



BeeCon 2016

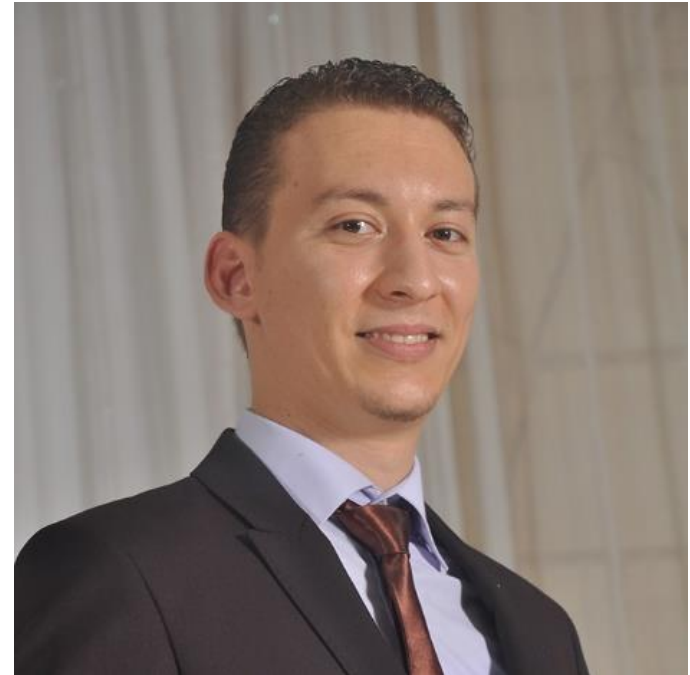
# Business Activity Monitoring in Alfresco

A guide into a BAM implementation  
inside Alfresco/Activiti driven by a  
Sample Use Case

# whoami ?

**Younes REGAIEG**

ECM R&D Engineer @AYD  
Proud member @OOTBee  
(yreg) on IRC



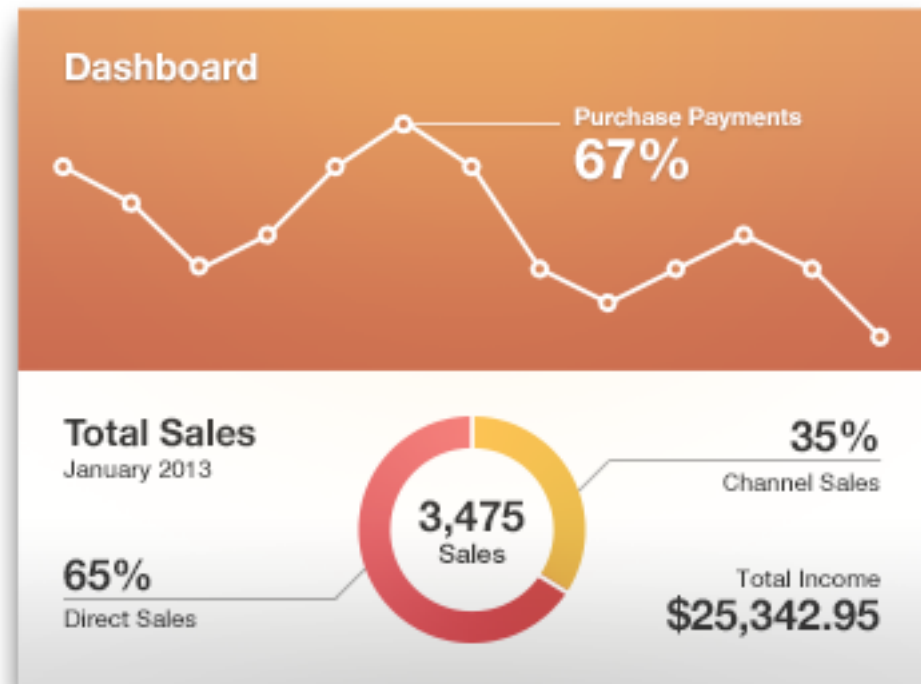
## Outline

What is BAM about?

Why using BAM matters?

How to add BAM capabilities  
in business processes?

What comes after ?



