Hands-on Session

Let's get started!

Step 1 - Inspect Data

Open **PurchasingExample.csv** file in python/pandas (or Excel) and inspect its contents

- Every row corresponds to one event
- You find information on Case IDs, Activities, Start and end times, Resources, Roles

Step 2 - Import Data

Load **PurchasingExample.csv** in Disco

Assign columns as follows:
- Case ID ➡ Case ID
- Start and Complete Timestamp ➡ Timestamp
- Activity ➡ Activity
- Resource ➡ Resource
- Role ➡ Other

Click 'Start import'
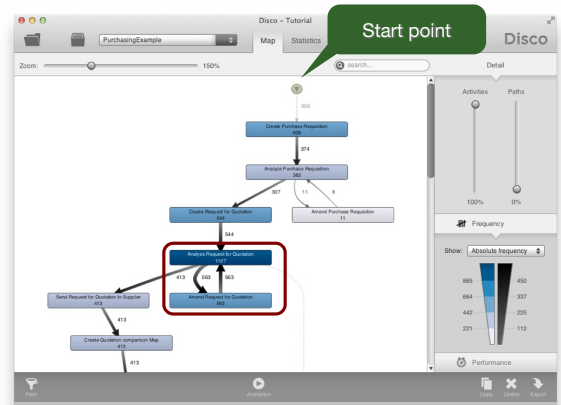
Step 3 - Inspect Process

Look at the resulting process model
- Numbers in rectangles are activity frequencies
- Number at arcs is frequency of connection

→ You see the main process flows
- All 608 cases start with activity 'Create Purchase Requisition'
- Lots of changes were made (amendments)!

Step 3 - Inspect Process

It's important to be able to adjust the level of detail for the process map

Move up the 'Activities' slider down to lowest position (0%)

- Only the activities from the most frequent process variant are shown

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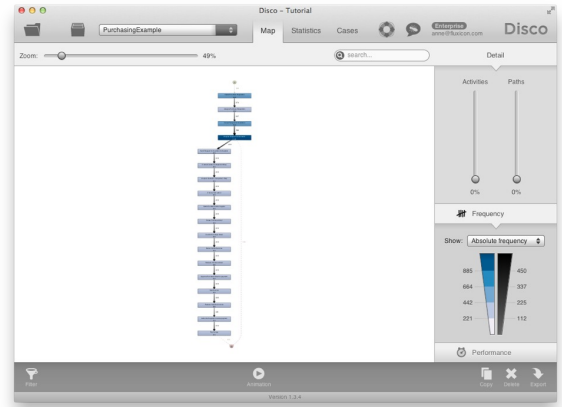
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Step 3 - Inspect Process

Gradually move the 'Activities' slider up to 100% again until all activities are shown

- Even infrequent activities such as 'Amend Purchase Requisition' are shown

You'll notice that 11 cases are flowing in to 'Amend Purchase Requisition' but only 8 are moving out - Where are the other 3?

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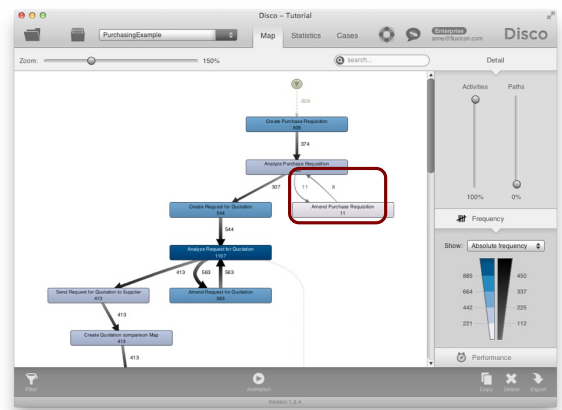
36

Step 3 - Inspect Process

Move up the 'Paths' slider up to the top

You now see a 100% detailed picture of the executed process

- The 3 missing cases move from 'Amend Purchase Requisition' to 'Create Request for Quotation'

