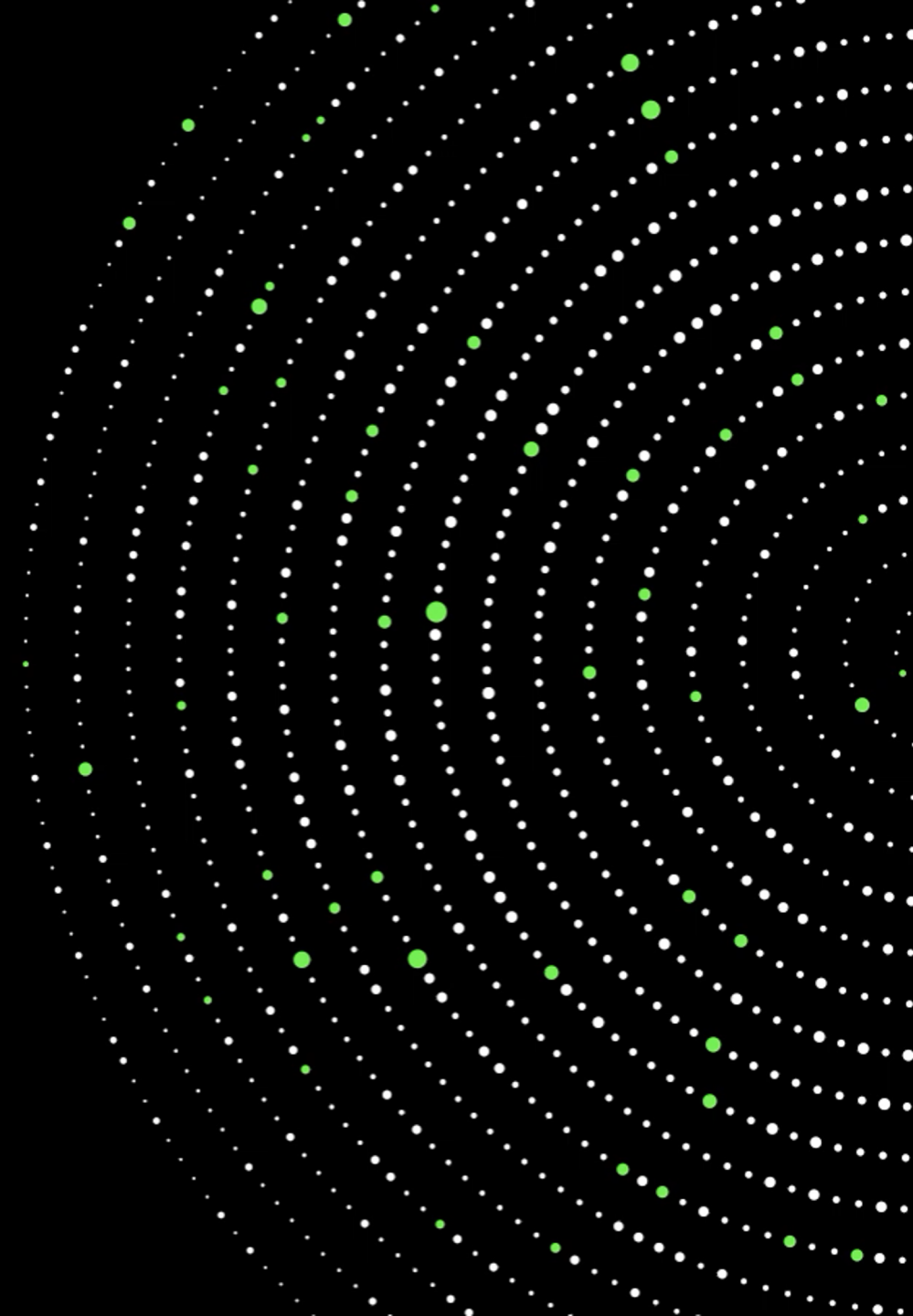




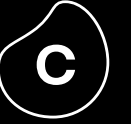
C4C+ Project Handbook

Set your project up for success

Celonis Ecosystem Team
September 2021



Welcome to the C4C+ Project Handbook

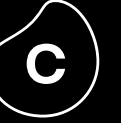


There are a total of 8 sections

- 01 **Introduction to C4C+**
C4C+ Opportunity
- 02 **Stage 00: Get started in your C4C+ journey**
Getting Started Basics | Enablement & Certification | Key Platforms & Resources
- 03 **Stage 01: Kick off your C4C+ project**
Success Factors | Project Scoping | Creating Project Plan | Effort Estimation
- 04 **Stage 02: Establish process connection**
Different Data Connection Methods | Data Transformation | Data Modeling
- 05 **Stage 03: Build your analysis**
Analysis Templates | Data Validation | Analysis Building Best Practices
- 06 **Stage 04: Frame Business Value**
Value Realization Framework | Frame Value | Realize Value
- 07 **Stage 05: Expand**
Building a Long-term Engagement | Expansion Options
- 08 **Additional Resources**
Value Assets | IT Architecture & Data Security | Objection Handling | Other FAQs

Purpose

The C4C+ Project Handbook is designed by Celonis experts to guide you along the Celonis project lifecycle and help you deliver sustainable customer value with accelerated project timelines and execution. This handbook covers all you need from project execution best practices to technical guidance.

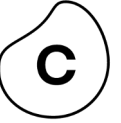


Introduction to



C4C+ is getting Celonis into the hands of every Consultant

Introduction to C4C+



The Celonis Ecosystem

The Cornerstone to our Success



**Malhar
Kamdar**

Chief Customer Officer

*"In one bold move, **every business consultant in the world can now provide the full digital truth** to their clients through any given service offering, program, or practice.*

*This isn't just about arming the world with Celonis and its execution management platform. This is a massive transformational opportunity for all of the world's consulting practices to **embed data and intelligence into their service portfolio as part of their DNA.**"*

Celonis **Press release**

- **Democratize process mining & EMS** by bringing Celonis on every Consultant's desktop

- **Scale and grow** according to your client's needs and business challenges

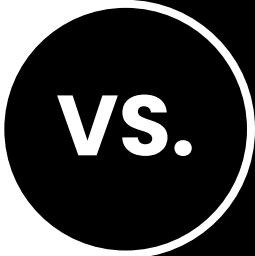
- **Deliver the full client value** by leveraging on all of Celonis EMS capabilities

- **Provide client access** to continuously operationalize project insights and ensure sustainable business value

Regular consulting methods make it hard to identify execution gaps



Old Way
Process Discovery



New Way
Process Mining

Subjective
interview

Objective and
data-driven sources

Partial process
understanding

End-to-end
transparency

One-time
improvement

Continuous value
realization

Celonis EMS accelerates project delivery

across your entire service portfolio



Financial Reporting

Customer Service

Value Creation

Benchmarking

Evaluation

Claims Handling

Process Compliance

Tax Monitor

VAT Processes

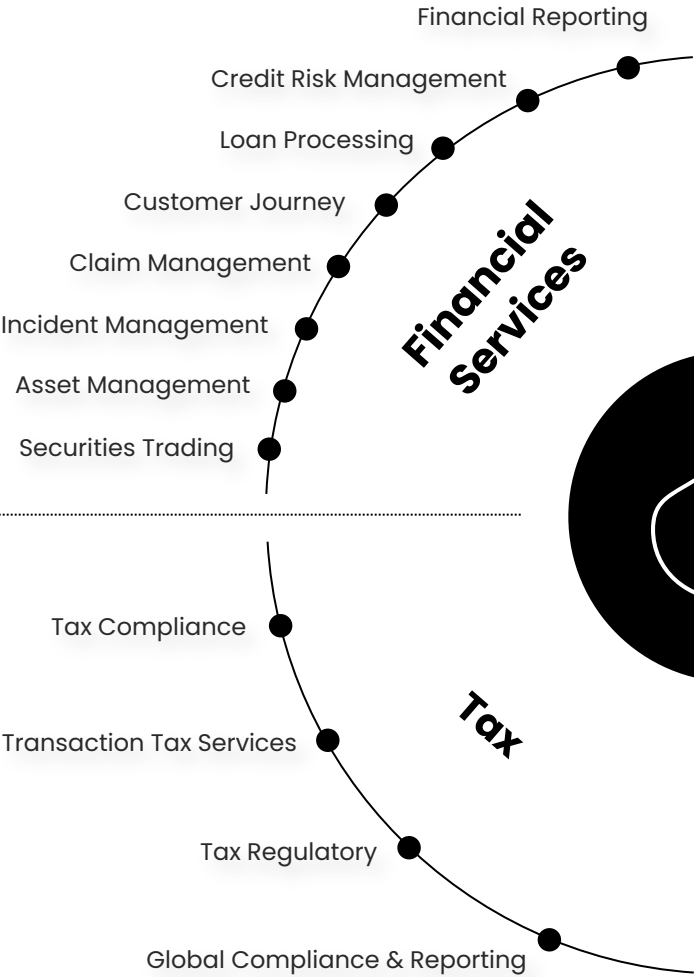
Manual Changes

Payment Insights

eDiscovery

Fraud

Transfer Pricing



External Audit



Liabilities Analysis

Credit Note Analysis

Value-Add for Annual Audit

Depreciation Management

Control Performance

Risk Assessment

External Audit Routine

System Integration



Customer Journey

ERP Consolidation

Working Capital

S4 HANA Migration

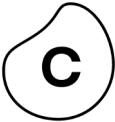
IT Service Management

Shared Services Centers

Transition Management

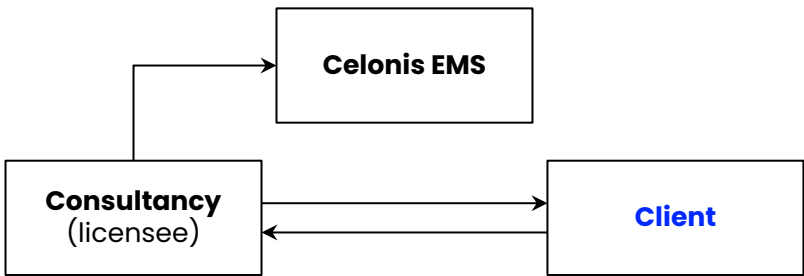
Separating (Carve Out/Outsourcing)

C4C+ and C4C+ Execution will unlock new business opportunities in your consulting engagements



C4C+

“Digital transformation of consulting services”



Consultancy accesses Celonis C4C+ to deliver services to the client. No client access.

- Enabling data-driven consulting
- Full end-to-end transparency
- Fact-based identification of value drivers
- Faster time-to-value
- Obtain detailed process insights through consultancy
- Low client resource commitment
- Value-based resource allocation

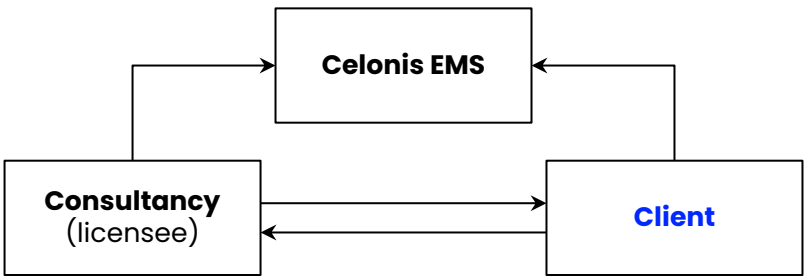
EMS Value Realization

100%

Discovery functionalities	EMS functionalities ¹	
---------------------------	----------------------------------	--

C4C+ Execution

“End Client transformation powered by EMS”



Consultancy accesses Celonis C4C+ to deliver services to the client *with* client access.

- Build a long-term customer relationship
- “Leave something behind”
- Support end-to-end customer value journey
- Unlock new business opportunities to extend the consulting engagement
- Fast adoption of EMS to drive business value
- Operationalization of insights for sustainable efficiency improvement
- No lengthy software procurement process (Consultancy is licensee)
- OPEX optimization (no software subscription)

EMS Value Realization

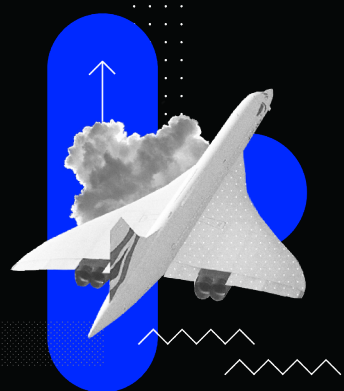
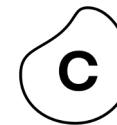
100%

Discovery functionalities	EMS functionalities ¹	C4C+ Execution ²
---------------------------	----------------------------------	-----------------------------

Notes: ¹Unlock the full EMS functionalities upon request (i.e., Action Flows & Transformation Center) | ² Full Enterprise EMS capabilities incl. End client Access, Action Flows, Real-Time Connection, Scheduling, etc.

Your perfect End-to-End Celonis Journey

Leverage all Celonis GTM Motions for your client engagements



Start with a
Celonis Project Template
Consultancies can develop their own standard templates or use Celonis Quickstarts

Consulting Project
Process Discovery &
Execution Gap
Analysis
AND/OR
Pilot for Celonis EMS

C4C+ Execution
Provide end client
Access & leverage
Full EMS Capabilities

→ 5+ Client User
→ ∞ Consultants

(Project Templates can be
directly used for a C4C+
Execution Engagement)

Client has at the moment no interest to pursue with a software purchase but wants to fully leverage Celonis EMS capabilities

C4C+ Execution

Expansion & Scaling to ensure long-term engagement

- Client User/APC based Growth
- ∞ Consultants
- C4C+ Execution can be started with no contract and no involvement from procurement

EMS Enterprise license

Initiate an EMS Enterprise license sales cycle

- **Co-selling**
Collaboration with Celonis Sales & provide joint offer
- **Resell**
Benefit from reselling discounts

Client intends to be licensee and is interested to pursue with a software purchase. Client building up their own Capabilities.

Project Templates
for every Service Line

Digital Truth
in every Consulting Projects
(duration 2 – 6 weeks)

Operationalize
& Execute
Project Insights

Sustainable
and Long-term
Business Value

Continuous
Improvement as
Trusted Advisor

C4C+ Testimonials

Introduction to C4C+



Accenture

Joel Vander Weele
North American Process Mining Practice Leader

"We believe that digital transformation is coming for every industry – including consulting. With C4C+, we are transforming how our people work with our clients to solve process problems and set up a value realization capability."



Capgemini Business Services

Lee Beardmore
Chief Innovation Officer

"We used to gather information about existing client processes through a series of in-depth interviews, often backed by questionnaires. Today though, a significant proportion of discovery work can be delivered digitally, using Celonis to visualize, assess and measure key business processes. Celonis helps to identify key pain points in the form of bottlenecks, process variations, and exceptions to accelerate an understanding where improvements should be applied. Celonis enables us to provide to our clients with an evidence-based, data-driven assessment to deliver improvement recommendations."



PwC

Christian Bartmann
Partner, Global Celonis Alliance Lead

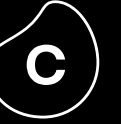
"Building technical and digital skills in our global workforce is at the heart of our new global strategy we call 'the new equation'. C4C+ allows us to build the necessary skill set around execution management and deliver intelligent PwC solutions, running on the Celonis platform, to our clients as a managed service. Our goal is to give every PwC consultant the possibility to use C4C+ to deliver sustained outcomes to our clients."



Deloitte

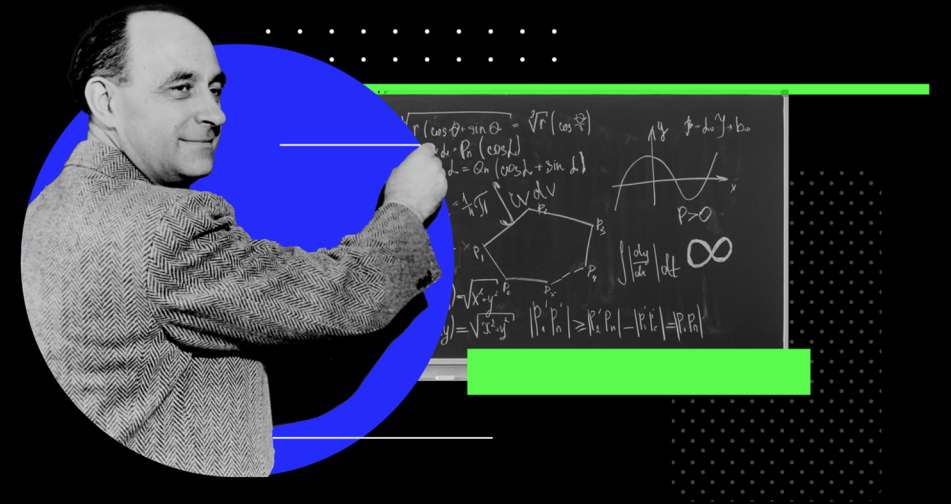
Tobias Unger
Head of Center for Process Bionics (CPB)

"C4C+ provides the full power of the Celonis EMS in a ready-to-use project environment with the ability to scale to a full enterprise solution with C4C+ Execution. Deployments are faster and clients can benefit from our consulting knowhow and assets."



STAGE ZERO

Getting started in your C4C+ journey





STAGE ZERO

Get started in your C4C+ journey

Introduction

This section covers the basics of getting started with C4C+ and walks you through the details of 4 main phases.



01

Get access to C4C+

Sign-up for C4C+ project hub and get started for free

02

Form your team

Understand skills you need and establish your team

03

Get trained

Explore Celonis partner enablement program

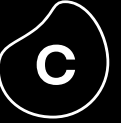
04

Discover key platforms

Explore Partner Portal, TryCelonis, Online Training Platform and many more

1. Get Access to C4C+ Project Hub

Your one-stop shop for all consulting projects



C4C+ Project Hub

Oversee and manage lifecycle of all Celonis projects

Monitor individual project APC consumption

Self-service administration of project environments

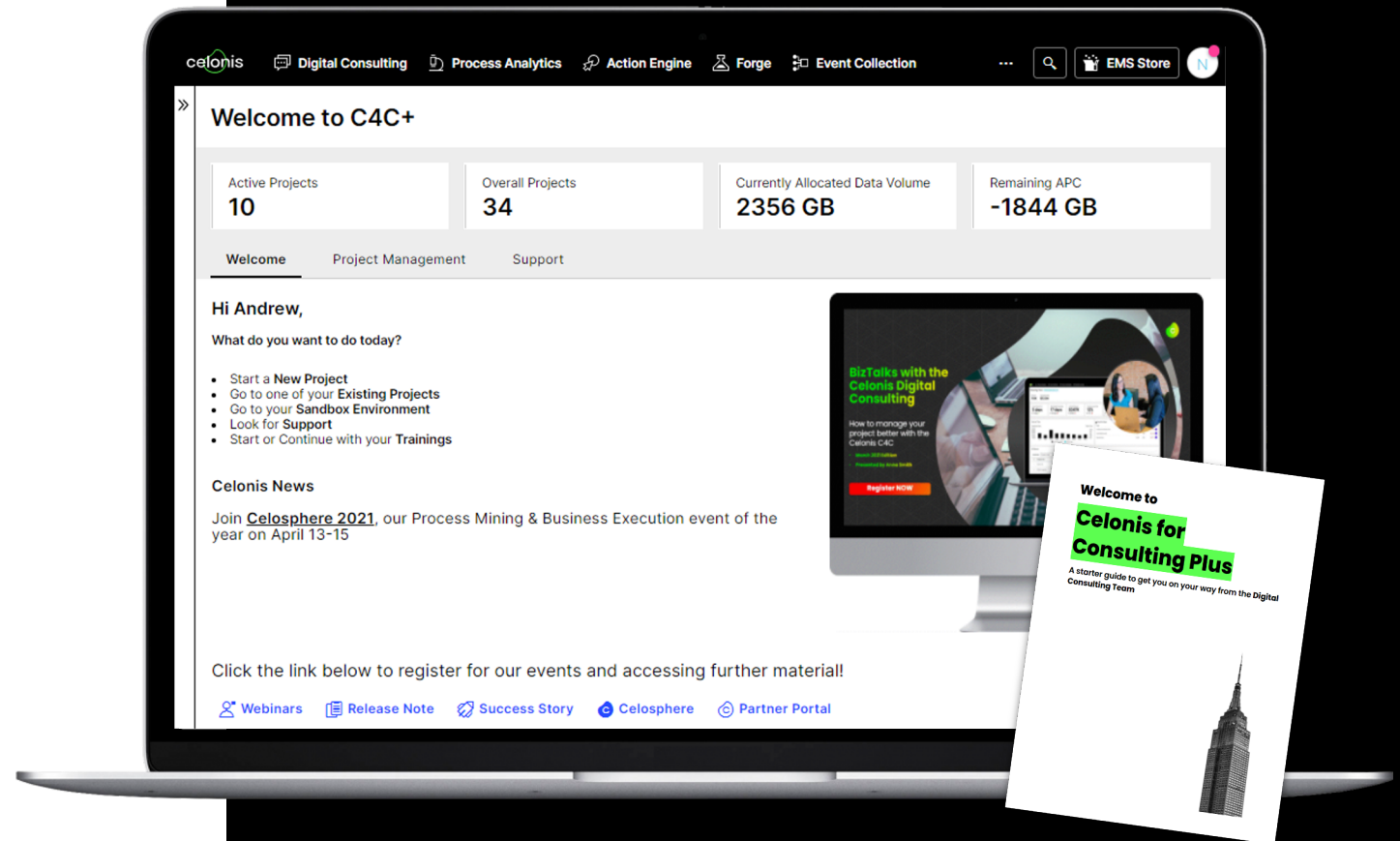
Easy access to available support channels

Access to project environment

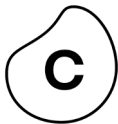
[Click here](#) to sign-up

... and start your Celonis project today!

[Click here](#) for video introduction



2. Form Your Team



Your Team

Project Manager

Data Engineer

Analyst



Client (Core) Team

Project owner

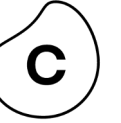
Business process owner/Process expert

IT engineer

Client (Stakeholder) Team

Executive Sponsor

Comprehensive Consultant Enablement Program



Level 05

Continuous Learning

Level 04

Hands-On
Enable/Adopt/Improve

Level 03

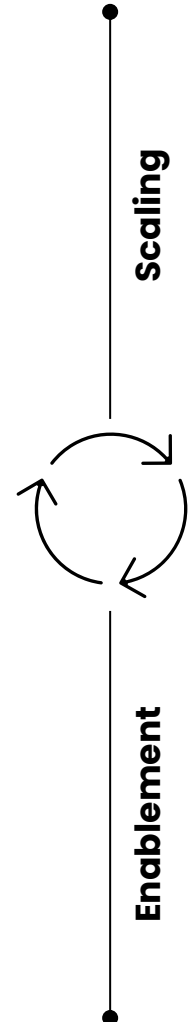
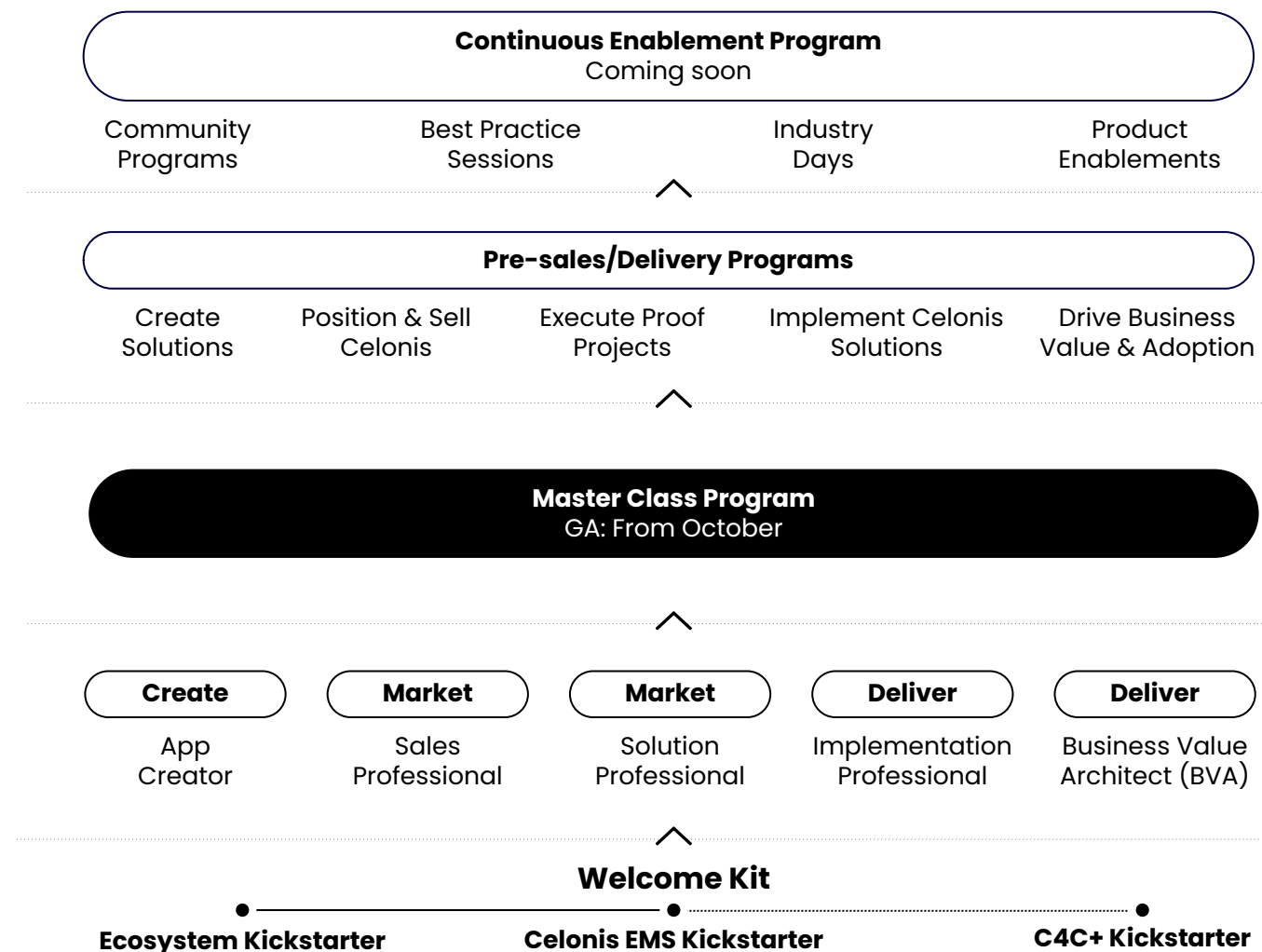
Hands-On Training through
Case Study

Level 02

Role-Based Training Track
& Certification Exam

Level 01

General Onboarding



3. Start your Learning Journey



Welcome Kit

● ————— ● ————— ●

Ecosystem Kickstarter

(~30 min)

Introduction to Celonis

Partnering with Celonis

Partner Enablement Program

Tools & Resources

Celonis EMS Kickstarter

(~1 hr)

Welcome to Celonis EMS

Fundamentals

The Celonis EMS Blueprint

C4C+ Kickstarter

(~25 min, optional)

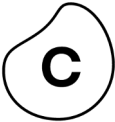
C4C+ & C4C+ Execution

Managing Your Environments

Training & Support

3. Get trained

Level 2: Role-based Training Tracks Overview



**App
Creator**
Create

Build Execution
Applications

**Sales
Professional**
Market

Drive Celonis
sales cycles

**Solution
Professional**
Market

Run C4C+/proof projects
to showcase the Celonis
value

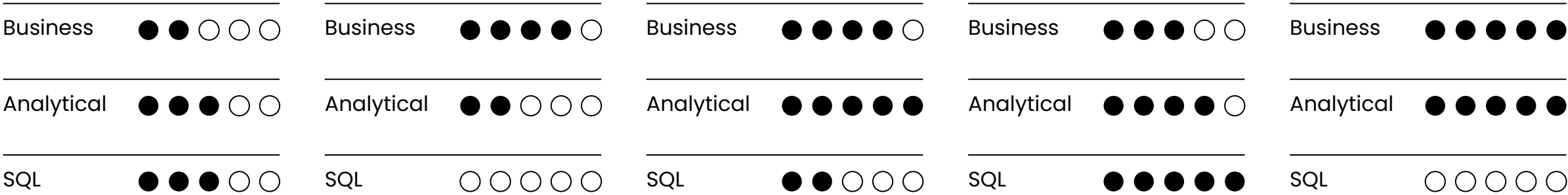
**Implementation
Professional**
Deliver

Execute Celonis
implementation
project(s)

**Business Value
Architect (BVA)**
Deliver

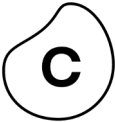
Realize business value for
Celonis customers

Skills Profile



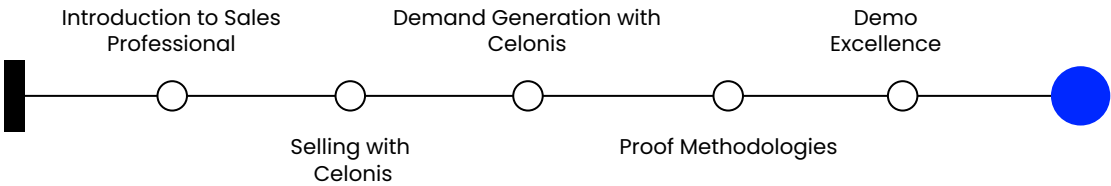
3. Get trained

Level 2: Role-based Training Track Details



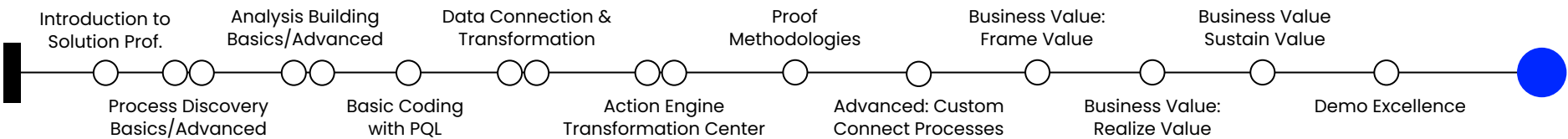
Sales Professional

Duration: ~ 5 hrs



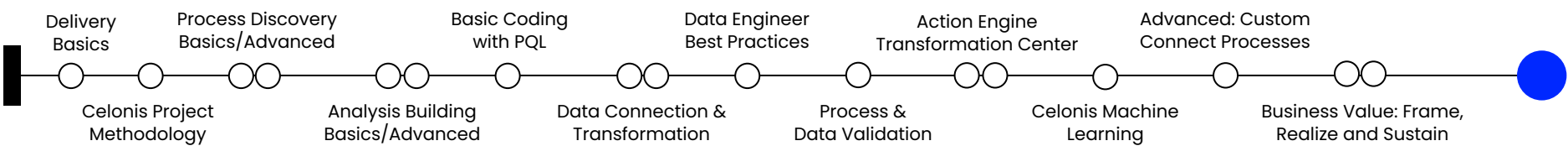
Solution Professional

Duration: ~ 28 hrs



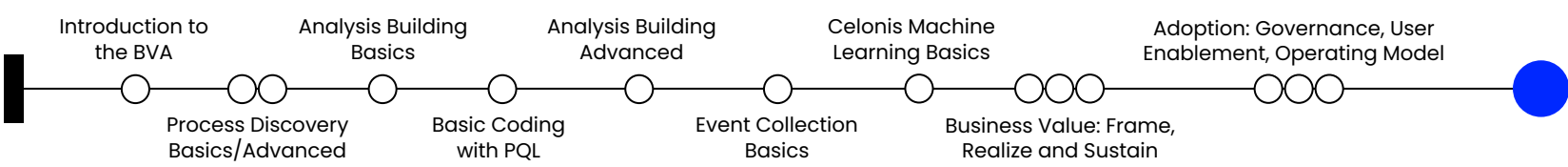
Implementation Prof.