# What ?

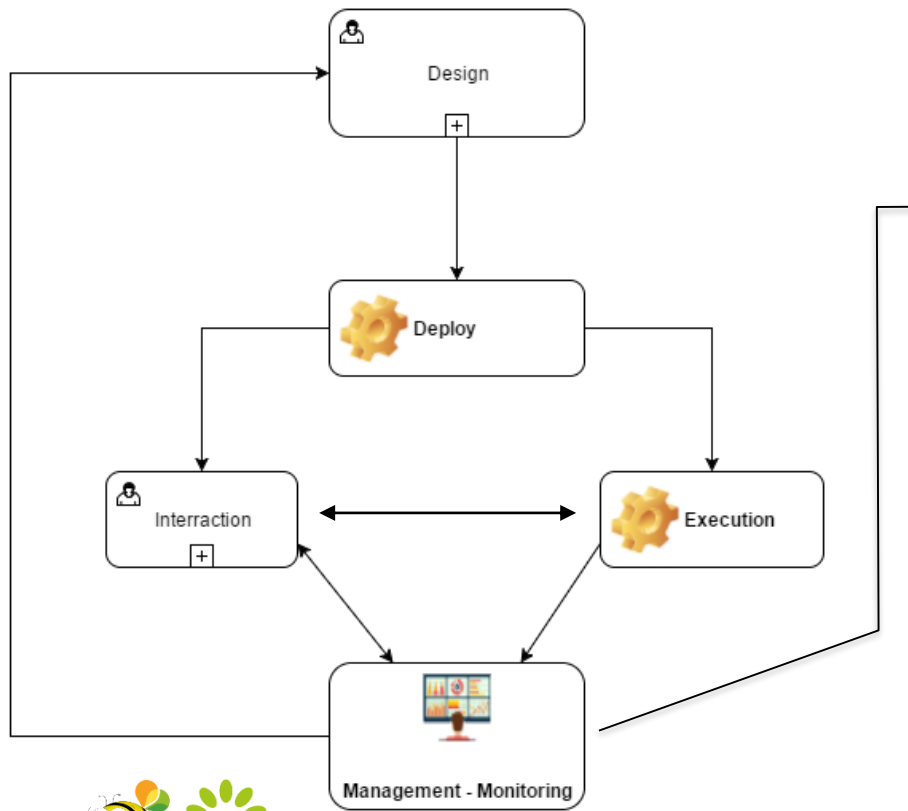
- **Business activity monitoring (BAM)** describes the processes and technologies that enhance situation awareness and enable analysis of critical business performance indicators based on real-time data. BAM is used to improve the speed and effectiveness of business operations by keeping track of what is happening and making issues visible quickly.

