

Ricetta de la pasta a la lausannese

June 2012

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Lasagne or spaghetti ?

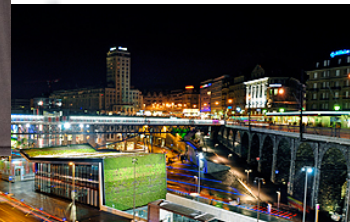
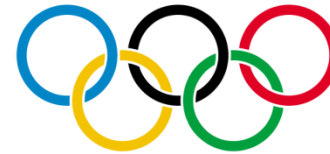
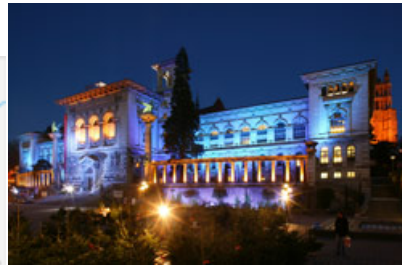
Fusilli, penne, farfalle, maccheroni, tagliolini, tagliatelle, pappardelle, inslatonde, troffie, ravioli, rigatoni, conchiglioni, canneloni...

City of Lausanne



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June 2012

Context of process mining in the City of Lausanne

- 2008: New ERP introduced for Human Ressources Dept
 - From 2008: difficult period for the Human Ressources Department
- 2008-2011: pilot study to set up an Internal Control System
 - Goal: reduce risks
 - Goal: process mapping
 - Goal: change management to support the e-gov program
 - Human Ressource Dept in the ICS pilot study
 - Risk identification & process mapping through interviews
- 2011: election of politicians to Lausanne City Council
 - Decisions frozen for 1 whole year !
 - New political orientation: budget cuts !
 - New political orientation: Stop the Internal Control Systems project
 - New political orientation: process optimisation

Resource constrained I

When politicians want results and reduce budgets

- Canton de Vaud is slow in legally enforcing ICS to communities
 - Budget balance of City of Lausanne is negative for years now
 - 2 big developmental projects forseen and close to start
 - New subway line
 - New ecological suburbs
 - 30% of budget is for people salaries and cannot be reduced
 - 20% of budget is enforced by law and cannot be changed
- => Pressure to optimise process (or to increase incomes)

Resource constrained II

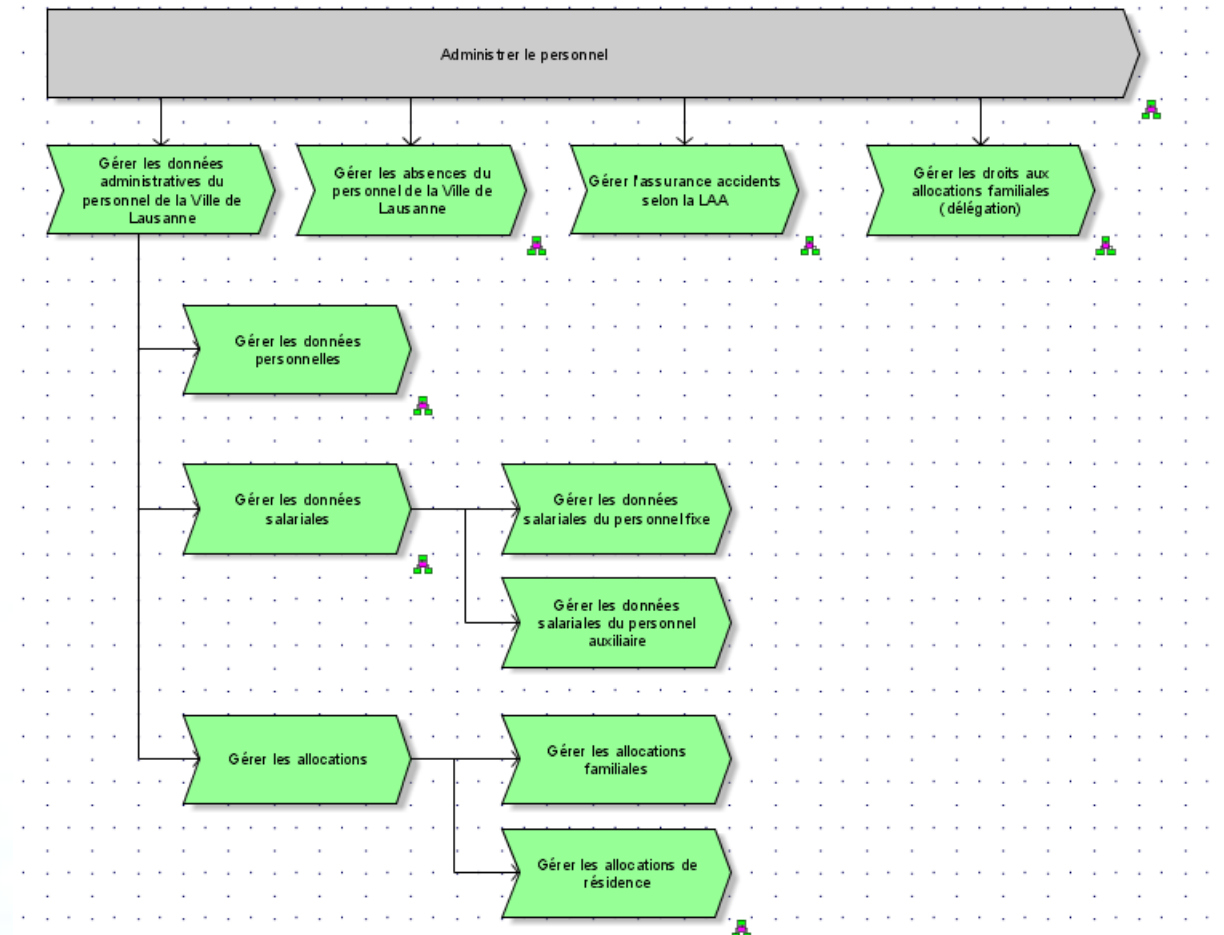
When colleagues consider that Process Mining is not their business