Duration: ~ 29 hrs



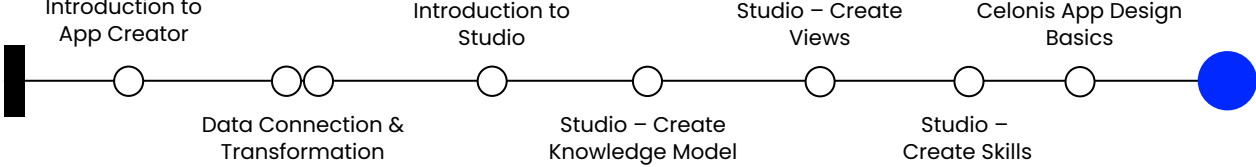
Business Value Architect

Duration: 20 - 23 hrs



App Creator

Duration: ~ 16 hrs

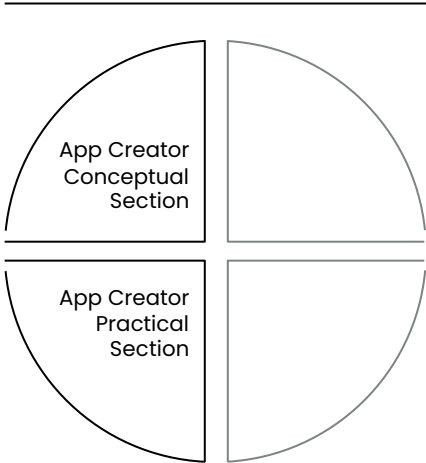


3. Get trained

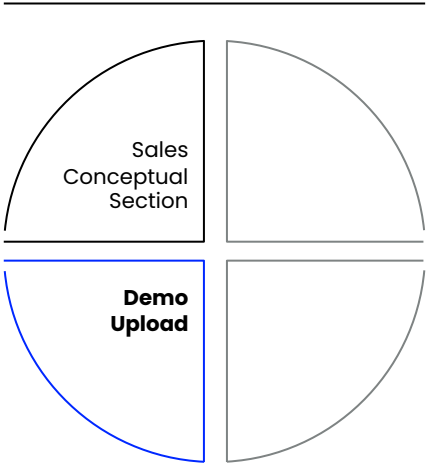
Level 2: Role-based Certification Exams



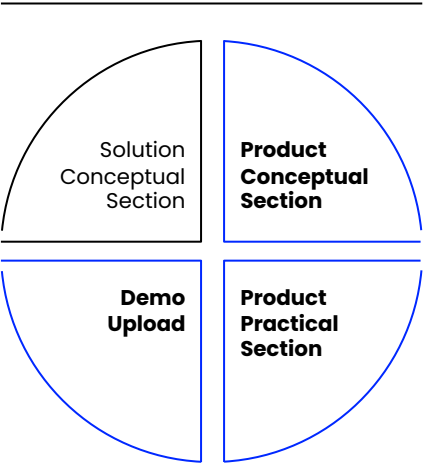
App Creator
Certification | [Create](#)



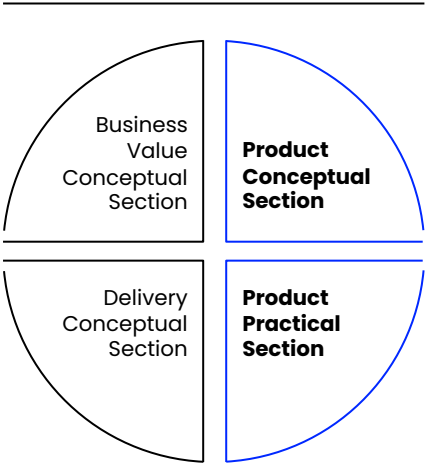
Sales Professional
Certification | [Market](#)



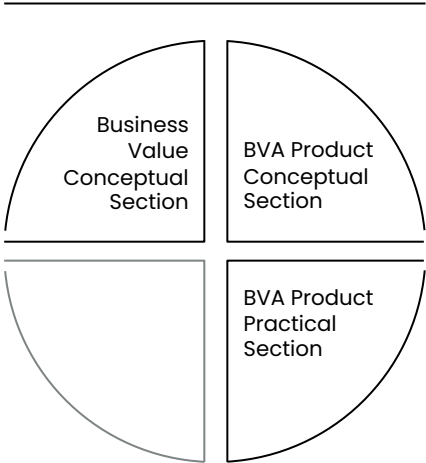
Solution Professional
Certification | [Market](#)



Implementation Professional
Certification | [Deliver](#)



Business Value Architect (BVA)
Certification | [Deliver](#)



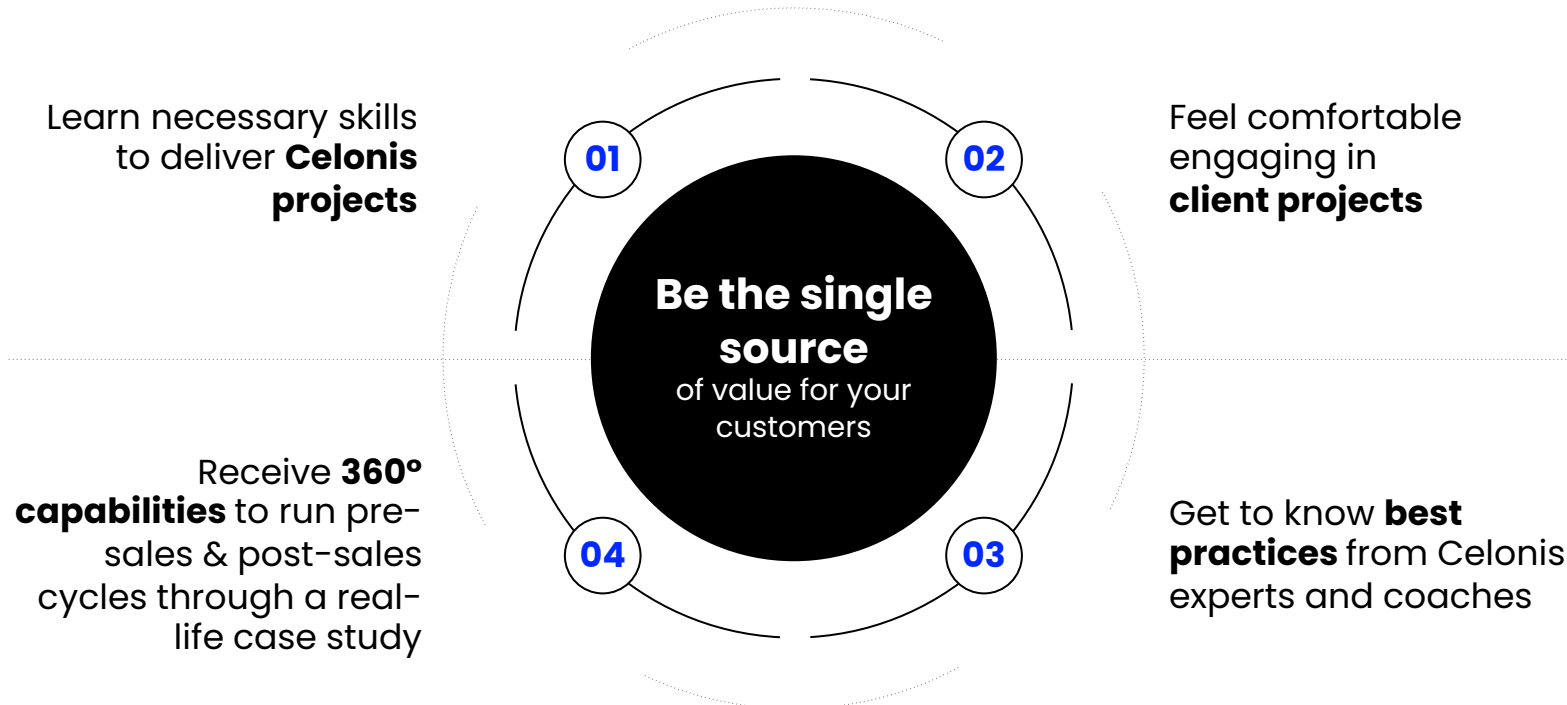
After the role-based training, complete the certification to get your digital Celonis badge!



3. Get trained

Level 3: MasterClass Training

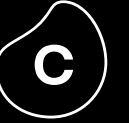
Become the next Celonis Master

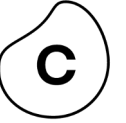


"I came to the **master class** expecting just a **good framework** how to deliver projects.

I left with a **changed mindset.** You changed my focus to delivering value."

EMEA attendee - 1st Masterclass





4. Discover Key Platforms

Overview of Celonis Platforms

To explore

Partner Portal

Central portal for asset library, opportunity management, implementation and partner program

TryCelonis

Celonis Demo Platform for 80+ use cases across industries and processes

Sandbox – only for registered partners

Non-productive team to build assets, test out functionalities and store templates

To train

Celonis Online Training Platform

to get access to ...

- Welcome Kit
- Role-based Training Tracks
- MasterClass Registration

... and many more individual learning courses

To get help

Cloud Help Page

Find all product-related information and FAQs on Celonis Help Page available in all project instances

Celopeers | community

Ask your questions and exchange with Celonis customers, Celonauts and partners

Celopeers | servicedesk

Create a support case for your questions and technical issues

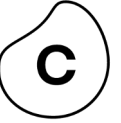
1:1 Advisory Service

Schedule 25-min advisory session with an Ecosystem Solution Manager

You can access all of these platforms through your C4C+ Project Hub!

[Sign-up here](#)

To Explore | Partner Portal Access



Central portal for asset library, opportunity management, implementation and partner program

[Click here](#) for video introduction

Intuitive & easy way to find relevant materials to support the collaboration with Celonis

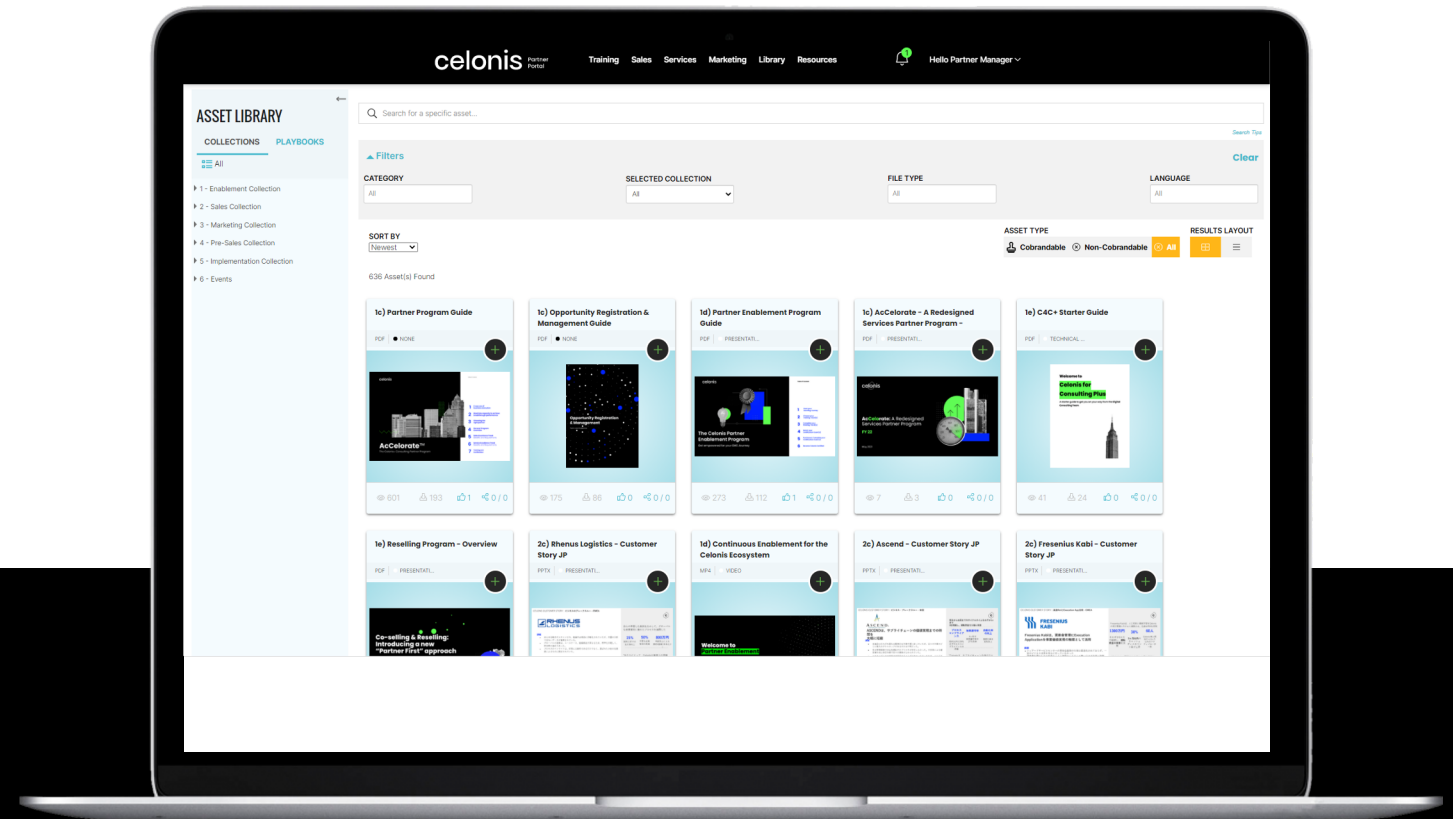
New

- Implementation Best Practice Assets incl. Product Webinars, Templates, EMS Documentations
- 70+ diverse regional assets
- 300+ Sales Collaterals incl. Competitive Intelligence Materials, Customer Success Stories, Use Cases

600+
Assets

100+
Customer
Stories

120+
Industry/Pro-
cess specific
assets



To Explore | TryCelonis

Access: Partner Portal > Resources > Trycelonis



Centralized Demo Environment

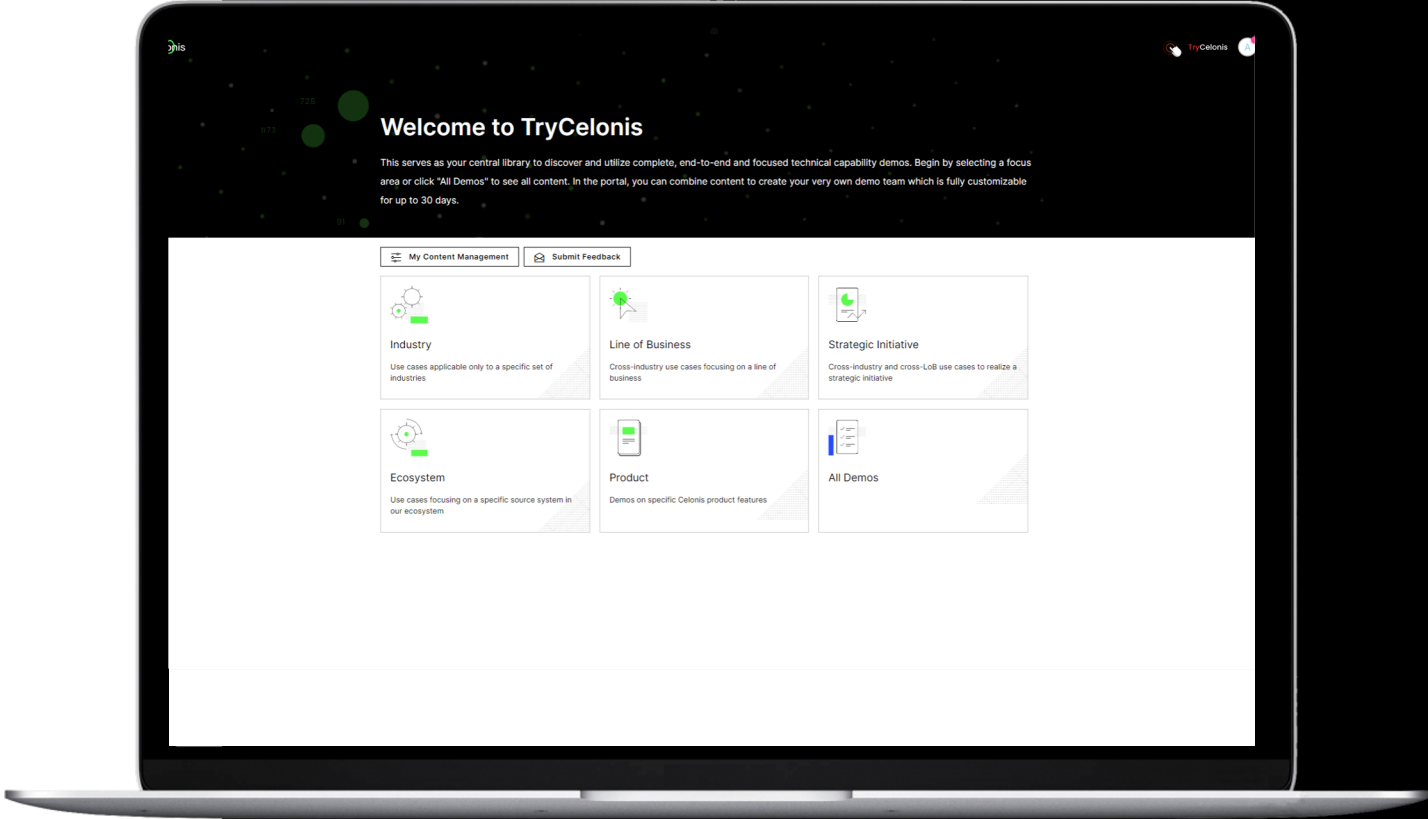
Extensive Demo Knowledge Base with **80+ use cases**

Access to all **clickstories, best practice videos and presentation materials**

Quick & easy navigation through TryCelonis

Tailor your demo with full editing rights and deliver a story that connects

[Click here](#) for video introduction



To Explore | Celonis Sandbox

Access: Partner Portal > Resources > Sandbox
(only for registered partners)

Your non-productive environment to build analyses

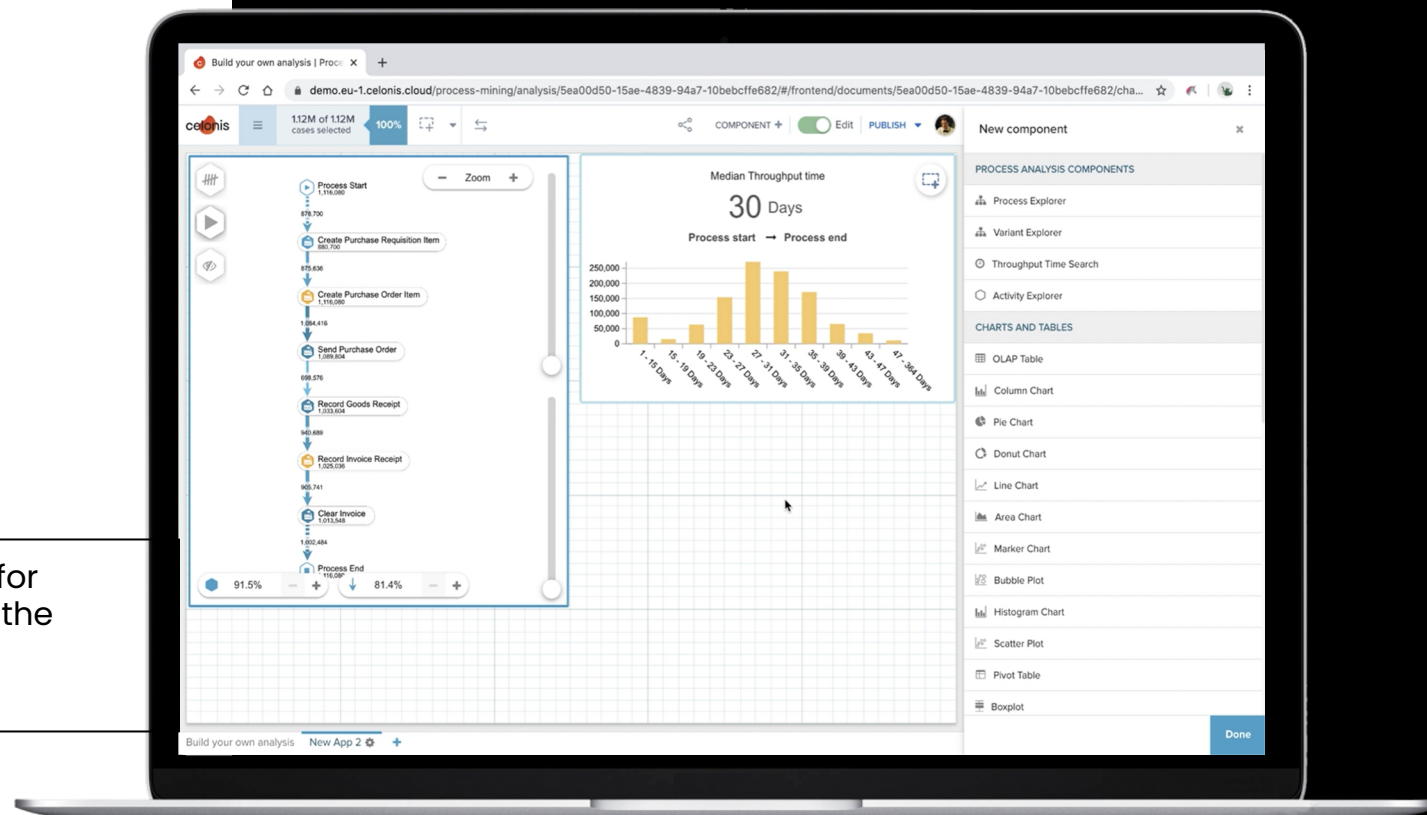
Build your own templates and assets

Store data models and analyses

Upload non-productive data up to 10 data models,
via file or direct connection to the IT System

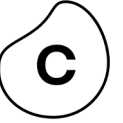
Access to EMS App Store and Help Page

- Sandbox environment can NOT be used with client data, for those cases, please create a productive environment on the Project Hub
- Contact your DC Manager for more information



To Train | Celonis Online Training Platform

Access: Partner Portal > Training



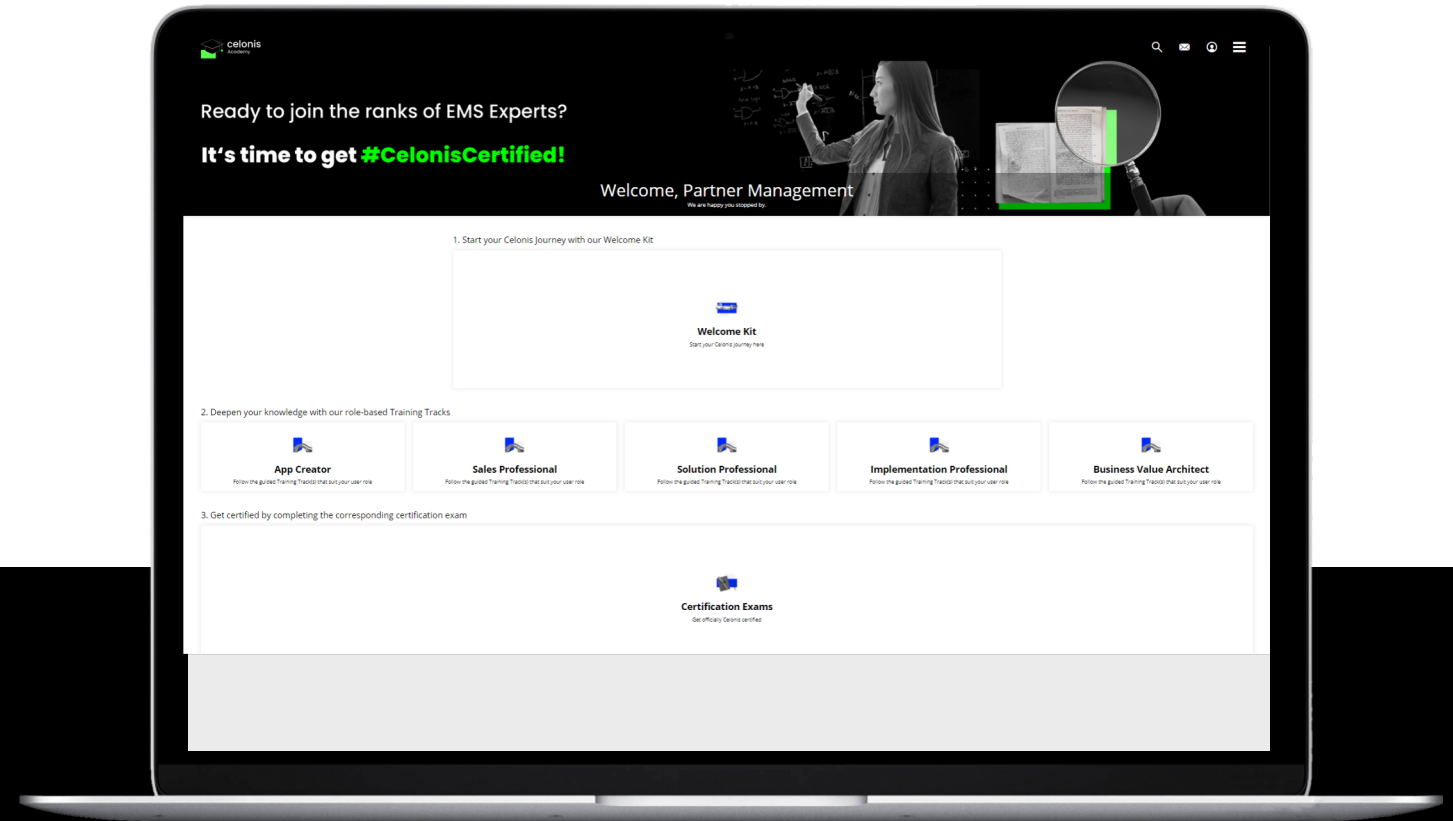
Access through the Training Tab within the Partner Portal

Start of Learning Journey to complete Training Track(s) & Certification(s)

For further information, check out

[Partner Portal > Asset Library > 1- Enablement Collection](#)

- Enablement Overview
- Access Guides & FAQs
- Exam Logistics



5

Role-based
Training
Tracks

5

Certifications

30+

Unique
Courses

To Get Help | Cloud Help

Access: Any Celonis Environment

Access through any Celonis environment

Overview of Release Notes

Product Updates/Documentations

EMS Best Practices

[Click here](#) for video introduction



To Get Help | Celopeers Community

Access: Partner Portal > Celopeers Community



Join **Celonis Community Topics** to discuss with customers and Celonis Product Managers on Celonis Products, Use Cases and much more!