- Gartner Group

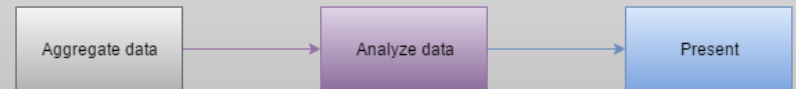


# What ?

## Business Process lifecycle



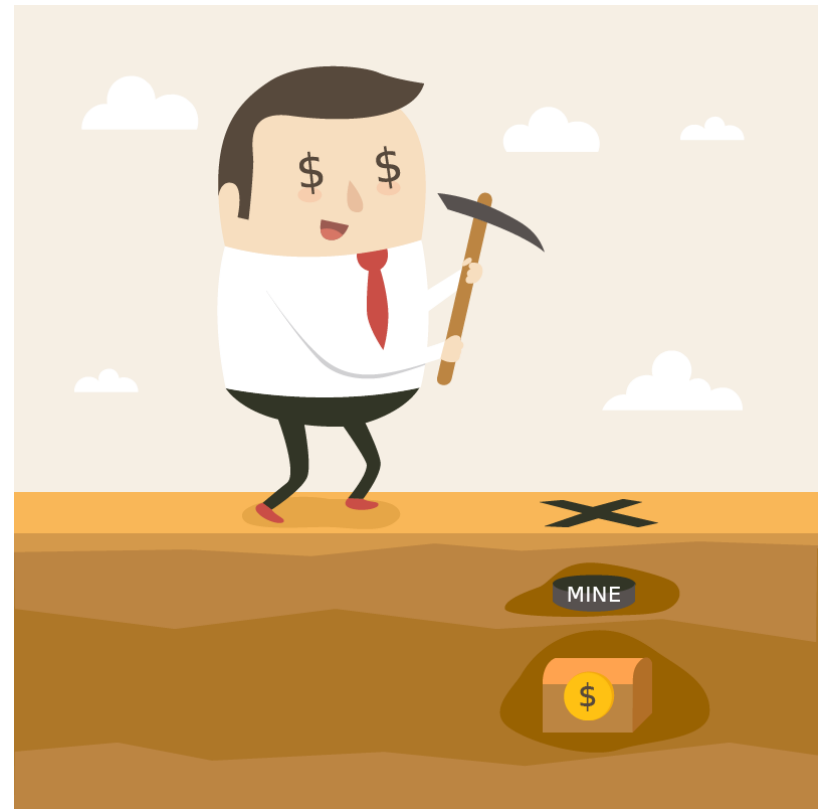
## Monitoring



# Why ?

## The power of informed decisions making

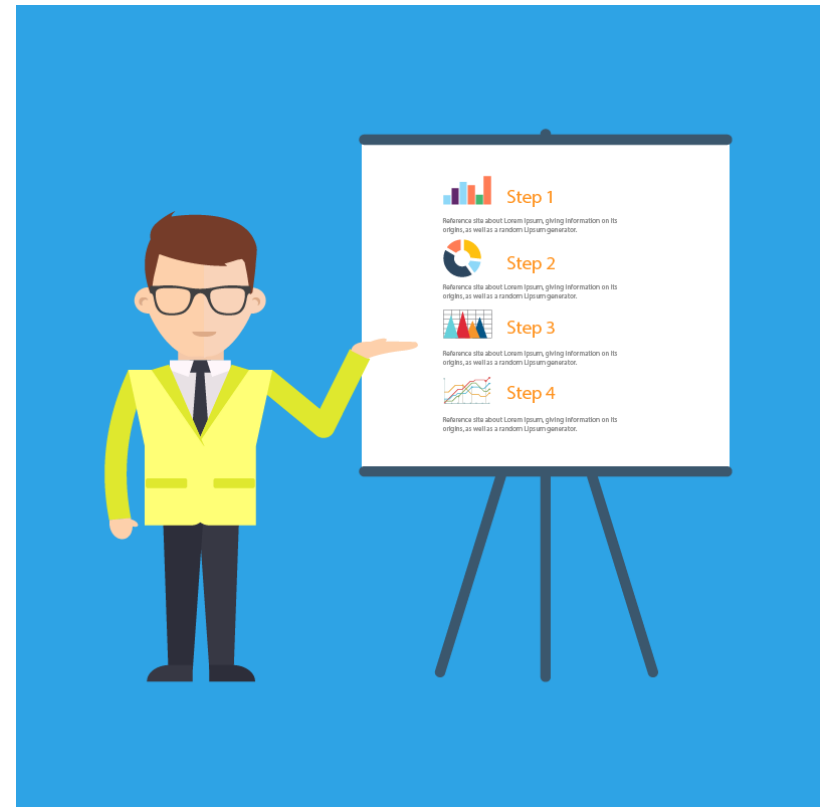
- Master operational security
- Visibility to combat potential threats as they arise



# Why ?

## The power of informed decisions making

- Quickly address problem areas
- Re-position your organization to take full advantage of emerging opportunities
- Reduce costs



