Datathon Help Packet

Pizzeria Mamma Mia
TAMU Datathon

celonis

I. General

Overview

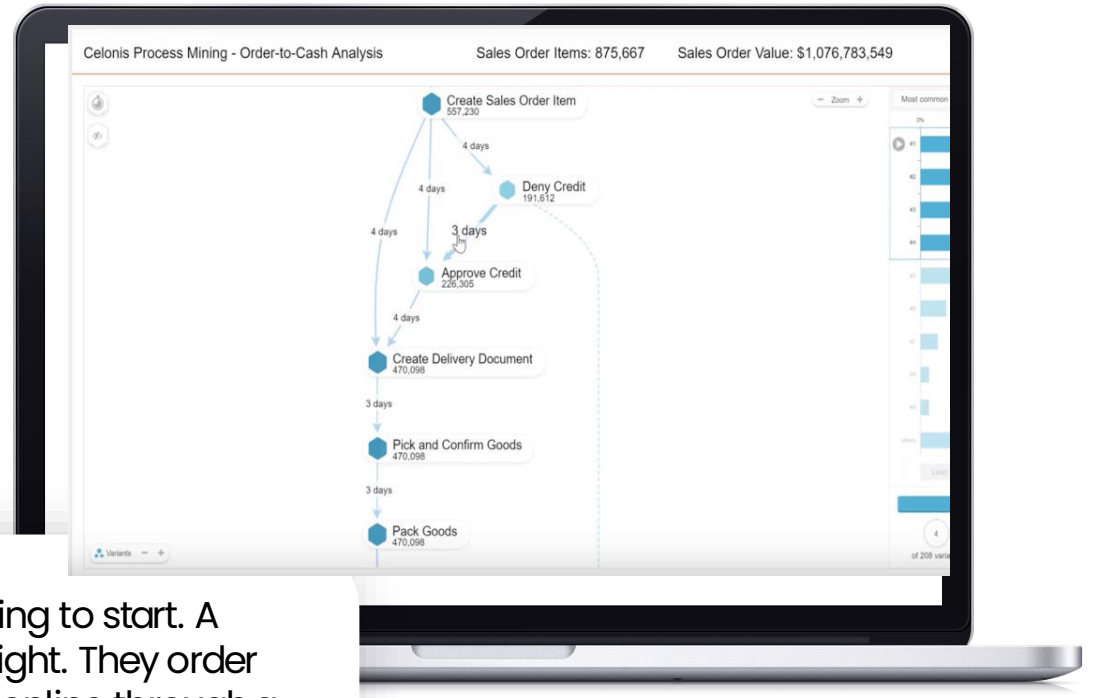
This case study is used to aid students in re-thinking how data can aid in business decision making using data. On slides 3-4, you can find two perspectives that went into the creation of the challenge

III. Case Problem

Customer Perspective

"We had to wait several hours to then eat cold pizza. Never ordering here again!"

Anna
First Year Student at the
Technical University of Munich



It's Friday evening and in only two hours the big semester opening party is going to start. A group of freshmen decides to order some pizza before heading out into the night. They order at *"Pizzeria Mamma Mia"* – a local take-away restaurant. They decide to order online through a delivery service system.

However, after an hour has passed, they still haven't received the food. Therefore, they call the pizzeria to ask what has happened to their order. They are asked to repeat their order again as their order got lost somehow. Really annoyed, but driven by empty stomachs, they repeat it and hope they get to eat soon.

By the time the pizza arrives, the pizza is cold. That is the final straw, the angry group arranges a heavy discount on the bill with the embarrassed delivery guy and lets him leave without any tip. Baffled by the bad service, they rate the pizzeria with 0 out of 5 stars and leave a negative review.

0 out of 5

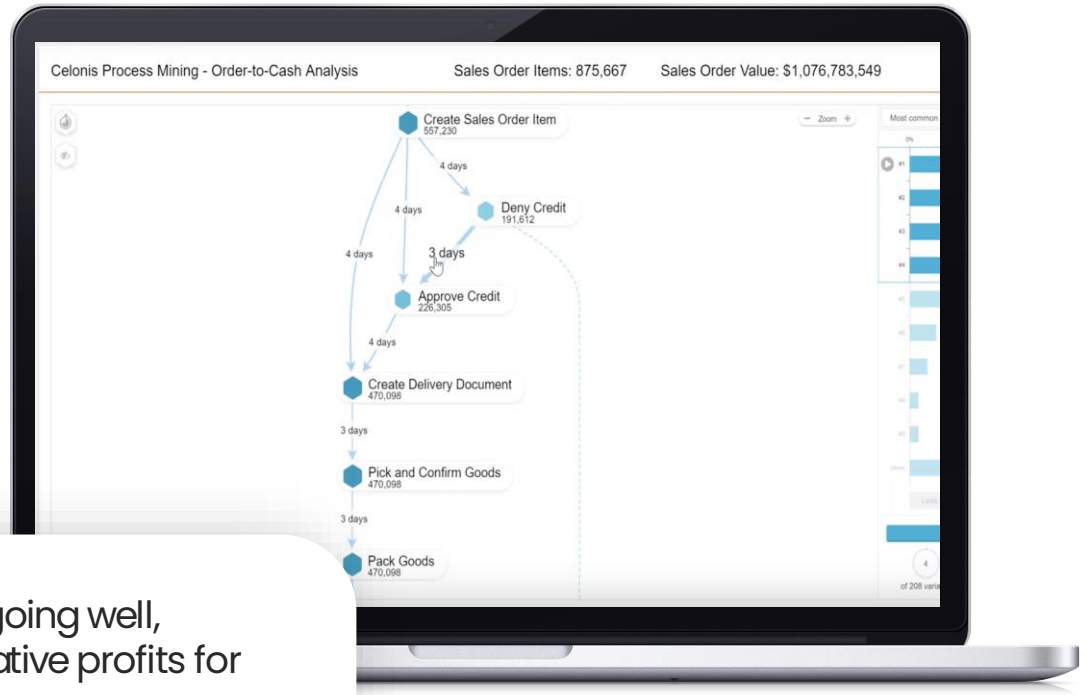
Long waiting times and insufficient quality impact customer satisfaction

III. Case Problem

Business Perspective

“My pizza is top quality, but I struggle with providing my customers excellent service. I need something like an X-ray machine to find out where the problems lies.”