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Step 4 - Inspect Statistics

Look at 'Statistics' tab to see 'Overview' information about the event log

- 9,119 events were recorded for 608 cases
- Timeframe is January - October 2011

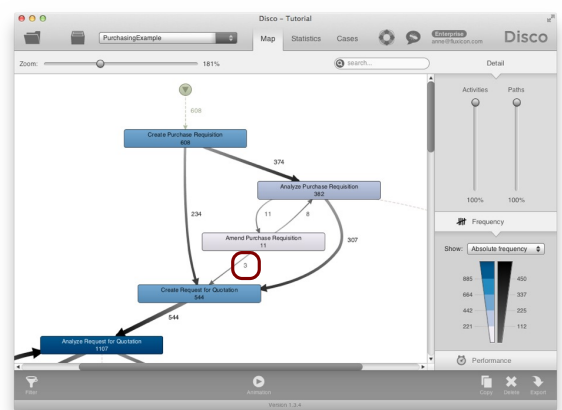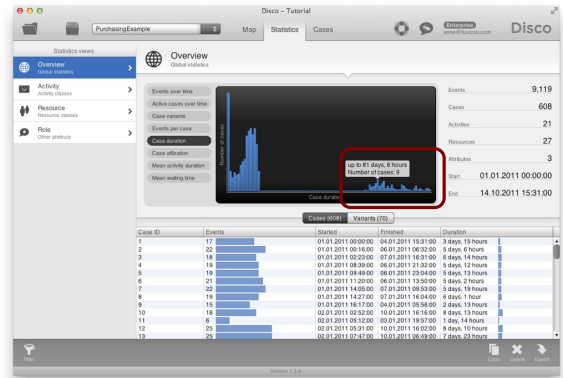The 'Case duration' is typically up to 15 or 16 days, but some cases take very long (more than 70 or 80 days!)
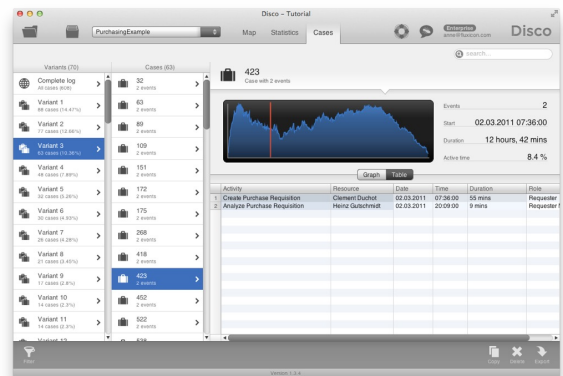
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Step 5 - Inspect Cases

Select 'Cases' tab to inspect variants and individual service instances

- The third most frequent process variant ends after 'Analyze Purchase Requisition' (ca. 10.36% of all cases follow this pattern)
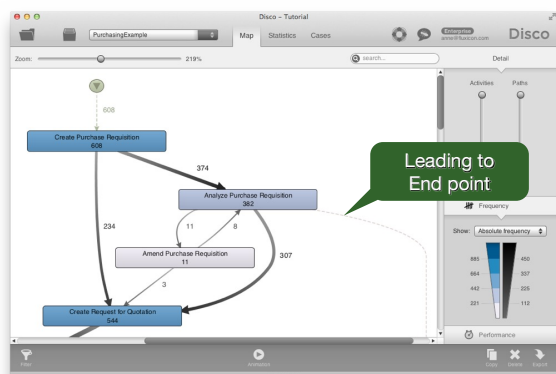
→ Why are so many requests abrupted?

- Do people not know what they can buy?
- We can find this back in the process map, too

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Results so far…

Original Questions:

✅ 1. How does the process actually look like?