# Why ?

- Transform processes interactions into well performed actions





# How?

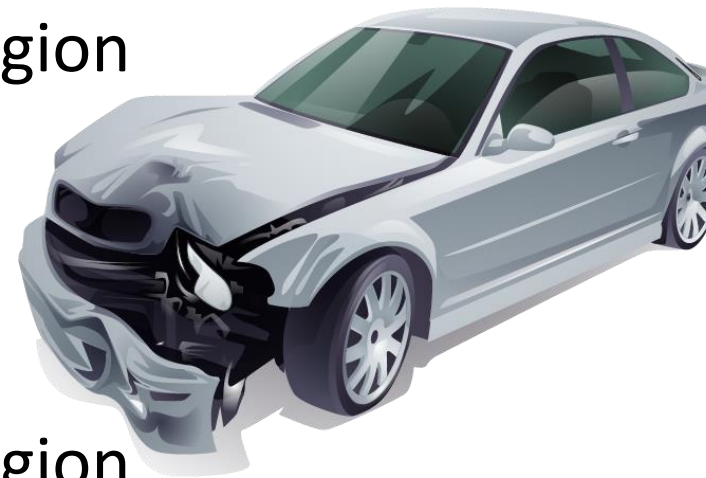
## BAM components

- Business Event
- Business activity
- Metric
- Key performance indicator



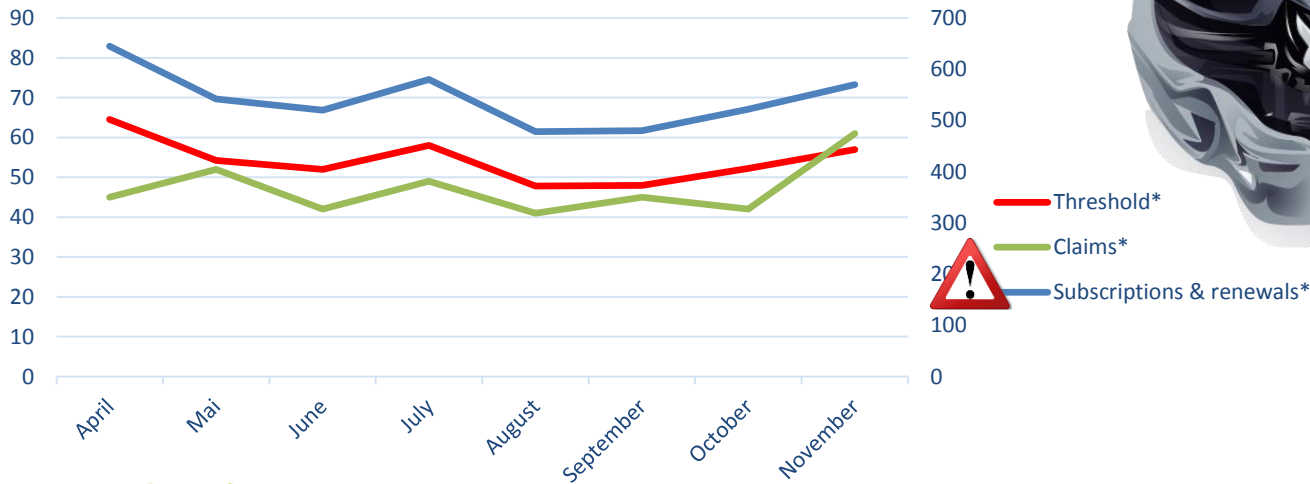
# Use case (Insurance company)

- Number of new subscriptions/renewals
  - Per customer, agent, agency, region
  - Per day, week, month
- Number of claims
  - Per customer, agent, agency, region
  - Per day, week, month
  - Per claimed damage value  $>1000^*\$$ ,  $<1000^*\$$



# Use case (Insurance company)

- Ratio for claims out of new subscriptions/renewals
  - Per claimed damage value  $>1000^*\$$ ,  $<1000^*\$$
  - Per customer, agent, agency, region
  - Per day, week, month



# Use case (Insurance company)



Main phases in a car insurance claim workflow

- Mean processing time
  - For preliminary processing phase
  - For expert valuation and assessment
  - For final processing



# Use case (Insurance company)

- Aims
  - Detecting insurance fraud
  - Harvesting highly valuable data for marketing
  - Taking necessary actions to limit losses/expand revenues



# Use case (Insurance company)

- Dashboard
  - Table view / Chart view
  - Multiple charts
  - Pie chart / table navigation
  - Combining multiple indicators in a single chart



# Use case (Insurance company)

- Reporting
  - Table
  - Multiple charts
  - Combining multiple indicators in a single chart
  - Automated periodic report generation





