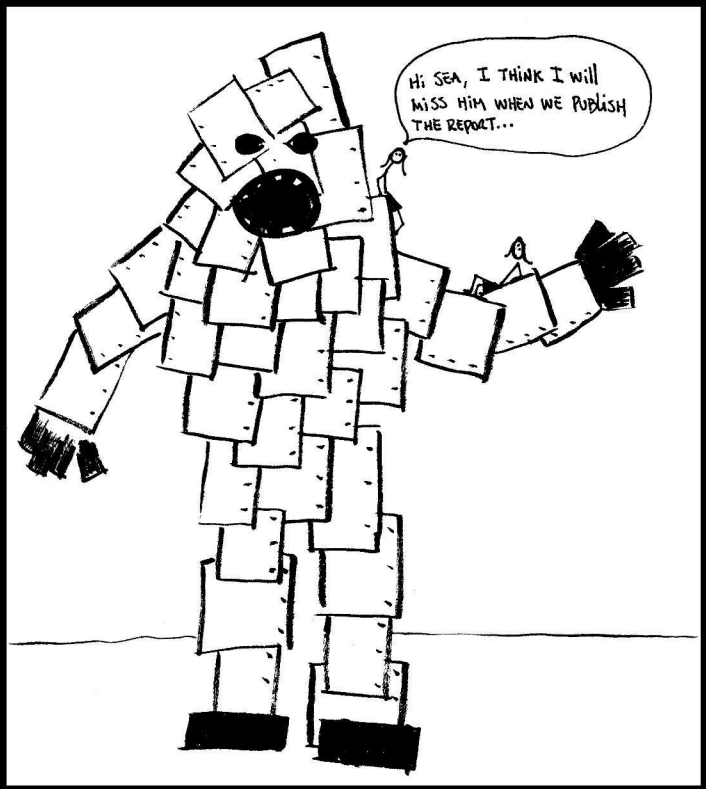
The Little Monster

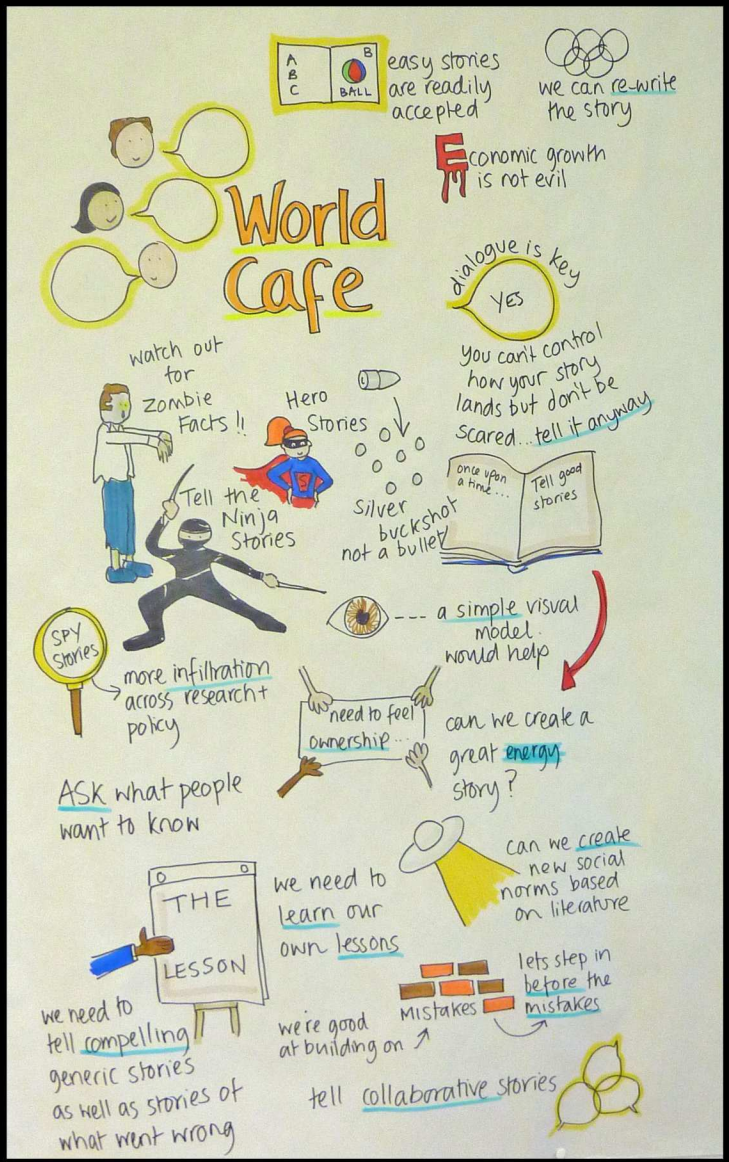
Subtask 1 analysis of IEA DSM Task 24:

