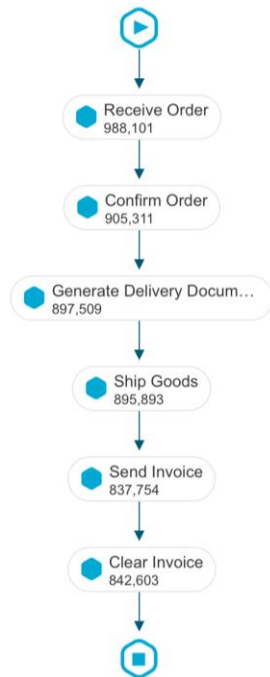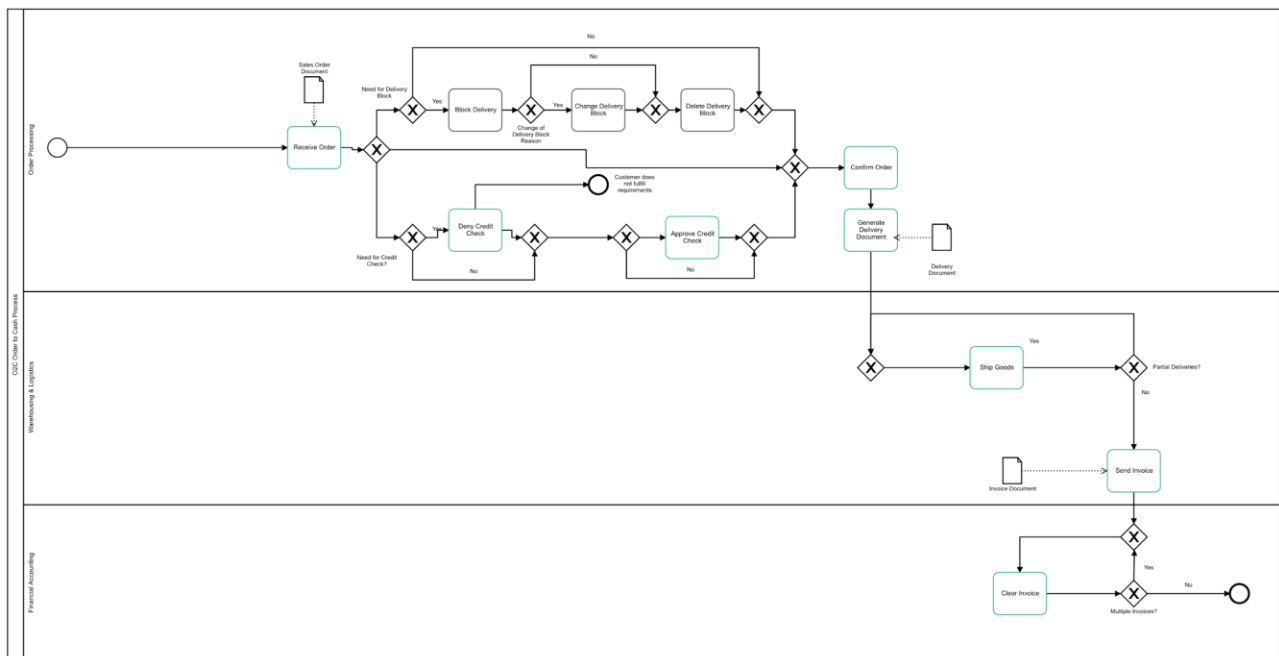# INF2166 Final Project:
Order-to-Cash Challenge

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Part 1

Most Common Path:

Tentative as-is Model:

Question 1. Screening the prepared analyses and using your skills from the viewer training (variant explorer, filters and drilldowns, conformance checking), what attracts your attention in terms of potential inefficiencies in the process?

After screening the prepared analyses of the Order-to-Cash process, we have identified the following inefficiencies in the Order-to-Cash process:

1. **Approve Credit Check** in 19 percent of cases and accounting for an average throughput time of 24.20 days.
2. **Extend Confirmed Delivery Date** in 17 percent of cases and accounting for an average throughput time of 48.51 days.
3. **Cancel Order** in 8 percent of cases and accounting for an average throughput time of 19.46 days.
4. **Return Goods** in 6 percent of cases and accounting for an average throughput time of 24.80 days.
5. **Send Second Payment Reminder** in 2 percent of cases and accounting for an average throughput time of 41.94 days.
6. **Change Price** in 4 percent of cases and accounting for an average throughput time 34.96 days.
7. **Send First Payment Reminder** in 5 percent of cases and accounting for an average throughput time of 34.34 days.
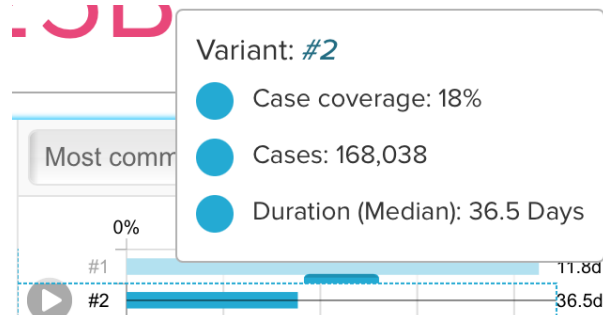
Question 2. Explain two findings in detail. What happens here? Do you find an explanation for this?

