



Example of project title two line description

Name Surname, Name Surname, and Name Surname

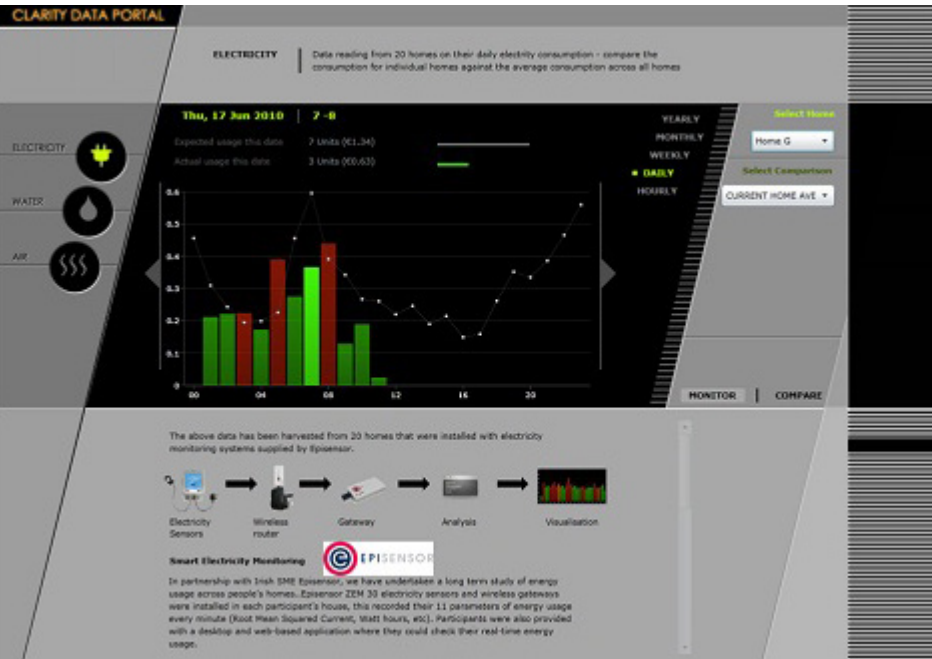
Example poster with content in place

April 2014 change has propelled environmental issues to the very front of political decision making, with consequent increasing focus on the impact of the quality of the environment on society, both locally, and globally.

At Insight we have developed environmental sensors to capture raw data (e.g. sensors to measure water + air quality). We have semantically enriched this raw environmental data through processes such as the detection of electrical appliances being switched on (in domestic electricity usage data).

We then manage, personalise, present and transform these vast quantities of data into meaningful information. This has provided an opportunity for up-and-coming Irish companies to draw upon our expertise, e.g. Irish SME EpiSensor Ltd.

At all times we focus the output of our work on the ‘sensor data portal’. Raw data collected across various homes, rivers, and landfill sites is automagically uploaded to this website (see next section).



Live and Historical Data

Live data from our various sensors situated from Donegal to Dublin to Cork, and various locations between. Some of our carbon acquisition devices include landfill air quality unit and EpiSensor electricity monitors shown here.



Reports For Public Digest

- We have produced a number of reports for public consumption, with the following highlighted ones giving a good high-level overview of our work.
- Report on monitoring gas emissions at landfill sites
 - Survey on microbiological water quality in the Dublin area
 - Report on monitoring gas emissions at landfill sites
 - Survey on microbiological water quality in the Dublin area

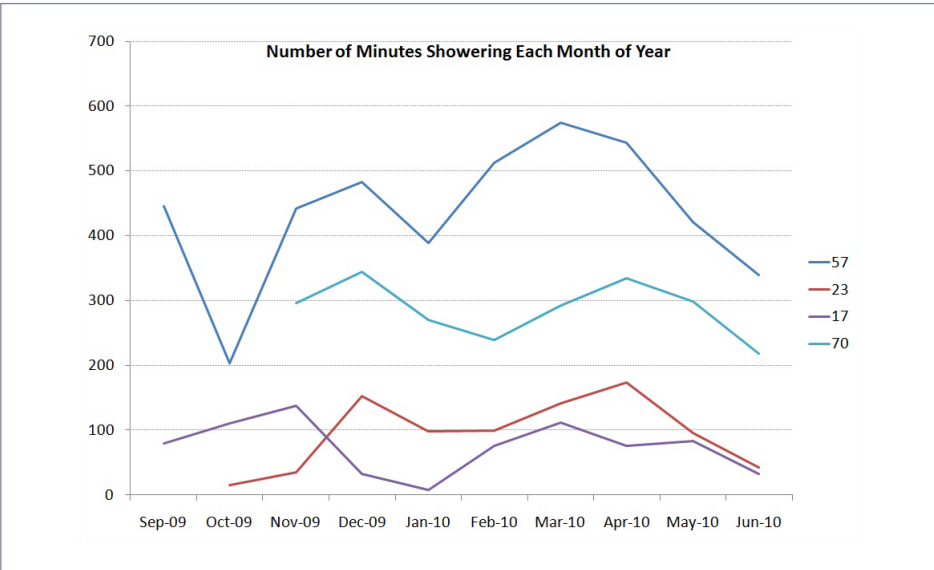
Turning Raw Data into Information

A feature of our work is that we record huge amounts of sensor readings every day from a range of sensors in a wide variety of locations e.g. for electricity alone we’ve now acquired over 78 million sensor readings. To make sense of this information we mine event patterns from this raw data.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Mon	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.15%	26.14%	53.59%	49.02%	75.16%	66.67%	54.90%	33.99%	25.49%	0.00%	10.46%	1.96%
Tue	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.19%	50.33%	100.0%	64.71%	37.91%	57.52%	0.00%	37.25%	5.88%	6.54%	6.54%	1.96%
Wed	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.15%	61.44%	79.08%	52.29%	49.67%	38.56%	31.37%	18.30%	6.54%	11.76%	2.61%	9.15%
Thu	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.27%	77.12%	60.78%	96.73%	56.21%	58.17%	19.61%	33.33%	22.22%	9.15%	14.38%	0.00%
Fri	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.76%	46.41%	64.05%	64.05%	13.07%	30.72%	16.34%	31.37%	19.61%	3.27%	33.99%	25.49%

An interesting use case is that of the domestic shower! One user had over 3.3 million data readings over a nine month period. From all this data, our algorithms have been able to summarise that there’s been 520 showers taken in that house, average duration is 8 minutes (min=3, max=27).

Similarly across 9 users, 20 million data readings were gathered, and our algorithms have automatically detected 1,455 shower events i.e. reducing the data by a factor of over 10,000x. From this we have been able to mine lifestyle usage patterns to help individuals become more aware of their electricity (and carbon) usage. Interestingly we can see how long people spend in the shower as the year goes on (see graph below).



Shower event patterns across 4x users

For some reason people seem to spend longer in the shower in March and April—perhaps this is because people become more physically active at this time of the year, or perhaps it’s something else!



This project has been funded by <Insert Funder Name Here>