Closing the Loop: Behaviour Change in DSM - From Theory to Practice



Dr Sea Rotmann
Dr Ruth Mourik

Read the full monster here: http://www.ieadsm.org/?p=2113



THE POWER OF STORY TELLING

Drawing from the world café session from Task 24 workshop in Oxford, October 9-10, 2012

BUILDING RETROFITS

Image from Dutch Energy Label case study (Source: Ministry VROM)

Country	case	Theory or model used	Policy or Societally driven
Netherlands	Blok voor Blok aanpak, retrofitting programme	Behavioural economics	policy
	Energy labelling of houses	Behavioural economics	policy
New Zealand	Warm Up New Zealand: Heat Smart	social marketing; social norms; neoclassical economic; TPB	policy
Switzerland	Swiss Building Retrofit Programme	Neoclassical Economics	policy
	2000 Watts Society (housing)	Ethics, long-term visioning	policy
Norway	Myhrerenga Housing Cooperative, a user initiated retrofitting of a housing cooperative	Theory of Planned Behaviour	societally
Sweden	Sustainable Järva (Hållbara Järva).	Systems approach; visioning	societally
UK	Kirklees Warmzone	Neoclassical economics	policy
	My EcoHome Project	Practice Theory, abductive reasoning, identity theory	societally

The Dutch BLOK VOOR BLOK
Insulation Subsidies Programme

Once upon a time... In the cold Northern country of the Netherlands, people lived in homes built during the rebuild after WWII. These homes had horrible draughts, were badly insulated and people could not put their couches against the walls because they were so cold. Incidentally, this initiated a interior design market...

Every day...thousands of Euros went up the chimney, and a few more were spent on weather strips.

But, one day... The Dutch government felt it was time to retrofit all those badly insulated homes in the Netherlands and get people to live more economically and efficiently.