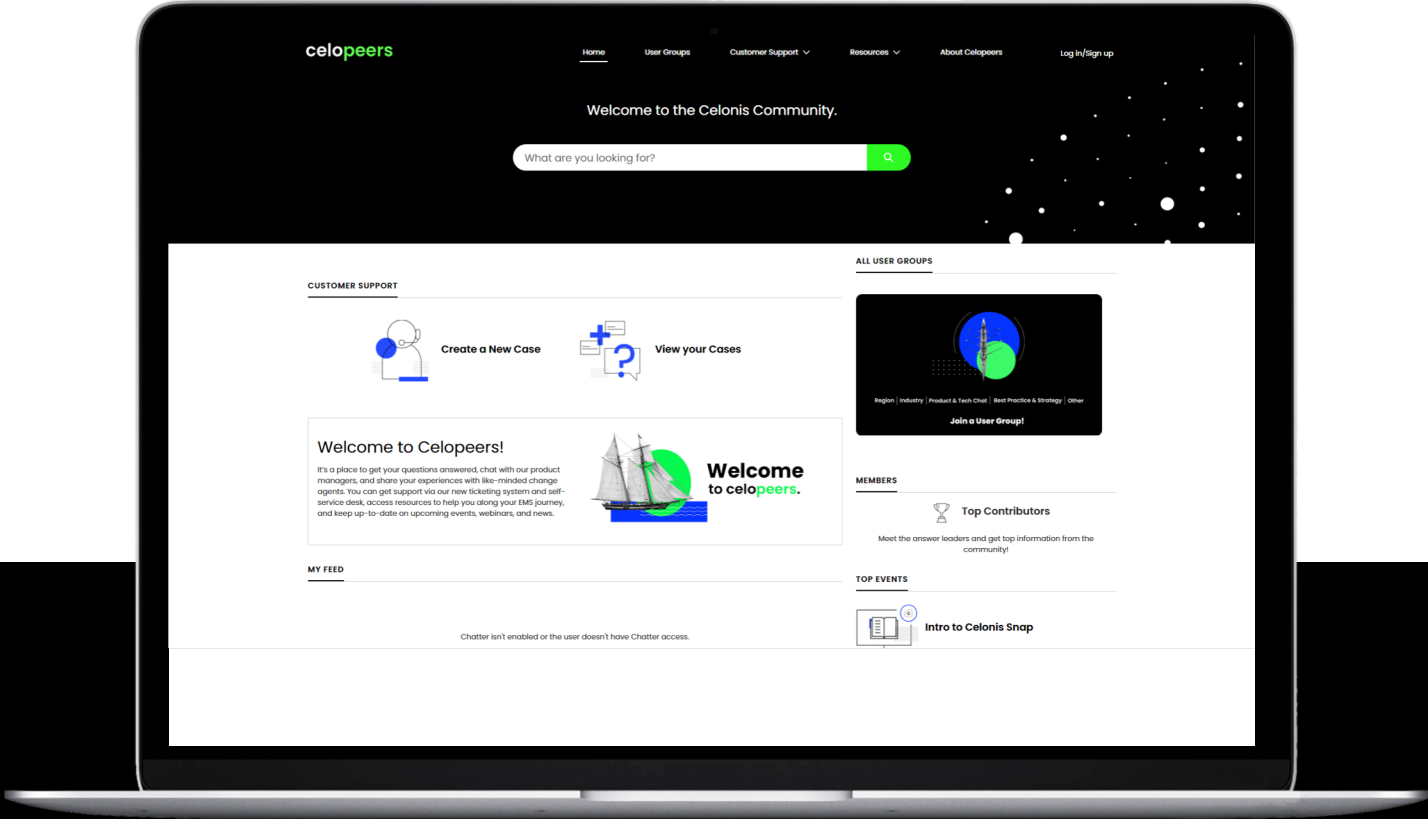
[Click here](#) for video introduction

Join **local Celonis User Groups** and stay up-to-date about local events and initiatives

Access our Partner Support to ask your technical question

800+
Partner User

15
User Groups



To Get Help | Technology Advisory Service

Access: Partner Portal > Resources > Technology Advisory Service



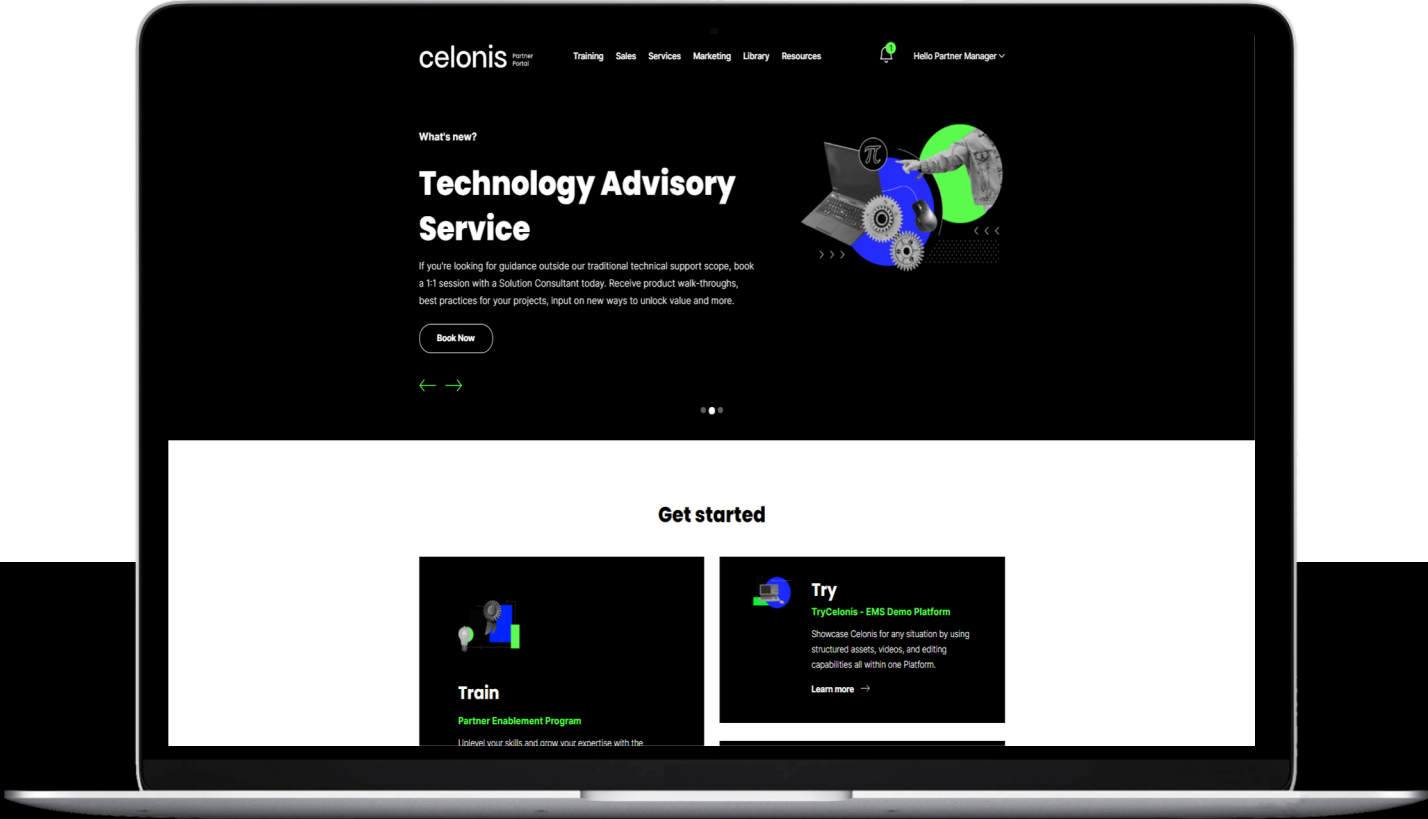
Access via the Celonis Partner Portal
(Resources – Navigation Bar)

[Click here](#) for video introduction

Book a 25-min session with an Ecosystem
Solution Manager

Ask your questions to get guidance &
recommendations from a Celonis expert

Best Practice sharing of project execution
(project scoping, data connection suggestion,
value identification etc.)



40+
Weekly Sessions

5+
Celonis Experts

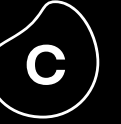
Please note: For Product-related technical questions, please create a ticket on Celopeers

Checklist

Stage Zero: Get Started in Your C4C+ Journey

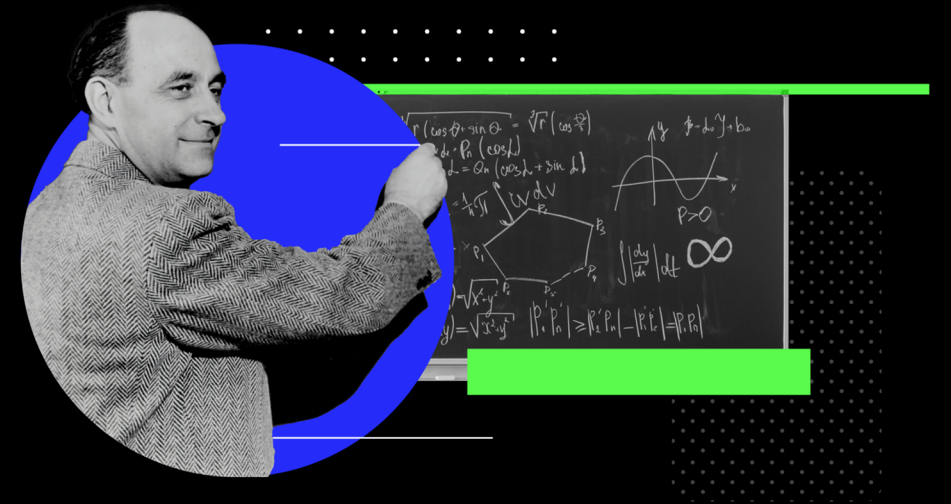


01	Get access to C4C+ Hub	You have signed up for C4C+ project hub and can create project teams	<input type="checkbox"/>
02	Form your team	You know what roles and skills you need in the team, and you established a core team	<input type="checkbox"/>
03	Get trained	<ul style="list-style-type: none">• You have mapped training tracks to your user roles• Everyone in the team is trained and certified according to their roles	<input type="checkbox"/>
04	Explore main platforms	<p>You reviewed Celonis Cloud Help Page</p> <p>You have access to all key platforms and resources:</p> <ul style="list-style-type: none">• C4C+ project hub• TryCelonis• Partner Portal• Celopeers• Celonis Online Training Platform	<input type="checkbox"/>



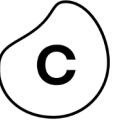
STAGE ONE

Kick off your C4C+ project



STAGE ONE

Kick off your C4C+ project



Introduction

This section helps you to define the C4C+ project scope and setup a project plan with their clients.



01

C4C+ Success Factors

Prerequisites to deliver exceptional customer value with your C4C+ project

02

Project Scoping

Selecting the right process and systems according to customer value pyramid

03

Project Plan

Creating a mutual project plan with necessary activities and milestones

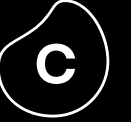
04

Effort Estimation

Outlining project delivery effort estimation both for your team and for your client

C4C+ Success Factors

Prerequisites to deliver exceptional customer value



Fundamentals of extraordinary C4C+ projects

You have an
enabled team on board

You know what is
value your customer

You have
a good champion
on board for the project

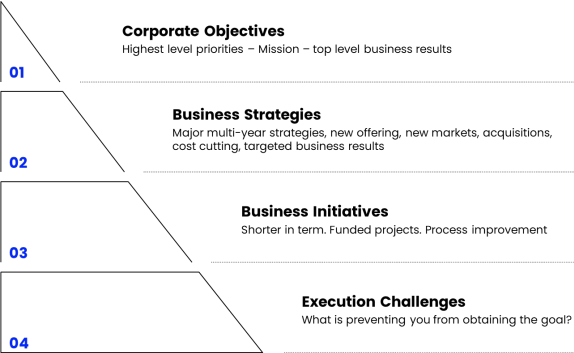
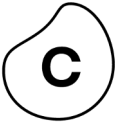
You have the
involvement of
right stakeholders

You have a
mutual action plan
and clear timelines

You have
**access to the necessary
data for your analysis**

Project Scoping

Designing Your C4C+ Project for Maximum Customer Value

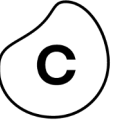


What Success Looks Like

Challenges	Current State	Required Capabilities	Celonis Impact
Transparency	Disconnected systems Opinions, not facts Ad hoc analysis	Connect to multiple systems in real time Visualize "as-is" processes Shorten analysis to a few clicks	E2E visibility across all 5 systems Discover how processes really run Uncover "eureka" moments via rich analytics
Control, Compliance, & Sustainability	Inconsistent taxonomy Lots of bad behavior Limited governance	Capture and normalize P2P data Alert employees to non-compliance Guardrails & automatic corrective actions	Single source of truth for P2P performance Improve compliance within Buying Hub Drive good behavior with good processes
Operational Excellence	No baseline or benchmarks Lagging indicators Loudest voice wins	Prebuilt benchmarks across dimensions Configurable KPIs and metrics Recommendations on the next best action	Operate with a holistic view of P2P Take action on performance barriers Prioritize work by impact/value (I&O)
Cost Reduction	Incomplete view of spend Significant tail spend Low catalog adoption	Flag manual steps and costly bottlenecks Find and fix pricing/payment inefficiencies Identify maverick/wagie spend	Plug the leaks and increase agility Increase spend under management Boost productivity per employee

Celonis Recommendation

Select 1 process and 1 system to kick start your C4C+ project to minimize technical work and fully focus on value realization for your customers.



Project Scoping | Understand Customer Value

Our customers and partners leverage Celonis Execution Management System to drive impact across dozens of initiatives, hundreds of processes and business metrics.

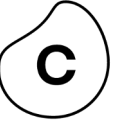
That is why it is absolutely essential to understand your customer's corporate strategy, initiatives, pain points and challenges, so that you can define how your project enables their broader goals to drive tailored value for your customer.

To achieve this, we recommend starting any customer engagement with a **discovery** session, where you can identify high-level objectives and business initiatives and drill into specific execution gaps, challenges and their implications.

In the next two slides, you can find 2 templates to help you define the value for your customers.

Let's go!

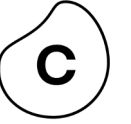
Project Scoping | Understand Customer Value



Template 01



Project Scoping | Understand Customer Value



Template 02

Current State

<describe current State>

Implications

<describe Implications>

Desired State

<describe desired State>

Outcomes

<describe outcomes>

Celonis EMS accelerates project delivery

across your entire service portfolio



DIO

Inventory Turnover

Material/Labor Availability

Out-of-Stock Rate

% Managed Spend

Spend/Revenue

Supplier Metrics

Lead Times

Time-to-Service

Time-to-Completion

Carrier Reliability

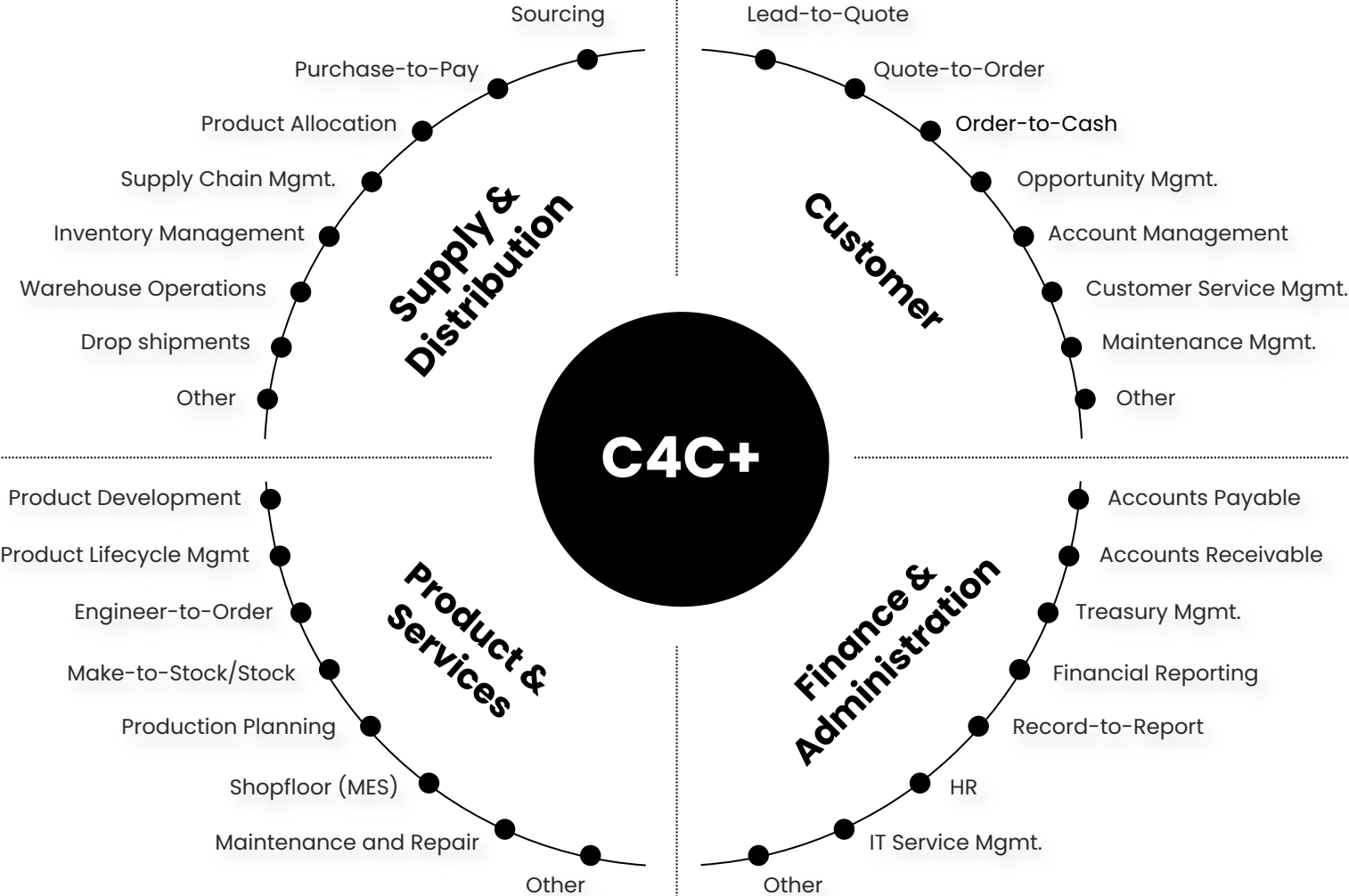
Downtime

On-Time Fulfillment

Construction Costs

Construction Time

Time-to-Market



OTIF Ratio

Order Cycle Time

Conversion Rate

Automation

Customer Satisfaction

Resolution Times

Replies per Request

Resolution Rates

Working Capital

Operating Cash Flow

AP/AR Turnover

DPO & DSO

Employee Satisfaction

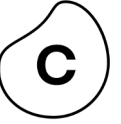
Resolution Time

Multi-Hop Incidents

Compliance

Project Scoping | Select Process

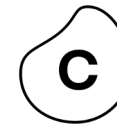
Celonis Process Selection Framework



01	Strategic Relevance	<ul style="list-style-type: none">• Core processes• Financial relevance• Current strategic initiatives	Value Drivers
02	Optimization Potential	<ul style="list-style-type: none">• Process volume• Challenges & pain points• Need for transparency	
03	Technical Feasibility	<ul style="list-style-type: none">• Number of systems• Unique ID• Data access	Effort Drivers
04	Project Team	<ul style="list-style-type: none">• Strong champion• Subject matter experts• Executive Sponsor	

Project Scoping | Select Process

Celonis Process Selection Framework Guiding Questions



01	Strategic Relevance	<ul style="list-style-type: none">• Does it touch a significant portion of companies resources, costs or revenue?• Is it a business process that is tied closely to organizational targets and strategy?• Is there an existing business initiative related to this process (e.g., migration)?	<input type="checkbox"/>
02	Optimization Potential	<ul style="list-style-type: none">• Does the process hold high transaction volume?• Are there known pains and challenges that can be translated into success criteria?• Does the process performance have significant impact on downstream activities?	<input type="checkbox"/>
03	Technical Feasibility	<ul style="list-style-type: none">• Is the majority of this process captured in business systems?• Is the process spread across excessive number of systems?• How easy is it to get access to the data? (security approvals, system constraints ...)	<input type="checkbox"/>
04	Project Team	<ul style="list-style-type: none">• Do you have access to system and process experts?• Do you have a strong champion on board?• Do you have access to an executive sponsor?	<input type="checkbox"/>

Project Scoping | Select Process

Prioritizing Processes with Value/Effort Chart



Value

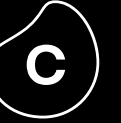
= Optimization Potential, Strategic Relevance

Effort

= Technical Feasibility, Project Team

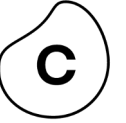
Exemplary Processes

- | | | | |
|----|------------|----|------------|
| 01 | Process 01 | 02 | Process 02 |
| 03 | Process 03 | 04 | Process 04 |



Project Scoping | Select System(s)

Minimum requirements for your data to be process mining ready



01

Unique Identifier

Represents an identifier that uniquely follows the **object** from **start-to-end** of the process

Across systems the identifier can be in **different format**, but it should be possible to **link their relations**

Example
ID: Sales Order Number

02

Activity Name

Represents the **Activity** that is **executed** in at a particular time

One process can **contain dozens of different activities** that characterize it

Example
Activity: Goods Issued

03

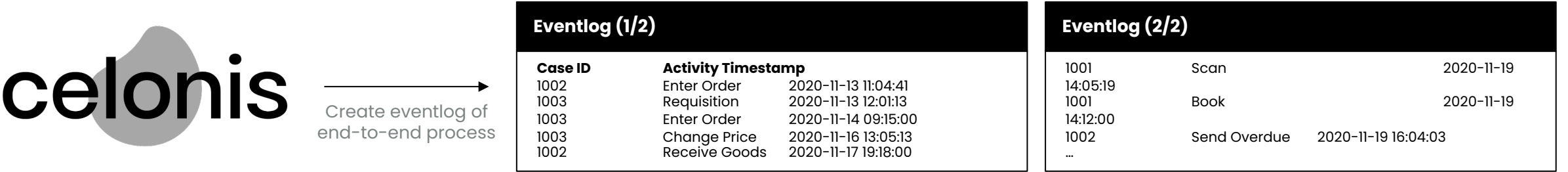
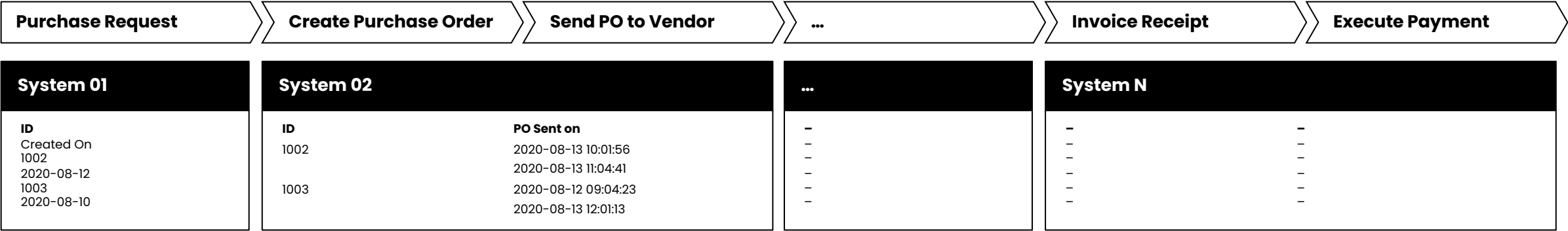
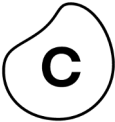
Timestamp

Represents the **date and time** at which the **activity** has been **completed**

This process data is usually found in **transaction tables, change tables, workflow history tables**, etc.

Example
Executed on: 2020-09-09 14:23:03

Project Scoping | Select System(s)



Celonis collects data from all knowledge sources and unifies it in one model with the Event Collection. To minimize the technical work in your consulting engagement, we recommend selecting 1 – 2 systems that capture 95% of the process details.

Project Scoping | Select System(s)

Additional master data to enhance your process analysis



Activity table		
PO item ID	Activity	Event time
45100759750001	Create Purchase Request	2015-07-23 12:34:58
45100759750001	Create Purchase Order Item	2015-07-24 13:12:17
45100759750001	Receive Goods	2015-08-18 08:14:21
45100759750001	Receive Invoice	2015-08-20 12:12:19
45100759750001	Pay Invoice	2015-09-02 04:34:55
45234726350012	Create Purchase Order Item	2015-08-10 11:10:02
45234726350012	Change Price	2015-08-10 11:34:21
45234726350012	Receive Goods	2015-09-11 19:41:43
45049123220007

Material Information			
Material number	Material name	Material class	...
255541	HP XF-323	Printers	
685456	Samsung L-13	Screens	
...	

Purchase order item information			
PO item ID	PO number	Purchase quantity	Material number
45100759750001	4510075975	10	255541
45100759750002	4510075975	17	685456
45234726350012	4523472635

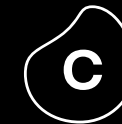
Foreign Key (n:1)



Foreign key relation (n:1)

Master Data enables you to enhance your analysis and drill down into execution gaps to identify root causes and take action.

Project Scoping | Select System(s)



Guiding Questions

- 01 Is the captured data sufficient to analyze your target use cases and key metrics?
.....
- 02 Do we capture change activities in this data set?
.....
- 03 Do we capture major roadblocks in the process such as approvals, blocks, cancellations?
.....
- 04 Is there a sufficient number of cases?
.....
- 05 Do we have a case table as a part of this system?

Celonis Recommendation

If you have flexibility in selecting processes, we recommend you select a process & system, which Celonis already offers a standard process connector to accelerate your project delivery.

For a consulting engagement, it is important to identify optimal system connection to minimize the technical work and fully focus on value realization.

That is why you should understand the system landscape for your project scope and identify 1 – 2 systems that capture majority of this process. We recommend starting with the main system of record such as Oracle, Infor, Salesforce and SAP and add additional systems as necessary.

Project Scoping | Define Success



What

are key success criteria
for this project?

How

does success look like?

What

impact and results should we drive
to call this engagement a success?

Template

To consider this project a success, we need to ...

XXX

XXX

XXX

XXX

XXX

XXX

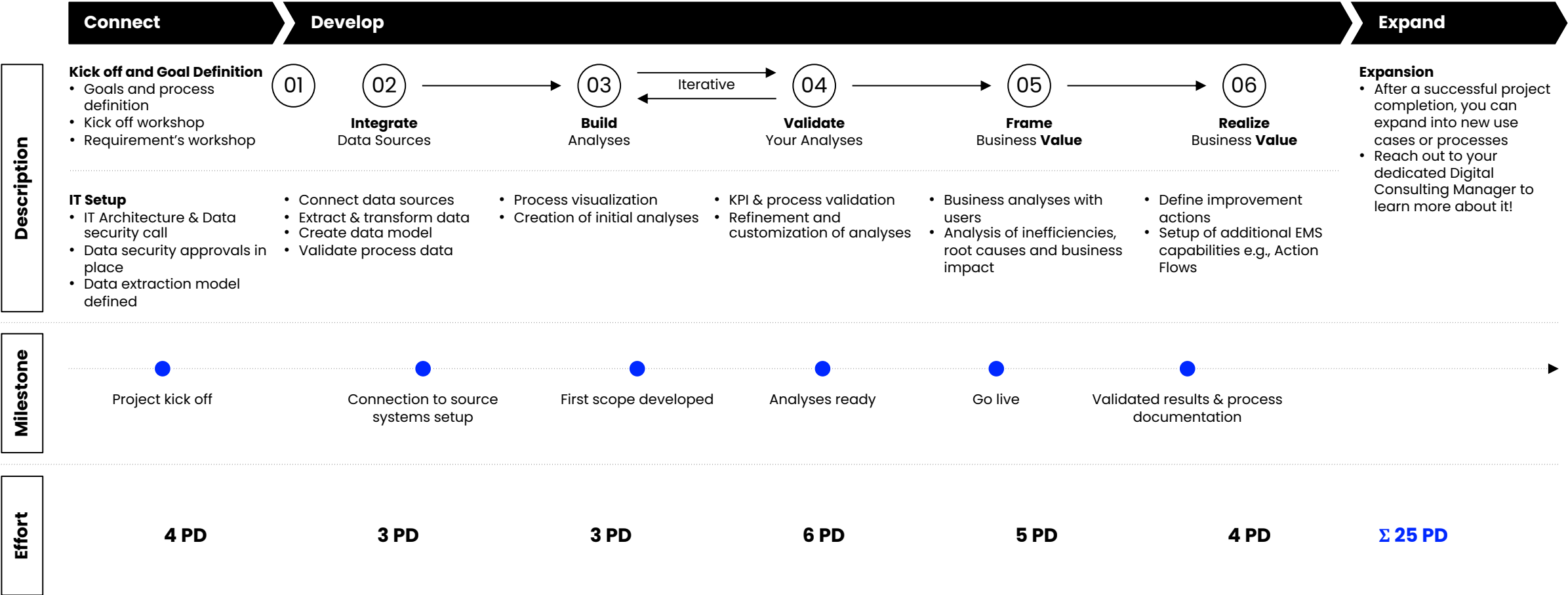
XXX

XXX

XXX

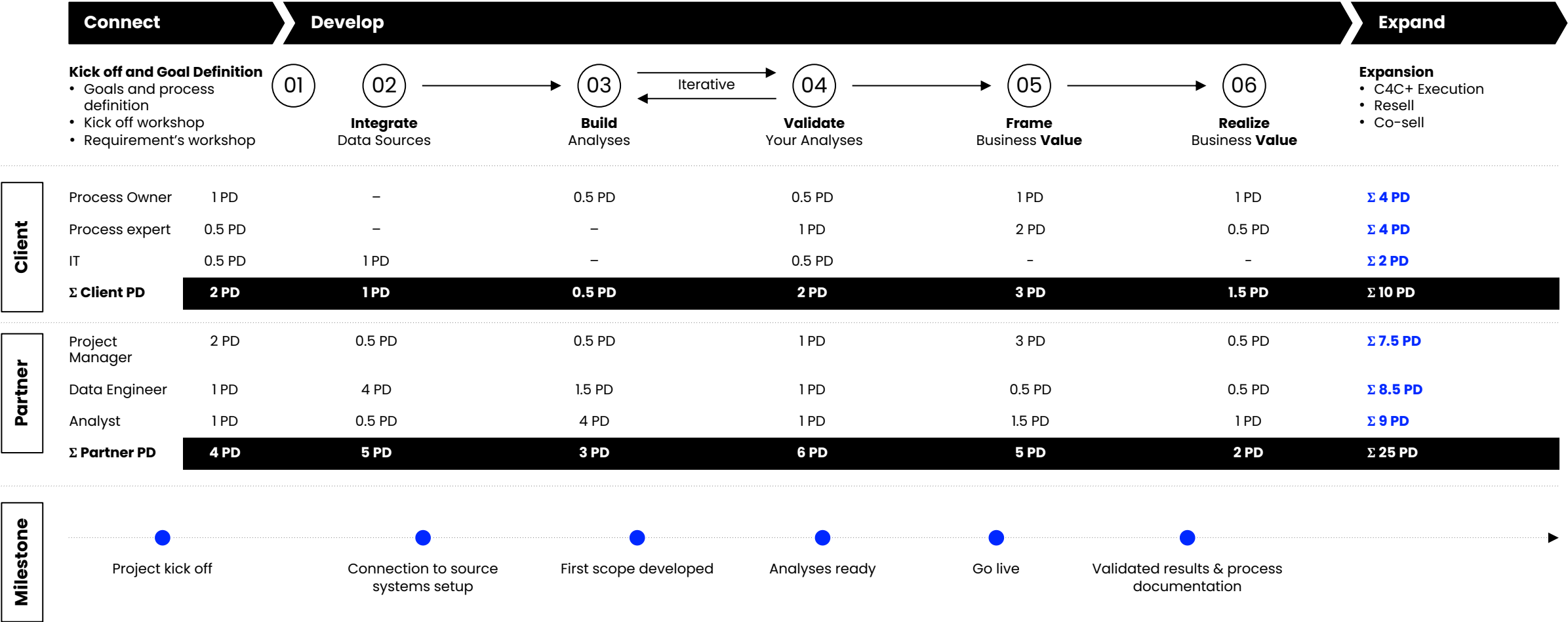
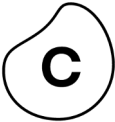
Project Plan | Standard Project Plan

For one process and one system



Project Plan | Effort Details

For one process and one system



Effort Estimation | Standard Scoping Guidelines

Best Practices

EMS-template process	EMS store source system	25 MD
	Custom source system	30 MD
Non-template process	EMS store source system	30 MD
	Custom source system	min. 35 MD
Additional source system	Same as initial one	+3 MD
	Different as initial one but appstore system	+5 MD
	Different as initial one, custom system	+8 MD
Additional process	Scoping as above but -5 MD if same source system	+20 MD (min.)
Data integration	Continuous data integration already exists	-2 MD



Agile **project management**

Setup of **Celonis Event Collection** with continuous data integration

End-to-end implementation of one process data model

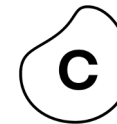
Development of use cases and user-specific **Celonis analyses** including:
Additional Celonis functionalities (i.e., Action Engine, Transformation Center, Process Automation, etc.)