- Human Ressource Department overwhelmed by introducing a new ERP
- Because of political/organisationnal reasons, Human Ressources Department is a somewhat « weak » leader of the HR strategy of the city
- Human Ressource Department is understaffed
- Some people do not welcome changes

HR Administrative Process

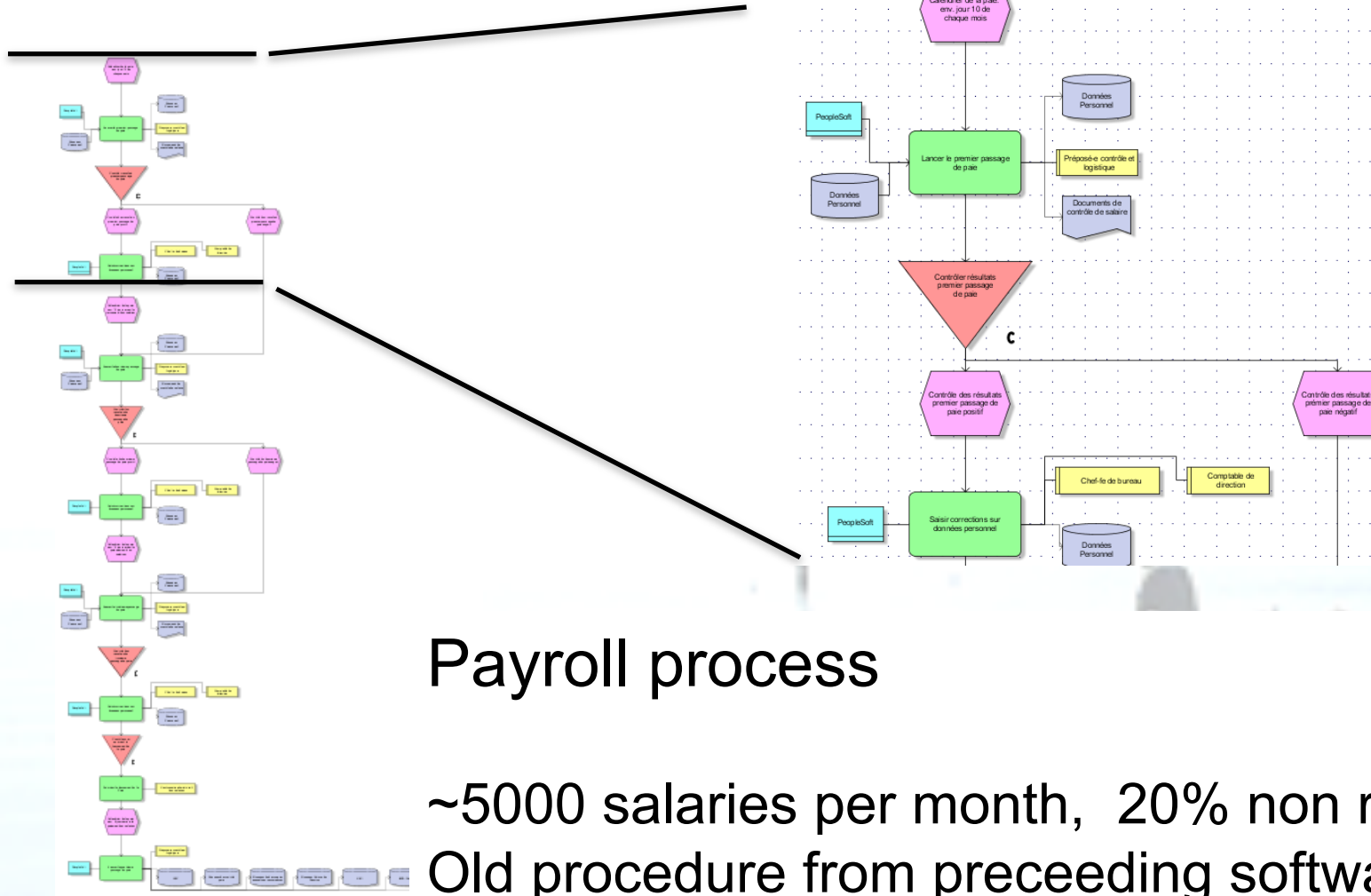
How they see it (a)