- Objective process map discovered
- Lots of amendments and stopped requests: Update of purchasing guidelines needed

2. Are there deviations from the prescribed process?

3. Do we meet the performance targets?

- Not by all (some take longer than 21 days): Is there a bottleneck in the process? -> **Next**
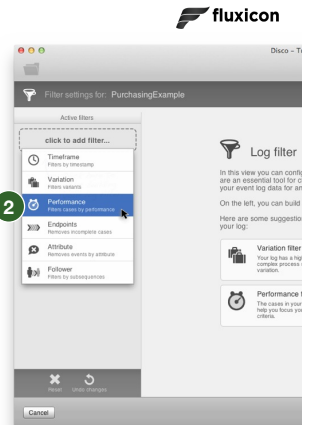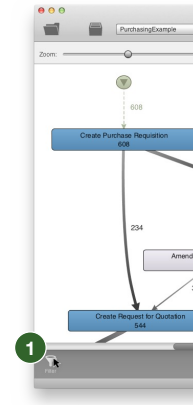
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Step 6 - Filter on Performance

Click on the Filter symbol in the lower left
corner and add a Performance filter

- Select 21 days as lower boundary
- You'll see that ca. 15% of the purchase
  orders take longer than 21 days

Press 'Apply filter' to focus only on those
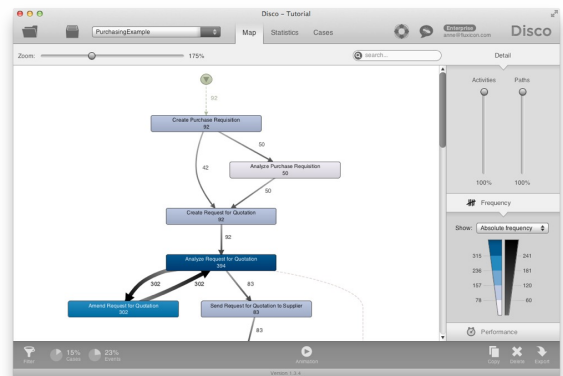cases that take longer than 21 days

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Step 7 - Spot Bottlenecks

The filtered process map shows the process
flow for the 92 (15%) 'slow' cases

- On average 3 amendments per case!
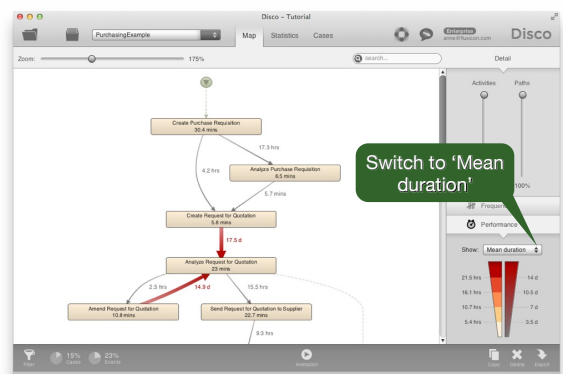 - 92 cases, 302 amendments…

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Step 7b - Spot Bottlenecks

Switch to 'Performance' view

- 'Total duration' shows the high-impact areas

- Switch to 'Mean duration':
  - On average it takes **more than 14 days** to return
    from the rework loop to the normal process
  - What about min and max duration?

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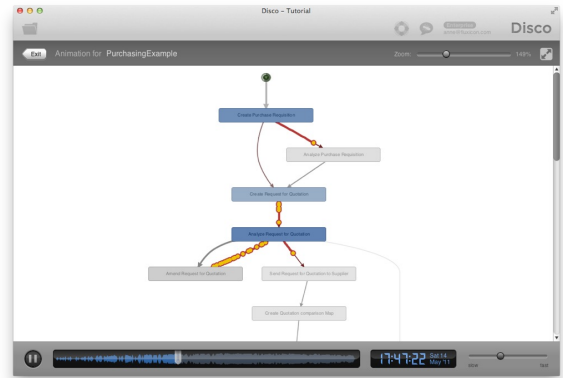51

Step 8 - Animate Process

Visualize bottleneck:
Press ▷ button to start animation

Observe how purchase orders move through the process

Drag needle to the end of the timeline

- observe how the most used paths get thicker and thicker

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Results so far…

- ✅ 1. How does the process actually look like?
  - Objective process map discovered
  - Lots of amendments and stopped requests:
    Update of purchasing guidelines needed

