In today’s session

Where we started with parametric flood insurance

The tools available to our product designers

Why IoT sensor tech is the future of parametric flood
The flood market was ripe for disruption

- Highly granular, uncertain analytical challenge
- Huge uninsured losses globally since 1980
- Existing parametrics needed much expertise to structure policies

So, only large-scale clients could access parametric property flood products
A new flood product needs a parameter

<table>
<thead>
<tr>
<th></th>
<th>Correlate to loss</th>
<th>Modelled quantity</th>
<th>‘The client test’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water depth</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Inundation duration</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Water velocity</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Square metres flooded*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Choosing how to measure our parameter

1. River/tidal gauge
2. Remote sensing
3. On-site measurement
Option 1 – river and tidal gauges

1. River/tidal gauge
2. Remote sensing
3. On-site measurement
River and Tidal Gauges

**PROS:**
- Good for pre-inundation losses
- (relatively) low setup costs

**CONS:**
- High basis risk
- May not capture flash flooding
- Not always available
Option 2 – remote sensing

1. River/tidal gauge
2. Remote sensing
3. On-site measurement
Relying on uncertain datasets and measurements

<table>
<thead>
<tr>
<th>Elevation data source</th>
<th>Relative Vertical Accuracy (RMSE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3DEP DTM (1m resolution)</td>
<td>Up to ± 50 cm</td>
</tr>
<tr>
<td>3DEP DTM (10m resolution)</td>
<td>Up to ± 80 cm</td>
</tr>
</tbody>
</table>
Remote sensing

**PROS:**
- Great for flooded extents
- Great for client engagement

**CONS:**
- Accuracy varies greatly
- Many auxiliary data sets required
- Uns suited for localized or urban flooding
- High-cost setup
Option 3 – on-site measurement

1. River/tidal gauge
2. Remote sensing
3. On-site measurement
The smart sensor solution

10-year life
Ultra-low power consumption allows a single battery to be used for the sensor’s lifetime

Global connectivity
Designed for new NB-IoT and Cat-M1 networks ensuring low data usage and better coverage than any current mobile network

Low-cost solution
Millimeter-scale accuracy for client unit costs of £100/$200

Fraud resistant
Live data monitoring feeds into robust automated and fraud-resistant claims process

Easy installation
Can be installed on any wall by 3rd party engineers with next to no training
The tech behind the tech

Pricing
Sophisticated pricing algorithm with high-resolution risk data, state-of-the-art flood modelling and dynamic price adjustments

Architecture
Scalable serverless architecture for securely processing and analyzing sensor data

Web portal
Modern API-driven web application to enable brokers to quickly and effortlessly quote and bind policies

Admin system
Centralized management of quote, policy, customer, broker and sensor data for business-wide insights
What we see during a flood
There are loads of benefits

- Near-instant payouts for fast recovery
- mm accurate depth reading
- No extra costs or data required
- Any location, any client
- Physical installation for peace of mind
- More flexible policies
- Building long term data sets
FloodFlash