- HR recording tasks
- A specially dedicated group of 6 people
- Transfer info from paper forms to HR ERP
- No managing power => no changes...



HR Administrative Process

How they see it (b)



Payroll process

~5000 salaries per month, 20% non repetitive
Old procedure from preceeding software tool =>
4 controls per month...
....4 people close to burnout !

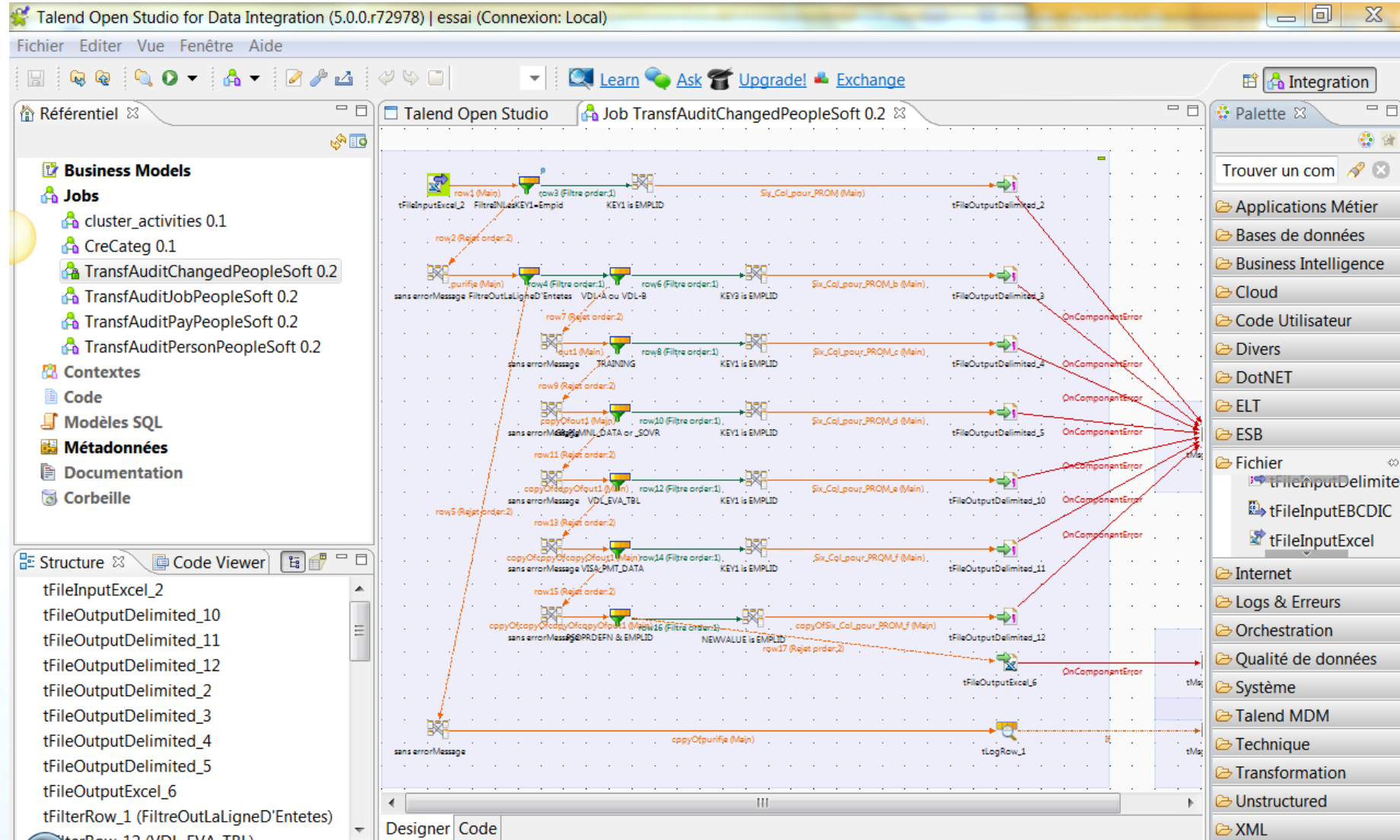
Now, la pasta a la lausannese !