Business deep dive sessions

Data validation support

Value creation workshop

Effort Estimation | Other Factors



Check 01

Do you have access

to pre-built data transformations and data model for this process and system?

Custom connections can take an additional 1 – 2 weeks to develop and validate based on the proficiency of your certified Celonis data engineers and your access to the right IT stakeholders from the client side (source system experts).

Check 02

For custom connections

How complex is the data structure?

-
- In the best case, you should ask to check out a sample data set to understand how complex the data structure is
 - In cases where the data is stored already as an event log, it takes less than a couple of hours to build your transformations and the data model. This is especially very usual for IVR and customer service systems
 - If the timestamp data is spread across multiple systems and tables, it will take you longer (2 – 3 person days) to build your transformations and the data model

Check 03

Do you have direct access

to the right stakeholders from your customer's IT team?

Identifying the right IT expert to support you along the project is a key success factor. We highly recommend to identify this stakeholder as soon as possible, as they will be key to extract the data and to provide you all the information you need around the source systems (e.g., are there any customizations? where can I find XYZ data?)

Check 04

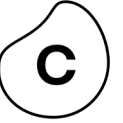
How easy is it to get access to the data?

Do you need to get any approval?

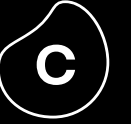
-
- Agreement on how the extracted data should be transferred & stored prior to uploading onto the IBC environment
 - Generally, our Partners store the extracted data on their own infrastructure (database/server) as per the contractual agreement with clients

Checklist

Stage One: Kick off your C4C+ project

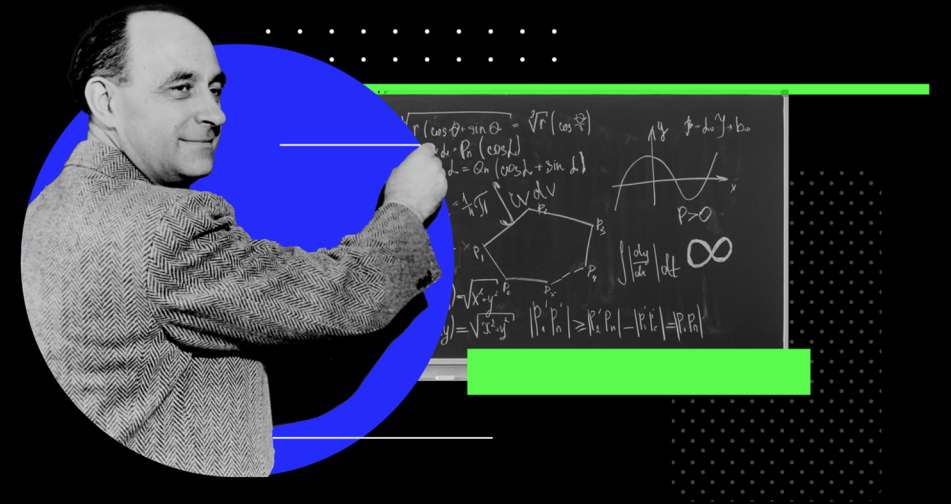


01	Build Value Framework	Understand customer's objectives, strategic initiatives and pain points	<input type="checkbox"/>
02	Choose relevant process	Select a process with high business value and low implementation effort	<input type="checkbox"/>
03	Choose system(s)	Select system(s) to extract the data, ensuring: <ul style="list-style-type: none">• There is a unique identifier that can be traced through the system• There are timestamps for relevant activities• There is master data available for the analyses• Changes are logged and do not get overwritten• If there are multiple systems, the ID can be linked across systems	<input type="checkbox"/>
04	Define success criteria	Define what success looks like for this C4C+ project	<input type="checkbox"/>
05	Create a project plan	<ul style="list-style-type: none">• Conduct a project kick off meeting to align on roles & responsibilities• Define project timelines and milestones	<input type="checkbox"/>



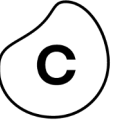
STAGE TWO

Establish process connection



STAGE TWO

Establish process connection



Introduction

Now, you understand how success looks like for your customer and have a project scope with selected process, key metrics, system(s) and timeline along with a clear project plan.

In this section, we will focus on establishing the process connection based on the identified project scope. To establish the process connection, we will follow 5 simple steps:

- 01 Install Process Connector (only if exists)**
Go into EMS Store and select a process connector from 80+ existing options
- 02 Establish system connection**
Setup data connection between Celonis and source system; or upload data via flat files
- 03 Extract data**
Define tables and fields to be extracted
- 04 Transform Data**
Configure the transformation scripts to allow the fitness of data for process mining
- 05 Build Data Model**
Setup the Data Model based on your transformation script

Introduction to Process Connection

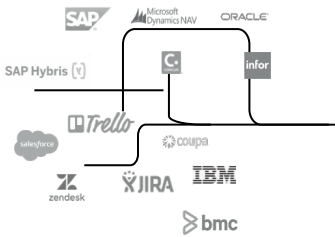
Connect the process in 5 easy steps in Celonis Event Collection



Step 01 Install Proc. Connector

Procurement P2P	- SAP	Sales O2C	- SAP	Accounting AP	- SAP
--------------------	-------	--------------	-------	------------------	-------

Step 02 Establish sys- tem connection



Step 03 Extract Data

TABLE 1: Order Information

order slip	details	Item Code	customer	Quantity	Amount	Creation date
2020170175	000001	255541	ABC Retail	3	3,000	2020.01.30
2020170175	000002	255555	ABC Retail	1	2,000	2020.01.30
2020170175	000003	255565	ABC Retail	2	5,000	2020.01.30

TABLE 2: Shipping Information

Shipping Slip	order slip	details	Creation date
1020220001	2020170175	000001	2020.02.04
1020220002	2020170175	000002	2020.02.04

TABLE 3: Change Table

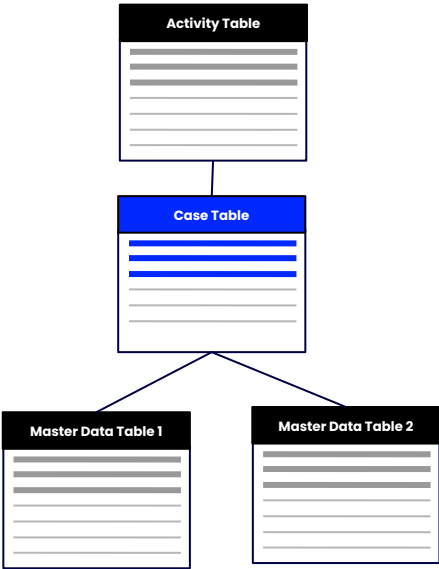
order slip	details	Item	Before change	After change	Date of change
2020170175	000001	Quantity	2	3	2020.02.01
2020170176	000001	Amount	1,000	1,100	2020.02.02

Step 04 Transform Data

CELONIS EVENT LOG

Case Key	Activities	Timestamp
2020170175000001	Registering Order Slip Details	2020.01.30
2020170175000001	Quantity change	2020.02.01
2020170175000001	Create shipping slips	2020.02.04
2020170175000001	shipping confirmation	2020.02.05
2020170175000002	Create shipping slips	2020.02.04
2020170175000002	shipping confirmation	2020.02.05
2020170175000003	Create shipping slips	2020.02.04
2020170175000003	shipping confirmation	2020.02.05

Step 05 Build Data Model



Pre-configured for out-of-box Process Connectors

(1) Install Process Connector

80+ Out-of-Box Process Connectors accelerate your project delivery

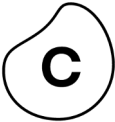


Process Connectors has pre-built extractions, transformations and the data model to give you a head start.

<div>IT Service Management</div> <div>Incident Management</div> <div>By Celonis</div> <div>bmc</div>	<div>Workflow_Management</div> <div>CAMUNDA Workflow Solution</div> <div>By Celonis</div> <div>JIT</div>	<div>Snap</div> <div>Demo SNAP process</div> <div>By Celonis</div> <div>celonis snap</div>	<div>Accounting</div> <div>Accounts Payable</div> <div>By Celonis</div> <div>Microsoft</div>	<div>Procurement</div> <div>Purchase Requisitions</div> <div>By Celonis</div> <div></div>	<div>Procurement</div> <div>Sourcing Event</div> <div>By Celonis</div> <div></div>	<div>Procurement</div> <div>Purchase Scheduling Agreements</div> <div>By Celonis</div> <div>SAP</div>	<div>Sales</div> <div>Quote-to-Order</div> <div>By Celonis</div> <div>SAP</div>
<div>Accounting</div> <div>Accounts Payable</div> <div>By Celonis</div> <div>coupa</div>	<div>Procurement</div> <div>Purchase-to-Pay</div> <div>By Celonis</div> <div>coupa</div>	<div>Accounting</div> <div>Asset Management</div> <div>By Celonis</div> <div>SAP</div>	<div>Accounting</div> <div>Accounts Payable</div> <div>By Celonis</div> <div>Real Time</div> <div>SAP</div>	<div>Accounting</div> <div>Accounts Receivable</div> <div>By Celonis</div> <div>Real Time</div> <div>SAP</div>	<div>Master Data Management</div> <div>Customer Master Data</div> <div>By Celonis</div> <div>SAP</div>	<div>Master Data Management</div> <div>Vendor Master Data</div> <div>By Celonis</div> <div>SAP</div>	<div>Logistics</div> <div>Warehouse Management</div> <div>By Celonis</div> <div>SAP</div>
<div>Accounting</div> <div>Accounts Payable</div> <div>By Celonis</div> <div>ORACLE JD EDWARDS</div>	<div>Accounting</div> <div>Accounts Receivable</div> <div>By Celonis</div> <div>ORACLE JD EDWARDS</div>	<div>Sales</div> <div>Order-to-Cash</div> <div>By Celonis</div> <div>ORACLE JD EDWARDS</div>	<div>After-Sales</div> <div>Customer Service</div> <div>By Celonis</div> <div>SAP</div>	<div>Accounting</div> <div>Dispute Case Management</div> <div>By Celonis</div> <div>SAP</div>	<div>Production</div> <div>Hire-to-Retire</div> <div>By Celonis</div> <div>SAP</div>	<div>Accounting</div> <div>Accounts Payable</div> <div>By Celonis</div> <div>SAP S/4 HANA</div>	<div>Accounting</div> <div>Accounts Receivable</div> <div>By Celonis</div> <div>SAP S/4 HANA</div>
<div>Procurement</div> <div>Purchase-to-Pay</div> <div>By Celonis</div> <div>Microsoft Dynamics AX</div>	<div>Sales</div> <div>Order-to-Cash</div> <div>By Celonis</div> <div>Microsoft Dynamics NAV</div>	<div>Accounting</div> <div>Vendor Invoice Management</div> <div>By Celonis</div> <div>openext</div>	<div>Sales</div> <div>Meter-to-Cash</div> <div>By Celonis</div> <div>SAP</div>	<div>Sales</div> <div>Make-to-Order</div> <div>By Celonis</div> <div>SAP</div>	<div>Sales</div> <div>Market Communication</div> <div>By Celonis</div> <div>SAP</div>	<div>Procurement</div> <div>Purchase-to-Pay</div> <div>By Celonis</div> <div>SAP S/4 HANA</div>	<div>Change Management</div> <div>Change Management</div> <div>By Celonis</div> <div>servicenow</div>
<div>Accounting</div> <div>Accounts Payable</div> <div>By Celonis</div> <div>ORACLE E-BUSINESS SUITE</div>	<div>Accounting</div> <div>Accounts Payable</div> <div>By Celonis</div> <div>ORACLE E-BUSINESS SUITE</div>	<div>Accounting</div> <div>Accounts Receivable</div> <div>By Celonis</div> <div>ORACLE E-BUSINESS SUITE</div>	<div>Master Data Management</div> <div>Material Master Data</div> <div>By Celonis</div> <div>SAP</div>	<div>Sales</div> <div>Order-to-Cash</div> <div>By Celonis</div> <div>Real Time</div> <div>SAP</div>	<div>Procurement</div> <div>Purchase-to-Pay</div> <div>By Celonis</div> <div>Real Time</div> <div>SAP</div>	<div>IT Service Management</div> <div>Incident Management</div> <div>By Celonis</div> <div>servicenow</div>	<div>IT Service Management</div> <div>Service Request Management</div> <div>By Celonis</div> <div>servicenow</div>
<div>Sales</div> <div>Order-to-Cash</div> <div>By Celonis</div> <div>ORACLE E-BUSINESS SUITE</div>	<div>Procurement</div> <div>Purchase-to-Pay</div> <div>By Celonis</div> <div>ORACLE E-BUSINESS SUITE</div>	<div>Procurement</div> <div>Purchase-to-Pay</div> <div>By Celonis</div> <div>ORACLE E-BUSINESS SUITE</div>	<div>Production</div> <div>Plant Maintenance</div> <div>By Celonis</div> <div>SAP</div>	<div>Production</div> <div>Production Planning</div> <div>By Celonis</div> <div>SAP</div>	<div>Procurement</div> <div>Purchase Requisitions</div> <div>By Celonis</div> <div>SAP</div>	<div>Sales</div> <div>Lead Management</div> <div>By Celonis</div> <div>Salesforce</div>	<div>Sales</div> <div>Opportunity Management</div> <div>By Celonis</div> <div>Salesforce</div>

(2) Establish System Connection

There are three types of source systems: On-premise, Cloud Applications and User Interaction Data



01

On-premise Applications

Custom systems



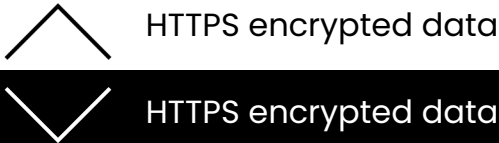
02

Cloud Applications

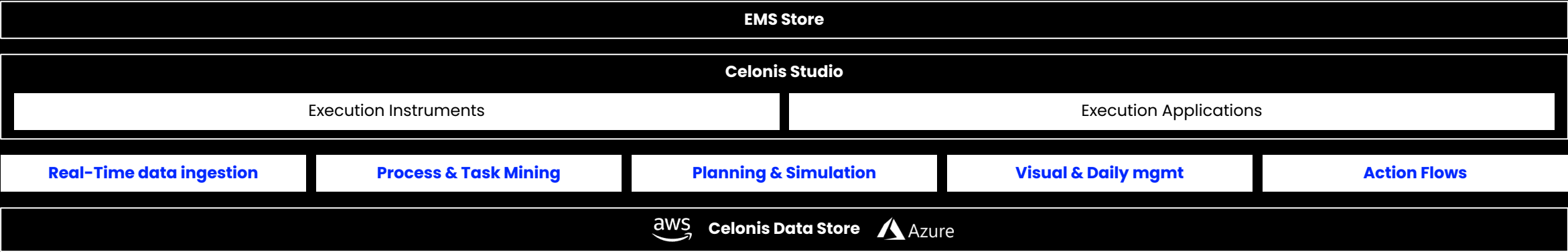


03

Flat Files

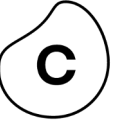


Celonis Execution Management System



(2) Establish System Connection | On-premise

Most Common Options



1a

SAP Connection

Connect to your SAP systems via RFC module

1b

JDBC Connection

Access your database through a JDBC extractor and extract data

(2) Establish System Connection | On-premise

1a. SAP Source Systems

Install. RFC Extractor Module

Requirements

- Minimum Version: SAP ECC 6
- Development rights on the SAP system to install the module
- Creation of SAP User with rights and functions as in provided user role
- G-Zip available on the server of the SAP system
- 100 GB of free disk space on the SAP system server hard drive at the location used
- For real-time connection: Create change log table and trigger for each source table

Setup Extractor Server

Hardware

- CPU: Min. Intel Xeon process with 4 Cores
- RAM: Min. 20 GB
- Disk space: Min. 110 GB

**Adminis-
trative rights
for setup**

Software: Operating System (64 Bit)

- Windows Server 2008 R2 SP1, 2012 R2 (recommended) 2016
- Ubuntu: recommended 16.04 LTS
- Red Hat Enterprise Linux 7
- SUSE Enterprise Linux (SLES) 12 and 15
- Oracle Linux 6 and 7

Additional Software

- Open JDK (in this case AdoptOpenJDK 11 recommended) or Java (JRE) 11 64 bit
- On Windows: MS Visual C++ 2010 & 2013 Redistributable Package (x64)

Execution Mgmt. System

Configure Event Collection

According to defined data scope

Setup Data Connection

Based on the provided connection details

Perform Extraction

On agreed time frame

Apply Process Package

From the Intelligent Business EMS Store to create the event log and the data model

Network connectivity and access

Source System	Target System	Port	Protocol	Description
Extractor server (on-premise)	SAP System (on-premise)	33XX (xx is the system no.)	TCP	RFC connection from Extractor server to SAP system. The system number can be retrieved from the SAP basis team.
Extractor server (on-premise)	Execution Management System	443	TCP	HTTPS connection from Extractor server to Execution Management System.



(2) Establish System Connection | On-premise

1a. SAP Source Systems



01 Setup Extractor Server

Provided Material

Guide including server requirements, how to start extractor and configure proxy server if necessary

To dos

- Setup server according to hardware requirements (as stated on the slide “Continuous Event Collection – Requirements for SAP Sources”)
- Start extractor via command line



02 Installation RFC Module

Provided Material

- Installation guide RFC module
- Transport for RFC module and SAP user role

To dos

- Import RFC module in SAP
- Assign provided SAP user role
- Install G-Zip on SAP server
- Provide required 100 GB hard drive space
- Provide SAP connection details
 - Username and password of the created SAP user for the RFC connection
 - Hostname or IP of the SAP server used for the RFC connection to the extractor server
 - System number
 - Client
- For real-time connection: Create change log table and trigger for each source table



03 Ensure network connectivity and access

Provided Material

- Required connections (see the slide “Continuous Event Collection – Requirements for SAP Sources”)
- IP addresses to Cloud endpoint (see the slide “Continuous Event Collection – Requirements for SAP Sources”)

To dos

Configure firewalls to ensure connectivity:

- Extractor Server to SAP System
- Extractor Server to Cloud endpoint



Check out more details on: [Help Page](#)

(2) Establish System Connection | On-premise

1b. JDBC Connection

Setup Extractor Server

Hardware

- CPU: Min. Intel Xeon process with 4 Cores
- RAM: Min. 20 GB
- Disk space: Min. 110 GB

Additional Software

- Open JDK (in this case AdoptOpenJDK 11 recommended) or Java (JRE) 11 64 bit
- On Windows: MS Visual C++ 2010 & 2013 Redistributable Package (x64)

Administrative rights for setup

Software: Operating System (64 Bit)

- Windows Server 2008 R2 SP1, 2012 R2 (recommended) 2016
- Ubuntu: recommended 16.04 LTS
- Red Hat Enterprise Linux 7
- SUSE Enterprise Linux (SLES) 12 and 15
- Oracle Linux 6 and 7

For real-time connection: Create change log table and trigger for each source table

In case direct access to the JDBC source system can be given, no extractor server is necessary



Execution Mgmt. System

Configure Event Collection

According to defined data scope

Setup Data Connection

Based on the provided connection details

Perform Extraction

On agreed time frame

Apply Process Package

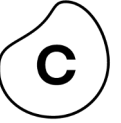
From the Intelligent Business EMS Store to create the event log and the data model

Network connectivity and access

Source System	Target System	Port	Protocol	Description
Extractor server (on-premise)	Source System (on-premise)	Depending on database, typically 5432 (Postgres) and 30015 (HANA)	TCP	JDBC connection from on-premise Extractor server to the database. The port is the one that you use normally to connect to the database.
Extractor server (on-premise)	Execution Mgmt. System	443	TCP	HTTPS connection from on-premise Extractor server to the Execution Management System.
Execution Mgmt. System	Source System (on-premise)	Depending on database, typically 5432 (Postgres) and 30015 (HANA)	TCP	JDBC connection from the EMS to the database. The respective IPs of the Execution Management System need to be enabled for the source system. For direct access

(2) Establish System Connection | On-premise

1b. JDBC Connection



01 Setup Extractor Server

Provided Material

Guide including server requirements, how to start extractor and configure proxy server if necessary

To dos

- Collection – Requirements for JDBC Sources")
- Start extractor via command line
- Provide JDBC connection details
 - The type of database (e.g., Postgres, Oracle, ...)
 - The database server name or IP of the database server
 - The port to connect to the database server
 - The name of the database within the database server
 - The schema to use
 - Additional properties like validate Certificate = False for a HANA database
 - The username to connect to the database server
 - The password of the username
- For real-time connection: Create change log table and trigger for each source table



02 Ensure network connectivity and access

Provided Material

- Required connections (see slide "Continuous Event Collection – Requirements for JDBC Sources")
- IP addresses to Cloud endpoint (see slide "Continuous Event Collection – Requirements for JDBC Sources")

To dos

Configure firewalls to ensure connectivity:

- Extractor Server to SAP System
- Extractor Server to Cloud endpoint



Check out more details on: [Help Page](#)

(2) Establish System Connection | Cloud Applications

Most Common Options



2a Celonis Standard Cloud Connectors

Leverage a standard connector from the EMS store

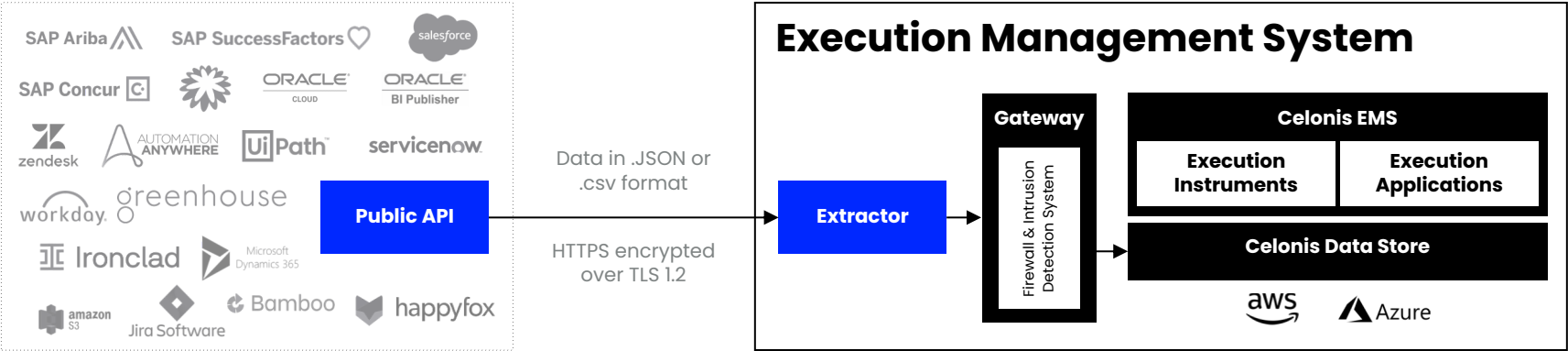
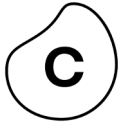


2b Extractor Builder

Build custom cloud connections with our low-code extractor builder

(2) Establish System Connection | Cloud Applications

2a. Celonis Standard Connectors



Celonis has 25+ out of the box cloud connectors to 20+ source systems that can be readily used

The EMS Connects with the Cloud infrastructure through a Public API

- REST API (e.g., Zendesk)
- Soap web service (e.g., Workday)
- Message Queue (e.g., Salesforce Platform Events)

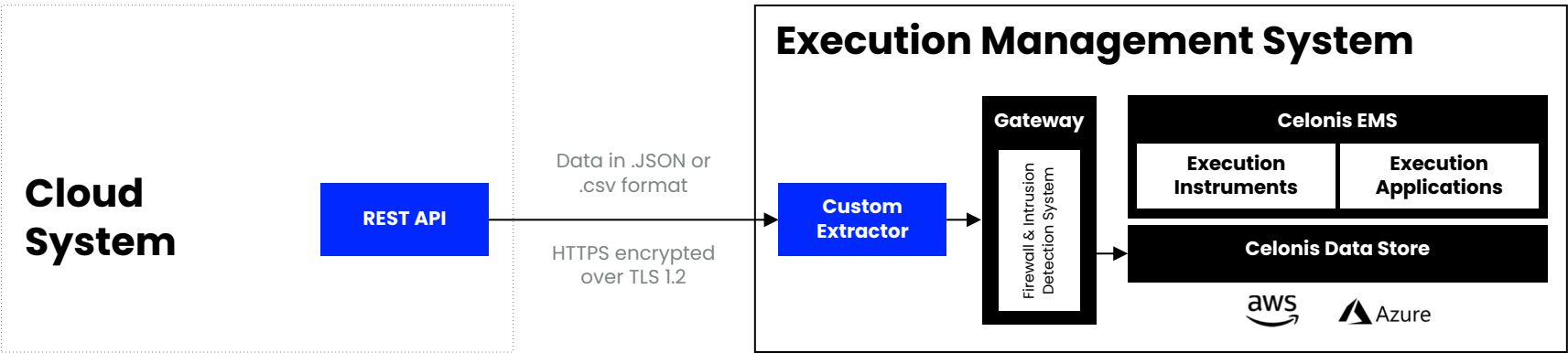
Public API endpoints provide data in a JSON file, .csv file or similar format to the Celonis Extractor

The Celonis Extractor converts the data to parquet and inserts it to the EMS data store

Check out more details on: [Help Page](#)

(2) Establish System Connection | Cloud Applications

2b. Celonis Extractor Builder



Cloud applications

with extractor builder connection
Procedure

Configure or customize **your own extractor** and define your API requests to get the right data from your cloud application **inside Celonis' low-code environment**

The Custom Extractor that is hosted in the EMS Connects with the Cloud infrastructure through **GET requests** with a **REST API**. Authentication with the targeted cloud application is done through **Basic, Bearer, or OAuth**

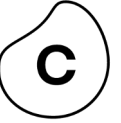
The REST API endpoints provide data in a JSON file, .csv file or similar format to the **Celonis Extractor**

The **Celonis Extractor** converts the data to parquet and inserts it to the **EMS data store**

Check out more details on: [Help Page](#)

(2) Establish System Connection | Flat File Upload

Most Common Options



3a

ABAP Report

To export and upload data from SAP Source Systems

3b

SFTP File Upload via File Storage Manager

To upload large volume flat files

3c

File Upload Option in Event Collection

To upload small volume CSV, XLS, XLSX, XES, JASON, PAQ files **(not recommended for large volume of data)**

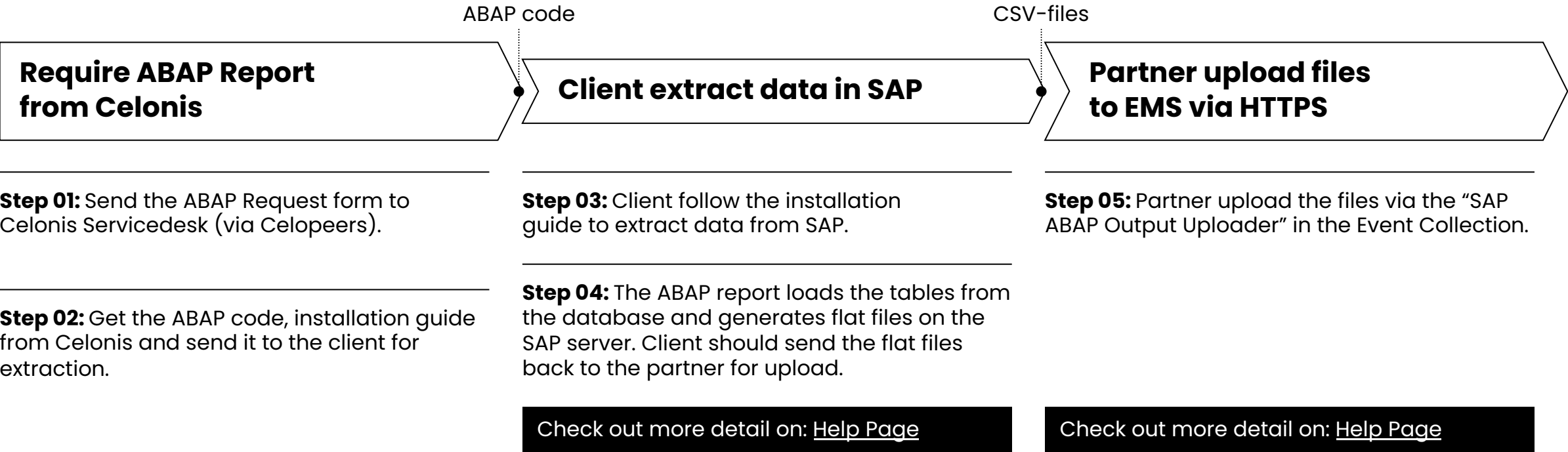
While we always recommend continuous connection as a standard, for short-term assessment projects and pilots, you can also leverage flat file upload option to build your analysis.