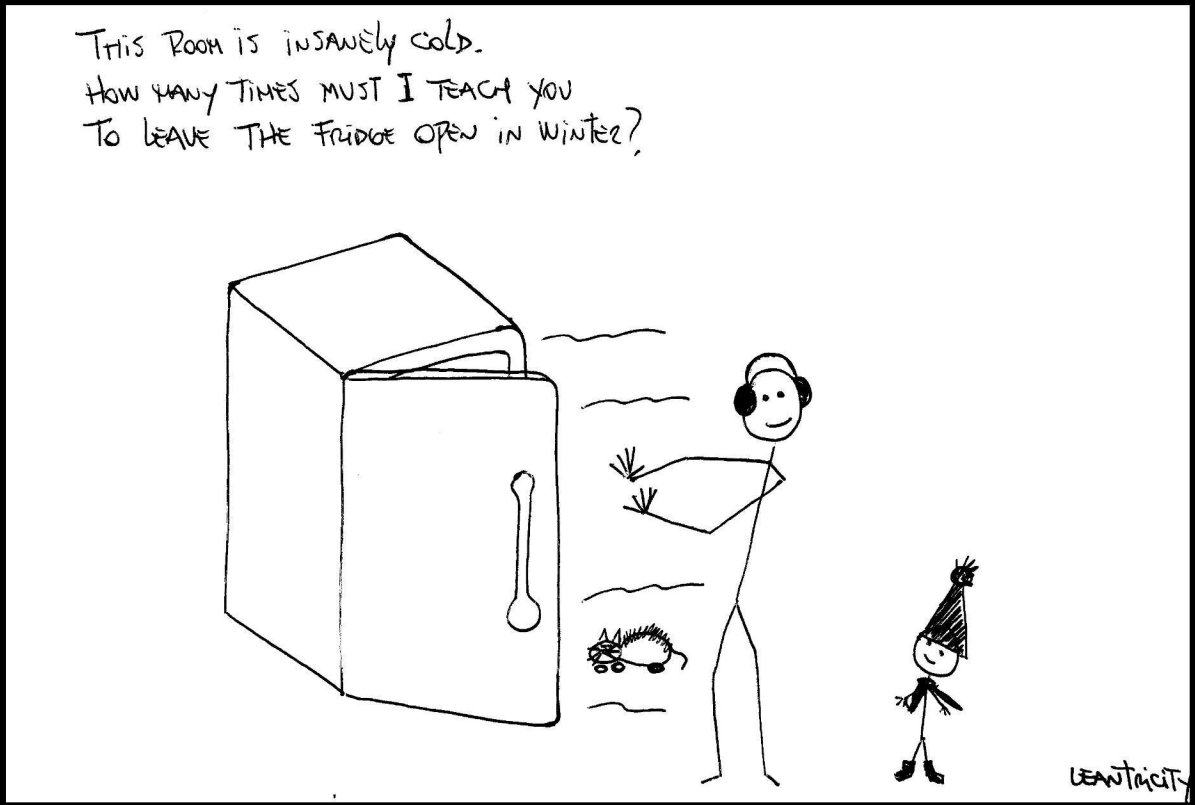
Because of that...they started a subsidy scheme called 'City Block by Block' and gave money to homeowners who wanted to insulate and retrofit their homes.

But then...those homeowners that submitted a request for funding were asked to provide an enormous amount of paperwork, technical information and, in addition, they had to prefinance the retrofitting! And it was the installation market that profited mostly at first because their sales got up.

Until, finally...most of the homeowners who did apply got their money, and had warm and comfortable homes. Some even saved some money on their energy bills, although they had no way to monitor or meter if they consumed less energy. The modeled calculations, however, said they did.

And, ever since then...the scheme is seen by the policymakers as a huge success and learnings are translated into new designs for new schemes.

THE END



WARM UP NEW ZEALAND: HEAT SMART
Insulation Subsidies

Once upon a time... there was a beautiful country called New Zealand,which had very cold, damp houses.

Every day... Kiwis shivered and froze, but they just told each other to stop being a sissy and put on another jumper.

But, one day...the new right-wing Government decided it needed to show it wasn't uncaring and evil and created a programme called Warm Up New Zealand. It was meant to insulate a quarter of the housing stock, create many jobs and a new market, and reduce energy use, energy bills and CO2.

Because of that...the Energy Efficiency and Conservation Authority set about tendering for the best contractors in the country to fulfil this lofty goal.

But then...they realised that people weren't that interested in insulation, they rather spent their money on a new kitchen and kept putting on those jumpers!

Because of that... they concentrated on using Third Party Providers and other community groups to ensure that at least the most needy and vulnerable people got free insulation and clean heating installed.

So, finally... they did an evaluation of the programme and found that the real benefits - $5 for every $1 spent, lay in the health improvements, not a new market or energy savings or lower bills.

And, ever since then... The other Kiwis also slowly realised that being warm and cozy in your home was maybe just as important as having a new kitchen.

THE END.

A Story on an economic theory-based approach in retrofitting

Money makes the world go round

You need to change your home's energy use and we will help you by paying (part of) its retrofitting

By the way, you need to pay up first and it might take a while before we pay you back

The info we need from you will teach you all you need to know

You only need to make a one-off decision to invest

We have the technology you need, contractors or installers (you need to find/ choose) will put it in and that's it!