Step 1: getting the ingredients

- Audit logs from HR ERP is CSV format
 - Columns Inhomogenous
- Statistics
 - About 3 years of data recording
 - 300k events
 - 12k cases
 - 34 activities
 - 258 ressources
 - 7 attributes
- Secondary files to enrich/decrypt information content
- Interviews with audit logs and ERP experts to understand data content

La pasta a la lausannese

Step 2: Talend Open Studio



La pasta a la lausannese

Step 2 bis: Talend Open Studio

Talend Open Studio for Data Integration - tMap - tMap_1

row3

Column
AUDIT_OPRID
AUDIT_STAMP
AUDIT_ACTN
RECNAME
FIELDNAME
CASE_ID

row4

Clé d'expr.	Column
row3.AUDIT_OPRID	Code_utilisate...
	Utilisateur
	Donnee_popu...
	Code_role
	Role

row5

Clé d'expr.	Column
row3.RECNAME	activity
	description

Var

Expression	Type	Variable
row3.AUDIT_OP...	String	var1

Auto map !

out1

Property	Value
Catch output reject	false
Catch lookup inner join...	false
Schema Type	Built-In

Expression	Column
row3.AUDIT_OPRID	AUDIT_OPRID
... row3.AUDIT_STAMP	AUDIT_STAMP
row3.AUDIT_ACTN	AUDIT_ACTN
row3.RECNAME	RECNAME
row3.FIELDNAME	FIELDNAME
row3.CASE_ID	CASE_ID
Var.var1	SERVICE_ID
row4.Role	ROLE_ID
row5.description	RECNAME_DE...

out2

Property	Value
Catch output reject	false
Catch lookup inner join...	true
Schema Type	Built-In

Expression	Column
row3.AUDIT_OPRID	AUDIT_OPRID
row3.AUDIT_STAMP	AUDIT_STAMP
row3.AUDIT_ACTN	AUDIT_ACTN