Giovanni
Owner at the
Pizzeria Mamma Mia



The Pizzeria Mamma Mia is selling take-away pizza. The business is generally going well, however, their customer ratings have been very low, and they are making negative profits for some of their deliveries.

The owner of the Pizzeria, Giovanni, is puzzled: “I make my pizza by following the original recipe of my grand grandfather and everyone loves it! Still, customers complain and don’t come back. I wonder if there is some way, I could look behind the processes at the pizzeria to find the problem."

Revenue

Key Performance Indicators (KPI) for businesses are revenues and costs. Low revenues and high costs make a business unprofitable.

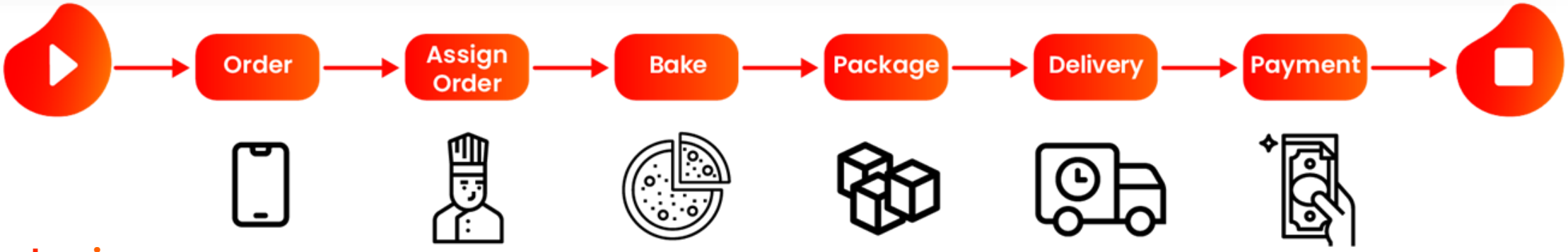
Business Processes at a glance

Let's explain to Giovanni what a process is:

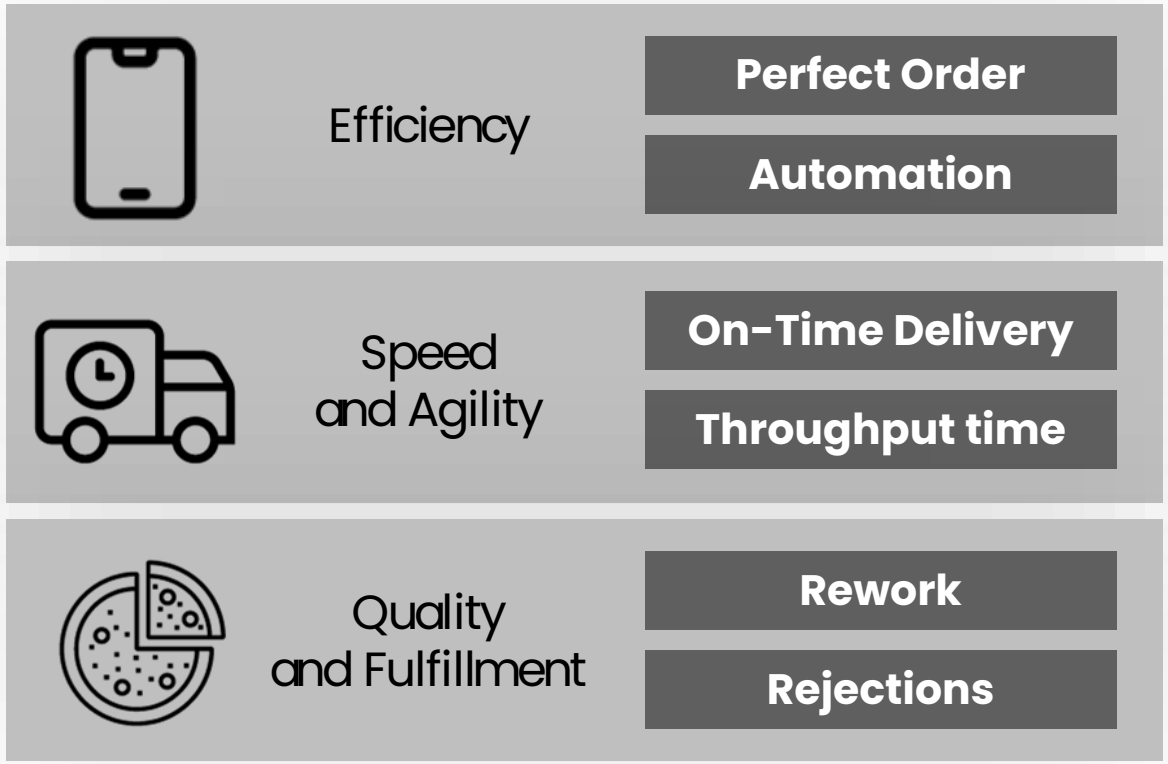
A business process or business method is a collection of **related, structured activities or tasks** that in a **specific sequence produces a service or product** (serves a particular business goal).

Source: Mathias Weske (2012)

To simplify this definition for Giovanni, we can illustrate the pizza delivery process. The following graphic shows how the pizza process could look like but does not necessarily have to.



Business Impact of Process Mining



- Reduce Process Cost
- Increase Revenue
- Reduce Working Capital
- Higher Customer Satisfaction

Creating your workspace guide

Start right away!

Access Celonis in three steps

1. Register for free with your academic e-mail address.
2. Open the invitation e-mail and click the link.
3. Access your personal team and start exploring!

V.
Preparation

Pizzeria Mamma Mia – Get the data

Create a new analysis for the pizza process

You are now in the role of a Process Mining Analyst at Pizzeria Mamma Mia.
Giovanni asked you to prepare a new analysis to get a deep dive into the pizza delivery times.