If you do not understand the technology, just don't touch the buttons…

You will save money for a nice weekend to the Bahamas

You only need to give us a bill from your installer, we probably won't check how much energy you actually saved

What counts for us is how many m2 are insulated, how many homes are retrofitted or how much money is spent. Oh yes, and how many kWh are saved of course!

We will do the number crunching, don't worry, we do not need to know what you actually saved, we will use models to calculate all energy savings

But if you want to know how much energy you saved, buy a metering device.

Using stories to tell the way different models of understanding behaviour would be 'felt' by the end user the intervention is designed for

A Story on a more system-based approach in retrofitting

Together we will make the world go round

You embody what we need to know and change: do, feel, learn

We will help you understand and use the technology, and train those that install and sell it to you

We will create a supportive material, institutional and social environment

Your needs are important so we need to do this together, as if this were your kitchen or bathroom

Your life will change

It's all about us now, and our grandchildren and their future

Quality matters and we will keep learning and sharing

If we need to be flexible we will

This is only the start of a long way and your home is the first step

We will monitor, calculate and report on energy, money, health, welfare, comfort, wellbeing

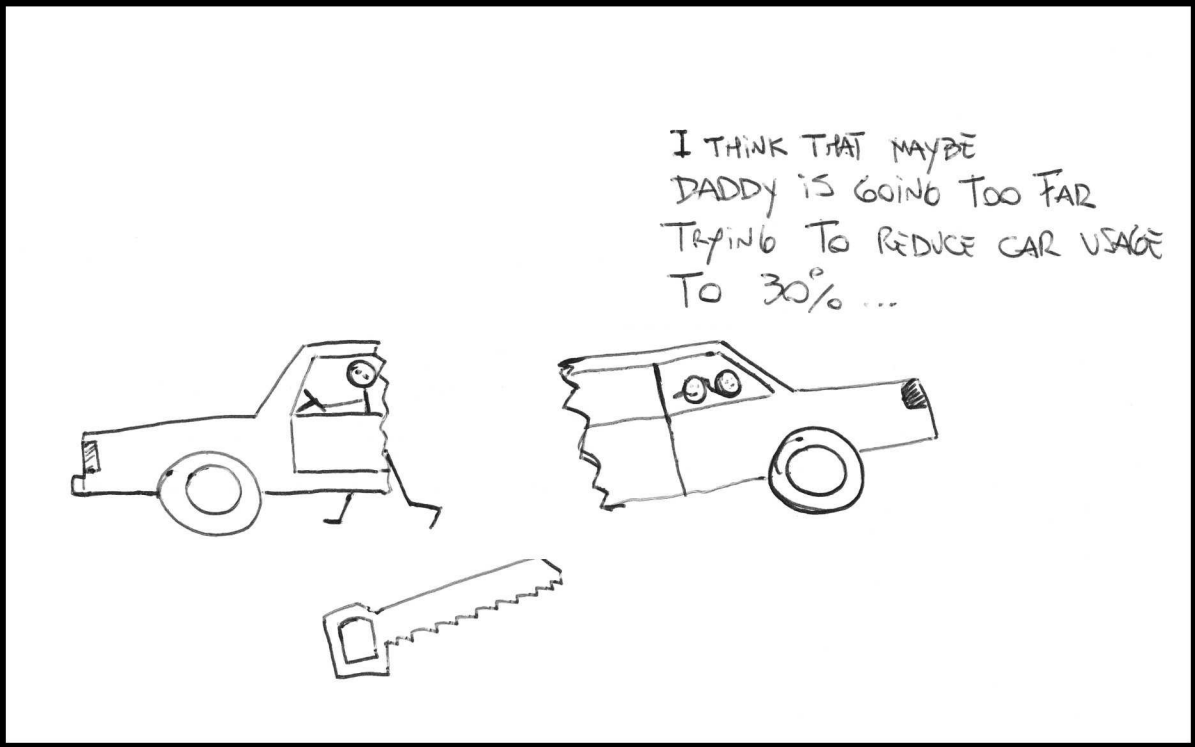
And learnings based on qualitative and quantitative inputs will be shared (with you)

We will help you figure out what your impact is to be able to make sure you get where we collectively want to!

