chief Scientist, Celonis



23



Join us at Celosphere Live in Munich, Germany.

[Register now](#)

November
14 - 15



- see you in Halle 1, B2 -