Dutch Environmental Permit Application Process: CoSeLoG

bdanalytics

Contents

Date: (Thu) Dec 11, 2014

Data: Originates from the CoSeLoG project executed under NWO project number 638.001.211. Within the CoSeLoG project the (dis)similarities between several processes of different municipalities in the Netherlands has been investigated. This event log contains the records of the execution of the receiving phase of the building permit application process in an anonymous municipality.

Source: http://data.3tu.nl/repository/uuid:a07386a5-7be3-4367-9535-70bc9e77dbe6

Time period: 2010-10-02 to 2012-01-23

0.0.1 Synopsis:

0.0.1.1 Potential next steps include:

0.0.2 Template:

Approach I used:
Describe exactly what you did (e.g. which plug-ins did you use, which settings did you change), in such a way that others can easily reproduce your results. You only need to describe where/if you deviated from the provided instructions.

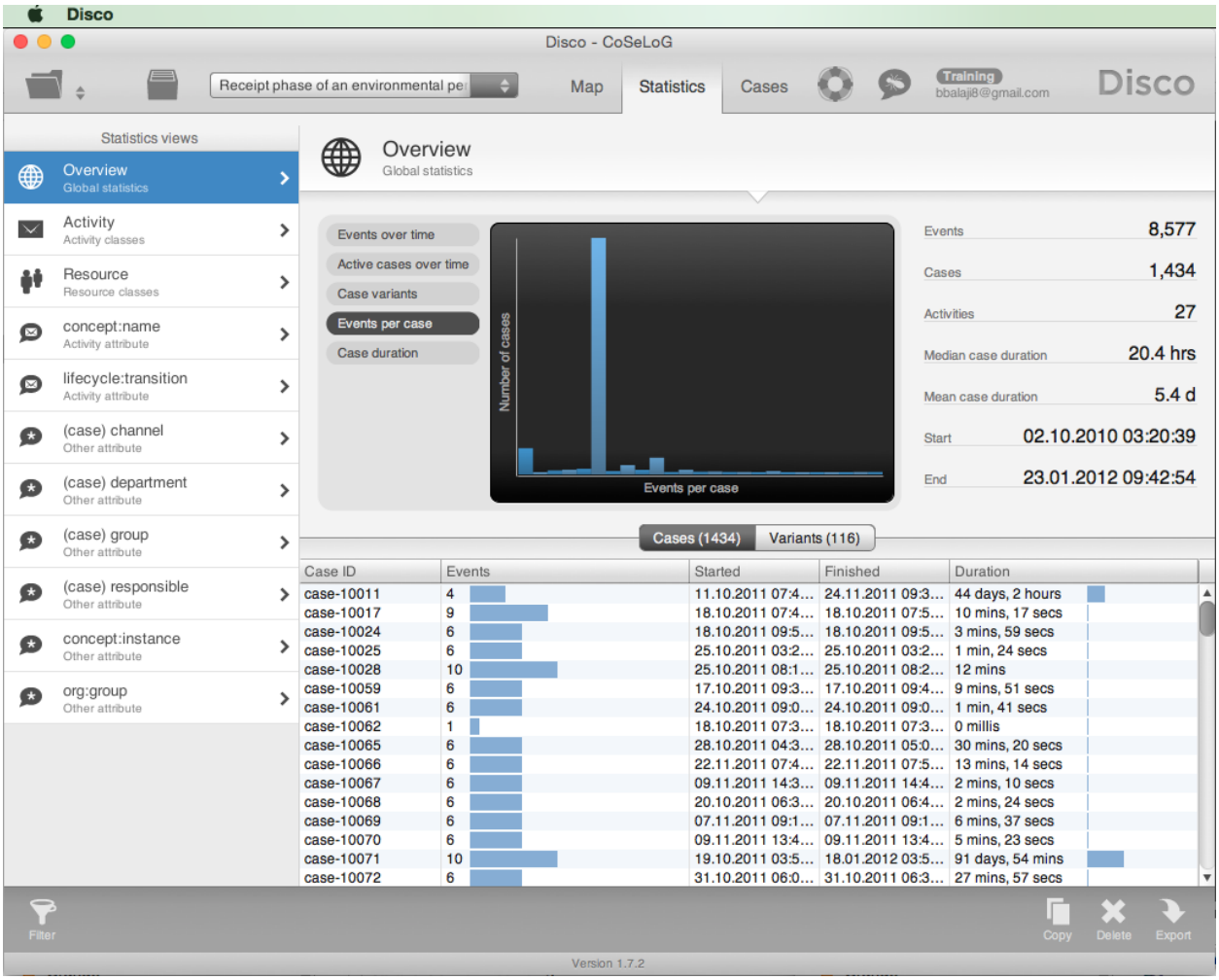
What I saw:
Briefly describe the resulting analysis screen (also include this as a screenshot, see explanation below), explain what we see, without including observations or conclusions.

