Process Automation with Semantic Text Analytics

2nd Swiss Text Analytics Conference
Winterthur, 9 June 2017
Business Track
About Us and Myself

Richard Forster

- PhD in Computational Linguistics, Zurich University
- 15 years of in-depth experience in all processes, tools and strategies related to language, text, retrieval and publications
- Passionate about chess and member of the Swiss national team for >20 years

Wabion in Olten

- Head Semantics & Cognitive Technologies
- Leading CH integration partner for Google, Fusion and Expert System
- Mission: help our customers achieve true digital transformation
- Customers: Zurich Insurances, AXA, Nestlé, Tamedia, Migros…
About Cogito

%-Leading Semantic Text Engine developed by Expert System
%-Multilingual, covering all major European languages (and then some)
%-Used in all major industries around the World
%-One of the richest and most extensive semantic networks around
%-Thanks to tight integration of syntax and semantics it understands language the way humans do
Text Analytics – Success Factors

Standard document types with a lot of variety, but overall similar content and patterns (contracts, bills, medical reports, police reports, risk reports, forms…)

✔ Lots of people doing lots of paperwork!

Apply Text Analytics?

- High Volume
- High Worth
- Semi- or unstructured information
- Fair degree of standardization

CH Insurances: >116’000 employees

General Insurance CH: 17B CHF/year

Dozen or more documents per case

Figures: Finma 2015
Process Automation in Claims Management

Benefits

- **Review time streamlined from days to hours**
- **Reduced claims leakage due to more accurate decision**
- **Smarter analytics thanks to more standard reporting**
Process Automation in Claims Management

Liability Decision  Valuation  Negotiation

Benefits

 '>' Human effort is reduced by more than two-thirds

 '>' More consistent MR assessment

 '>' Reduced leakage due to higher accuracy

COGITO

Categorize
- Detect claim notification forms, medical reports, invoices, etc.
- Extract metadata

Analyze
- Medical Codes (ICD9)
- Injury progress & recovery time
- Past medical history
- Calculation of expected damages payment
- Decide on settlement offer

Assess

Claims Handlers

Human effort is reduced by more than two-thirds

More consistent MR assessment

Reduced leakage due to higher accuracy
Process Automation in Claims Management

**Benefits**

- More reliability in detecting fraud indicators
- More standardized and better informed negotiations
- Reduced leakage and more time/cost-effective

### Extract
- Accident details
- Doctors and agencies
- Past incidents
- ...

### Validate
- Compare accident accounts for consistency
- Check for completeness of history
- Check for red flags

### Negotiate
- Request further information
- Request second report
- Forward to fraud investigation team
- ...

**Liability Decision**

**Valuation**

**Negotiation**
Because of the underlying motor vehicle accident, the plaintiff has incurred the following damages as represented by his medical bills:

- AMR (Ambulance): $900.34
- Montgomery Medical Center: $6,024.28
- UMC Medical Center: $2,348.09
- Cabin Hills Chiropractic: $1,297.00

**TOTAL** $10,569.71

Please see attached exhibits for medical records (ex. 1-4) and billing (ex. 5). Further medical records and billing from UMC, Cabin Hills and Montgomery Medical Center have been ordered and will be sent to supplement this demand.

**CONCLUSION**

A very sympathetic plaintiff, who was thrust into this situation through no fault of his. The plaintiff has made his work life excruciating as he is forced to sit for long hours. The pain has also impacted his sleep and made him constantly tired for many weeks. Because he did not have health insurance, he had to discontinue treatment after his PIP exhausted.

In light of the serious collision, we believe a jury would award John over $75,000 for this accident. However in the interests of moving forward, [name redacted] authorized me to extend a settlement offer of $60,000 as an exchange for a full release of his claim against your insured. I look forward to your response.

Kind Regards,

[Name redacted]
Section G - Accident time, location and description
6.1 Estimated time of accident (24 hour clock) 17:25
6.2 Where did the accident happen? Runswick Road
6.3 Weather and road conditions Weather conditions Sunny Rain Snow Ice Fog
6.4 Please select the most accurate description of the accident circumstances from the list opposite
Claimant vehicle hit by party emerging from side road
X Claimant vehicle hit in the rear Claimants vehicle hit, whilst parked Accident in a car park Accident on a roundabout Accident involving vehicles changing lanes Concertina Collision Other
this section continues over the page ->

8
Section G - Accident time, location and description (continued)
6.5 Please give a brief description of the accident, including approximate speeds of all vehicles and details of the areas of vehicle damage. Client was driving through Runswick Road in heavy traffic when the defendant hit our client in the rear.

---

Medical Report
Client was driving through Runswick Road

---

History of the Accident in Question:
Mr [redacted] informs me that he was involved in a road traffic accident. The accident occurred on the afternoon of 15/04/2014. Mr [redacted] was the driver of a car. He was wearing a seat belt and the car was fitted with a headrest. At the time of the accident, the car was stationary on a main road. The car was hit by another car from the driver’s side. The impact occurred at a medium speed. Air bags were fitted but did not deploy. He was looking straight ahead at the time of the impact. He was jolted sideways. Mr [redacted] was able to exit the vehicle

---

Claim Notification Form
At the time of the accident, the car was stationary on a main road.
Wrap-Up

- Very significant savings in time and effort spent per case
- Reduced leakage; fewer unwarranted payouts, more reliable fraud detection process
- Improved consistency and higher quality of case assessments, enabling smarter analytics
- Better understanding of subject matter, better alignment and better resource allocation