DSM Retrofitting Recommendations

1. FOCUS ON THE SOCIAL SIDE.
2. IT'S NOT JUST WHAT WE BUY, IT'S WHAT WE DO.
3. CHANGE LIFESTYLES NOT LIGHTBULBS.
4. THINK OF THE BENEFITS FOR THE END USER AS WELL.
5. FOCUS YOUR MESSAGING, USE TRUSTED INTERMEDIARIES.
6. PAY THE SUBSIDY UPFRONT AND DON'T ASK FOR TOO MUCH UPFRONT INFORMATION FROM END USERS.
7. USE A TOOLBOX OF INTERVENTIONS AND GO BEYOND kWh TARGETS.
8. DON'T BOX PEOPLE IN TOO MUCH.
9. BENCHMARK YOUR HEART OUT, MEASURE, NOT MODEL
10. LEARN FROM THE UNWILLING.

Conventional monitoring of retrofitting success	More systemic monitoring of retrofitting success
· Total area of insulated building parts (windows, walls, ceilings…) · Type of retrofit investment, type of heating system · Type of building · m2 of insulation used · Reduction of CO2-emissions (calculated from type of heating system and type of insulation and expected calculated reduced demand for heat) · Costs of measure (euro or other currency per saved ton of CO2) · # of buildings labelled · Uptake by the public · Total number of houses renovated.	all of the issues listed left, plus: • changes in room temperature • humidity • wellbeing • trust (in providers) • number of third parties involved • actual reduction in energy consumption • social cohesion • satisfaction of residents • opinion of residents regarding the programme • reasons for (not) participating • sensitivity to (other) energy efficiency measures • request for other energy efficiency measures • increased uptake in local renewables • comfort level improvement • reduction in doctor visits • improvement in health, decrease asthma and respiratory diseases, mental health • reduction in domestic violence • number of jobs created • quality of industry before and after • creation of standards • training centers and market creation • days off school • sick days • benefits advice requested by homeowners.