1. Extend Confirmed Delivery Date

For 168,038 order items (18 percent), delivery date has been extended after the order has been received and confirmed.
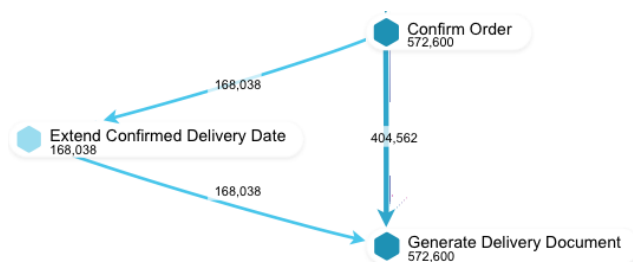


This is the second most common process variant.

Because manual changes, such as this activity, indicates additional effort it would be ideal if this activity could be minimized to an absolute minimum. It is also worthwhile noting the effect that this process deviation has on the throughput time, i.e. exactly how much time takes place between two activities. We

can see that extending the confirmed delivery date increases the average (AVG) throughput time by more than triple — from 3 days to 10 days.
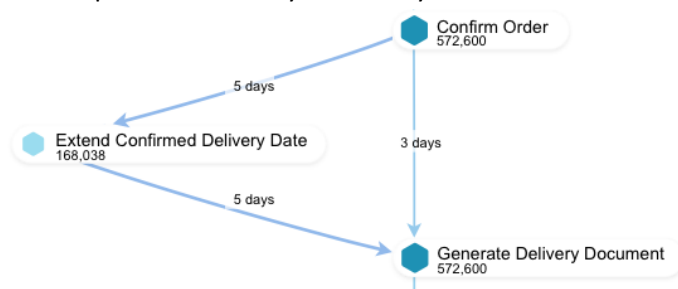
Overall, cases of this violation take 48.1 days from process start to process end. This duration is a substantial increase compared to the 19.1 days for non-violating cases.

Throughput time
48.1 vs **19.1** Days
Violating cases vs. non-violating cases
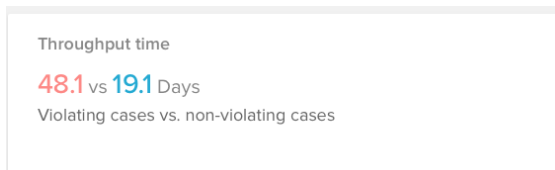
An additional effect of this violation on the Order-to-Cash KPI is an increase in the number of events performed as compared to conforming cases. 7.0 events are performed in the cases that involve the Extend Confirmed Delivery Date violation whereas conforming cases are performed in 6.3 events.

Steps per case
7.0 vs **6.3** Events
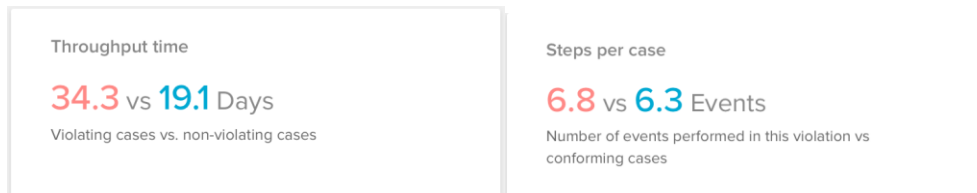Number of events performed in this violation vs conforming cases
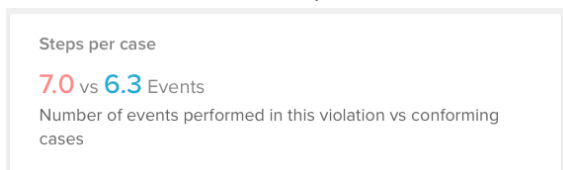
2. Send 1st Payment Reminder
For 31,160 invoices sent for the first payment reminder (6 percent), the payment reminder date has been extended after the goods have been shipped.
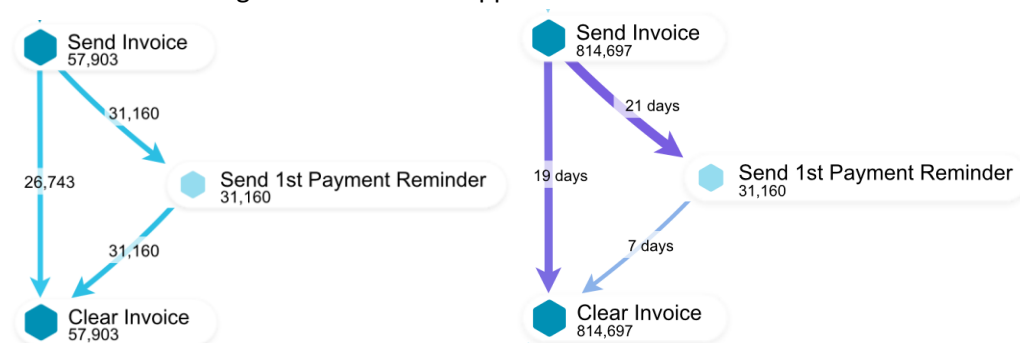
As previously mentioned from the Extend Confirmed Delivery Date activity, this activity could also be minimized as we could see that sending the first payment reminder increases the average (AVG) throughput time from 19 days to 28 days.