Éditeur de Schéma Editeur d'expression

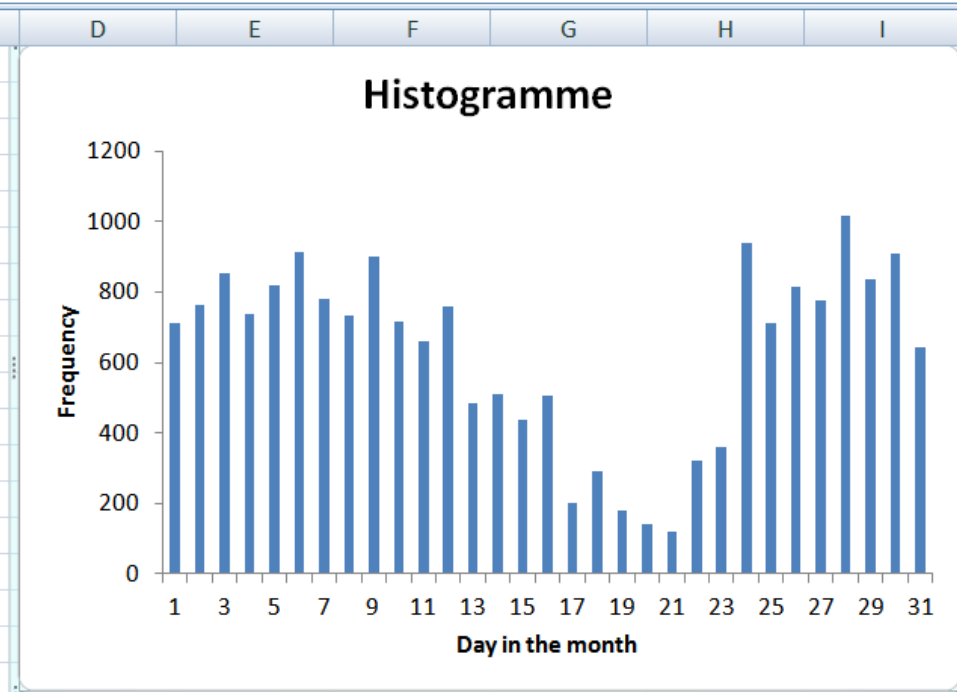
La pasta a la lausannese

Step 3: don't forget slices of python and Excel

```
55
56 dt_r = datetime.strptime(elements_courants[1], STRING_FORMAT_DE_SORTIE)
57
58 try:
59     for compteur, ligne in enumerate(all_lines):
60         elements_courants = ligne.split(';')
61         date_courante = elements_courants[1]
62         dt_c = datetime.strptime(date_courante, STRING_FORMAT_DE_SORTIE)
63
64         if (elements_courants[5]
65             abs(dt_r - dt_c) < t
66             compteur > 0 ):
67             for i in [0,2,3,4]:
68         else:
69             elements_de_ref = el
70             date_de_ref = elemen
71             dt_r = datetime.strptime
72
73             # elements_courants = ligne.
74             for i in [0,2,3,4]:
75                 if '/' in elements_d
76                     elem = elements
77                     elements_de_ref[
78                     elements_de_ref[
79
80             all_lines[compteur] = el
81 finally:
82     objet_fichier.close()
```

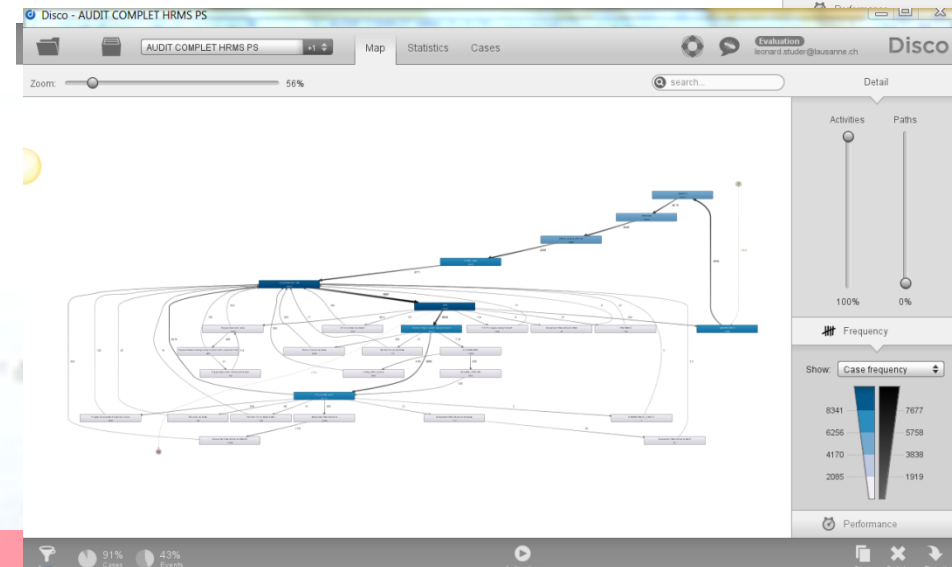
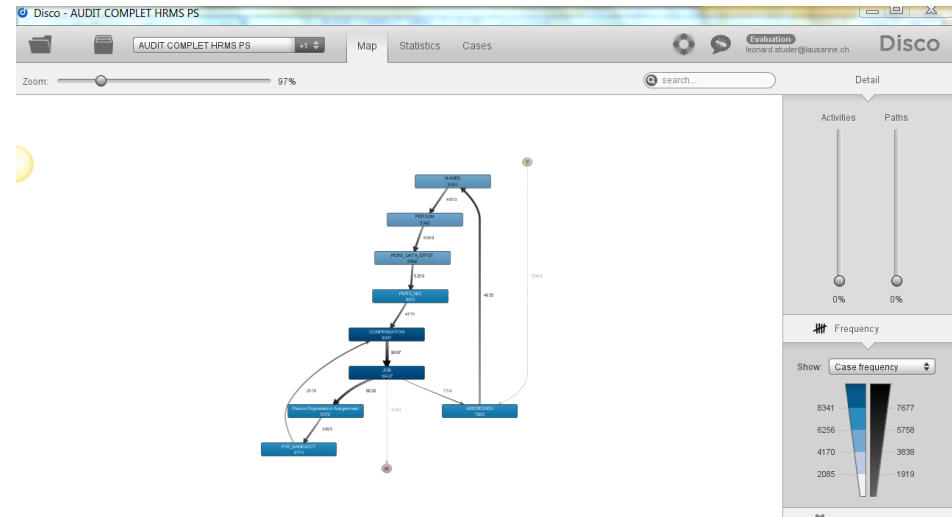
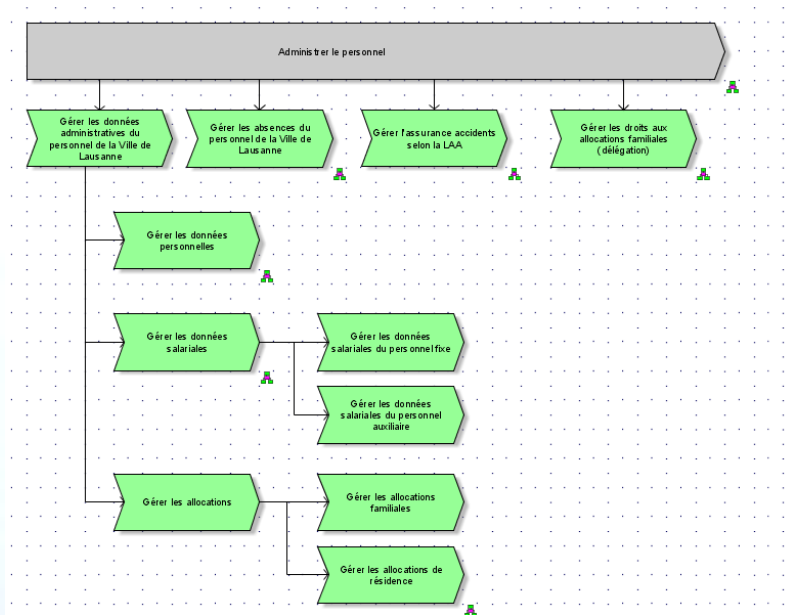
Graphique 1