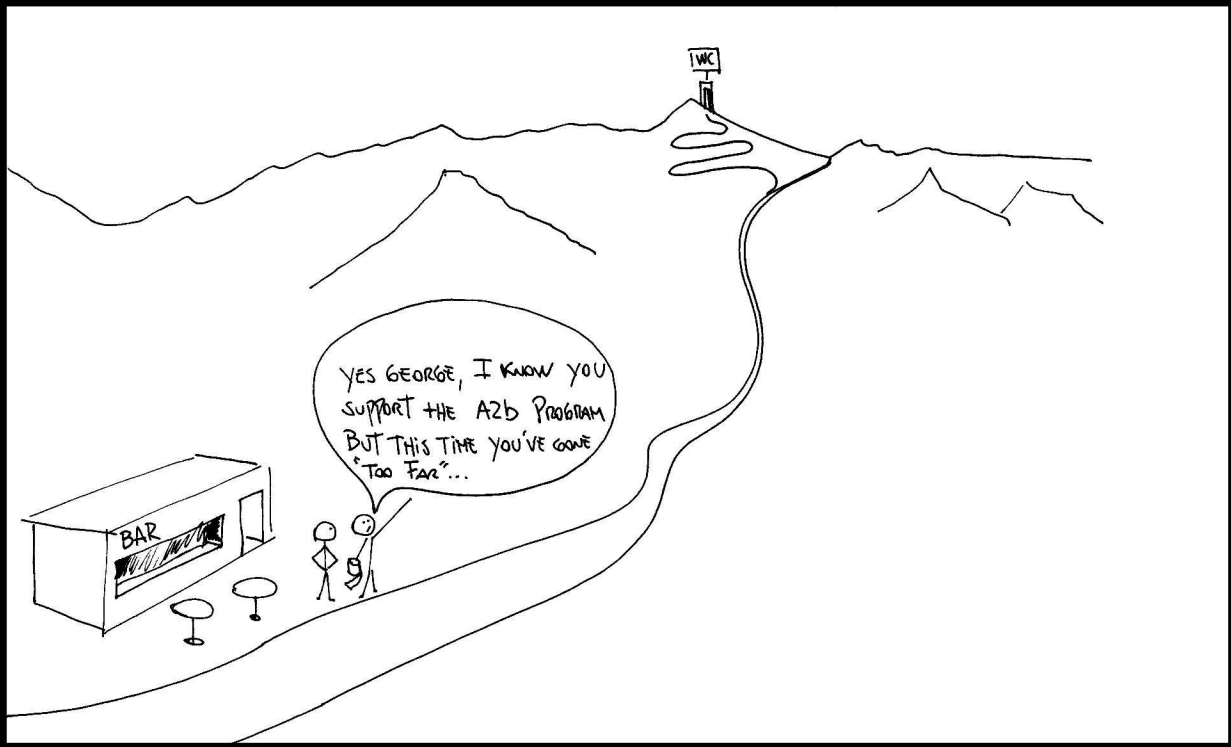


TRANSPORT

Picture by Leantricity (2013) for Dutch Spitsmijden case study

3. Transport: observations

Country	Project or programme	Theory or model used	Policy or Societally driven
Netherlands	The New Driving, Het nieuwe Rijden	Psychological theories on motivations	Policy
	Congestion pricing, spitsmijden	Cialdini's Social psychology	policy
New Zealand	Fuel Efficient Driver Training Programme	Value Action gap	societally
	Active A2B programme	Norm Activation Theory, Lewin's unfreezing-refreezing, Stern's Principles of Intervening, McKenzie-Mohr's social marketing	policy
Switzerland	2000Watts mobility		policy
	Purchasing of fuel efficient cars	Theory Planned Behaviour Norm Activation Theory	policy
Norway	Nobil : a database for an EV charging grid informational system	Theory Planned Behaviour	policy
Sweden	Stockholm congestion pricing transport project	Activity based models	policy



New Zealand's ACTIVE A2B Mode Switching Programme

Cartoon by Leantricity (2013)

Once upon a time... there was the 'coolest little capital in the world' called Wellington. One of the things that wasn't so cool about Wellington was the traffic.

Every day...there were a lot of people driving their cars to the city for commuting - on their own and all at the same time of day.

But, one day...in 2010, the Greater Wellington Regional Council and a bunch of partners came up with the great idea to start a mode-switching programme that focused on getting a specific target group of people to walk or cycle more instead of drive to work.