(2) Establish System Connection | Flat File Upload

3a. ABAP Report

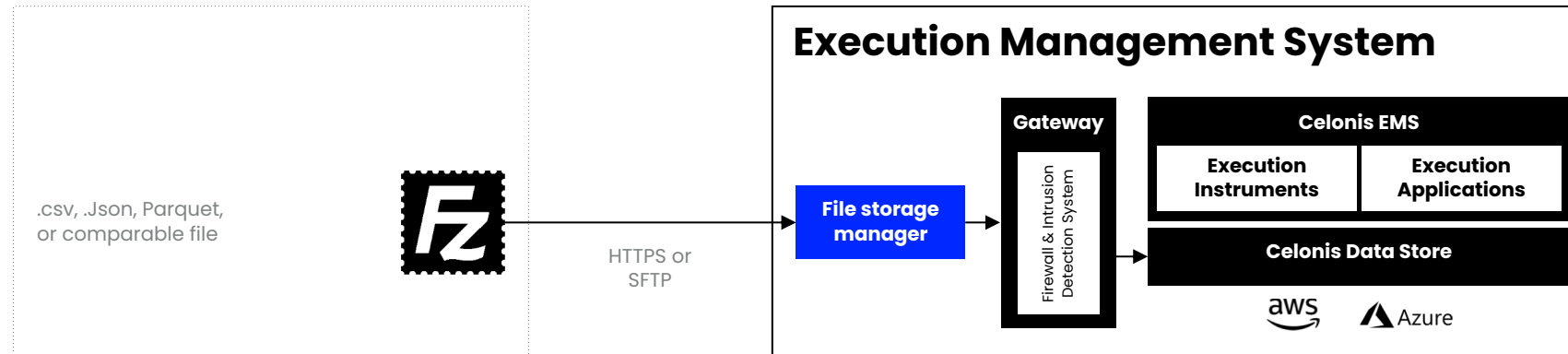
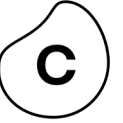


To upload the data via ABAP extraction, please follow the steps below:



(2) Establish System Connection | Flat File Upload

3b. SFTP File Upload via File Storage Manager



SFTP file-uploads

to the file storage manager connection procedure

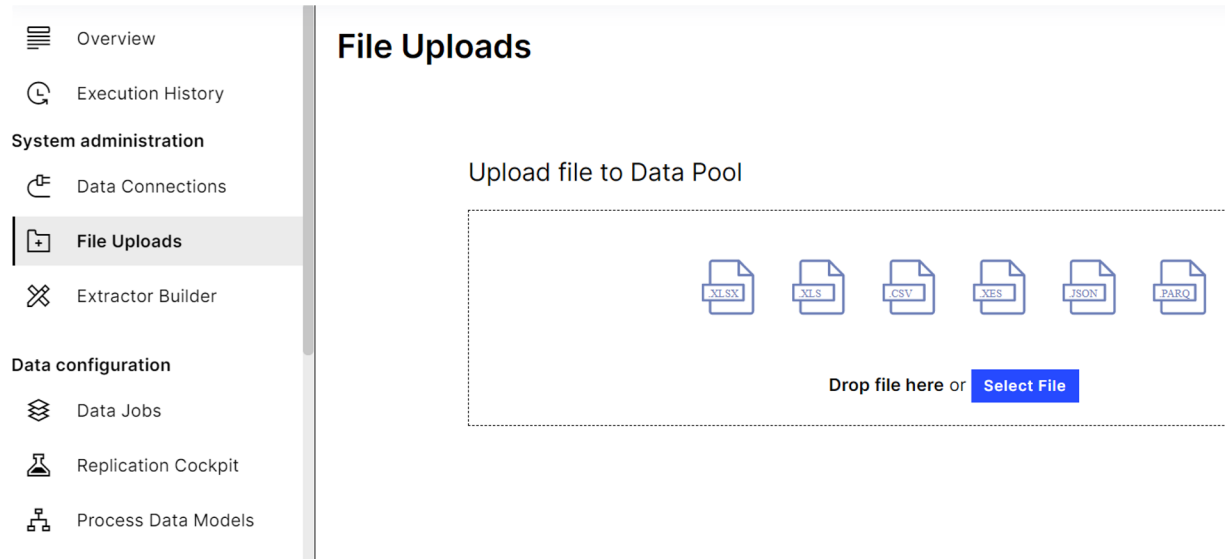
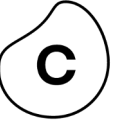
Simply **drag and drop** the (unstructured) files in the **file storage manager** using FileZilla

This is for **manual one-time uploads**, meaning no real-time connection is established, we always recommend to setup real-time connection if possible

Check out more details on: [Help Page](#)

(2) Establish System Connection | Flat File Upload

3b. File Upload Option in Event Collection



File-uploads directly

in the EMS Data Pool

Drag and drop files directly into the EMS Data Pool via File-Uploads in the Event Collection

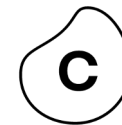
- Accepted formats: 1. CSV ; 2. Zipped CSV (7Zip, G-Zip, Zip, GZ) ; 3. Parquet ; 4. Database Backup or Dbdump
- The file upload limit is 1 GB per file

Additional **Best Practices** for extraction of data:

- No modifying raw data or providing BI reports. Celonis requires access to raw data from IT softwares
- If you do receive multiple extracts, upload them into the IBC separately and use "Union" statements to join the tables in the IBC – it's a lot faster that way and you don't end up overwriting data due to same table names
- Some companies try to send multiple extracts of data (usually monthly) – discourage this practice and ask for one complete data extract to make it easier and prevent additional manual effort
- No interpreted table names or column names – leave column titles as-is and provide separate translation if possible

This is for **manual one-time uploads**, meaning no real-time connection is established, we always recommend to setup real-time connection if possible

Check out more details on: [Help Page](#)



(3) Extract Data

Extraction Best Practices

To select Tables, first refer to the EMS Store Process Connector which fits your process at stake.

If there are none you can find inspiration from similar processes Connectors. You can download these in a new Pool and check the Extraction templates there.

To select Columns you can keep all columns selected for any table by default. Except for large tables (100M+ rows) where you should ideally only select the 10 – 30 columns you need for your analysis.

To select Filters, refer to the ones from the EMS Store Process Connector that you have chosen for your process, or from PCs which are similar to your process.

Usually you would use:

- A Date filter for your transactional tables (POs, SOs, Invoices etc.)
- Attributes filters on certain tables, for example Doc Types filter on Documents tables (VBFA, BSEG etc.)

Typical timeframe to enable and augment long-term Value from Celonis projects are 1 – 2 years, depending on the industry and customer. 1 year or YTD is usually a minimum. 1.5 – 2 years is better.

Align with the customer on the Timeframe to pull. Also align on which tables would be considered heavy (10 – 100M rows) based on the timeframe.

In some cases, it can be a good method to **first extract a small timeframe** (i.e., 1 week – 1 month), before increasing it progressively to a larger timeframe (i.e., 1 – 2 years). Basically, having a **lean** approach and avoid extracting heavy tables when the volumes are unclear. Iterating on the timeframe is very easy using Pool parameters for example.

It is a best practice to extract those **large tables during customer downtimes**, such as overnight or over the weekend, to avoid affecting their servers. Of course, the customers might be completely indifferent to extraction time and volume, but it is important to align with them beforehand.

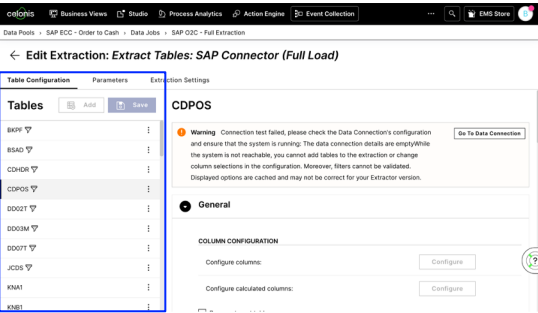
(3) Extract Data

Define an extraction job in 4 simple steps



01 Define tables

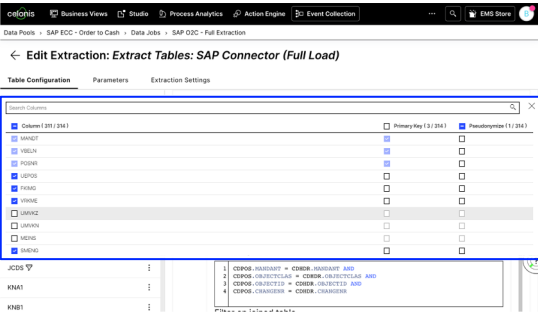
Select which tables you would like to extract for your analyses



02 Configure columns

Specify which columns to include and exclude in your extraction to minimize data

In this view, you can also select which fields you want to **pseudonymize**

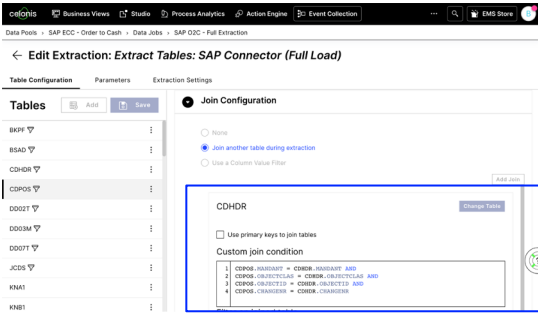


Configure for each table

03 Configure joins

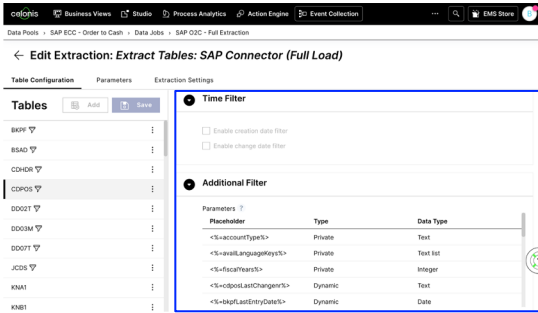
Join one or multiple tables to further minimize your extraction

Each join partner can either be joined through the primary keys of the tables or through a custom join path



04 Configure filters

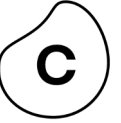
You can add time filters and any additional filters such as company codes, geos to further filter your extraction



Check out more detail on: [Help Page](#), and the best practice: [Here](#)

(3) Extract Data | Advanced Settings

Leverage advanced settings to tailor your extractions



Scheduling Settings

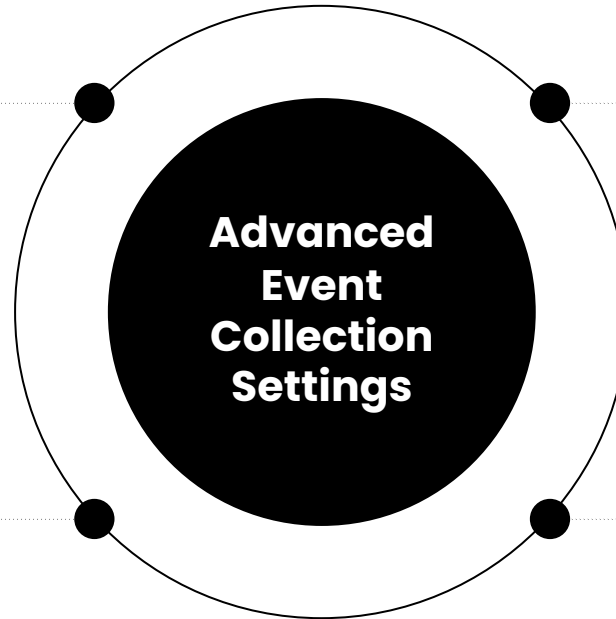
Automatically Execute Jobs

- Set **scheduling rules** e.g., frequency and date of extraction. ETL will **automatically be triggered** based on your pre-defined schedules
- Set which extraction and transformation should be extracted regularly

Delta Loads

Use Delta Loads for robust extraction

- Delta loads enable you to **extract only the “delta” data in comparison to your previous extraction**
- Delta filters are used to define which entries in the table are loaded in the delta load
- Best practice is to use **dynamic parameters** for delta filters as they indicate the maximum value of a defined column



Data Pool Parameters

Create parameters in data pool level

- Accessible through the main menu item **“Data Pool Parameters”**
- Establish and maintain parameters on a data pool level such as timeframe, company codes and any other parameters that you will use in your data jobs

Task Templates

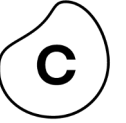
Create templates to re-use your tasks

- A generalized task to **use the same extractions and transformations** for multiple systems
- Create a template in two ways: (1) Use the context menu entry “Convert to template”; (2) Use the “New Task Template” button in the “Task Template” section

Check out more detail on: [Help Page \(Scheduling\)](#), [Help Page \(Delta Loads\)](#), [Help Page \(Parameters\)](#), [Help Page \(Template\)](#)

(4) Transform Data

For your first project, we recommend you leverage our ready-to-use connectors



Starting with a Celonis Process Connector

80+ process connectors: Ready-to-use connectors that include pre-configured data extraction, transformation scripts and data model.

Full editing right to customize these transformations.

Developing Your Own Transformations

Build your own connector if you can't find a suitable one in the EMS Store

Identifying the **case ID, activities and timestamps**

To learn more about custom connections, you can check out our **"Advanced: Custom Process Connection Course"** on Celonis Online Training Platform

Effort
required:



(4) Transform Data

Most of your customers will have their event data scattered across tables. Transformations are designed to bring this data together.

Data scattered among transactional tables

TABLE 01: Order Information						
Order slip	Details	Item Code	Customer	Quantity	Amount	Creation date
2020170175	000001	255541	ABC Retail	3	3,000	2020.01.30
2020170175	000002	255555	ABC Retail	1	2,000	2020.01.30
2020170175	000003	255565	ABC Retail	2	5,000	2020.01.30
...				

TABLE 02: Shipping Information			
SHIPPING Slip	Order slip	Details	Creation date
1020220001	2020170175	000001	2020.02.04
1020220002	2020170175	000002	2020.02.04
...	

TABLE N: Change log					
Order slip	Details	Item	Before change	After change	Date of change
2020170175	000001	Quantity	2	3	2020.02.01
2020170176	000001	Amount	1,000	1,100	2020.02.02
...			



Data merged into Activity Table

CELONIS ACTIVITY TABLE		
Case Key	Activities	Timestamp
2020170175000001	Registering Order Slip Details	2020.01.30
2020170175000001	Quantity change	2020.02.01
2020170175000001	Create shipping slips	2020.02.04
2020170175000001	Shipping confirmation	2020.02.05

(4) Transform Data

Celonis then automatically reconstructs all variants of the end-to-end process based on the Activity Table

Activity Table

Case key (= object ID)	Activity (= process step)	Event time
45100759750001	Order Request	2020-07-23 12:34:58
45100759750001	Create purchase orders	2020-07-24 13:12:17
45100759750001	Warehousing and transcription	2020-08-18 08:14:21
45100759750001	Receipt of invoice	2020-08-20 12:12:19
45100759750001	Paying bills	2020-09-02 04:34:55
45234726350012	Create purchase orders	2020-08-10 11:10:02

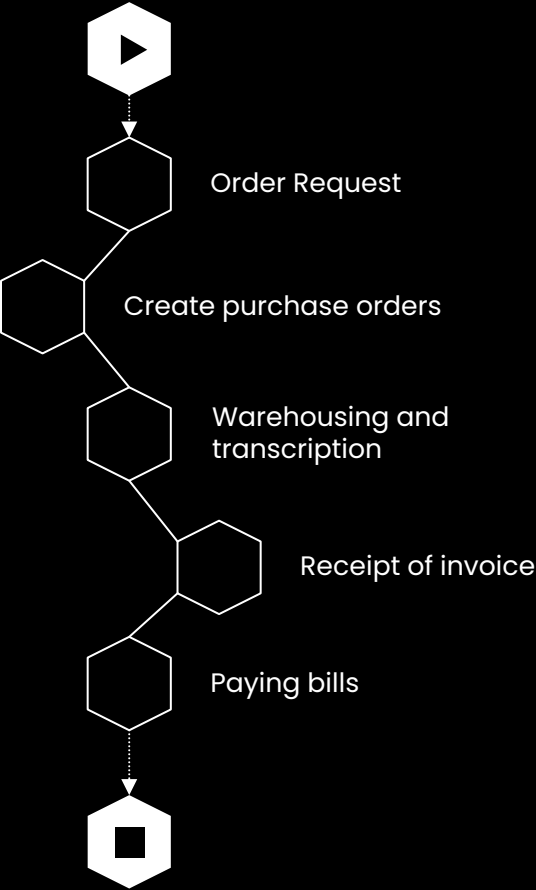
...

...

...

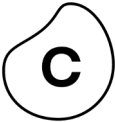
Celonis automatically constructs process flow

Purchasing Process



(4) Transform Data

Based on your use cases, you can add additional information to the Activity Table



Activity Table

Case Key	Activity	Event time	Sorting	User Type	Before Change	After Change	...
45100759750001	Order Request	2020-07-23 12:34:58	10	A			...
45100759750001	Create purchase orders	2020-07-24 13:12:17	20	B			...
45100759750001	Warehousing and transcription	2020-08-18 08:14:21	30	A			...
45100759750001	Receipt of invoice	2020-08-20 12:12:19	40	A			...
45100759750001	Paying bills	2020-09-02 04:34:55	50	B			...
45234726350012	Create purchase orders	2020-08-10 11:10:02	20	B			...
45234726350012	Price change	2020-08-10 11:34:21	25	A	1200	1100	...
45234726350012	Posting of incoming goods	2020-09-11 19:41:43	30	A			...
45049123220007

(4) Transform Data | Scripting Basics

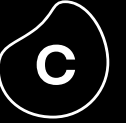
Creating a brand-new Activity Table

In the Event Collection, go to Data Jobs, add a New Transformation and insert the following SQL statement.

```
DROP TABLE IF EXISTS "_CEL_P2P_ACTIVITIES";
```

```
CREATE TABLE "_CEL_P2P_ACTIVITIES" (
```

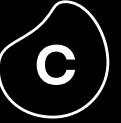
- Line for Case Key
- Line for Activity
- Line for Event Time
- Line for Sorting
-);



```
DROP TABLE IF EXISTS "_CEL_P2P_ACTIVITIES";
```

```
CREATE TABLE "_CEL_P2P_ACTIVITIES" (
```

- **"_CASE_KEY" VARCHAR(50)**
- **, "ACTIVITY_EN" VARCHAR(200)**
- **, "EVENTTIME" DATETIME**
- **, "_SORTING" INT**
- **);**



(4) Transform Data | Scripting Basics

Adding activities to the Activity Table

After setting-up the Activity Table, Activities can be added to this table by adding New Transformations

```
INSERT INTO_CEL_P2P_ACTIVITIES ("_CASE_KEY", "ACTIVITY_EN", "EVENTTIME", "SORTING")
```

SELECT

- "EKPO"."MANDT" || "EKPO"."EBELN" || "EKPO"."EBELP" AS "_CASE_KEY"
- , 'Create Purchase Requisition Item' AS "ACTIVITY_EN"
- , "EBAN"."BADAT" AS "EVENTTIME"
- , 10 AS "SORTING"

FROM "EKPO"

JOIN "EKKO" ON

- "EKPO"."MANDT" = "EKKO"."MANDT"
- AND "EKPO"."EBELN" = "EKKO"."EBELN"

JOIN "EBAN" ON

- "EKPO"."MANDT" = "EBAN"."MANDT"
- AND "EKPO"."BANFN" = "EBAN"."BANFN"
- AND "EKPO"."BNFPO" = "EBAN"."BNFPO"
- WHERE "EKKO"."BSTYP" = 'F';

WHERE "EKKO"."BSTYP" = 'F';

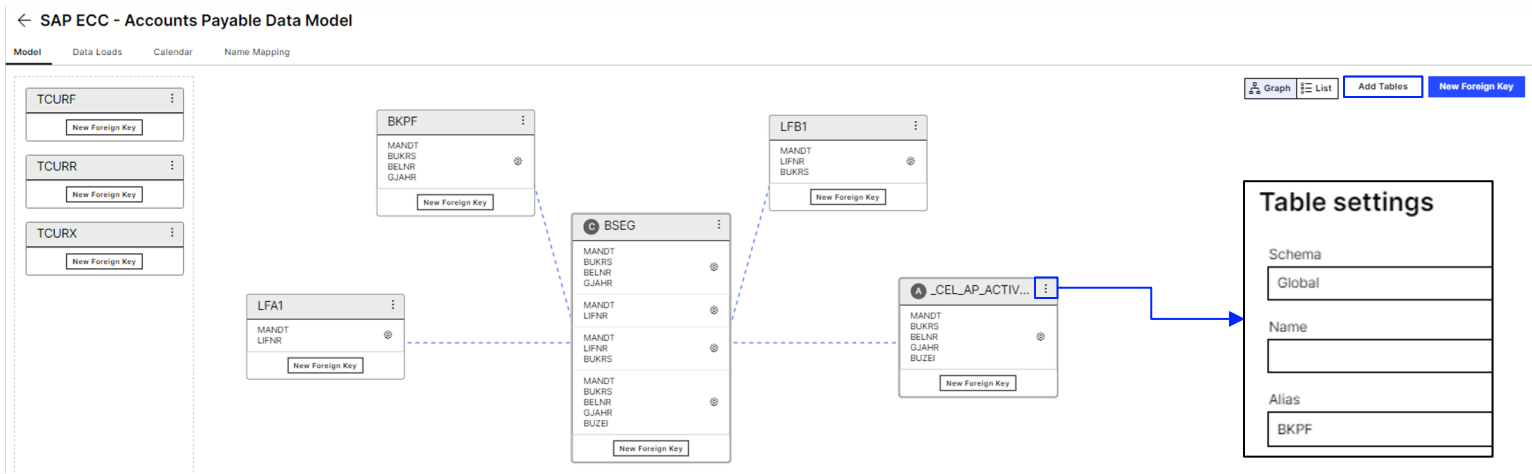
Insert results into activity table

Extract relevant information (case key, activity name, event time, ...)

Specify the objects you want to analyze (stays the same for all activities)

Depending on the activity, add tables with necessary further information by joining them to 1)

(5) Build Data Model



Use the standard Data Model from EMS Store

- 01 | Data model is pre-configured, simply go to “Data Loads” tab and press “Force Complete Reload” for the first load
- 02 | After it shows the green check mark means loading is successfully done

Check out more detail on: [Help Page](#)

Create your own customized Data Model

- 01 | Click “Add Tables” and add the tables you need
- 02 | Define Case Table and Activity Table
- 03 | Check the Table setting of each table to monitor if you choose the correct table from the right schema
- 04 | Link the tables with the foreign keys, check [Join functionality](#)
- 05 | Press “Force Complete Reload” after the configuration

Check out [Data Model error handling best practice](#)

Recommended Training Courses & Resources

Process Connection



Must complete
**Process Connection
Basic**

Must complete
**Process Connection
Advanced**

**Data Engineer
Best Practices**

Celonis Help Page
[Event Collection](#) | [Data Job](#)

ONLINE TRAININGS

HELP RESOURCES

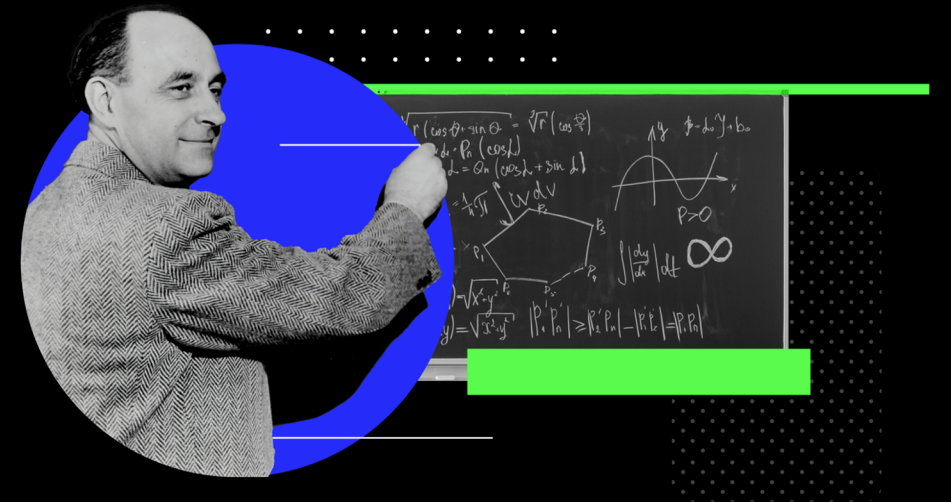
Training Tracks

01 | Fundamental Training:
The “**Process Connection Basic**” and “**Process Connection Advance**” training cover the most essential steps to successfully load data into Celonis for process mining

02 | Advance Training:
The “**Data Engineer Best Practice**” is crucial to complete to get the full knowledge of Event Collection best practices. By completely is, partners can ensure the quality of data extracted and speed up the data extraction and transformation process

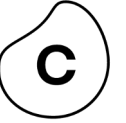
STAGE THREE

Analyses Building



STAGE THREE

Analysis Building



Introduction

Congratulations! Your data is now ready for process mining, the next step is to visualize the data, find out the business inefficiencies and root causes, then take actions against the bottleneck of the business.

In this section, we will look into some of our best practices and share how you can build a world-class analysis for your consulting engagements.

01

Validate data

Ensure that the data on Celonis EMS is validated by your customer before you identify use cases & improvement opportunities

02

Build analysis

Create tailored analyses based on your customer's requirements. Check out EMS Store and install any analysis from 500+ existing options

(1) Validate Data

Data and process validation is a crucial step for every project

After you connect the process, the next step is to validate the data visualization results. We highly recommend you check for red flags to prepare for the data validation with your customer. Please complete the **“Process & Data Validation”** training in Academy for more detailed instructions.