- 2. Are there deviations from the prescribed process? -> **Next**

- ✅ 3. Do we meet the performance targets?
  - Not by all (some take longer than 21 days)
  - The 'Analyze Request for Quotation' activity is a huge bottleneck: Process change is needed
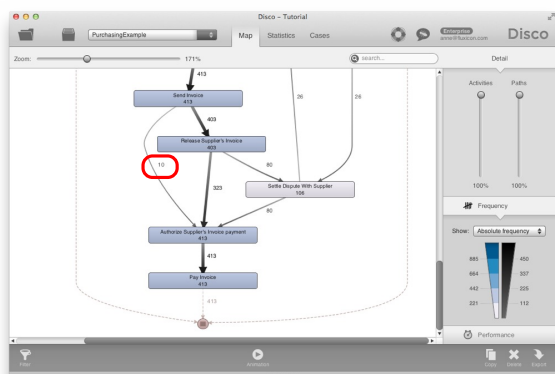
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Step 9 - Compliance Check

Exit the animation, return to Filter settings, and remove performance filter

Switch back to Frequency Map view and scroll to end of the process

- 10 cases skip the mandatory 'Release Supplier's Invoice' activity!

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Step 9 - Compliance Check

Drill down: Click on the path from 'Send invoice' to 'Authorize Supplier's Invoice payment' and press 'Filter this path…'

Switch to Cases view to see the 10 cases

- Actionable result: We can either change the operational system to prevent the violation or provide targeted training

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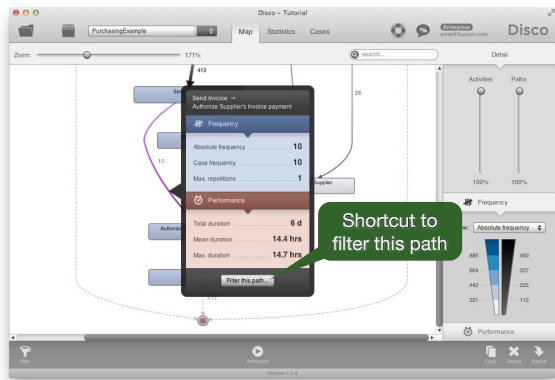
Results so far…

- ✅ 1. How does the process actually look like?
  - Objective process map discovered
  - Lots of amendments and stopped requests: Update of purchasing guidelines needed
- ✅ 2. Are there deviations from the prescribed process? -> Yes, training or system change needed
- ✅ 3. Do we meet the performance targets?
  - Not by all (some take longer than 21 days)
  - The 'Analyze Request for Quotation' activity is a huge bottleneck: Process change is needed

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Step 10 - Organizational View

Last Step: We seek an alternative view on the data to visualize the organizational flow

Go to 'Project view' and press 'Reload':

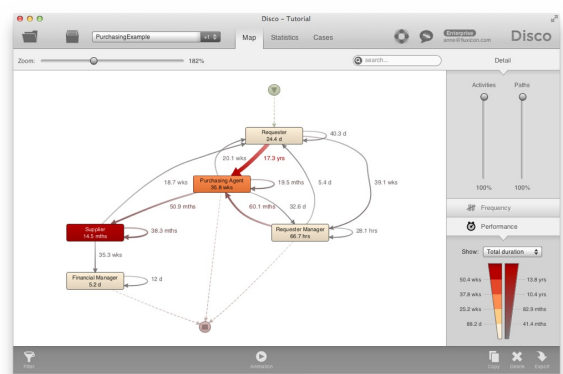Set 'Activity' column to 'Other' and configure 'Role' column as 'Activity'

Step 10 - Organizational View

Instead of the activity flow, we are now looking at how the process moves through different *roles* in the organization

- Inefficiencies can often be found at the borders of organizational units
- Clearly, the Purchasing agents are causing the biggest delays in the process!