My analysis:
What can you conclude from the analysis result? How do you interpret the result? What is the answer to the question?

0.0.3 Step 01: import event log in Disco

Approach I used:
1. Import the event log into Disco.
2. Switch to "Statistics" tab / view
3. Click on "Overview" button in the left pane under "Statistics views"
4. Click on "Events per case" button to the left of the graph

What I saw:



The graph pane displays a histogram (Number of cases) of Events per case in this event log. The event log contains 8,577 events in 1,434 cases with 27 activities.

My analysis:
There are 6 events on average per case. This information can be gathered by hovering the mouse on the tallest bar.

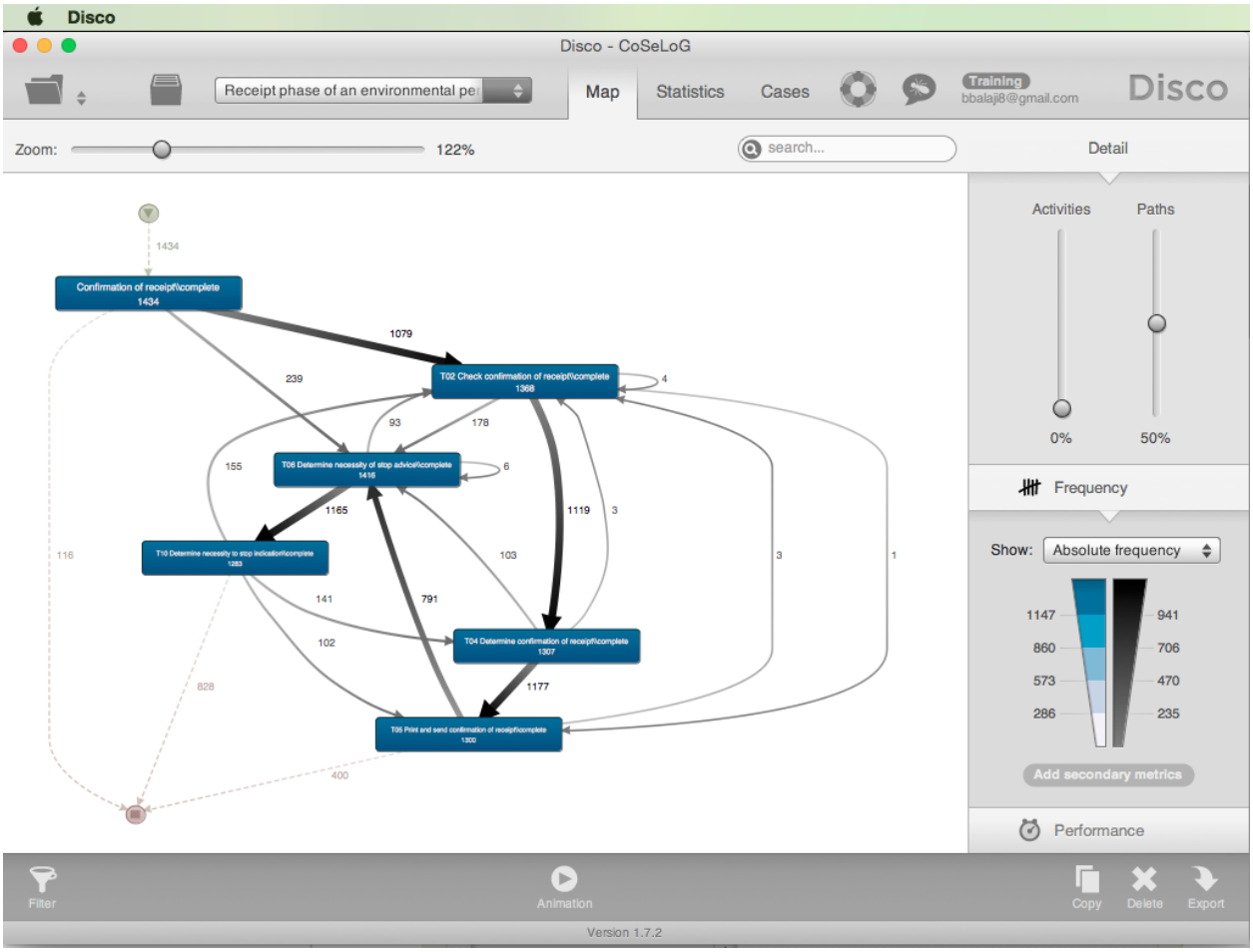
By clicking on "Variants" button on top of the table, we can see that there are only 116 variants amongst the 1,434 cases.