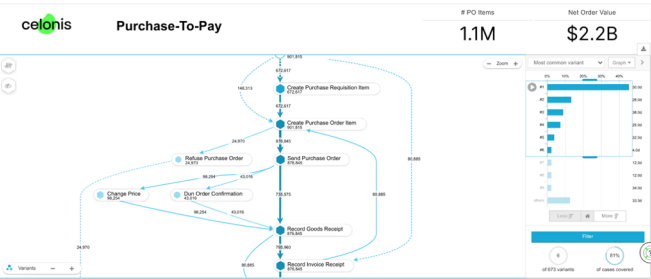
01 Process Validation

The sum of cases, activities and net order value is correct
!: The number of cases has exceptionally high peak in February

Activity throughput times and sequence make sense
!: Purchase order is created before the approval in 90% of cases

Activity frequency is correct
!: too many – “Create PO” is occurring 5M times in 1M cases;
too few, “Approve PO” is occurring 10 times in 1M cases

Check out more detail on: [Partner Portal documentation & video](#)



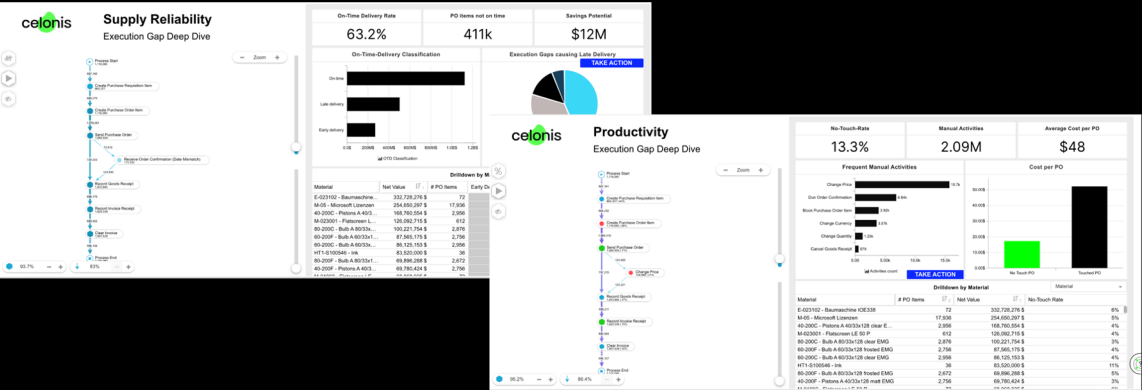
02 Analysis Validation

For each analysis, check if:

The absolute number of the KPI is plausible

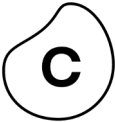
The trend of the KPI over time is plausible

The KPI values in the drilldown (e.g., by company code) is plausible



(2) Build Analysis

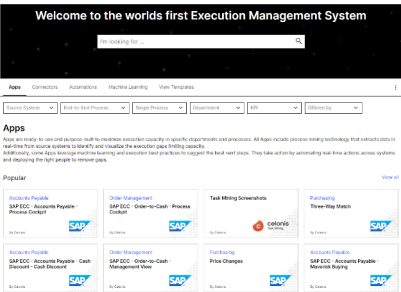
We highly recommend checking out our EMS store to get started with template analyses



Starting with the Celonis analysis template

Kickstart your analysis by installing a template from **500+ out-of-box analyses**, which include standard KPIs and dashboards for key processes and systems

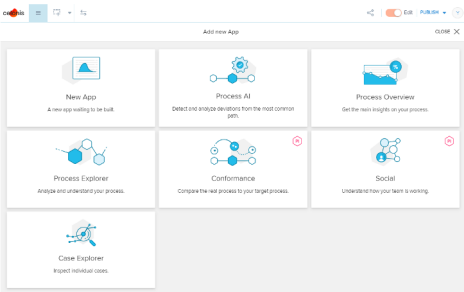
You will have **full editing rights** to tailor these for your customers needs



Developing Your Own analyses

You can also build your own analysis with Celonis’ drag & drop analysis-builder

To learn more about custom analysis, you can check out our **PQL Function library** on Celonis Help Page



Effort required:



(2) Build Analysis

After installing the analysis from the EMS store, you can configure the initial settings

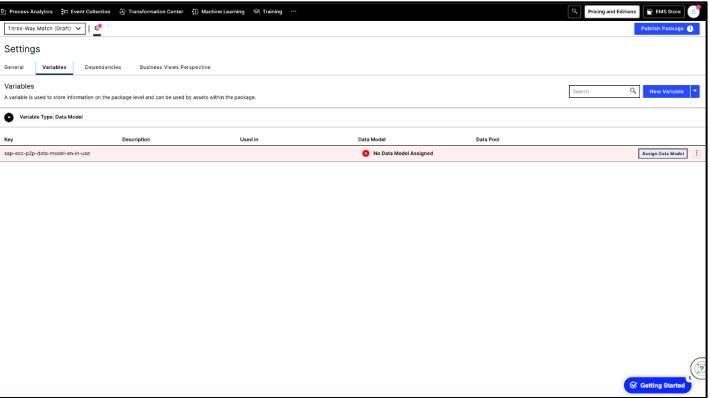


01

Assign Data Model

Check if you have the column in your data, if not, delete it in case it's not relevant for your use case. Or if its a wrong column name, replace the name to the correct one.

Example



02

Configure Settings Sheet

Many out-of-box analyses have a “Settings” sheet for you to easily tailor KPI calculations for your customers requirements.

Example



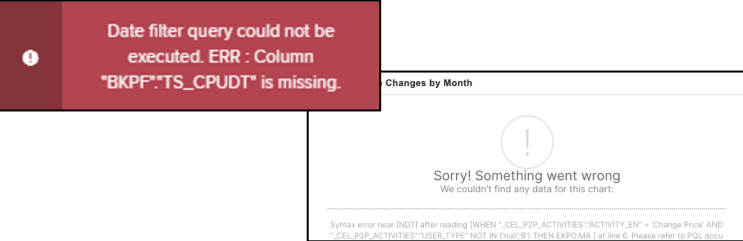
In this example, we are looking at the “Settings” sheet for an automation analysis. You can select the user types and activities that need to be considered for Automation Rate.

03

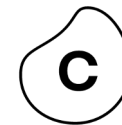
Check if everything is working

Scan through your analysis to make sure that everything is working. In many cases, there might be a need for adjusting the calculations due to data availability and source system customizations.

Example



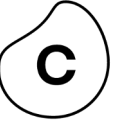
In this example, there is no column named “TS_CPUPT” in your data set. Check out if you can replace it with another column e.g., “CPUPT” or if you need to extract this additional field.



(2) Build Analysis

Analysis Best Practices

- 01 Think of who is your **target audience** – e.g., Directors & managers, Process Owners, Analyst or operation crew? you should tailor your analysis to their specific needs
- 02 What **storyline** do you want to present to them? For more information, please refer to the click story in Demos of TryCelonis
- 03 Make good use of the **“sorting”** function to keep your dashboard neat
- 04 Use **live data**, if possible, to identify inefficiencies in real-time and to track the results overtime
- 05 **Share your findings** with the client frequently to gain feedback and to optimize it
- 06 Remember, **less is more!** Don't put too much information on the single dashboard, show the most important and relevant figures on the page to catch the attention of the audience.



(2) Build Analysis

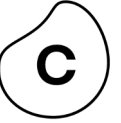
Analysis Best Practices

These are the Best Practices for Analysis Building, with details on the following slides:

- ① Fitted to Target Users
- ② Provides Target Insights & KPIs
- ③ Validated
- ④ Consistent
- ⑤ Clean

(2) Build Analysis

Analysis Best Practices



Additional Best Practices

When building an Analysis, the first critical aspect is **who are the Target Users?**

I.e.. Directors, Managers, Process Owners, Analysts or Business Users.

This will determine your entire Analysis: the format, the KPIs and type of views!

In the end the Analysis needs to allow the Target Users to obtain the Target Insights & KPIs as easily as possible.

It's all about providing the Target Insights.

Example: For a Cycle Times analysis for a P2P Process owner, the Analysis needs to provide ways to know which Activities are increasing CT, which Vendors are related to high CT etc. This usually entails having overall avg CT, a histogram of the CT and a Drilldown table with CT by data subset.

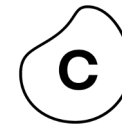
Your Analysis should be **validated** at some stage. That is what the Validation phase of the project is meant for. This is essential in order to ensure Insights & KPIs are correct and provide Value.

Keep your Dashboard **consistent**! This is also critical and relates to Validation.

Consistency is achieved by

Aligning KPIs across the Analysis. This is usually done by saving each KPI formula in the Knowledge Model or Saved Formulas and using that exact formula everywhere you need to display the given KPI. That ensures each KPI is consistent across views.

Align Variables across the Analysis. If updating a certain parameter is supposed to affect several views, then all those views should be using the same Variable containing that parameter.



(2) Build Analysis

Analysis Best Practices

The Analysis should be clean and well presented

Views are aligned i.e., borders are aligned

Views sizes are fitted to comfortably read the Insights & KPIs

Views formatting, font and colors are consistent and look professional

The format of KPIs and Numbers (i.e., number of decimals, rounding etc.)

should be well thought of. Remove decimals and extra digits when they are useless for the Target Users.

Example: On a Cycle Times analysis, on the Drilldown table, usually the decimals are not needed. 5 days or 32 days is a sufficient format, the decimals like 5.2 days 32.4 days are unnecessarily detailed. They will negatively impact your Analysis.

Example 2: For Executive Analyses, you would usually round numbers more than usual, because Executives require a very high-level view without the extra decimals.

(2) Build Analysis

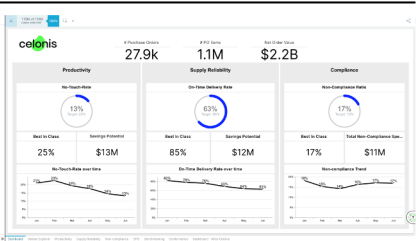
Exemplary Dashboards for inspiration



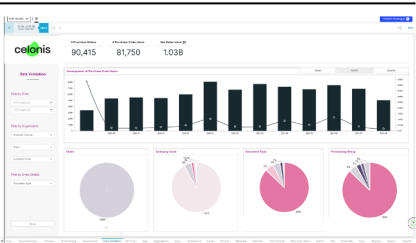
KPI Overview

for reporting purposes

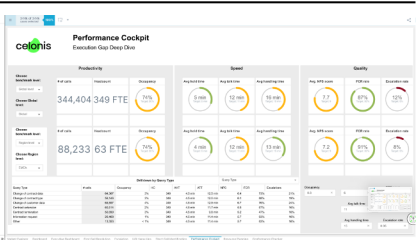
Executive Dashboards



Data Scope



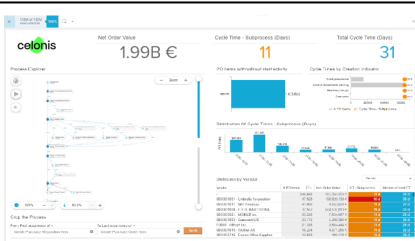
Performance Cockpit



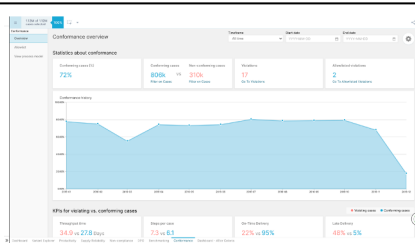
Exploratory

for high-level process exploration

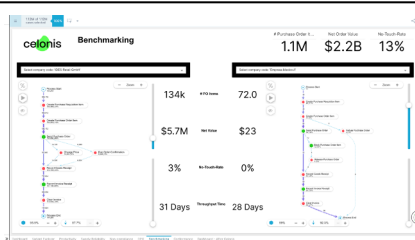
Cycle Time



Process Conformance



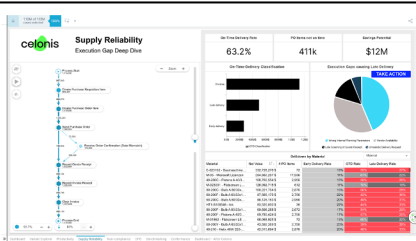
Benchmarking



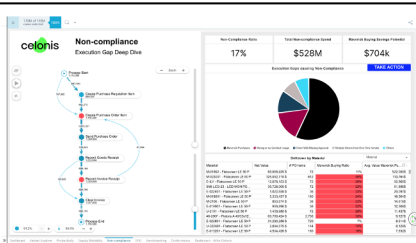
Process-specific

for KPI deep dives e.g., Procurement

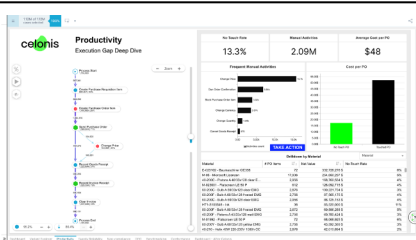
Supply Reliability



Non-compliant Purchases

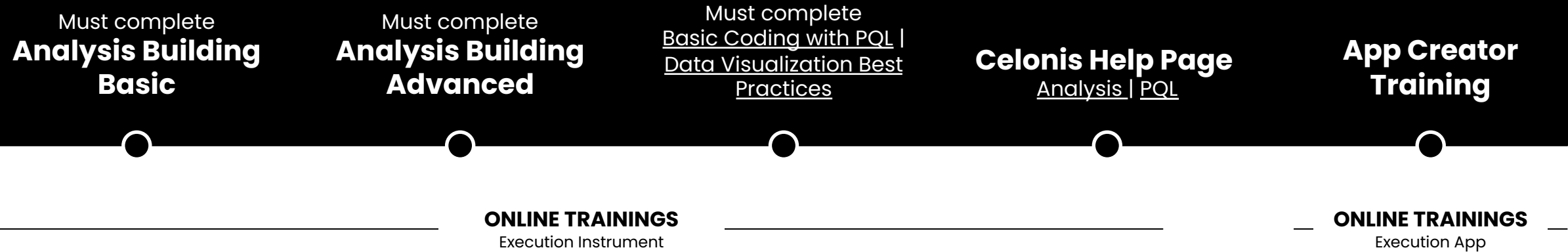


Procurement Productivity



Recommended Training Courses & Resources

Analysis Building



[Remark]

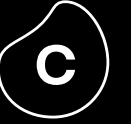
There are two kinds of Analyses you can build

01 | Execution Instrument:

Formerly known as process mining analytics applications. This is the analysis which partners usually work on. Currently there are 500+ free ready-to-use template on EMS Store.

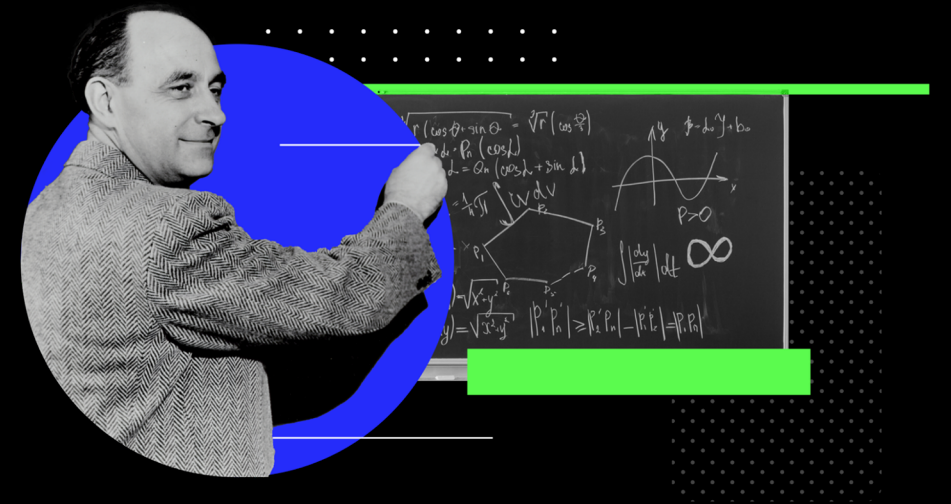
02 | Execution App:

Advance Celonis analysis that measures execution capacity in real-time and provide the best-in-class actions to remove these barriers. Currently the ready-to-use App templates are not free of charge.

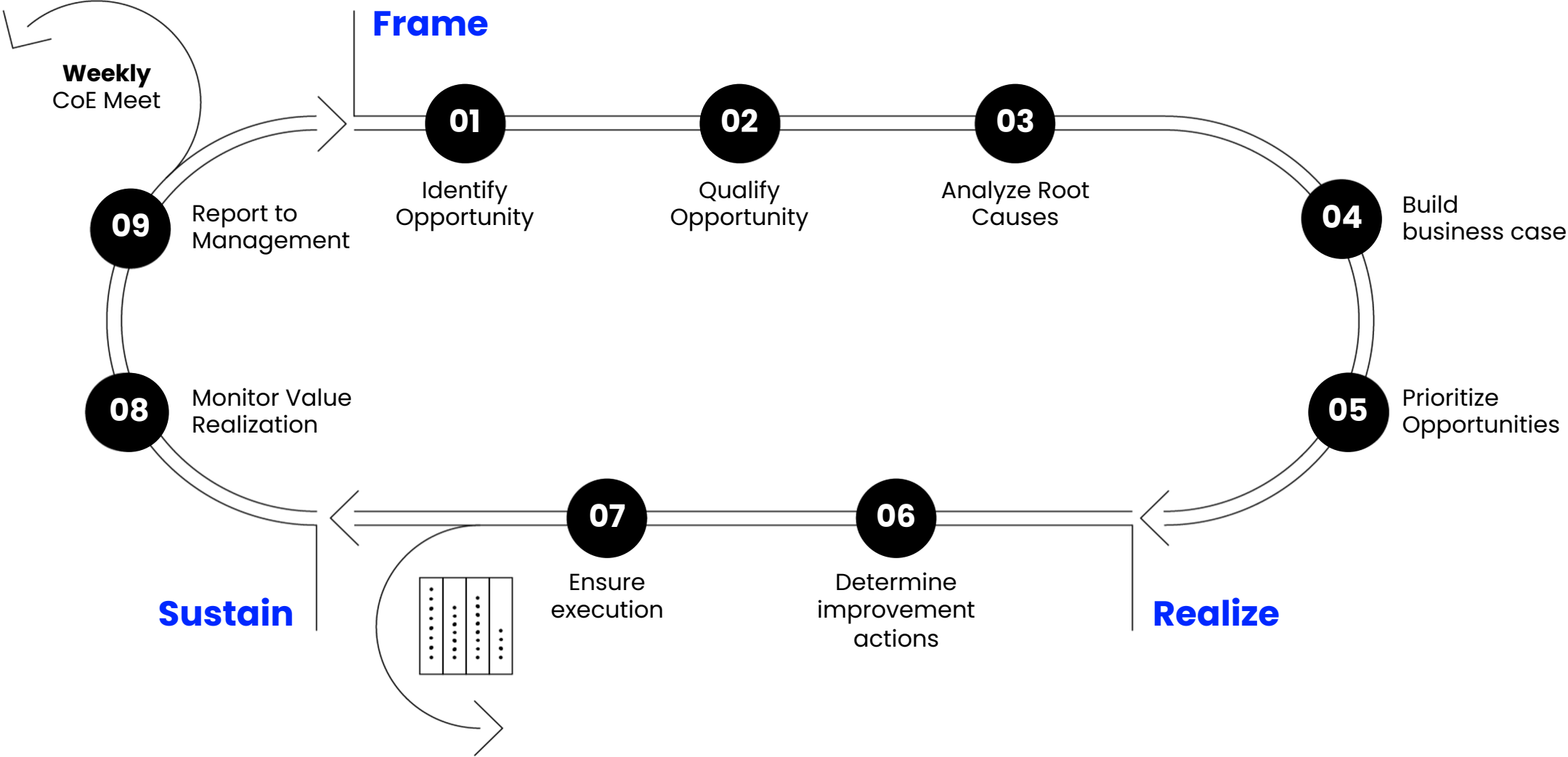
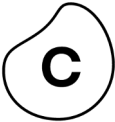


STAGE FOUR

Drive Value Realization



Celonis Value Realization Framework



(1) Frame the value

Identify Execution Gaps

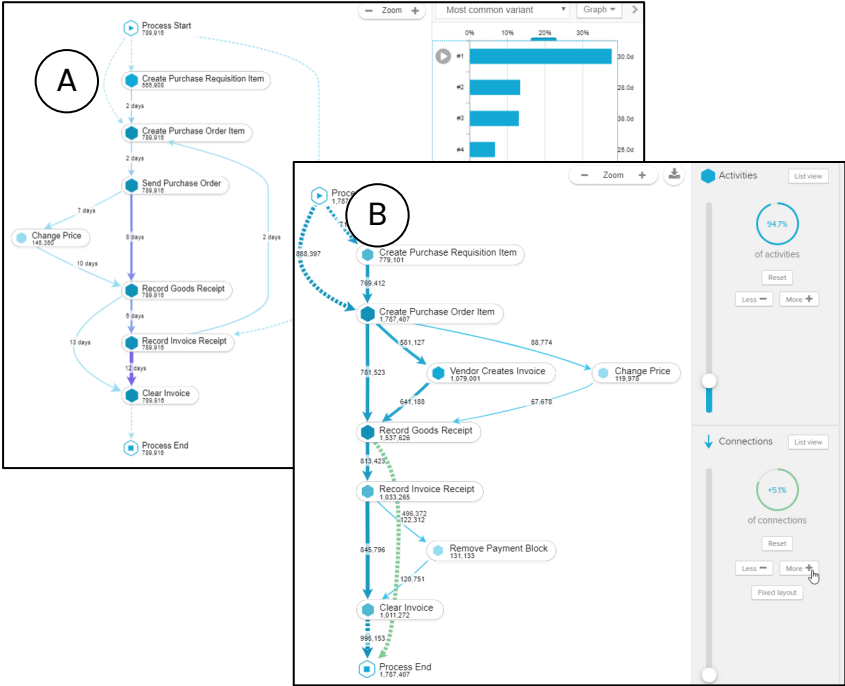
Celonis offers state-of-art process mining visualization to help you explore the as-is process and identify execution gaps

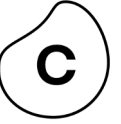
A Variant Explorer

- Very **intuitive** and easy to use
- Enables you to identify **the level of standardization** and the number of variants
- Displays **the most frequent process variant** by default
- You can **expand into further variants** in the order of frequency
- Possible to **filter on one or more process variants**
- All **variants can be unveiled**

B Process Explorer

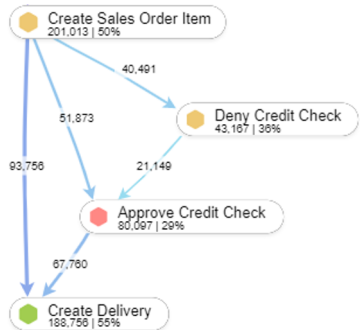
- Allows to **investigate processes** more precisely
- Differentiates between **activities and process connections**
- The process explorer **displays the most frequent activities and connections**
- More activities and/or connections** can be added
- Quickly **identify suspicious or fraudulent transactions**





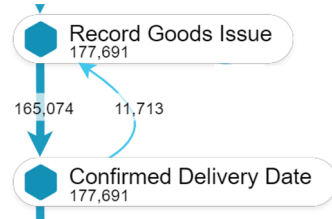
01

- a) Occurring
b) Missing, or
c) Repeated.



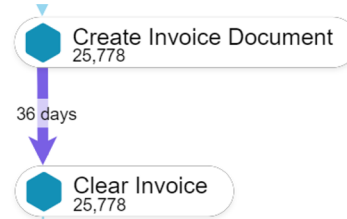
02

Process Steps are executed in the wrong Order.



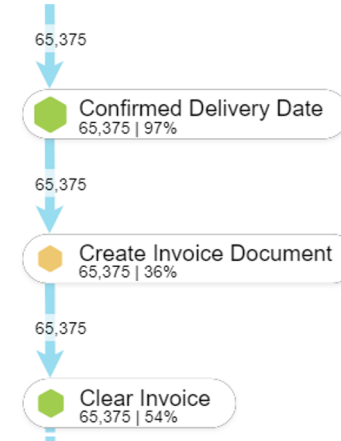
03

The Throughput Time between Process Steps is too high or too low.



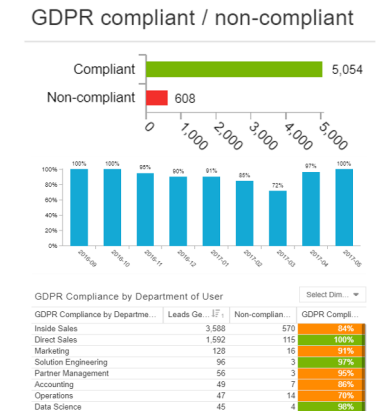
04

The Automation Rate for Process Steps or entire Cases is too low.



05

KPIs that don't fit any other category and are only applicable to some processes.



(1) Frame the value

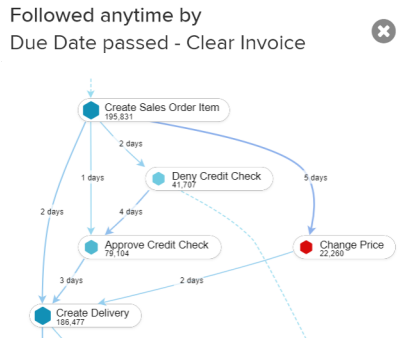
Analyze root causes



Find Drivers in the Process

Process Explorer

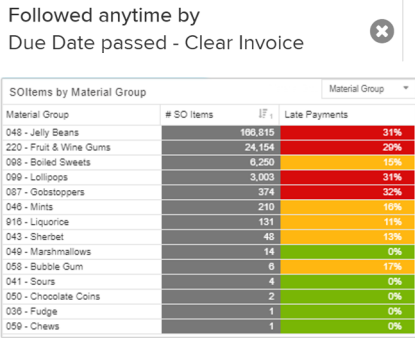
Work with the Process Explorer to discover other inefficiencies driving yours.



Find Drivers in the Attributes

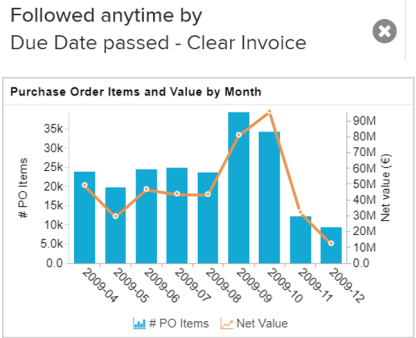
Drilldown Table

Search for Drivers in different dimensions using the Drilldown Table.



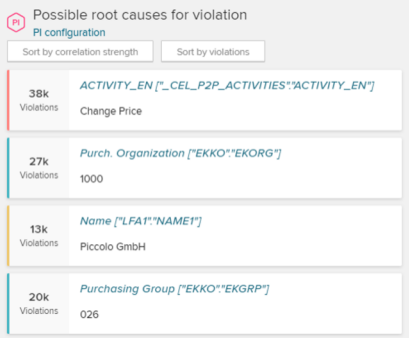
Column Chart

Search for significant developments over time.



Conformance Checker (Automated)

Use the Root Cause Analysis in the Conformance Checker to automatically derive possible causes.



Optional

Drill Down to a document level and look at specific Documents in Celonis (Case Explorer) or the Source System.

PURCHASING DOCU...	ITEM [EKPO.EBELP]	
0000080158	20040	
0000049801	10040	

Create Purchase Requisition Item	0
Create Purchase Order Item	+26
Print and Send Purchase Order	+40

(1) Frame the value

Celonis Use Case Template



- 01

Insight
The execution gap you identified in your analysis
- 02

Root cause
The output of your root cause analysis
- 03

Action
Your recommendation on how to eliminate this gap
- 04

Business Value
Business impact calculation with key inputs such as volume, impact and potential
- 05

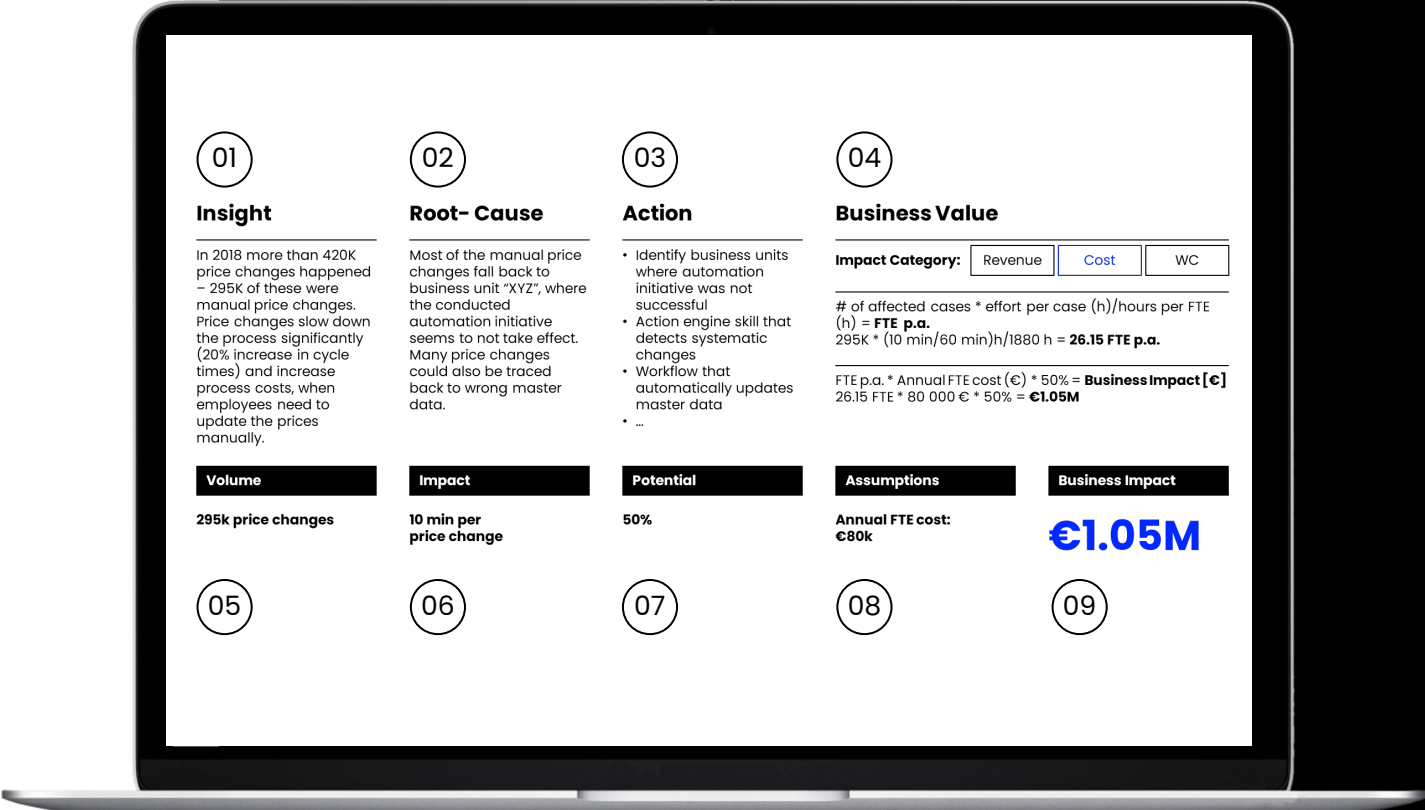
Volume
The volume of cases, revenue or costs impacted
- 06

Impact
Impact of this use case for the business
- 07

Realization Potential
An estimation on how much we expect to improve this use case with actions
- 08

Assumptions
Key inputs from the customer such as FTE costs
- 09

Business Impact
Total business impact based on volume, impact, realization potential and assumptions



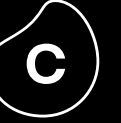
(1) Frame the value

Exemplary Celonis Use Case Template – Reducing Manual Price Changes



Template

Insight	In 2018 more than 420K price changes happened – 295K of these were manual price changes. Price changes slow down the process significantly (20% increase in cycle times) and increase process costs, when employees need to update the prices manually.	Volume	295K price changes
Root- Cause	Most of the manual price changes fall back to business unit “XYZ”, where the conducted automation initiative seems to not take effect. Many price changes could also be traced back to wrong master data.	Impact	10 min per price change
Action	<ul style="list-style-type: none">Identify business units where automation initiative was not successfulAction engine skill that detects systematic changesWorkflow that automatically updates master data...	Potential	50%
Business Value	<div>Impact Category: <div>Revenue</div><div>Cost</div><div>WC</div></div> <div># of affected cases * effort per case (h)/hours per FTE (h) = FTE p.a. 295K * (10 min/60 min)h/1880 h = 26.15 FTE p.a.</div> <div>FTE p.a. * Annual FTE cost (€) * 50% = Business Impact [€] 26.15 FTE * €80 000 * 50% = €1.05M</div>	Assump- tions	Annual FTE cost: €80K
		Business Impact	€1.05M



Exemplary Value Trees & Business Cases

Execution Excellence in Purchase-to-Pay



Happy Path



Business Objectives	Spend Reduction	Working Capital Optimi.	Labor Productivity	Supply Reliability	Compliance & Sustainability
Key Metrics	<ul style="list-style-type: none">• Spend under Management• Total Discounts Taken	<ul style="list-style-type: none">• Days Payable Outstanding	<ul style="list-style-type: none">• Cost per PO• First-Time Right	<ul style="list-style-type: none">• OTIF Rate• Lead Time Adherence	<ul style="list-style-type: none">• Spend Compliance• Internal Control Failure• Carbon Footprint
Improvement Opportunities	<ul style="list-style-type: none">• Cash Discounts• Contract Usage• Duplicate Payments• Price Stability• Supplier Consolidation	<ul style="list-style-type: none">• Payment Behavior• Payment Terms• Early Deliveries• Early Invoices• Payment Methods	<ul style="list-style-type: none">• PO Accuracy• Automation• 3-Way Match• Free-Text Orders• Master Data Mgmt.	<ul style="list-style-type: none">• Delivery Performance• Lead Times• Returns• Delivery Date Changes	<ul style="list-style-type: none">• Maverick Buying• Segregation of Duties• Approval Compliance• Fraud Detection

Success Story Highlights



\$77M savings in P2P generated



>\$7M in working capital saved

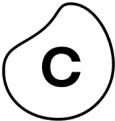











Perfect PO increased from **73% to 96%**



Improved Supplier OTD from **61% to 81%** in 4 months

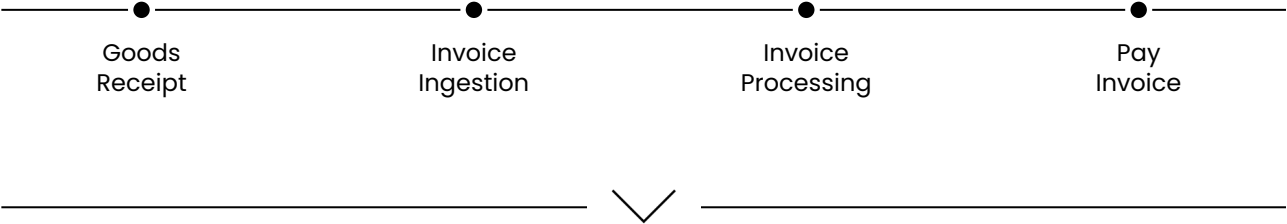
Celonis Financial Benefits in Purchase-to-Pay



Assumptions		#POItems: 160k/year		Invoice Value: \$1.2B		FTE Costs: \$55k/year		ROIC: 8%		Holding Cost: 2%	
Objectives	Improvement Opportunities	Affected Volume		Impact		Realization Potential		Reference Customers		Financial Impact	
Labor Productivity	Manual Rework	1.1	Rework Activities/Item	5	Min/Rework	25%		Improvement in perfect PO rate to 96%		\$112,000	
	Automation	1.5	Automatable Activities/Item	4	Min/Activity	25%		Saved annually \$770k by automating PO steps		\$122,000	
	EDI	60%	Manual Transmission Rate	4	Min/PO	35%	B/S/H/	Increased EDI rate by 20%		\$68,000	
	Free-Text Requisitions	18%	Free-Text Requisition Rate	15	Min/PO	65%		2x increase in purchasing catalog utilization		\$143,000	
Spend Reduction	Material prices	0.5%	Total Price Increase Rate			20%		\$1M saved by optimizing suppliers		\$1,150,000	
	Contract usage	32%	Non-Contract Usage Rate	3%	Discount Potential	15%		Elimination of monthly and manual reporting		\$1,656,000	
	Maverick Buying	13%	Maverick Buying Rate	3%	Discount Potential	15%		75% reduction in Maverick Buying		\$673,000	
Inventory Holding Costs	Early Deliveries	24%	Delivered too early	6	Days too early	25%		Optimized \$7M in Working Capital		\$23,000	
	Late Deliveries	22%	Delivered too late	8	Days too late	15%		Improved Supplier OTD from 61% to 81% in 4 months		\$17,000	
WC	Early Deliveries	24%	Delivered too early	6	Days too early	25%		Optimized \$7M in Working Capital		\$91,000 (One-Time)	
Required Celonis EMS capabilities to realize estimated financial benefits		01 Event Collection	02 Planning & Simulation		03 Execution Apps		04 Action Flows		05 EMS Store		\$4.06M

Execution Excellence in Accounts Payable

Happy
Path



Business Objectives	Spend Reduction	Working Capital Optimization	Labor Productivity	Compliance
Key Metrics	Total Discounts Taken	<ul style="list-style-type: none">Days Payable OutstandingOn-Time Payment Rate	<ul style="list-style-type: none">Cost per InvoiceNo-Touch Rate	<ul style="list-style-type: none">Spend ComplianceInternal Control Failure
Improvement Opportunities	<ul style="list-style-type: none">Cash DiscountsDuplicate PaymentsPenalty Payments	<ul style="list-style-type: none">Payment BehaviorPayment TermsBaseline DatesEarly InvoicesPayment Methods	<ul style="list-style-type: none">Invoice ErrorsAutomation3-Way MatchMaster Data Mgmt.	<ul style="list-style-type: none">Maverick BuyingSegregation of DutiesApproval ComplianceFraud Detection



Success Story Highlights



\$46M unrealized cash discounts saved

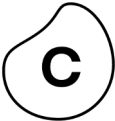










\$27M in working capital released



Increased touchless invoice rate by **33% p.p.**

Celonis Financial Benefits in Accounts Payable

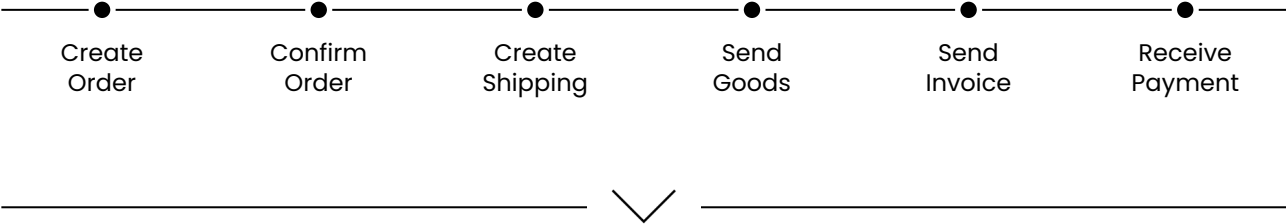


Assumptions			# Invoice Positions: 160k/year			Invoice Value: \$1.2B		FTE Costs: \$55k/year		ROIC: 8%	
Objectives	Improvement Opportunities	Affected Volume	Impact			Realization Potential		Reference Customers	Financial Impact		
Labor Productivity	Manual Rework	0.5	Rework Activities/Item	5	Min/Rework	15%		Reduced invoices needing rework by 20%	\$25,000\$		
	Automation	1.5	Automatable Activities/Item	4	Min/Activity	15%		Increased touchless invoice rate to 45%	\$60,000\$		
	Electronic Invoices	60%	Manual Transmission Rate	4	Min/Invoice	25%		20% increase in e-invoices	\$40,000\$		
	Payment Blocks	24%	Payment Block Rate	15	Min/Block	20%		444% efficiency increase in price block removals	\$48,000\$		
	Late Payments	22%	Too Late Rate	6	Min/Payment	25%		20% increase in on-time payment	\$22,000\$		
Spend Reduction	Maverick Buying	19%	Maverick Buying Rate	3%	Discount Potential	15%		Reduction in Maverick Buying by 75%	\$1,009,000\$		
	Lost Cash Discount	14%	Eligible for Discount	2%	Average Cash Discount	40%		Saved \$500K in previously lost cash discount	\$1,089,000\$		
	Duplicate Payments	0.15%	Duplicate Payment Rate			80%	Medtronic	1.2M invoices secured annually from paid twice	\$1,440,000\$		
Working Capital	Early Payments	20%	Too Early Rate	4	Days too early	50%		\$1.8M in savings related to early payments identified	\$158,000\$ (One-Time)		
	Payment Term Mismatches	39%	Unfavorable Payment Term Rate	10	Days of better terms	15%	3M	Improvement in payment term compliance to 92%	\$231,000\$ (One-Time)		
Required Celonis EMS capabilities to realize estimated financial benefits		01 Event Collection	02 Planning & Simulation		03 Execution Apps		04 Action Flows		05 EMS Store		\$4.12M

Execution Excellence in Order-to-Cash



Happy Path



Business Objectives	Revenue Increase	Working Capital Optimi.	Labor Productivity	Customer Satisfaction	Compliance & Sustainability
Key Metrics	<ul style="list-style-type: none">• Conversion rate• Rejection rate• Return rate	Days Sales Outstanding	<ul style="list-style-type: none">• Cost per SO• First-Time Right	OTIF Rate	<ul style="list-style-type: none">• # SoD Violations• % Expired Contracts• Carbon Footprint
Improvement Opportunities	<ul style="list-style-type: none">• Rejections• Returns• Discounting• Conversion• Delinquent Invoices	<ul style="list-style-type: none">• Late Deliveries• Late Billing• Cash Discount Effectiveness• Payment Terms• Late Payments	<ul style="list-style-type: none">• Order Changes• Automation• Credit Blocks• Order Bundling• Delivery Blocks	<ul style="list-style-type: none">• Delivery Timing• Delivery Date Confirmations• Incomplete Deliveries• Disputes	<ul style="list-style-type: none">• Segregation of Duties• Expiring Contracts• Fraud Detection• Internal Controls• Route Optimization• Waste Reduction

Success Story Highlights



27% improvement in OTD in four months



10% reduction in order rejections

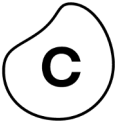


20%+ reduction in O2C cycle times



\$10M saved annually by increasing automation

Celonis Financial Benefits in Order-to-Cash



Assumptions

#SOItems: 160k/year

SO Value: \$1.2B

FTE Costs: \$55k/year

ROIC: 8%

Gross Profit Margin: 14%

Objectives	Improvement Opportunities	Affected Volume		Impact		Realization Potential		Reference Customers	Financial Impact
Labor Productivity	Manual Rework	0.7	Rework Activities/Item	5	Min/Rework	15%		L'ORÉAL	Increase in Touchless Orders from 3% to 16% \$43,000
	Automation	2.3	Automatable Activities/Item	6	Min/Activity	15%		ASCEND.	Improvement in automation rate by 43% \$169,000
	EDI	60%	Manual Transmission Rate	4	Min/SO	25%		B/S/H/	Increased EDI rate by 20% \$49,000
	Credit Holds	24%	Manual Credit Check Rate	4	Min/Check	45%		AcSmith.	Saved 4,000h by eliminating unnecessary credit blocks \$35,000
	Delivery Blocks	10%	Manual Delivery Block Rate	5	Min/Block	25%		L'ORÉAL	25% reduction in Blocked Orders \$10,000
	Returns	17%	Return Rate	45	Min/Return	5%		Manf. Company	Reduction in customer returns by 17% \$31,000
Revenue	Rejections	7%	Affected Sales Order Volume	14%	Gross Profit Margin	15%		B/S/H/	10% reduction in order rejections \$1,764,000
	Discounting	0.5%	Total Price Discount Rate			20%		Manf. Company	42% reduction in discounts after sales order creation \$1,200,000
Penalties	Late Deliveries	24%	Delivered too late	5%	Penalty Fee	20%		ASCEND.	27% improvement in OTD in four months \$2,880,000
	Incomplete Deliveries	10%	Incomplete Delivery Rate	5%	Penalty Fee	18%		Manf. Company	24% increase in in-full deliveries towards customers \$1,080,000
WC	Late Deliveries	24%	Delivered too late	6	Days too late	20%		ASCEND.	27% improvement in OTD in four months \$76,000 (One-Time)
	Order Lead Times			4	Avg. Min LT	20%		3M	Reduction in Order-to-Cash cycle times by 20% \$210,000 (One-Time)

Required Celonis EMS capabilities to realize estimated financial benefits

01 Event Collection

02 Planning & Simulation

03 Execution Apps

04 Action Flows

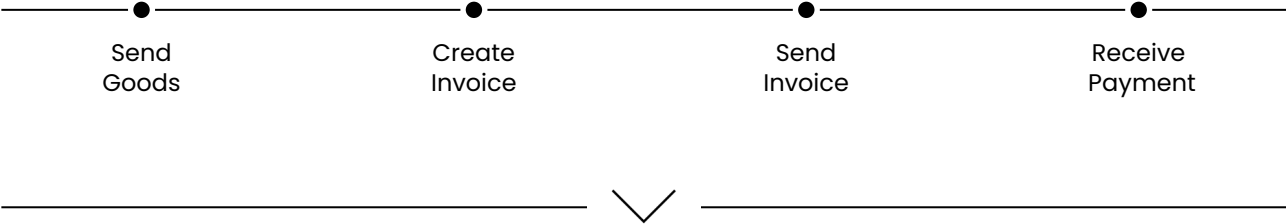
05 EMS Store

\$7.55M

Execution Excellence in Accounts Receivable



Happy
Path



Business
Objectives

Revenue Increase

Working Capital
Optimization

Labor
Productivity

Risk Mitigation

Key
Metrics

% Accurately Paid

Days Sales
Outstanding

- Cost per Invoice
- No-Touch Rate

SoD Violations

Improvement
Opportunities

- Underpayments
- Delinquent Invoices
- Three-Way Match
- Rebates

- Late Billing
- Cash Discount Effectiveness
- Payment Terms
- Late Payments
- Baseline Date Changes

- Invoice Errors
- Disputes
- Automation
- Rejections

- Segregation of Duties
- Fraud Detection
- Internal Controls

Success Story Highlights



Recovered **\$3.4M** in
overdues within the
first month



\$2M savings
discovered in late
payments










AkzoNobel

Reduced invoices
needing rework by
20%

Celonis Financial Benefits in Accounts Receivable

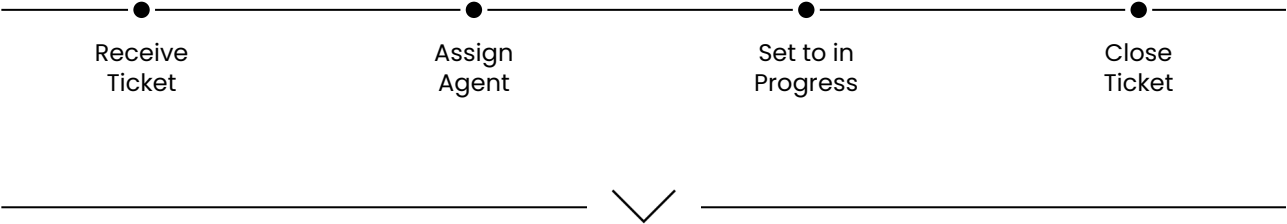


Assumptions			# Invoice Positions: 160k/year		Invoice Value: \$1.2B		FTE Costs: \$55k/year		ROIC: 8%		
Objectives	Improvement Opportunities	Affected Volume	Impact			Realization Potential	Reference Customers	Financial Impact			
Labor Productivity	Manual Rework	0.5	Rework Activities/Item	5	Min/Rework	15%		Reduced invoices needing rework by 20%	\$31,000\$		
	Automation	1.5	Automatable Activities/Item	4	Min/Activity	15%		Automation rate improved by 43%	\$73,000\$		
	Electronic Invoices	60%	Manual Transmission Rate	4	Min/Invoice	25%	B/S/H/	20% increase in e-invoices	\$49,000\$		
	Disputes	12%	Dispute Rate	35	Min/Dispute	5%	Honeywell	Identified \$29M in savings with disputed invoices being a key opportunity	\$17,000\$		
Revenue	Underpayments	11%	Underpayment Rate	3%	Average Underpayment	55%		\$455K saved by removing improper cash discount	\$2,178,000\$		
	Overdue Invoices	17%	Past-Due Rate	15%	Loss Probability	40%		60% reduction in past-due receivables in 9 months	\$12,240,000\$		
WC	Billing	20%	Billed Too Late	4	Days too late	50%		Removed 62K annual billing blocks that delayed invoicing	\$105,000\$ (One-Time)		
	Payment Terms	29%	Non-optimal Payment Term Rate	10	Days of better terms	15%		1.2M invoices secured annually from paid twice	\$114,000\$ (One-Time)		
	Late Payments	22%	Too Late Rate	6	Days too late	20%		60% reduction in past-due receivables in 9 months	\$87,000\$ (One-Time)		
Required Celonis EMS capabilities to realize estimated financial benefits		01 Event Collection	02 Planning & Simulation		03 Execution Apps		04 Action Flows		05 EMS Store		\$14.89M

Execution Excellence in Customer Service



Happy Path



Business Objectives

Resolution Cost Reduction

Customer Satisfaction

Risk Mitigation

Key Metrics

- Cost per Ticket
- Ticket Volume

- Resolution Time
- Customer Touch-Points
- Unresolved Tickets
- CSAT Score

- SLA Adherence
- Resolution Time for Critical Tickets
- Accurate Compensation

Improvement Opportunities

- Approval Thresholds
- Multi-Hop
- Automated Responses
- Problem-Incident Mapping
- Help Documentation
- Redundant Tickets

- Post-Boxing
- Resolution Time Variation
- Forgotten Tickets
- Missing Customer Reply
- Proactive Customer Communication

- Unrealistic SLAs
- Insufficient Prioritization
- Late Escalation
- Compensation Alignment

Success Story Highlights



\$20M savings in efficiency gains through handling time improvements

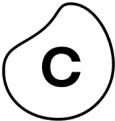


\$30M in yearly savings by improving first-time right



20% reduction in service ticket volumes

Celonis Financial Benefits in Customer Service



Assumptions		# Cases: 160k/year		Agent FTE cost/year: \$40K		Manager FTE cost/year: \$55k		# Manager FTEs: 50	
Objectives	Improvement Opportunities	Affected Volume		Impact		Realization Potential	Reference Customers	Financial Impact	
Resolution Costs	Multi-Hop Cases	40%	Multi-Hop Cases	14	Min/Case	30%		Reduced multi-hops by 48%	\$100,000
	Approval Thresholds	5%	Approval Cost Higher Than Payout	10	Min/Approval	90%	Uber	Analyzed 52M tickets to optimize approval process	\$50,000
	Automated Responses	32%	Automatable Replies	10	Min/Reply	15%		Improved customer satisfaction & reduce churn	\$28,000
	Help Documentation	18%	Less Cases with Better Documentation	10	Min/Reply	80%		Reduced # of cases & improved satisfaction	\$85,000
	Redundant Tickets	15%	Redundant Tickets	4	Min/Ticket	70%	CompuCom	20% reduction in service ticket volumes	\$25,000
	Problem-Incident Mapping	12%	Avoidable Cases with Better Mapping	10	Min/Case	45%		Decreasing resolution costs & prioritizing large issues	\$32,000
	Resource Planning	25%	Manager Planning Time			50%		\$1.2M in savings related to Resource Planning	\$469,000
Customer Satisfaction	Resolution Time	38%	Late Resolutions	\$12	Late Resolution Impact	25%	Uber	Reduced handling time for authorization holds by 29%	\$182,000
	Unresolved Cases	5%	Unresolved Cases	\$10	Unresolved Case Impact	65%	Travel Customer	Avoided follow-up cases & reduced churn	\$52,000
	Customer Touch-Points	20%	Additional Touch-Points	12	Min/Touch Point	30%		Cost savings of \$937K by reducing cust. interactions	\$43,000
Compliance	SLA Adherence	26%	SLA Violations			30%	BR [®]	\$1.4M in savings by re-negotiating SLAs	\$250,000
	Critical Cases	10%	Critical Cases	10%	Overlooked Critical Cases	50%	Utilities Customer	Escalating critical cases to reduce risk of outages	\$80,000
	Case Compensation	15%	Undercharged Cases			75%	Telco Customer	Saving costs by creating data-driven contracts	\$90,000
Required Celonis EMS capabilities to realize estimated financial benefits		01 Event Collection	02 Planning & Simulation	03 Execution Apps	04 Action Flows	05 EMS Store	\$1.49M		

Recommended Training Courses & Resources

Drive Value Realization



Must complete

Business Value Architect training tracks



Action Flows

Business Value and Adoption

Suggested to complete



Task Mining Starter Training

Machine Learning Basics

Celonis Process Simulation

Transformation Center –
Performance Monitoring

Celonis Help Page



Action Flow [Help Page](#)

ML Workbench [Help Page](#)

Task Mining [Help Page](#)

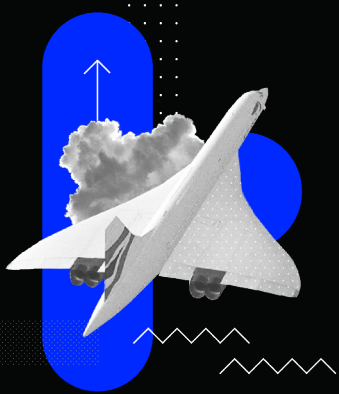
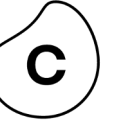
Simulation [Help Page](#)

Transformation Center [Help Page](#)

Partner Portal [business case](#)

Your perfect End-to-End Celonis Journey

Leverage all Celonis GTM Motions for your client engagements



Start with a Celonis Project Template

Consultancies can develop their own standard templates or use Celonis Quickstarts

Consulting Project
Process Discovery &
Execution Gap
Analysis

AND/OR

Pilot for Celonis EMS

C4C+ Execution
Provide end client
Access & leverage
Full EMS Capabilities

→ 5+ Client User
→ ∞ Consultants

(Project Templates can be
directly used for a C4C+
Execution Engagement)

Client has at the moment no interest to pursue with a software purchase but wants to fully leverage Celonis EMS capabilities

C4C+ Execution

Expansion & Scaling to ensure long-term engagement

- Client User/APC based Growth
- ∞ Consultants
- C4C+ Execution can be started with no contract and no involvement from procurement

EMS Enterprise license

Initiate an EMS Enterprise license sales cycle

- **Co-selling**
Collaboration with Celonis Sales & provide joint offer
- **Resell**
Benefit from reselling discounts

Client intends to be licensee and is interested to pursue with a software purchase. Client building up their own Capabilities.

Project Templates
for every Service Line

Digital Truth
in every Consulting Projects
(duration 2 – 6 weeks)

Operationalize
& Execute
Project Insights

Sustainable
and Long-term
Business Value

Continuous
Improvement as
Trusted Advisor



Build Packages including your unique offering for a successful Go-to-Market

“Discover”

Packages offered to End Clients | @ \$30,000

Your Prof. Services @ ~ \$30,000

- Pilot Project Implementation (~10 PDs)
- Consulting Services (~5 PDs)
- Customized Solutions (Analytical Templates) to identify execution gaps

C4C+ @ \$ 0/yr

- Up to 250 GB APC for free!
- Unlimited Consultant Users
- Discovery Capabilities
- EMS Connectors

“Enhance”

Packages offered to End Clients | @ \$163,000 (Year 1+)

Your Prof. Services @ ~ \$140,000**

- Project Implementation (~20 PDs)
- Consulting Services (~25 – 75 PDs)
 - Customized Solutions (Analytical Templates, Automatizations, Applications) to close execution gaps
 - Setup of operational use cases & automations

C4C+ Execution @ \$23,000/yr

- 50 GB APC
- 10 Client Viewer and 5 Client Analysts
- Unlimited Consultant Users
- Full EMS Capabilities

“Transform”

Packages offered to End Client | @ \$453,000 (Year 1+)

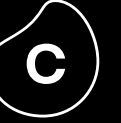
Your Prof. Services @ ~ \$380,000**

- Project Implementation (~40 PDs)
- Consulting Services (~80 – 220 PDs)
 - Customized Solutions (Analytical Templates, Automatizations, Applications) to close execution gaps
 - Setup of operational use cases & automations
 - Continuous change management to ensure sustainable business value

C4C+ Execution @ \$73,000/yr

- 100 GB APC
- 10 Client Viewer and 5 Client Analysts
- Unlimited Consultant Users
- Full EMS Capabilities

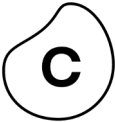
Notes: All packages are based on a C4C+ Execution Annual Subscription pricing. This is not a legally binding offer. All prices are excl. VAT and other taxes. | * C4C+ offers 250GB APC for free for consultancies globally |
** Dependent on the project scope and timeline of engagement, especially as C4C+ Execution environments are annual subscriptions and expansions in further business areas are common leading to multi-year engagements



Value Assets

Key Value Assets

Celonis Industry Plays



Industry Pitch Decks



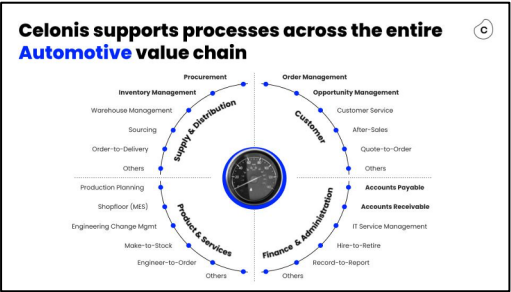
What is it?

Full deck positioning Celonis for a specific industry with relevant stories, processes, and more

When to use it?

First Pitch, Discovery Workshop, Executive Readout (Preparation)

Industry Wheels



What is it?

Slide that shows the top processes for one industry, grouped by execution centers

When to use it?

First Pitch, Discovery Workshop, Executive Readout

Industry Cheat Sheets

Process	Execution Center	Importance for Customer	Celonis Expertise	Score	Value Time	Demo + Video	VA	# Customers	LightHouse Customer
Indirect Procurement	Supply & Distribution	Medium	High	5	12	12	12	14	Harting
Accounts Payable	Finance & Admin	Medium	High	5	12	12	12	12	Frankfurt
Order Management	Customer	Medium	High	5	12	12	12	12	Michels
Accounts Receivable	Finance & Admin	Medium	High	5	12	12	12	4	Deigelt
Direct Procurement (DAP)	Supply & Distribution	High	Medium	5	12	12	12	14	Kronen-Siemens
Inventory Management	Supply & Distribution	High	Medium	5	12	12	12	2	Vötsch/Schne
Shopfloor (MES)	Product & Services	High	Medium	5	12	12	12	10	Porsche, BMW
Warehouse Management	Supply & Distribution	Medium	Medium	4	12	12	12	2	Tetberg
Order-to-Delivery	Supply & Distribution	Medium	Medium	4	12	12	12	2	Porsche, BMW
Production Planning	Product & Services	Medium	Medium	4	12	12	12	2	BMW
Cost Offerings									
Deliverable Item	Supply & Distribution				12	12	12	0	
Diagnosis Production Operations	Supply & Distribution				12	12	12	0	
Selected LightHouse Customers									
Selected Celonis Experts									
Philip Wenzel, Senior Director, Automotive									
Benedikt Fiedl, Principal PMO									
Jakob Meier, Industry Lead ST T&E									
Victor Sengstorf, Senior ST T&E									

What is it?

Slide that ranks the top processes per industry based on relevancy and our expertise

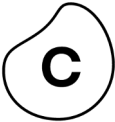
When to use it?