1. Download the data tables for the pizza process.

2. Upload the pizza data in your license and create the Process Data Model (detailed manual in next slide).

3. Create a new analysis (via Process Analytics) that helps Giovanni (the viewer of the analysis) to optimize his key performance indicators. You are free to choose appropriate components and designs.

4. Be creative, add structure to your analysis and create a presentation of your results.

The data files you need can be found in the dropbox folder

V.
Preparation

Upload files

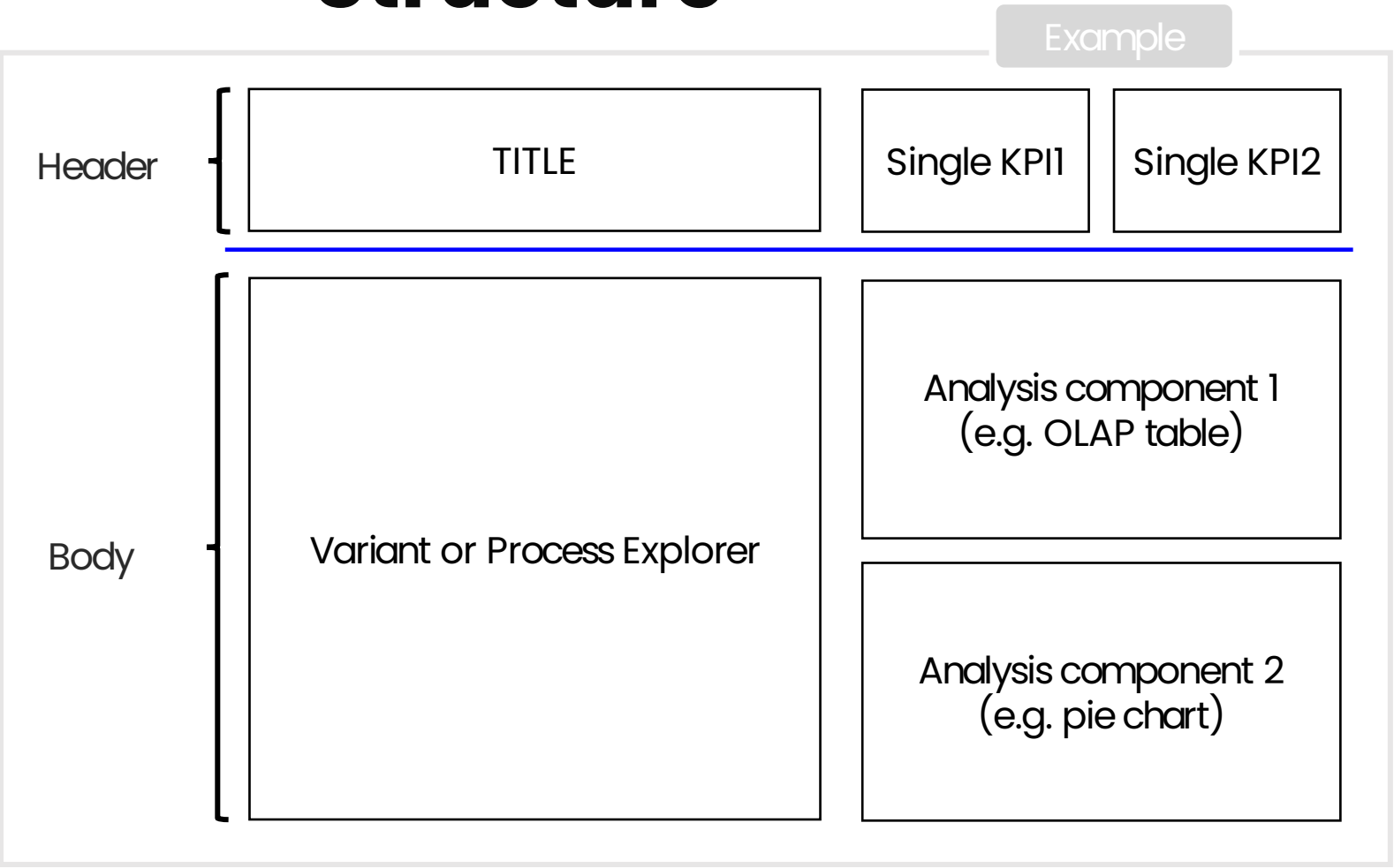
Summary

1. Open the register **event collection**
2. Create a **new** data pool
3. Upload the three tables via **file upload**
4. Create a **Data model**
5. Connect the tables through foreign keys
6. Create a **new workspace** within Process analytics
7. Build your **first analysis** based on your data model