Throughput time	Steps per case
34.3 vs **19.1** Days	**6.8** vs **6.3** Events
Violating cases vs. non-violating cases	Number of events performed in this violation vs conforming cases

In addition, as shown in the images above, we could also see that the violating cases as well as the number of violating events performed in this activity was comparably higher than the non-violating and conforming cases.

Question 3.

Which root causes can you find for these cases?

1. Extend Confirmed Delivery Date

Using the PI Configuration within the Conformance sheet ( ) we can identify some possible root causes for the Extend Confirmed Delivery Date activity violation which include:

- **Material Groups** 099, 046, 036, 043 and 048 account for 40k violations.
- **Sales Organizations** Vertimode Germany 2 and Vertimode Netherlands 1 account for 137k violations.
- **BUKRS_TEXT** Vertimode GmbH (Germany) 2 and Vertimode Inc. (USA) 1 account for 137k violations.
- **WERKS_TEXT** NW Eindhoven 1, U Miami 26 and NW Arnhem 31 account for 61k violations.
- **Distribution Channel** V1 accounts for 158k violations.

2. Send 1st Payment Reminder

Some possible root causes for the Send 1st Payment Reminder activity include:

- **Material Groups** 099, 916, and 048 account for 14k violations.
- **COMPANY_M** Vertimode accounts for 52k violations.
- **ONTIME_PROP** 0.97, 1, and 0.98 account for 11k violations.
- **Sales Document Item** P3, P12, P18, P28, P865, and P36 accounts for 10k violations.

Question 4. Why is this finding interesting from a business perspective?

<u>1. Extend Confirmed Delivery Date</u>

This finding is interesting from a business perspective because of the cost such a manual change takes. Executing the activity "Extend Confirmed Delivery Date" 168,038 time leads to a significant amount of avoidable effort. As a business, the company should make sure to reduce instances of these violations to shorten the throughput time of the process. One might begin by analyzing Vertimode Germany 2 and Vertimode Netherlands 1 to understand why these sales organizations account for 137k violations. These organizations should seek to implement appropriate preventive measures. If these organizations reduced instances of the number of cases that required an extension to the confirmed delivery date, it would benefit the current process which is likely incurring financial losses.

<u>2. Send 1st Payment Reminder</u>

This finding could also be interesting from a business perspective due to the similar reasons mentioned from the Extend Confirmed Delivery Date activity, as Sending 1st Payment Reminder activity also showed that avoiding it may possibly show a better result in the business process for organizations, especially for the ones with the many cases of violations -Material Groups for 14k violations, COMPANY_M's vertimode accounts for 52k violations and so on. The Throughput Time and the Steps Per Case between violating cases and non-violating cases as well as the number of events performed in this violation and conforming cases also demonstrate how avoiding this activity could bring increased efficiency in companies' business processes in a timely manner.

Part 2: See "O2C_Dashboard"

- V1 (version 1): dashboard with variant explorer
- V2 (version 2): dashboard with process explorer
- Credit Check: either" Approve Credit Check", "Deny Credit Check", or "Partially approve Credit Check"

- Process Explorer:
    - Approve Credit Check → green
    - Partially approve Credit Check → yellow
    - Deny Credit Check → red

- #Credit checks
    - #CC (items): # cases/sales order items with at least a credit check
    - #CC (activities): # activities that are credit check

- Credit Denial Rate Color Highlight:
    - 0%
    - >0% and <10%
    - >10% and <25%
    - >25% and <50
    - >50%
- Pie Chart: shows the percentage of credit check activities by each user type (Manual or Automatic