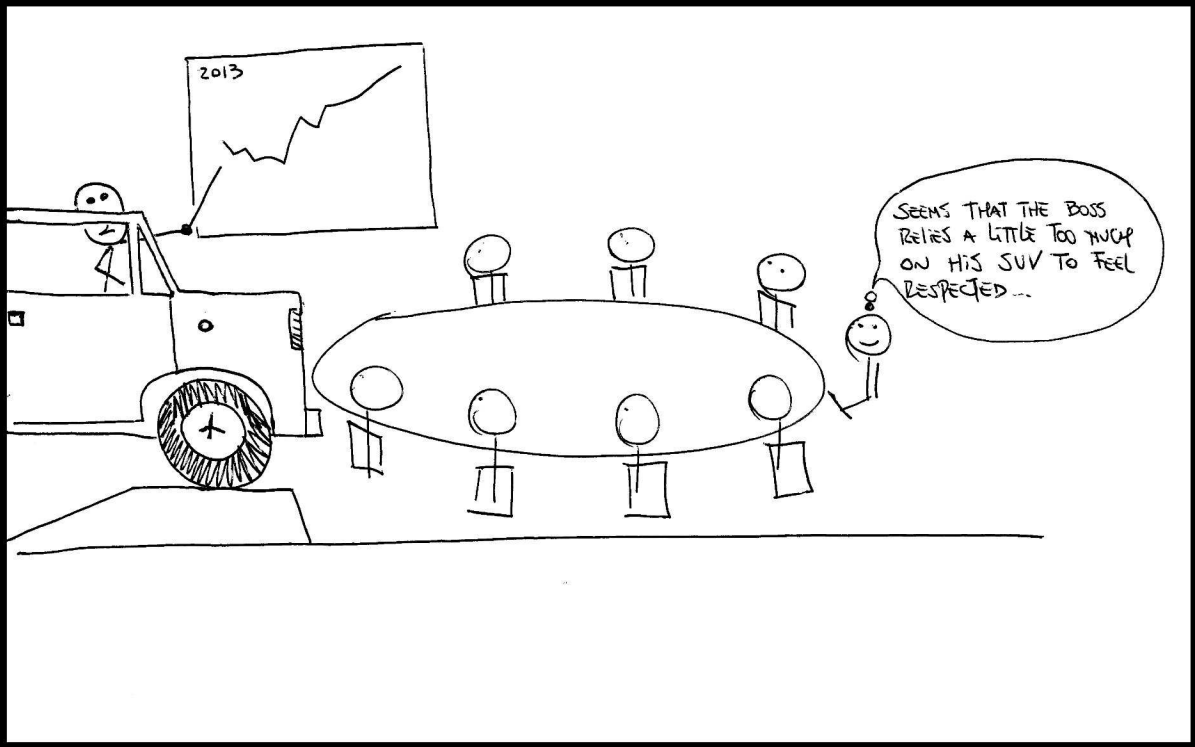
Because of that...they started competitions, goal setting, motivational groups and used a whole big toolbox of different models and theories of change in order to get the best results.

But then...they realised that people weren't very interested in being super sporty, or reduce CO2 if the tradeoff was feeling inconvenienced.

Until, finally...they came at it with a health and wellbeing angle, and talking about what 'normal' people could achieve, rather than boasting about cycling 50km a day clad in lurid lycra.

And, ever since then...it was shown that the target group of people indeed took the programme lessons to heart and they walked and cycled 20% more than they did before. However, the big issue remaining is still that the coolest little capital needs better public transport and cycleways before this becomes the real social norm.

THE END.



The Dutch Eco-Driving Programme HET NIEUWE RIJDEN

Cartoon by Leantricity (2013)

Once upon a time... in a country full of speedsters called The Netherlands, where eco-driving was a practice for organic, musli-eating hippies. 'If there's even the slightest bit of testosterone in your blood, you'll make your engine roar' they'd say.

Every day... these proud Dutchmen would waste a ton of fuel so as to feel their freedom and protect their status as the alpha male in the concrete jungle.

But, one day... the government decided to start an eco-driving campaign which showed that you can be a tough guy even when driving economically. The Dukes of Hazard were used in ads, and the driving school curriculum was changed so young drivers learnt the new way of driving. They also promoted feedback systems and tire pressure controls.

Because of that... almost 4Mt CO2 emissions were avoided between 2000-09. 69% of all drivers in The Netherlands used one or more principles of eco-driving in 2009, and 84% were familiar with the concept. The campaign was a roaring success.

But then...due to a change in government after 2008, which cut budgets and changed Dutch policy (including increasing the speed limit from 120 to 130 km/h which sent a very confusing message to drivers!), this great programme faltered.

But still... eco-driving is now embedded in the Dutch society. The implementation on different levels, such as the integration of the techniques in driving schools and the support of automotive organisations were a key factor of this change in social norm.

And, ever since then... you can be a tough guy whilst driving economically. And - it will save money and lives too. **The end.**

DSM transport recommendations

1. DON'T TAKE AWAY THEIR WHEELS.
2. CARS REFLECT LIFESTYLES.
3. YOU NEED MORE THAN ONE TOOL TO FIX A CAR (or its driver).
4. TRUST IS EVERYTHING.
5. PRE-SCOPE AND TRAIN, VISUALISE THE GAP BETWEEN ACTUAL AND GOAL BEHAVIOUR.
6. BE SMART, DRIVE SMART.
7. A NEW CAR/LICENCE IS A GREAT PLACE TO START CHANGING.
8. IT'S ABOUT MUCH MORE THAN JUST THE CAR.
9. YOU'RE NEVER ALONE WHEN YOU'RE DRIVING.
10. RISK MESSAGES CAN BE RISKY.
11. MONEY AIN'T EVERYTHING.