	A	B	C	D	E	F	G	H	I
1	ay in the mont	Frequency							
2	1	710							
3	2	764							
4	3	851							
5	4	738							
6	5	820							
7	6	915							
8	7	781							
9	8	731							
10	9	900							
11	10	714							
12	11	662							
13	12	757							
14	13	484							
15	14	511							
16	15	435							
17	16	505							
18	17	201							
19	18	291							
20	19	179							

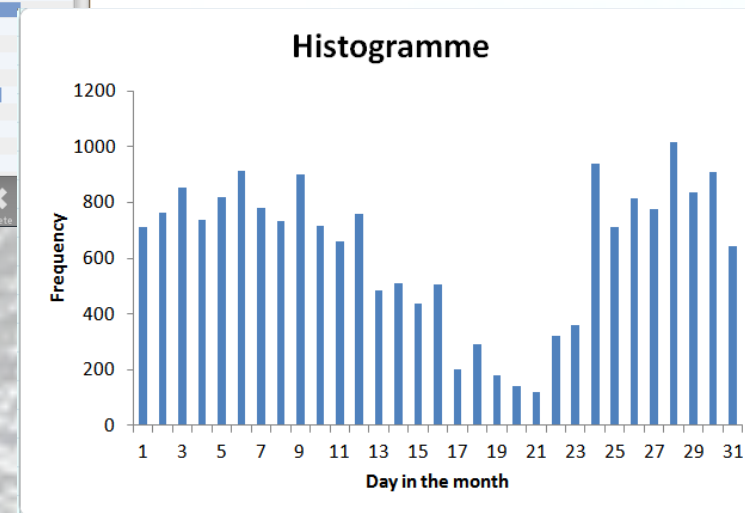
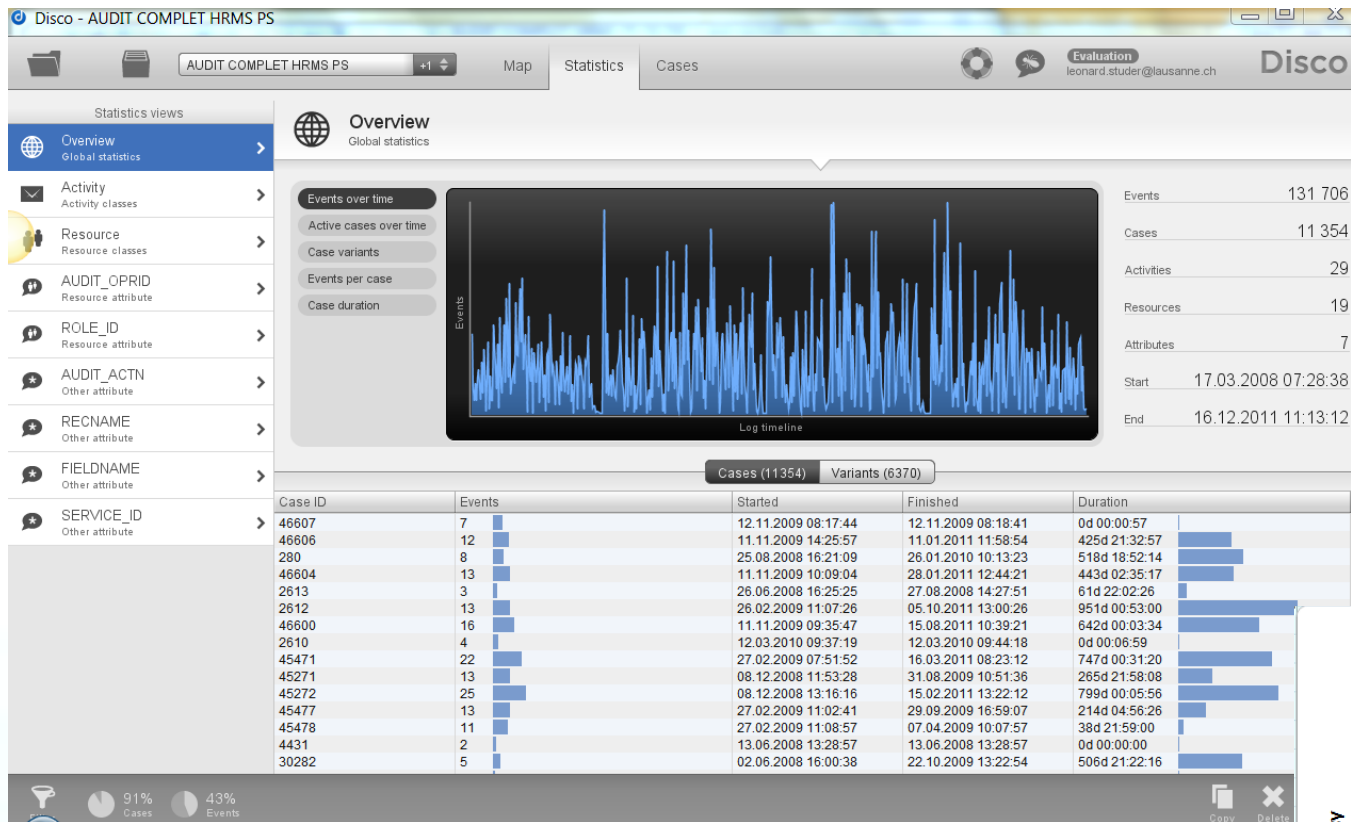