The main observation from the 'Events over time' graph is that the maximum number of events (33) occured on May 2, 2011 across cases.

0.0.4 Step 02: inspect process map in Disco

Approach I used:
1. Click on "Map" tab in the window header.
2. Set "Activities" slider to 0% & "Paths" slider to 50% to make the process map fit on one screen and still be readable.

What I saw:



My analysis:

The 6 most frequent activities between the initiation and termination of cases in the process map include:
A. Confirmation of receipt
B. T02 Check confirmation of receipt
C. T04 Determine confirmation of receipt
D. T05 Print and send confirmation of receipt E. T06 Determine necessity of stop advice
F. T10 Determine necessity to stop indication

The most frequent activity paths traced by the cases include (this is supposed to display as a table, but doesn't work properly) :

`Activity Path | # of Cases`

Start -> TA -> End | 116
Start -> TA -> T02 -> T04 -> T05 -> End | 400
Start -> TA -> T02 -> T04 -> T05 -> T06 -> T10 -> End | 828
|
Total cases displayed in this map | 1,344
Total cases | 1,434
% cases displayed in this map | 94%

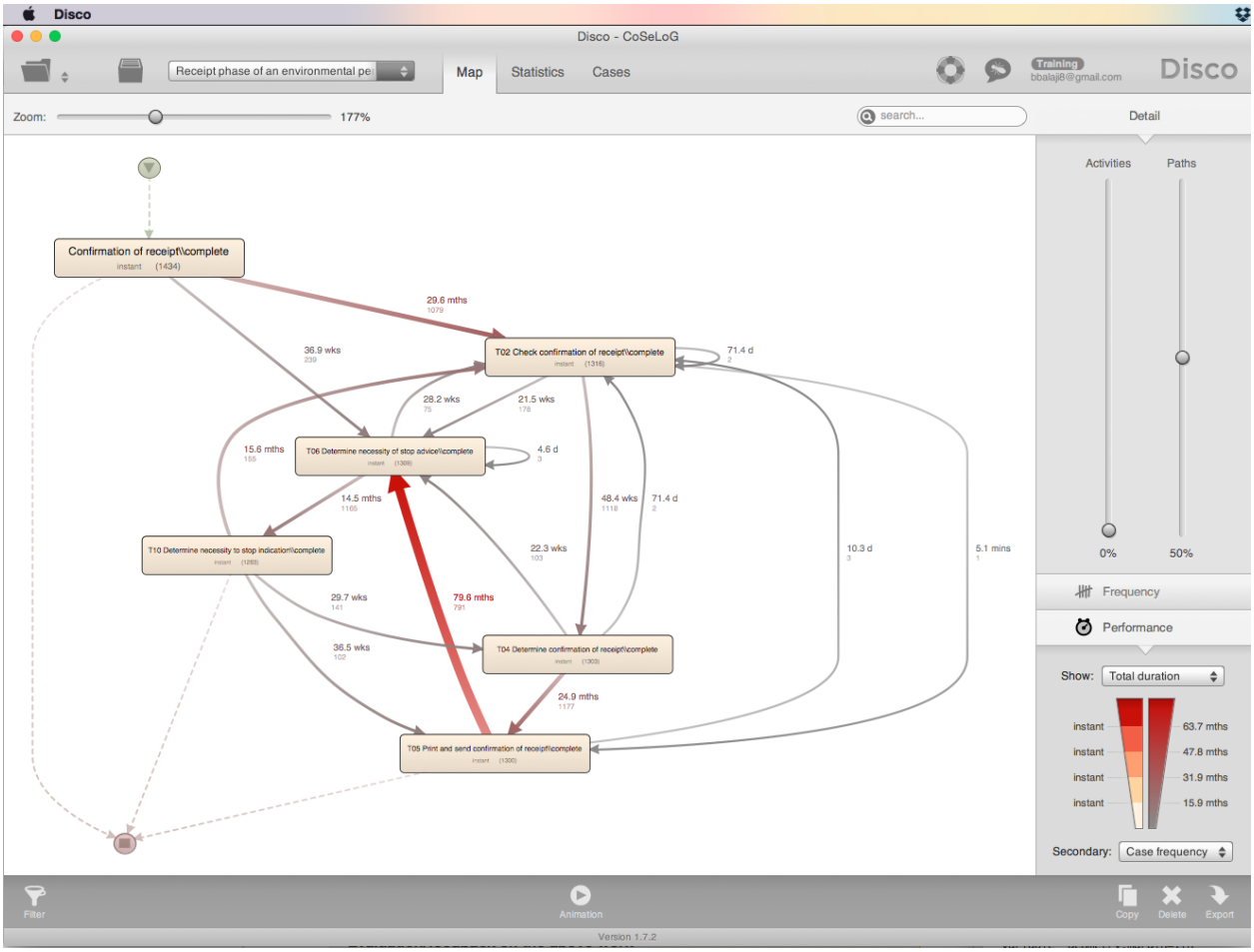
Do not understand why if " Confirmation of receipt" is complete, there is a need for "T02 Check confirmation of receipt". Additionally, there are 4 activities (TA, T02, T04 & T05) regarding confirmation of receipts.

Maybe these activities are not named appropriately ? and/or We need to understand the intermediate activities (e.g. T01, T03) to get a better understanding ?

0.0.5 Step 03: inspect process performance in Disco

Approach I used:
1. Click on "Performance" bar / button in the "Detail" pane (right above the "Copy" / "Delete" / "Export" icons).
2. Select "Total Duration" in the "Performance" pane to display.
3. Select "Case frequency" as the secondary metric in the "Performance" pane to ensure that we don't use outliers (e.g. low case frequency) to make broad conclusions about the process.
4. Cycle through different metrics in the button next to "Show:" in the Performance pane.

What I saw:



The color & thickness of the arcs are based on the distribution of the selected primary performance metric. Additionally, if an arc is clicked, a statistics window is dsiplayed for that arc.

My analysis:
Total Duration: The arc from T05 to T06 takes 79.6 months for 791 cases (31% of total duration of all cases which is 258.12 months: mean of 5.4 days per case X 1,434 cases / 30 elapsed days per month). The next bottleneck seems to be TA -> T02 which is 29.6 months for 1,079 cases.

Analysis of other metrics (median, mean & max duration) highlighted arcs with very low case frequency.

0.0.6 Step 04: inspect event log in ProM

Approach I used:

1. Click on "import..." icon on the upper right hand side of the "Workspace" pane.

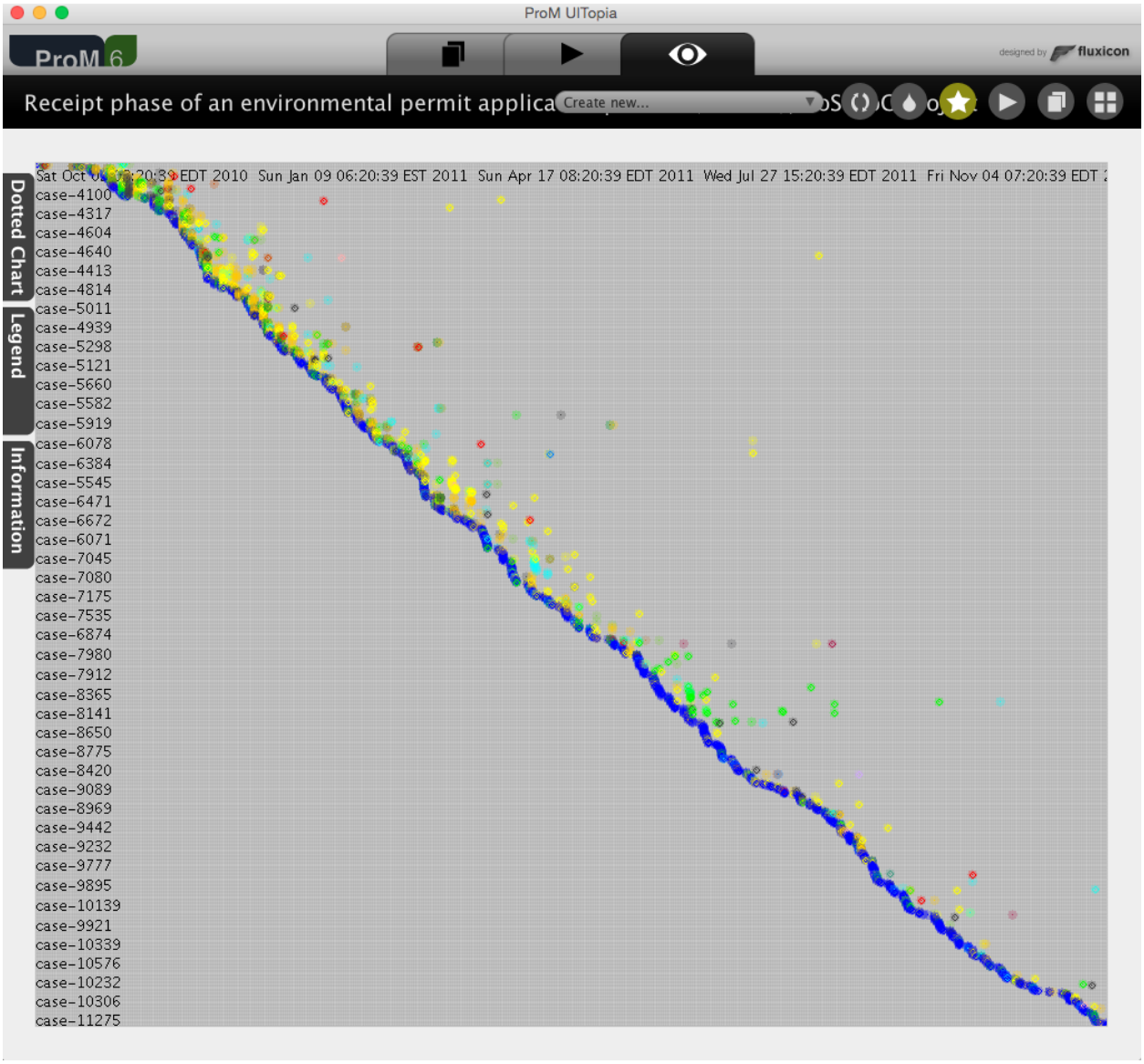
2. Click on eye icon (the one associated with the log in the middle; NOT the top one).

3. Click on "Create new..." droplist in the top center of the window.

4. Select "XDotted Chart" by scrolling down the list.
5. Select "Dotted Chart" tab on the left.
6. Select "Occurence of first event" from the droplist for "Case order:" option.

7. Click on "Apply Settings" button.

What I saw:



Events for each case are plotted across time and color-coded. Did not see the 'size shows # of events'-option. Zooming in does not make the timeline any more readable / discernible (e.g. do events initiate on weekends ?)