# Use case (Insurance company)

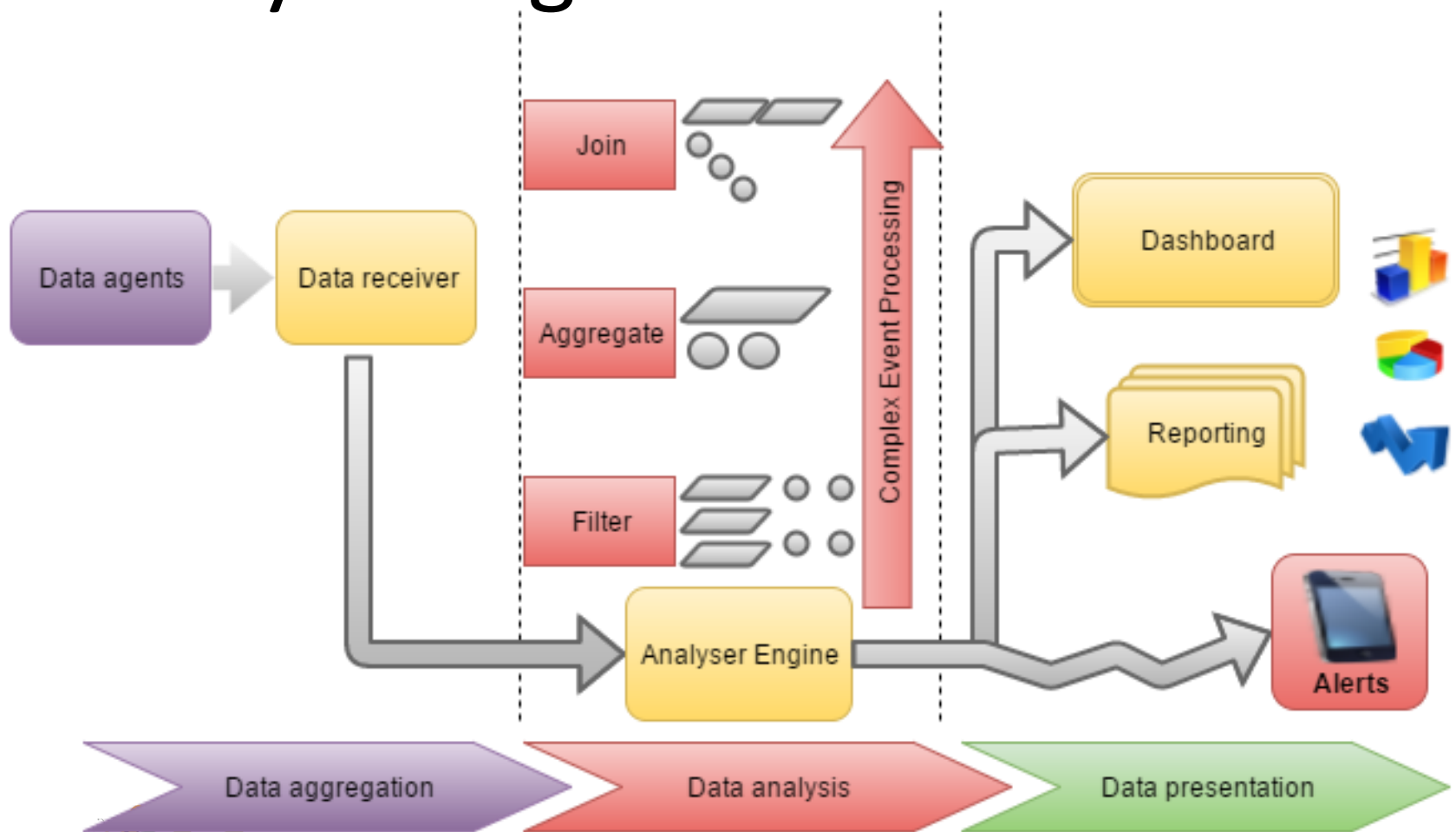
- Alerts
  - Complex Event detection and Processing
  - Automated email/SMS notification



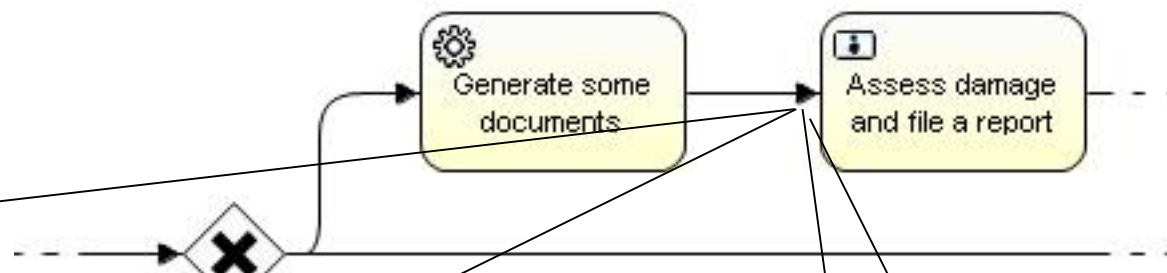
# Implementation



# System global architecture



# Implementation (Alfresco extension)



```
.....  
var assignedExpert = execution.getVariable('assignedExpert');  
var properties = {  
  claimRef : execution.getVariable('claimRef'),  
  contractId: execution.getVariable('contractId'),  
  processedTime: new Date(),  
  expert: assignedExpert.properties.userName  
};  
dataAgent.prepareAndSendEvent('AssignClaimToExpert', properties);
```