Or view a video
https://bit.ly/2JKxYG9

V. Preparation

Example Workspace Structure

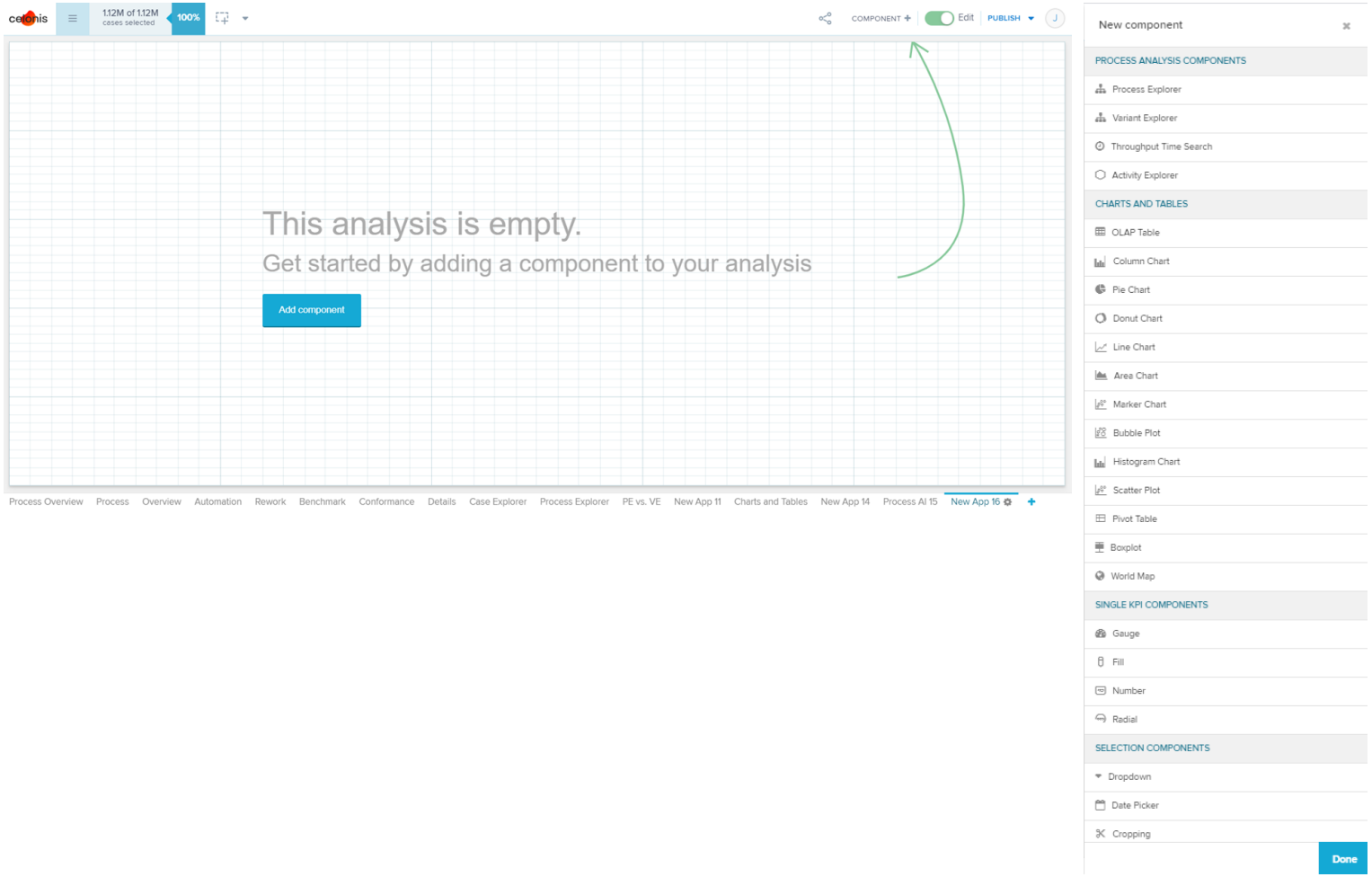


Details

- As an analyst, it is important to create well structured analyses that can be easily interpreted by the viewers
- A good analysis starts with a **useful title** and short explanation of the analysis' purpose
- In the **headline**, you can add further single KPIs and numbers describing the data set (e.g. the number of cases or the total net value)
- The **body** is the section beyond the headline, which can be seperated by a horizontal line
- The body includes various analysis components that help the viewer to understand the process and to drill down the data
- Usually, one analysis refers to a **specific use case**, e.g. process overview, analysis of rework activities or automation.

V.
Preparation

Example Analysis Components



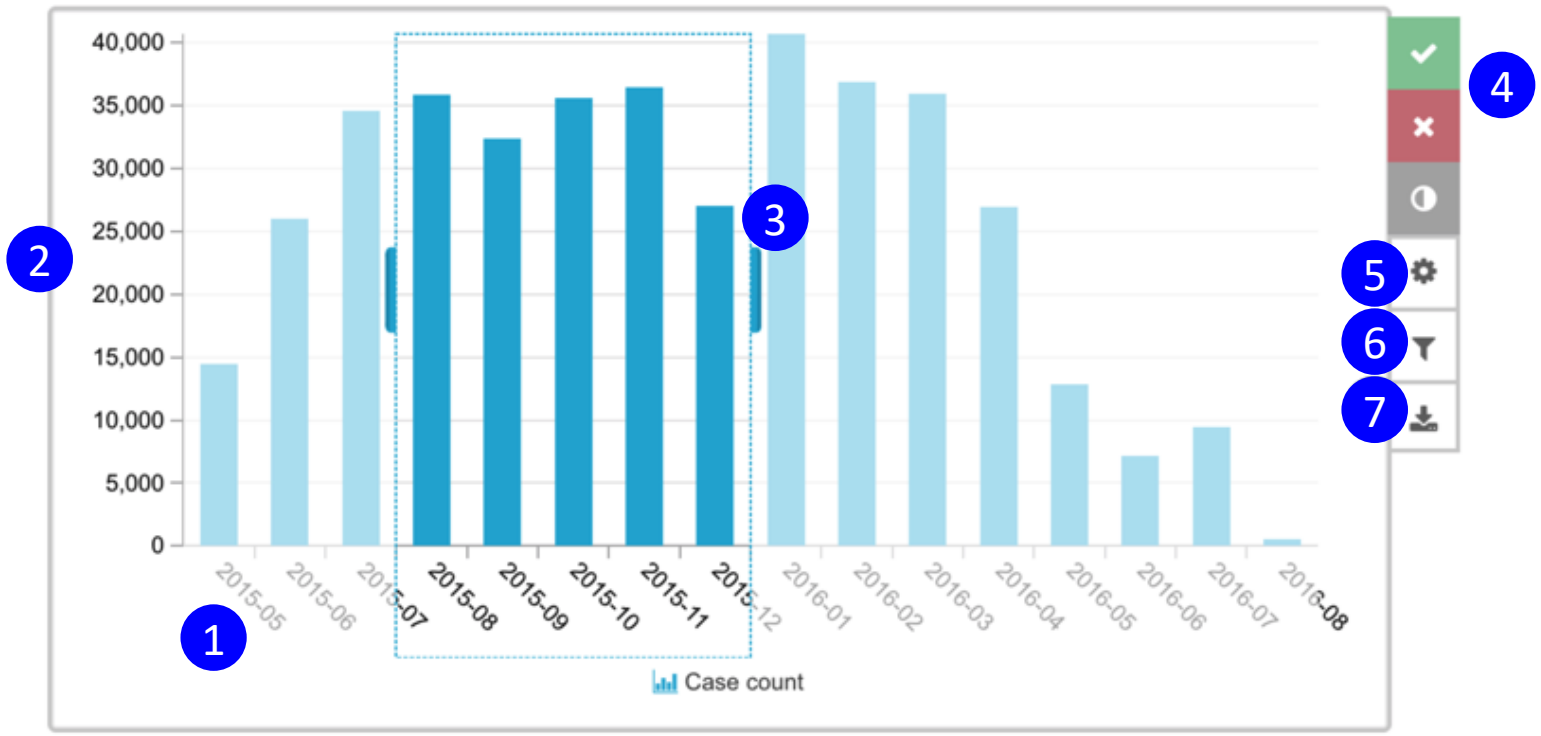
Details

Celonis has five different categories of components:

- **Process Components:** Visualize your activities and the way the processes flow through them (Process Explorer & Variant Explorer)
- **Charts and Tables:** Plot your data or group, segment and arrange them in tables (OLAP Table, Scatter Plot, Pivot Table, World map, Boxplot)
- **Single KPI Components:** Track your data according to a single KPI
- **Selection Components:** Helps the user create selections
- **Design Components:** Create design elements for your analysis.

V.
Preparation

Charts



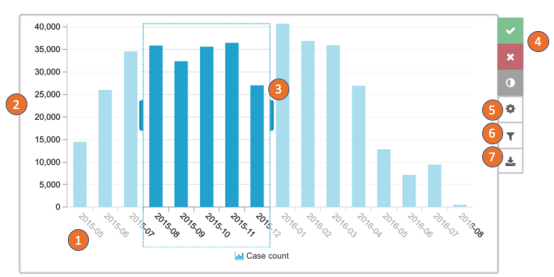
Details

Column, line, area and marker charts all behave the same with the visual representation being the only difference:

1. Dimensions are concatenated and shown on the dimension axis.
2. KPIs are by default all shown on the primary value axis.
3. Click on the chart and drag and drop to create a selection.
4. Confirm, cancel or invert the temporary selection.
5. Open the component settings. (Only available in the analysis draft)
6. Open the component filter. (Only available in the analysis draft)
7. Download the component.

V. Challenge
Tasks

Chart Types



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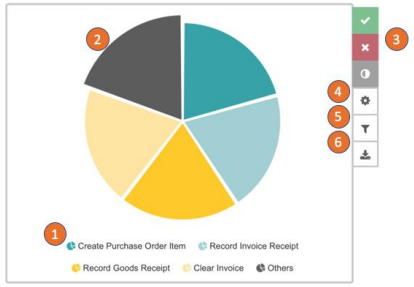

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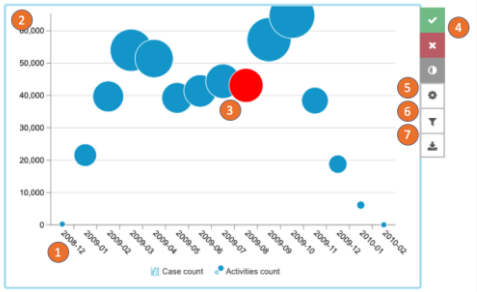

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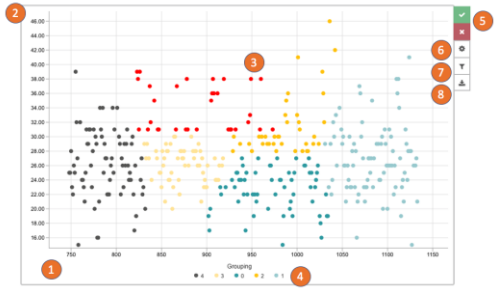

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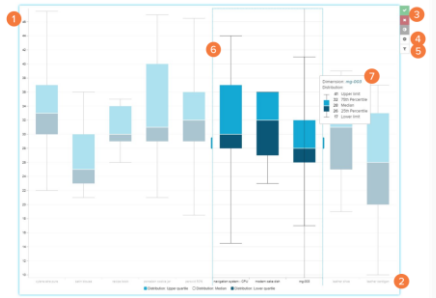

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Details

There are several chart types available in Celonis:

1. Column, line, area and marker charts
2. Pie and donut chart
3. Bubble plot
4. Histogram chart
5. Scatter plot
6. Boxplot

V.
Preparation

OLAP Table

_CASE_KEY	ACTIVITY_EN	EVENTTIME
1201350551901000000	Create Purchase Order Item	Sat May 2 2015 11:45:37
1201350551901000000	Change Price	Thu May 7 2015 11:58:06
1201350551901000000	Receive Order Confirmation	Thu May 7 2015 11:58:06
1201350551901000000	Record Goods Receipt	Thu May 7 2015 13:38:25
1201350551901000000	Record Invoice Receipt	Sat May 9 2015 07:43:11
1201350551901000000	Clear Invoice	Thu May 14 2015 10:28:23
1201350551901300000	Create Purchase Order Item	Sat May 2 2015 11:51:56
1201350551901300000	Receive Order Confirmation	Tue May 5 2015 09:26:07
1201350551901300000	Change Price	Tue May 5 2015 09:26:07
1201350551901300000	Update Order Confirmation	Fri May 15 2015 10:16:30
1201350551901300000	Record Goods Receipt	Sat May 16 2015 09:59:59
1201350551901300000	Record Invoice Receipt	Sat May 16 2015 12:26:41
1201350551901300000	Clear Invoice	Sat Jun 6 2015 13:06:22
1201350551901300000	Create Purchase Order Item	Sat May 2 2015 11:51:56

Details

The OLAP table shows all dimensions and KPIs configured in a table:

1. The dimension and KPI name are shown in the column headers. Click on the header to change the table sorting or search in the dimension columns.
2. Click on a dimension and create a selection. Selected entries can be copied to the clipboard by right click and the available action.
3. Confirm, cancel or invert the temporary selection.
4. Open the component settings. Hide and show dimensions and KPIs.
5. Hide and show dimensions and KPIs.
6. Open the component filter.
7. Download the component.

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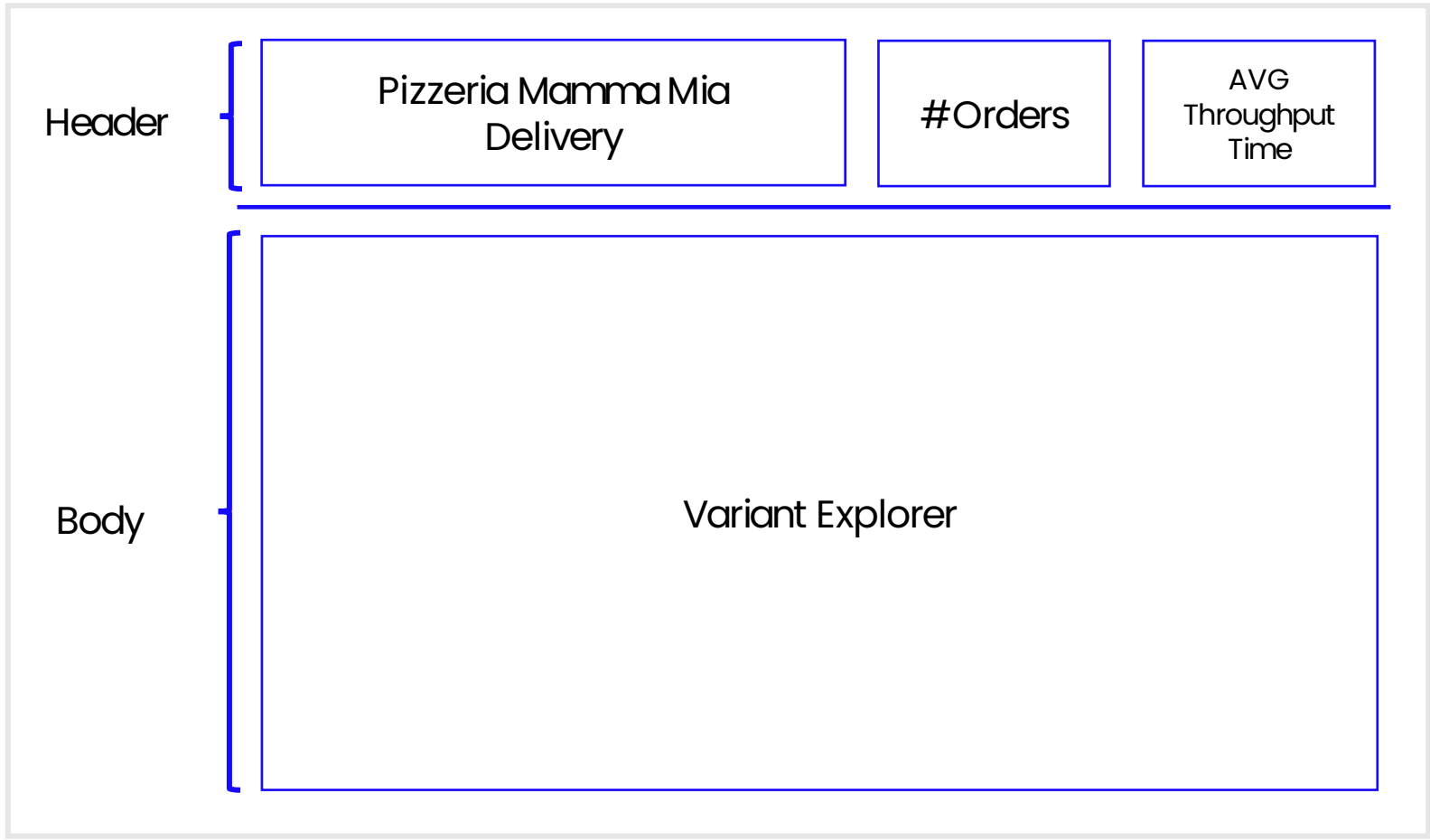
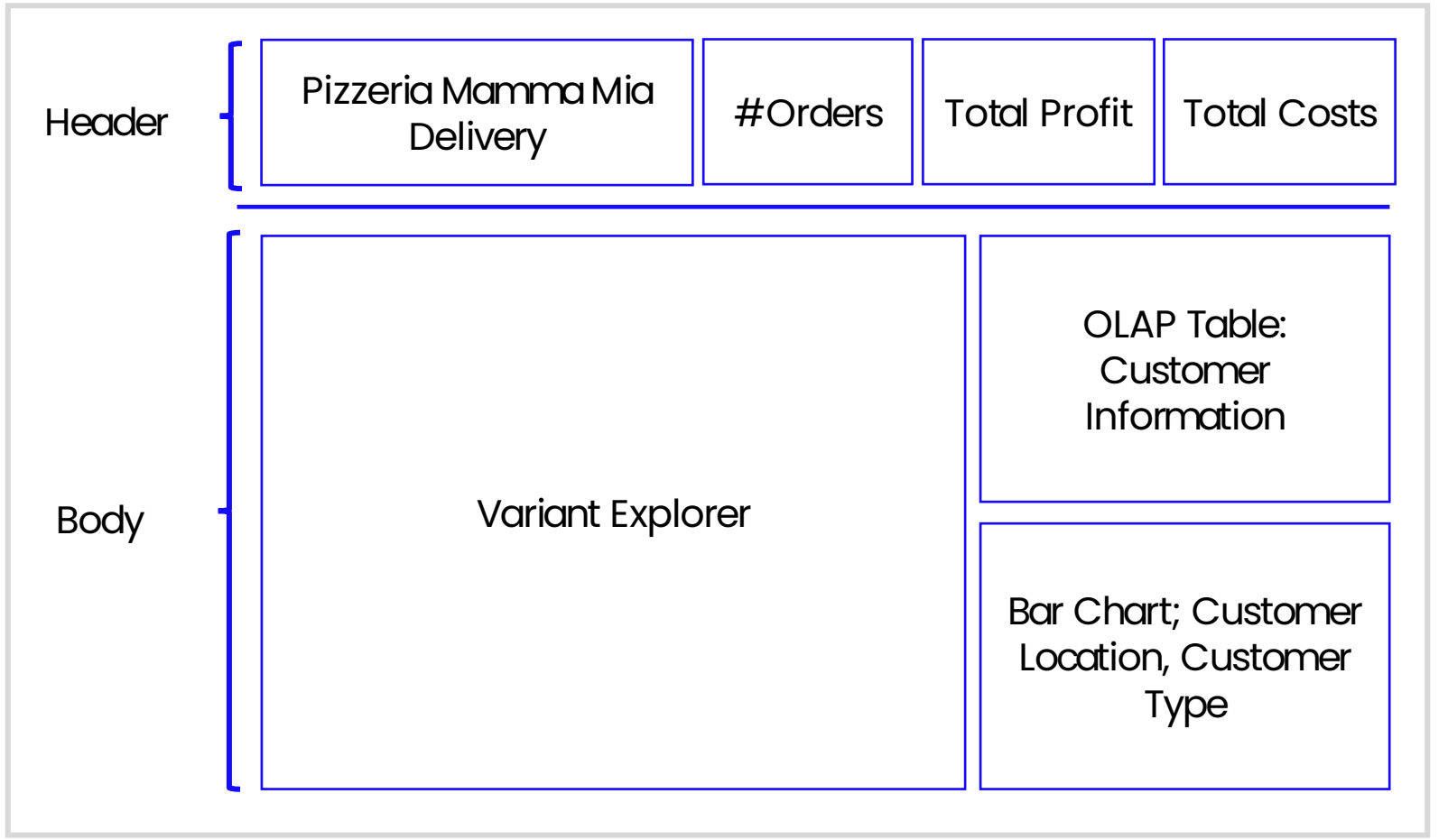
Sample Workspace Structures

1. Variant Explorer



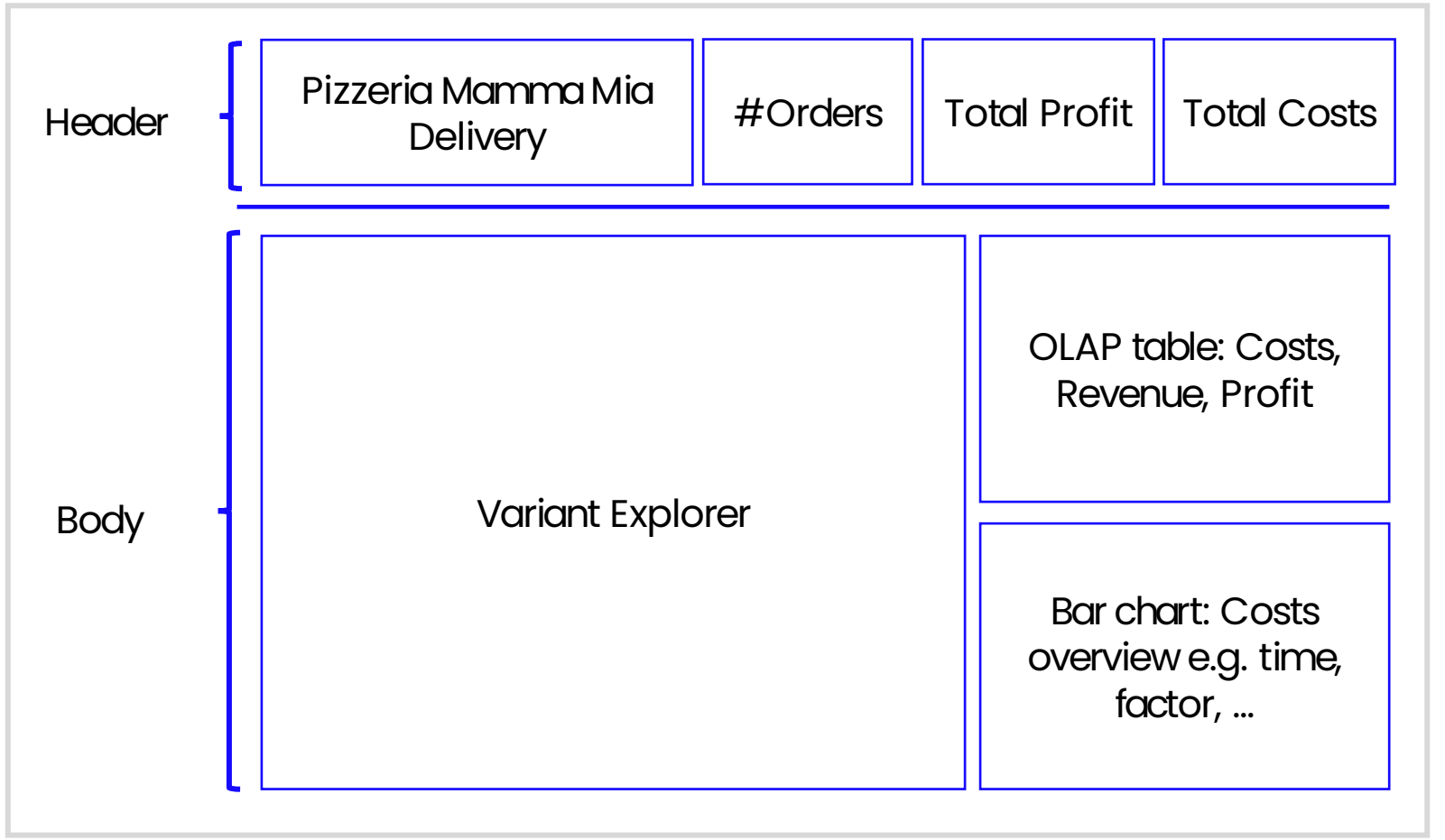
Task 2: Analysis

1. Overview Sheet: Costs



Task 3: Conformance Checking

1. Overview Sheet: Profit



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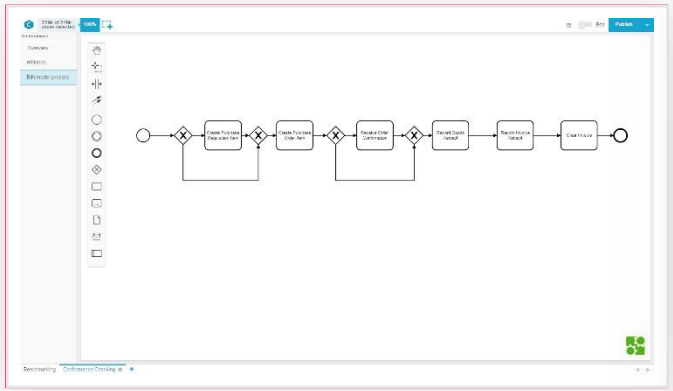
Conformance Checking

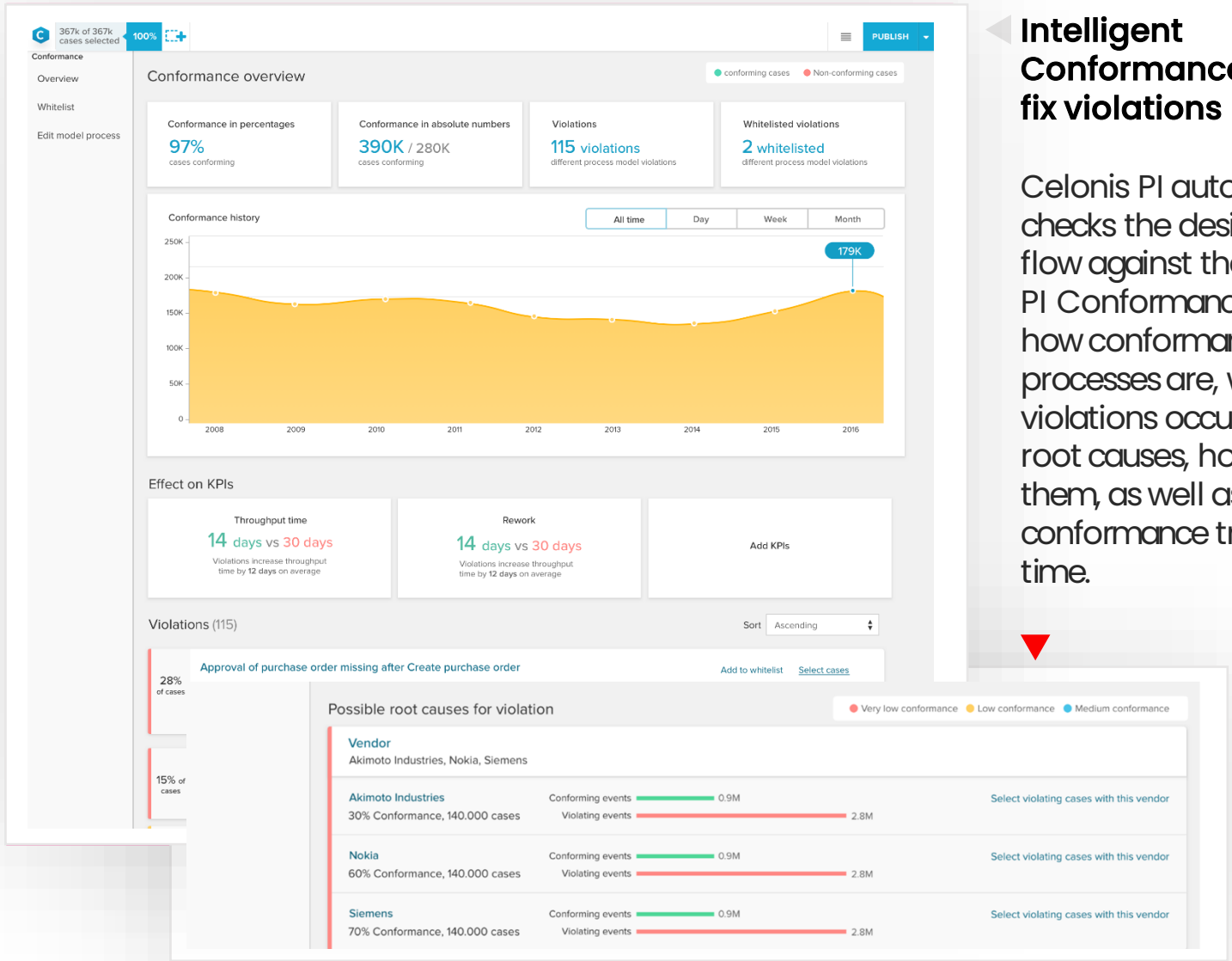
Task 3: Conformance Checking



Import your process models

Download the exisiting process model that we have created for your here: https://bit.ly/2S0xIXU
Go to „Edit Process Model“ and upload your model.

Or create and edit process models yourself with the built-in *Celonis Business Process Modeler*.



Intelligent Conformance: Find and fix violations

Celonis PI automatically checks the desired process flow against the real one. PI Conformance shows how conformant your processes are, where violations occur, possible root causes, how to fix them, as well as conformance trends over time.

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Making Recommendations based on your findings

Pitch your findings

Your writeup (1 page max) or video should include:

- Insights from the workspaces you created
- Business recommendations for process improvement
- An uploaded process model from the original business process
- Anything interesting you found ☺

VI. Exercises – Pitch challenge

When pitching your analysis…

Consider these types of questions:

1. Which variants have a negative impact on the On-Time Delivery and how do they look like?

2. What root causes can we identify that have a negative impact on customer satisfaction? How can we improve customer satisfaction?

3. What root causes can we identify that have a negative impact on profits? How can we increase profits?