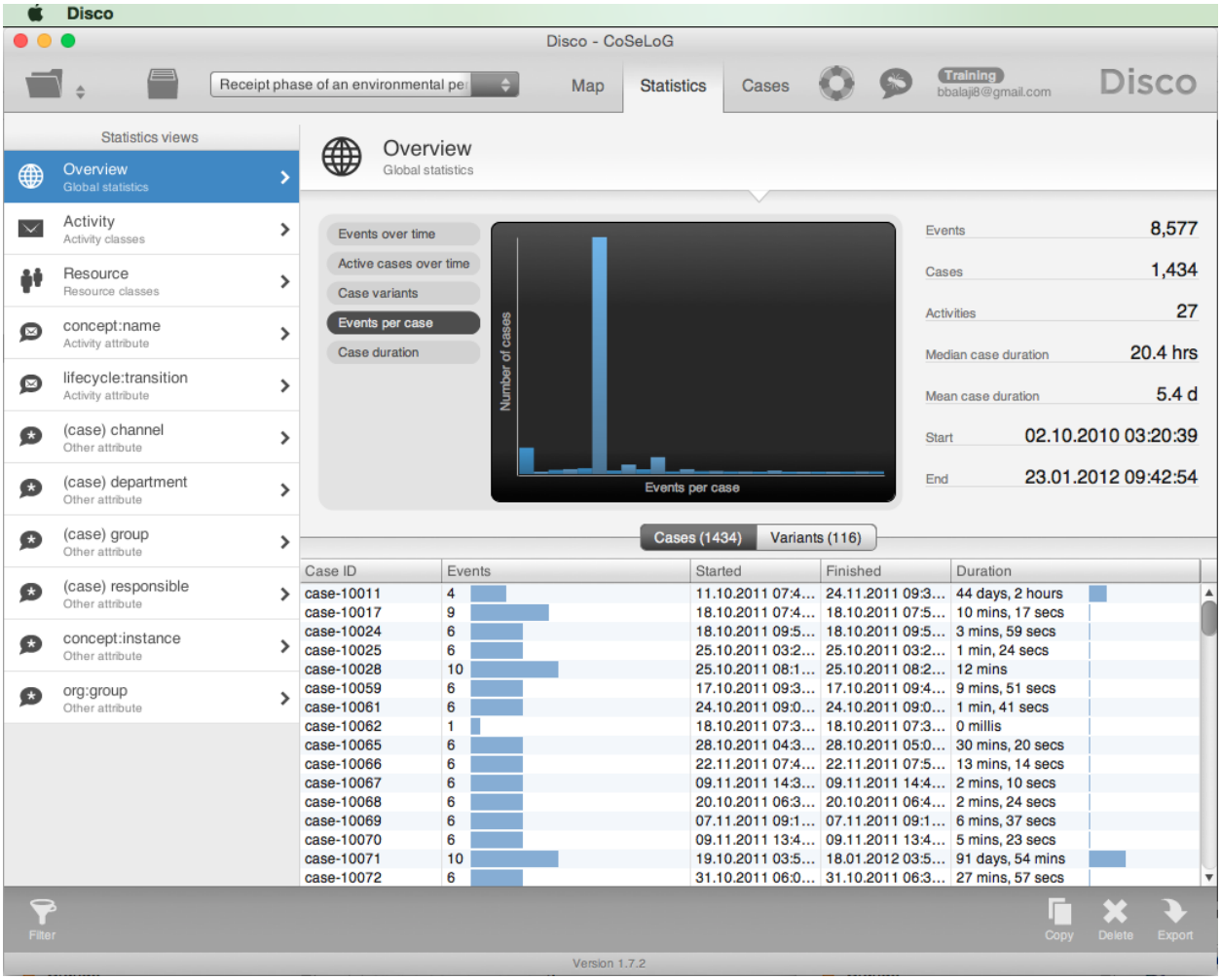
My analysis:
The arrival of the new cases is fairly constant evidenced by the -45 degree slope of the (approx) line of blue dots. There are some minor fluctuations which is difficult to quantify (clicking on the dots does not display any additional information).

For the more recent cases there are a lot less events / activities occuring close to case initiation compared to the earlier cases.

0.0.7 Step nn: step title

Approach I used:

What I saw:



My analysis: