EXPERT SYSTEM

Raedan AI

Natural Understanding

Agents for South East Asia

CASE STUDY:
Risk Engineering
Intelligent Austomation

Insurance

Risk Engineering

EXPERT SYSTEM

UNDERWRITERS' DAILY ACTIVITY

AS-IS Situation

- Risk engineers produce desktop risk assessments for specific risks, e.g., fire, based on the grading of selected risk factors, e.g., building combustibility
- Assessment based on third party risk reports
- Risk Grading scores are a key input for risk selection and pricing
- Performance of desktop assessments consumes a lot of time of the engineers with tens of thousands desktop assessments per year

Pain Points

- Limited capacity: risk engineers struggle to assess the risk on all renewals and request for quotations
- High level of subjectivity (> 25% disagreement): different engineers typically assess different risk scores
- Expensive process: to guarantee high-quality the process may reveal very expensive

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A REAL EXAMPLE

- Long and content-intensive documents
- Completely different layout, structure and language usage (depending on the provider)
- Unless you read the entire report, you cannot understand the risk and adapt it to your model

Third party risk report


AIG

OCCUPANCY AND PROCESS OVERVIEW

Production

Plant is one of the world's largest integrated dairy complex and comprises two main production blocks, CPP1 and CPP2, with a separation of 250m between main plants. CPP2 also houses one of the Middle East's largest juice manufacturing plants. There are also common utilities located adjacent to CPP1. Additionally there are accommodation blocks located on a total land plot of approximately 1,000,000 square meters. The site was established in 1977 and in 2005. There are several expansion projects on going and a prospective CPP3 is being planned. The majority of common utilities are located in various buildings next to CPP1 and between CPP1/CPP2.

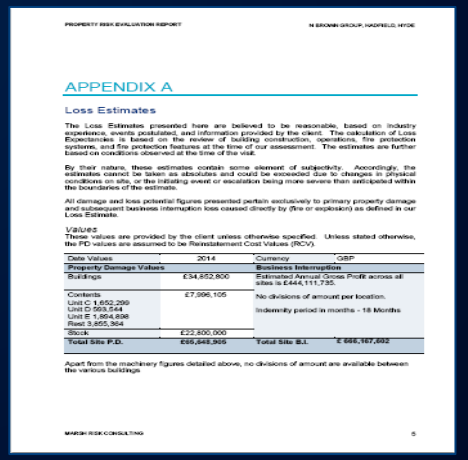
The main products from CPP1 plant consist of Laban, Zabadi (yoghurt) and fresh milk. 80% of the milk processed for both sites is in CPP1. Milk is received from the surrounding dairies by tanker and pumped into the milk processing area for steam heated pasteurisation and homogenization processes. These areas are extremely low hazard due to the nature of the manufacture. There are a total of 17 pot filling lines for yoghurt, the area being of low combustible loading but having exposing plastic insulated walls and 10 filling lines for milk.

The Milk and Laban areas receive plastic bottles directly from the blow moulding area. The production areas are fully sprinklered and generally of low hazard apart from the presence of
insulated metal panel walls.

HDPE bottles for milk are produced in the blow moulding department. The level of combustible
loading in this area is high with storage of exposed unexpanded plastic to 2.5m in a 4.5 m high
building. Individual blow moulders are fitted with 450ltr/s hydraulic units, these being fitted with low
pressure and low level cut outs. There is no combustible construction in this area.

CPP1 Milk Powder and Sugar Operations:

Powdered sugar is utilised for yoghurt and Laban, whilst milk powder is used in the Laban process.
Both potentially explosible dusts Bulk delivery of milk powder and powdered sugar is in bags to the In-Bound Dry Store. These bags are then emptied into silos manually. These products are then transported using pressurised air through narrow diameter pipework to the main bulk storage silos on the 1st floor. These main silos have no explosion venting, fitted but have had Fike explosion suppression systems installed. The silos have soft breakable seals at their bases to relieve the pressure in the event of a dust explosion. The risk of a fugitive dust in this area is relatively limited and risks of a major secondary explosion under current conditions would be relatively small. There are few risks involved with the transport of the two powders since the pipework is very small and there are multiple rotary valves.


PROPERTY RISK EVALUATION REPORT — N BROWN GROUP, HADFIELD, HYDE

APPENDIX A

Loss Estimates

The Loss Estimates presented here are believed to be reasonable, based on industry experience, events postulated, and information provided by the client. The calculation of Loss Expectancies is based on the review of building construction, operations, fire protection systems, and fire protection features at the time of our assessment. The estimates are further based on conditions observed at the time of the visit.

By their nature, these estimates contain some element of subjectivity. Accordingly, the estimates cannot be taken as absolutes and could be exceeded due to changes in physical conditions on site, or the initiating event or escalation being more severe than anticipated within the boundaries of the estimate.

All damage and loss potential figures presented pertain exclusively to primary property damage and subsequent business interruption loss caused directly by (fire or explosion) as defined in our Loss Estimate.

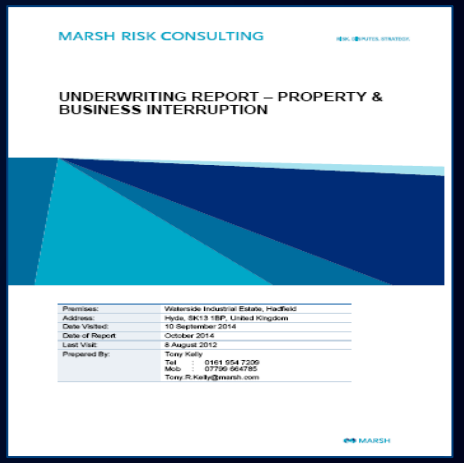
Values

These values are provided by the client unless otherwise specified. Unless stated otherwise, the PD values are assumed to be Reinstatement Cost Values (RCV).

Date Values	2014	Currency	GBP
Property Damage Values		**Business Interruption**	
Buildings	£34,852,800	Estimated Annual Gross Profit across all sites is £444,111,735.	
Contents	£7,996,105	No divisions of amount per location.	
Unit C 1,652,299 Unit D 593,544 Unit E 1,964,808 Rest 3,855,364		Indemnity period in months - 18 Months	
Stock	£22,800,000		
Total Site P.D.	£65,649,905	Total Site B.I.	£ 666,167,602

Apart from the machinery figures detailed above, no divisions of amount are available between the various buildings

MARSH RISK CONSULTING — 5


MARSH RISK CONSULTING

UNDERWRITING REPORT – PROPERTY & BUSINESS INTERRUPTION

Premises:	Waterside Industrial Estate, Hadfield
Address:	Hyde, SK13 1BP, United Kingdom
Date Visited:	10 September 2014
Date of Report	October 2014
Last Visit:	8 August 2012
Prepared By:	Tony Kelly Tel : 0161 954 7206 Mob : 07796 964785 Tony.R.Kelly@marsh.com

MARSH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EXPERT SYSTEM

FEATURES

Expert System Cogito for Underwriting in a nutshell:

- Detects the occupancy, applying standard taxonomies (NAICS, SIC, etc)
- Detects the risk factors across the entire report
- Assigns a grading to each risk factor applying custom grading scale (A-D)
- Weights the different risk factors and return an overall score
- Aggregate the information by location (multiple locations in the same report, many reports for the same location)

NAICS Code	443 - Retail Trade/Electronics and Appliance Stores

Risk Factor	Risk Grading
- RF02 - Building Combustibility	A
Non-combustible 100 The buildings and roofs are of light or heavy non-combustible structure.	
- RF08 - Fixed Fire Protection Including Sprinklers	B
Manual Protection Portable extinguishers, hose reels, yard hydrants Adequate number of hose reels and extinguishers, all site is enclosed by the hydrant ring network	
380 fire cabinets with hose reels are located inside and outside of the buildings.	
Flammable and hazardous liquids are adequately handled.	
Each hydrant has a shut off valve and these valves are tested monthly.	
- RF13 - Control of Process Hazards	B
Machinery & Plant Coils are stored in the press and die shop.	
Production / Logistics Apart from the body and chassis parts, suspension and transmission parts are produced in the suspension shop.	
The paint shop can be considered as a bottleneck for the plant production.	

Risk grading score

EXPERT SYSTEM

BENEFITS

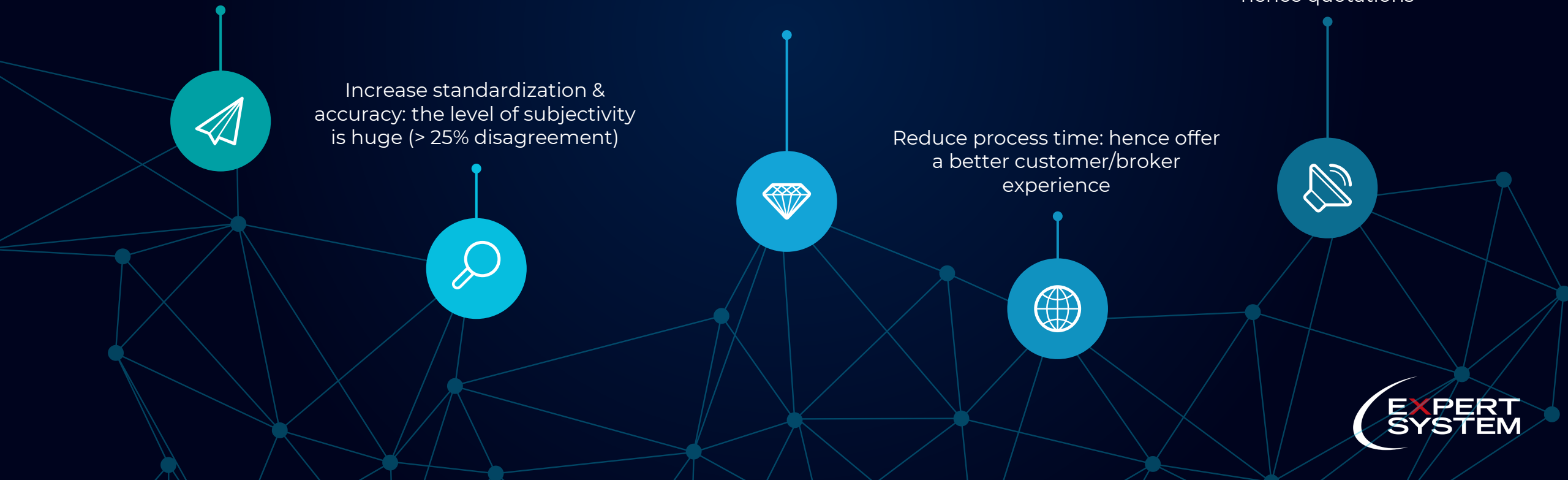
Free up time of risk engineers and underwriters: this time could be used to do more onsite assessment and improvement visits to risks with higher probability for large losses

Increase standardization & accuracy: the level of subjectivity is huge (> 25% disagreement)

Improve analytics

Reduce process time: hence offer a better customer/broker experience

Augment capacity: increase the number of assessments and hence quotations



EXPERT SYSTEM

KPIs

FTEs

Saving per risk report approx. 50$

Cost covered already in the first year

Average of 10.000 risk reports per year

RUN RATE BENEFITS PER YEAR

> USD 500.000

EXPERT SYSTEM

REFERENCE

AXA XL

AXA XL partners with AI specialist Expert System on property risk engineering risks

Raedan AI

Natural Understanding

Agents for South East Asia

https://raedanai.com

Call us now!

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linkedin.com/company/expert-system