In preparation for First Pitch and Discovery Workshop

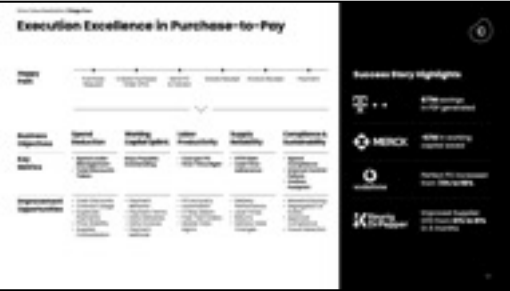
You can find all of these assets in our Industry Assets collection: [HERE](#)

Key Value Assets

Process Value Propositions



Value Trees



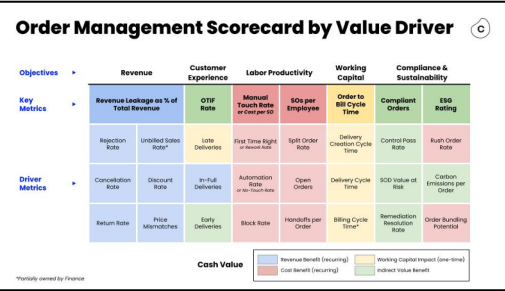
What is it?

Slide that shows the top objectives, key metrics, and opportunities for one process

When to use it?

First Pitch, Discovery Session, Proof, Executive Readout

Process Scorecards



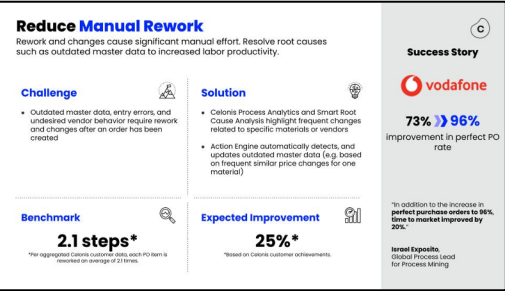
What is it?

Delivery version of the Value Tree with metrics instead of opportunities

When to use it?

Proof (to showcase how we will measure and drive performance post-sales)

Benefit Analyses



What is it?

Decks with detailed value propositions and micro demos for one specific process

When to use it?

Proof, Discovery Workshop, Executive Readout (Available on Request)

You can find all of these assets in our **Process Assets** collection: [HERE](#)

Key Value Assets

Discovery Frameworks



Value Pyramid



What is it?

Slide outlining a company's objectives, strategies, initiatives, and challenges

When to use it?

Discovery Workshop, Executive Readout

Solution Blueprint



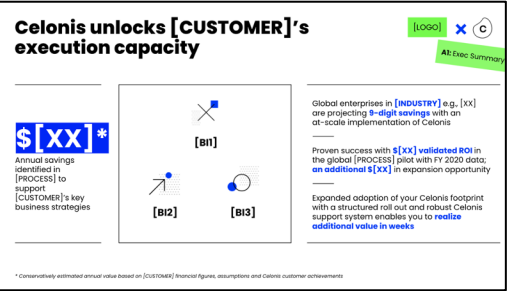
What is it?

Output of the DW that covers current state, desired state and where to begin with Celonis

When to use it?

Discovery Workshop

Exec Readout Template



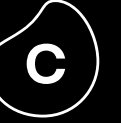
What is it?

Presentation template tailored for C-suite messaging

When to use it?

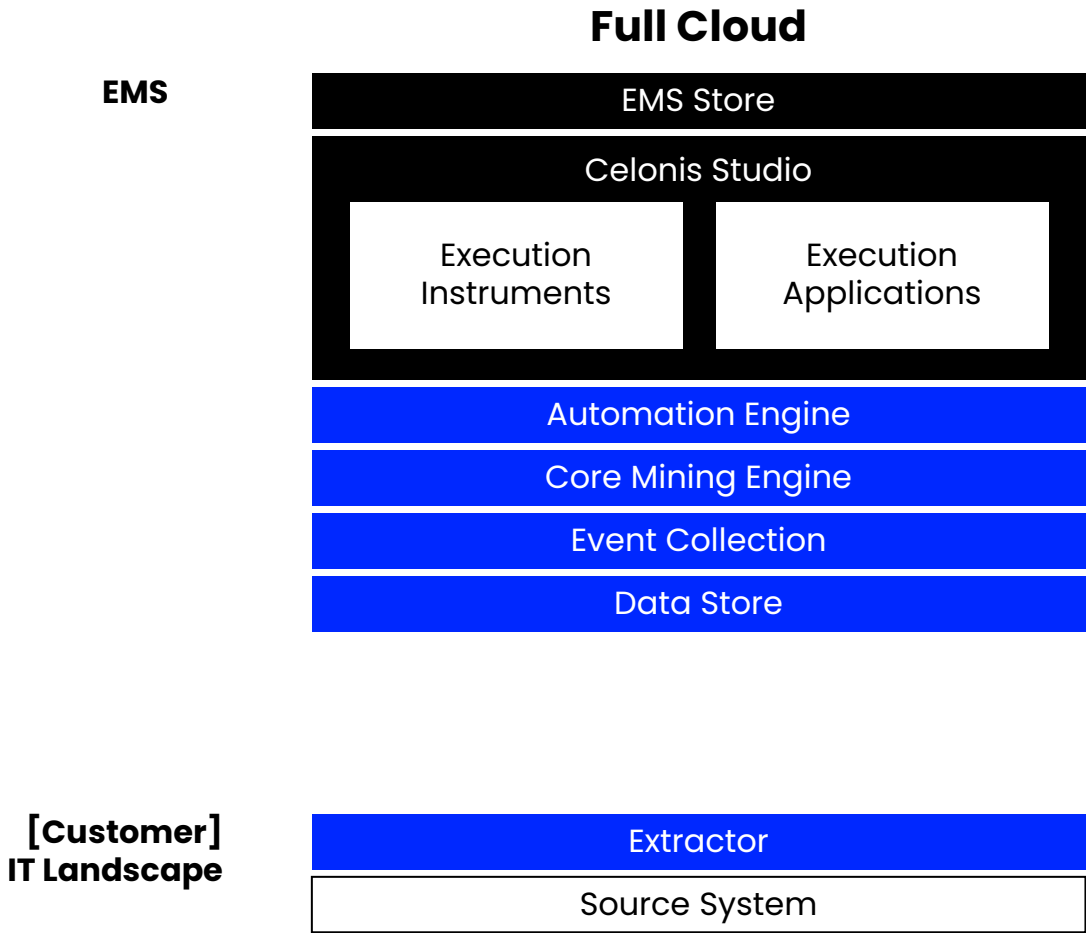
Final Executive Presentation (Pre-Sales)

You can find all of these assets in our pre-sales collection: [HERE](#)



IT Architecture & Data Security

EMS Infrastructure



Description

All applications are hosted within the Execution Management System. The on-premise connectors are used to connect to the customer's on-premise source systems.

Infrastructure managed by Celonis

All frontend applications: Process Analytics, Action Engine, Transformation Center, Machine Learning Workbench, EMS Store, Team Management.

Celonis Data Store, the Event Collection, Celonis Cloud Connectors to Cloud systems such as Salesforce.

The Core Mining Engine to run all calculations within your process & task analytics.

Infrastructure managed by the Customer

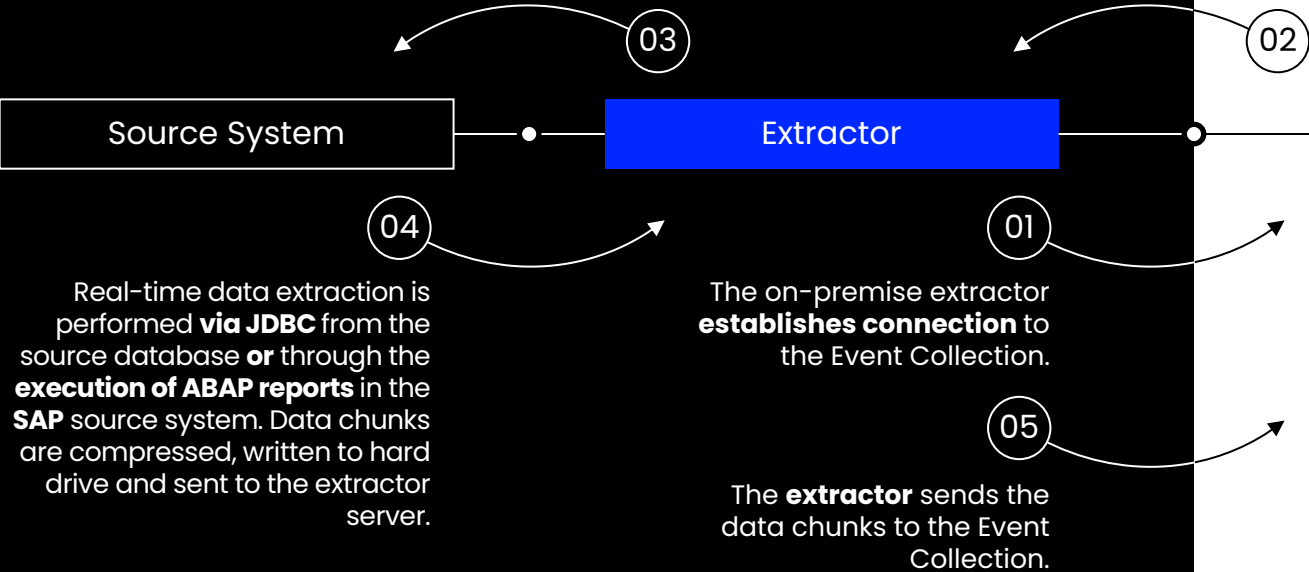
On-premise extractor to extract and compress data from on-premise source systems.

Data Extraction



[Customer] IT Landscape

System and data access is via **database user** on the source **JDBC database** or via **RFC (Remote Function Calls)** for **SAP** systems

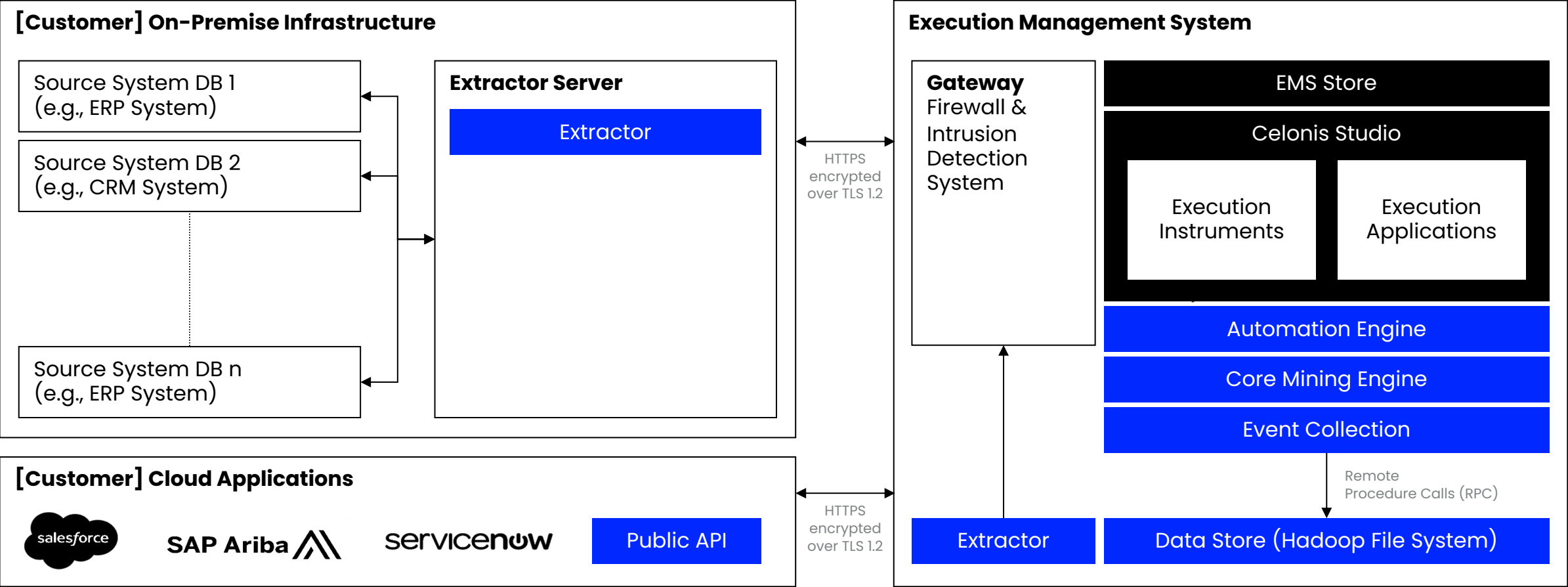
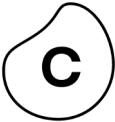


Execution Management System



06 All applications within Celonis Studio run using the **data** stored within the environment.

EMS Infrastructure



Integrated security features ensure the protection of sensitive data

Advanced access controls

Single sign-on via SAML and OpenID, LDAP, and Active Directory integration support user management and system security.

Monitoring & auditing

Tamper-proof audit log and optional login history enable active monitoring and auditing.

Login security

IP restrictions and **two-factor authentication** eliminate the risk of improper access.

Third-party audits & penetration testing

Regular third-party audits and penetration tests provide additional data security.

Data permissions & pseudonymization

Data protection methods are implemented across the entire data lifecycle.

Data encryption at rest & in transit

All customer data is always encrypted at rest (AES-256) and in transit (HTTPS).

Comprehensive security information available at celonis.com/trust-center



Customer Examples



Information on treasury payments of customers



Data on hazard loss (insurance) of people's property



Personal data on reverse mortgage applications



Information on expired credit of customers

The Celonis EMS Adheres to Highest Industry Standards in Privacy and Security



Highest industry standards in privacy and security

.....

Data hosted in Germany, US, or Japan

Advanced Access Controls	Login Security	Data Permissions
Monitoring & Auditing	Data Encryption	Penetration Testing

Proven compliance and certifications

.....

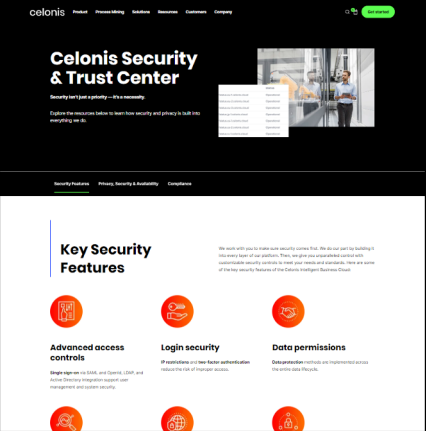
Only provider with ISO27701 (2019)



Celonis Trust Center

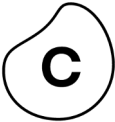
Transparent overview of all certifications

Best practices & whitepaper covering security, privacy and compliance

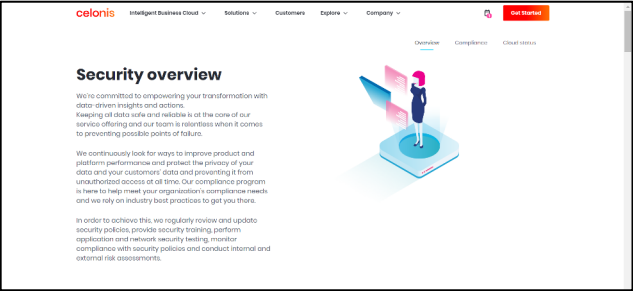


<https://www.celonis.com/trust-center/>

Celonis Trust Center



Security Overview

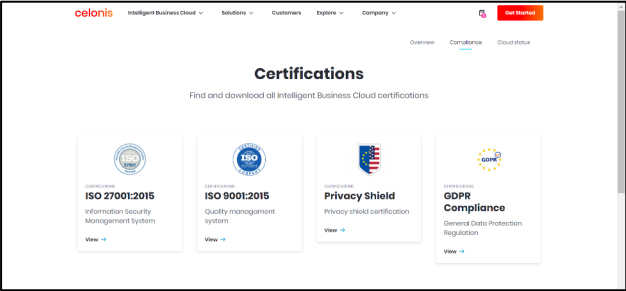


Best practices

Whitepaper

GDPR compliance

Certifications



Overview of certifications

Link to our certificates

Celonis statement CAIQ: CSA – STAR Program
(Level 1 – Self-Assessment)

Status Page

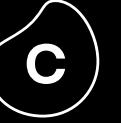
Data Push	Operational
Data Transformation	Operational
On-Prem Connectivity	Operational
Partner Demo Environment	Operational
Training Environment	Operational
Web services	
Celonis Community	Operational
Corporate Site	Operational

System overview

History of past notifications

E-Mail subscription

<https://www.celonis.com/trust-center/>



Multi source Process Connection

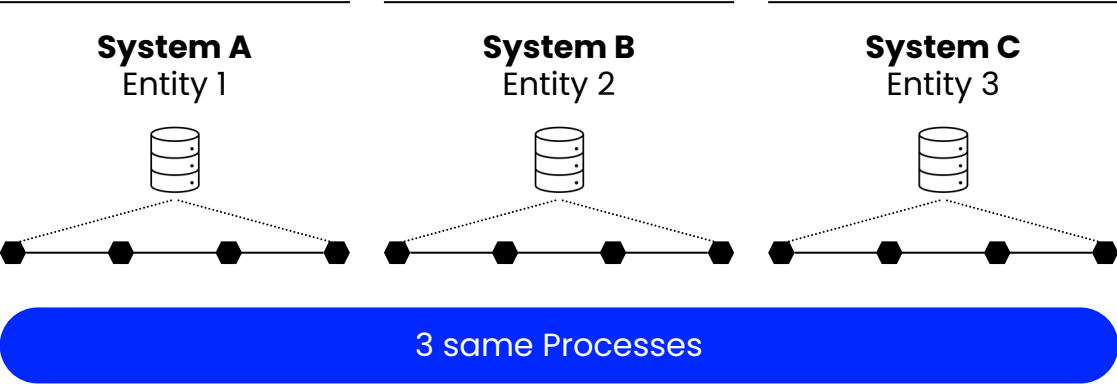
Stage 03: Integrate – 2. Process Connection

Transform – Multiple Source System | Overview



01

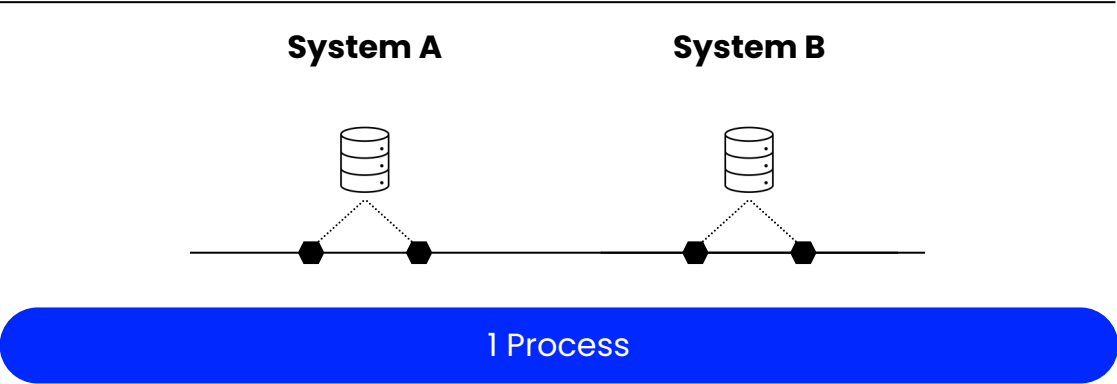
Multiple source systems supporting **the same process** (Horizontal)



e.g., across different entities of the same P2P process

02

Multiple source systems used **across the sub-processes** (Vertical)



e.g., more than 1 systems feeding into the P2P process

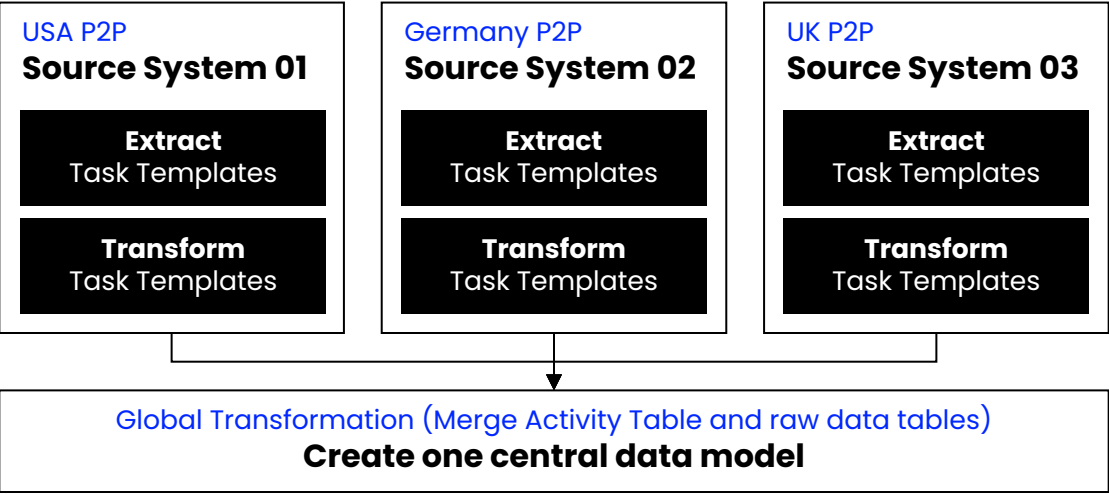
Stage 03: Integrate –

2. Process Connection

Transform – Multiple Source System



Scenario 01: Horizontal



Example Use Cases

- Benchmarking across different entities
- Process harmonization initiative
- System migration initiative

Steps

- 01 | Set up a pseudo-Data Connection for each of the source systems e.g., SAP_USA, SAP_DE, SAP_UK
- 02 | Create transformation for each of the source systems under their Local scope (e.g., SAP_USA) in the Data Job | Each source system should have 1 activity table
- 03 | Union all **activity tables** into a single activity table in the Global scope, and create an additional column to indicate the source
- 04 | Union all **raw data tables** in the Global scope, and create an additional column to indicate the source
- 05 | Create one central data model; activity table and raw data tables

Things to note

- When creating a 'Union' tables (activity and raw), ensure that
 - **Naming convention/definition of each columns** are the same
 - Tables have the **same number of columns**
- If there are customized tables (e.g., additional fields) in one of the source system, include as a "NULL" column for the table that do not have the additional column

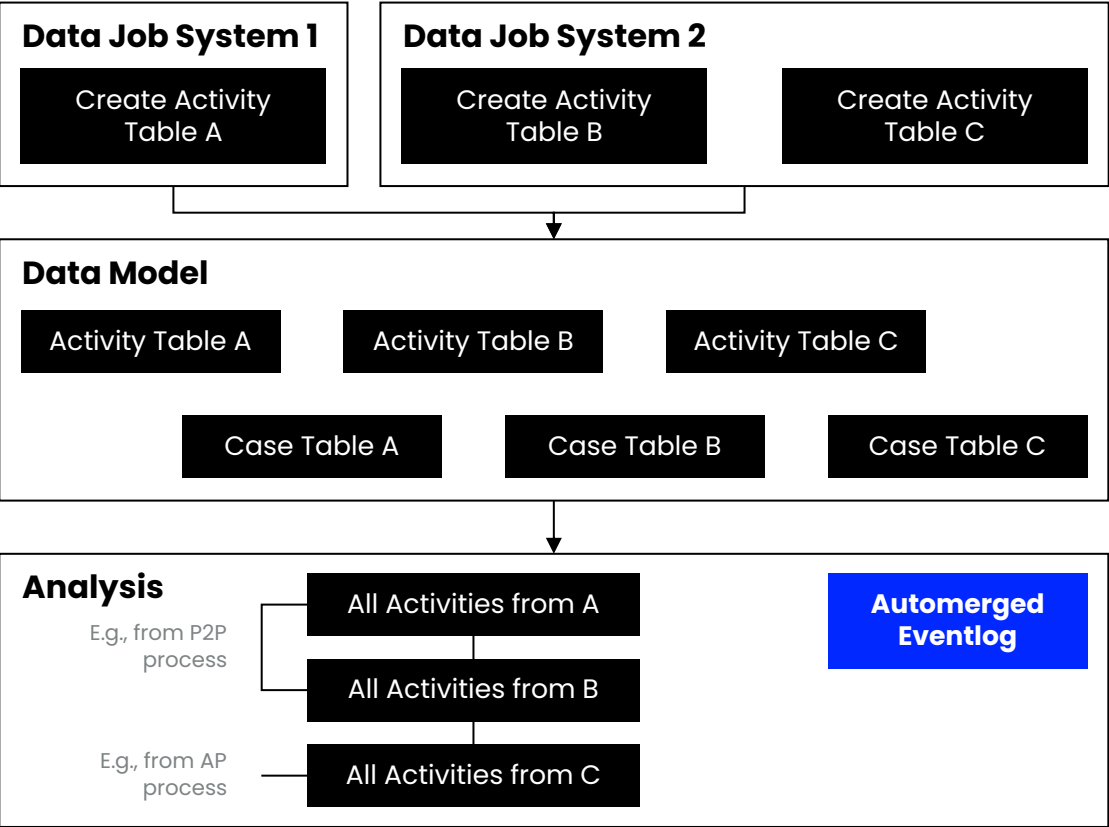
Stage 03: Integrate –

2. Process Connection

Transform – Multiple Source System



Scenario 02: Vertical



Steps

- 01 | Set up a pseudo-Data Connection for each of the source systems e.g., SAP_1, JDE_2, Ariba_3
- 02 | Create transformation for each of the source systems under their Local scope (e.g., SAP_1) in the Data Job | Each source system should have 1 activity table
- 03 | Identify the **joins between the tables** of the source systems to define the data model joins according to the [Help Page of Merge Eventlog](#)
- 04 | Merge the Activities in the Analysis with MERGE_EVENTLOG(). Please find more information and instruction in the [Help Page](#)

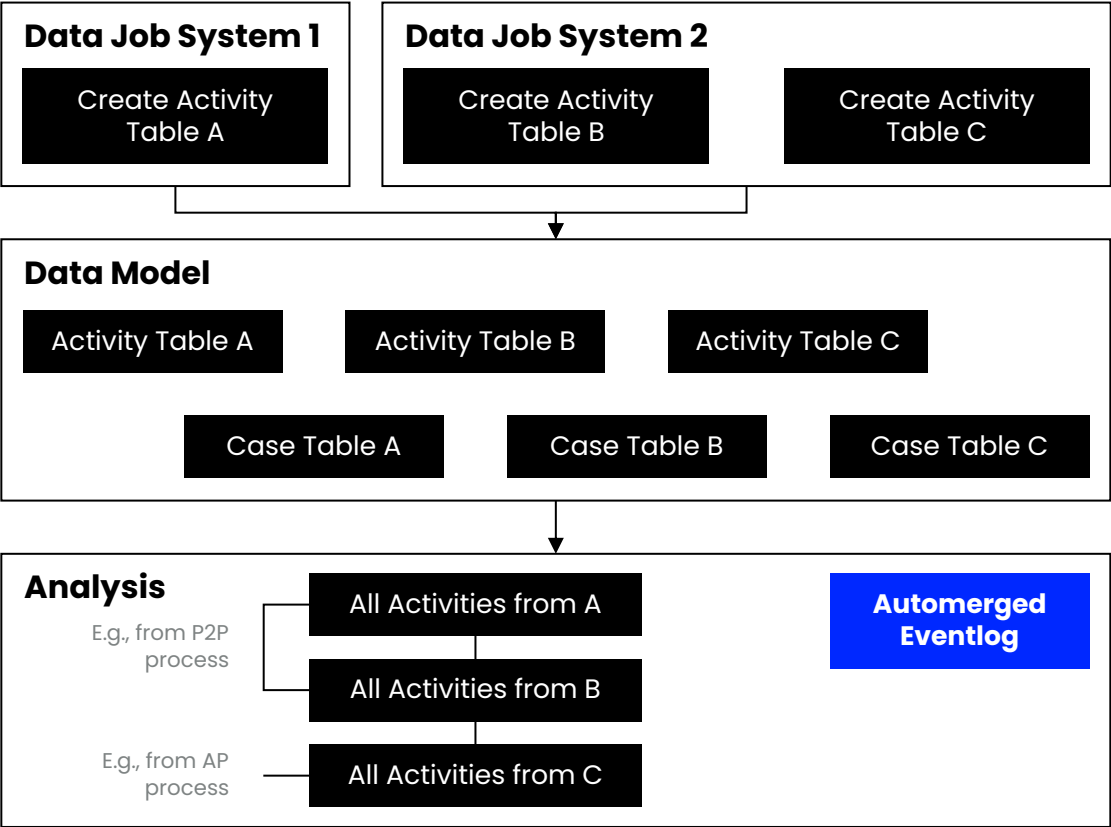
Stage 03: Integrate –

2. Process Connection

Multi-event Log



Scenario 02: Vertical



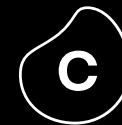
Summary

The Multi-Event Log technology allows you to include multiple Event Logs with their respective case tables in one semantic Data Model. All Event Logs can be linked to each other as well as to master data via joins/foreign key relationships.

Things to note

- Discuss with your client of how to allocate the activities to the appropriate activity tables. E.g., Invoice related activities could be in RSEG or RBKP or BSEG activity table
- Each Case Table must have a correspondent Activity Table

Check out more detail on: [Help Page](#)



celonis