Putting la pasta a la lausannese on the table

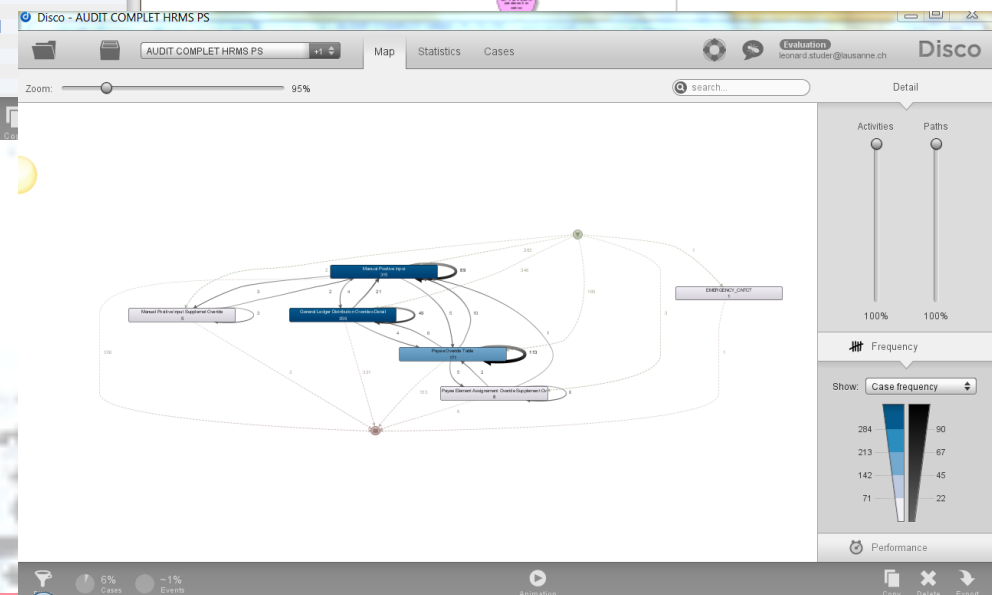
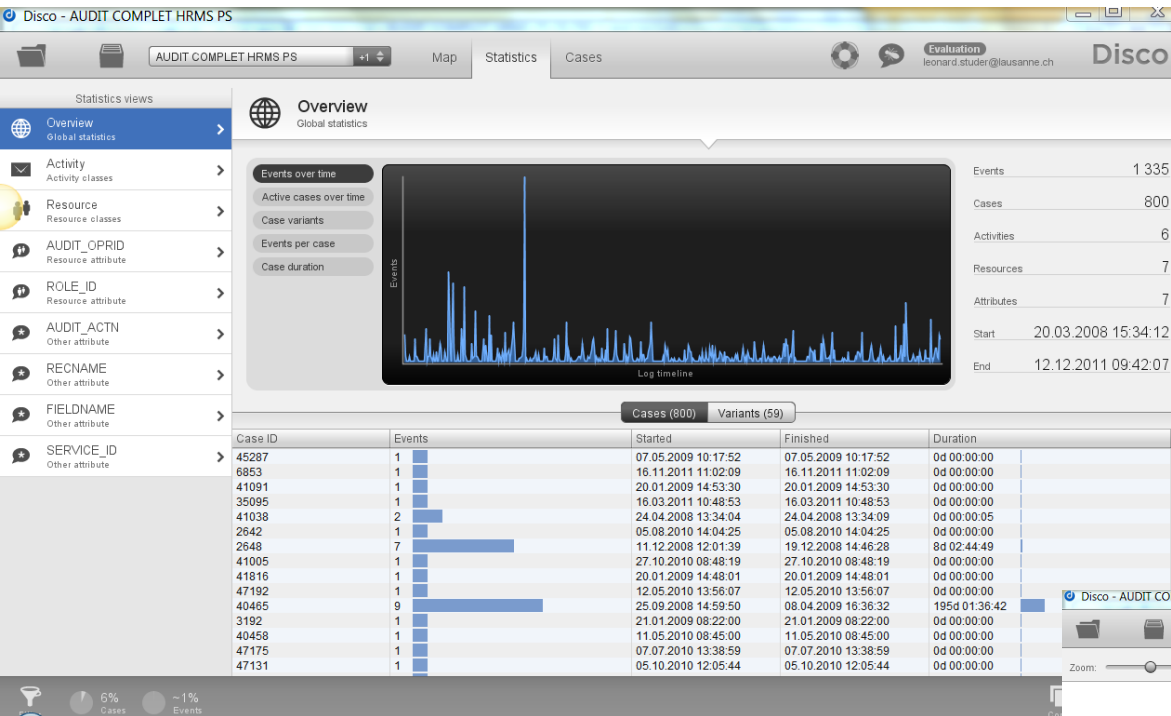
Comparing how they thought they were doing and what I discovered



HR Administrative Process



Payroll Process



How palatable is la pasta a la lausannese ?

When colleagues face the results of Process Mining

- The project manager in charge to set up the new ERP:
 - « *My people are already strongly disturbed by the new ERP* »
 - ➔ Agreement to deliver Process Mining Results ... later
- Politicians want to reduce costs
 - Set up a major program to « Optimize the Administrative Processes » !
 - Process Mining + Records Management + Business Intelligence...
 - But only 4 people to carry out this program ☹
- Computer engineers
 - Please, tell me where are the audit logs !

Second servings ? Future plan, next step.

- The Optimize the Administrative Processes Program
- Special emphasis in going hand-in-hand with process actors
- E-gov program will include « data logs » requirements
- Strengthen the Business Process Management skills among process actors
- Catalyze BI, RM and Process Mining

La pasta a la lausannese
Enjoy !



Thank you