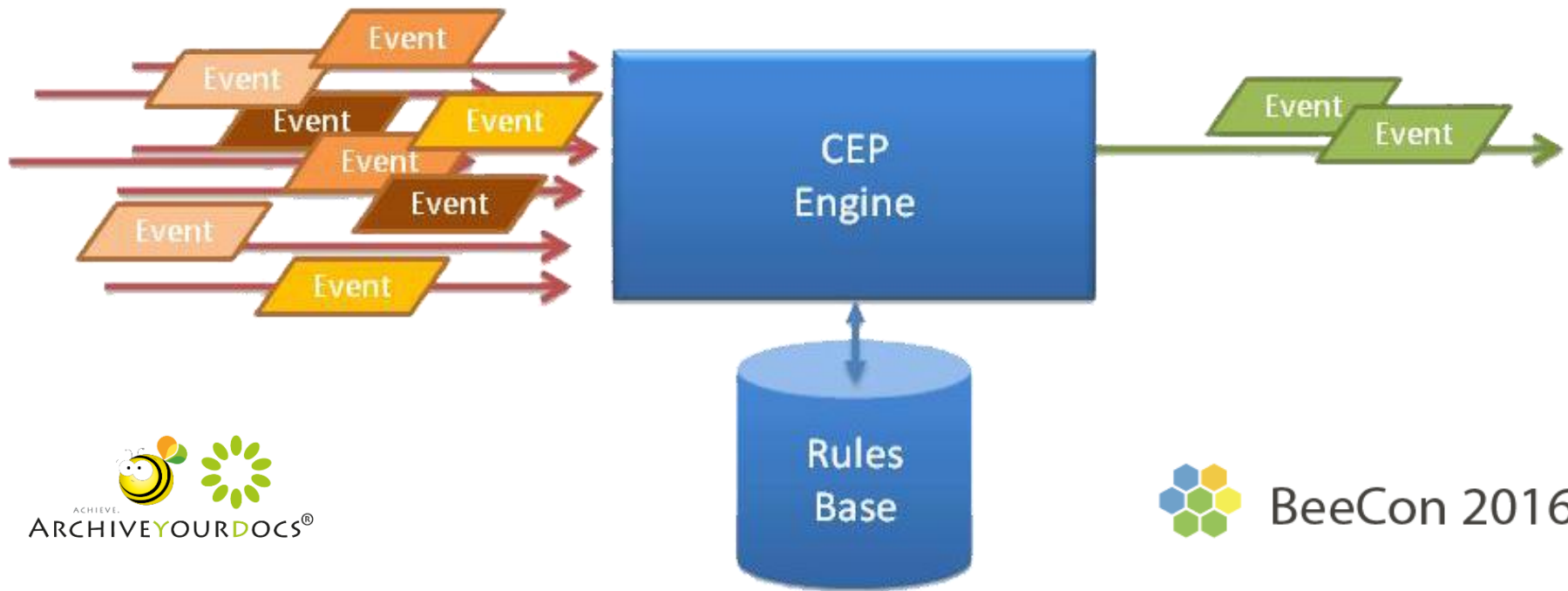
# Implementation (Data Analysis Server)

- Input adapters
- Complex Event Processing Engine
- Output adapters



# Implementation (Data Analysis Server)

Complex Event Processing (CEP) is a technology for low-latency filtering, correlating, aggregating, and computing on real- world event data.





# Implementation (Data Analysis Server)



- Historical Data Access Layer
- Rule Subscribers
- Complex Events discovery



# Implementation (Data Analysis Server)

select

avg(endAssessmentEvent.processedTime - beginAssessmentEvent.receiveTime) as avgAssessmentDuration,  
max(endAssessmentEvent.processedTime - beginAssessmentEvent.receiveTime) as maxAssessmentDuration

from pattern [

every beginAssessmentEvent=AssignClaimToExpertEvent

-> endAssessmentEvent=AssessmentReportFiledEvent(claimRef=beginAssessmentEvent.claimRef)

].win:length(1)

# Implementation (Preview)



JasperReports







# What's next ?

- Limitations
  - No data persistence in Esper CE
  - Changes to the predefined EPL queries result in data loss
- Horizons
  - Rewrite the dashboard and the backend to rely on web sockets instead of periodic polling
  - Provide a way to persist data over system restarts
  - Provide a UI interface for composing dashboard elements easily and effectively for different profiles



**« It's more important to measure what matters  
and less important to measure everything »**

**That's all folks!**



# Credits

## Content

- Klipfolio - [klipfolio.com](http://klipfolio.com)
- Stacy Barr - [staceybarr.com](http://staceybarr.com)
- Gartner Group - [gartner.com](http://gartner.com)
- Adrian Milne - [dzone.com](http://dzone.com)
- R&D Team @ ArchiveYourDocs

## Graphic resources

- Ibrandify - [Freepik.com](http://Freepik.com)
- Freepik - [Freepik.com](http://Freepik.com)
- FreeVectors.com
- Patrick Gantet - Wikimedia