A Story on value Action Gap informed transport interventions

You can make the wheels of your car go round more efficiently

You are good driver and should be proud, but you can become the best!

You only need the right attitude and the motivation to act, we know you will want to act as soon as you see what you can do

We will pull down the barriers you experience, may they be social, individual or institutional

We know you also experience constraints such as lack of time, money, information, encouragement, facilities or whatever

We will help you take responsibility and do away with your laziness or lack of interest, or lack of trust and the feeling that you cannot be efficient at changing your behaviour

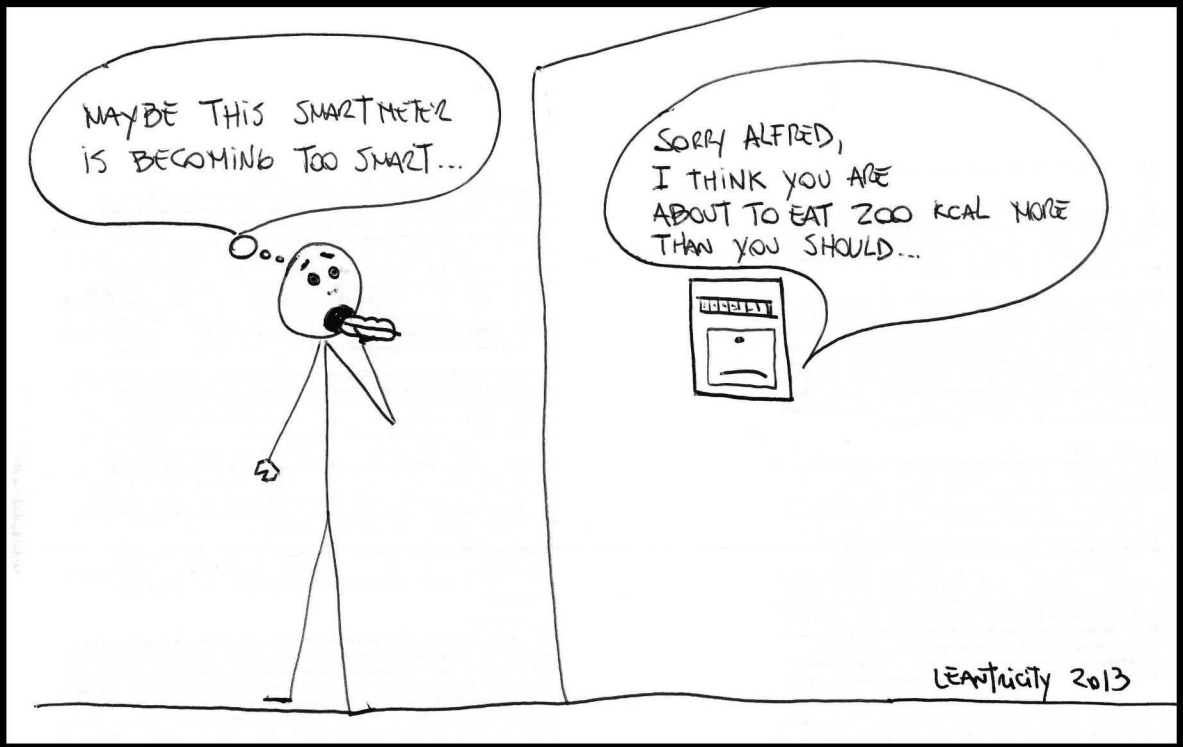
So we will make sure a peer you respect and trust will show you how to drive more efficiently

Don't worry, only your driving will change, you and your car will still be cool

It's all about you and your car and your driving and of course your money

We will monitor your driving, we got really cool gadgets to do that

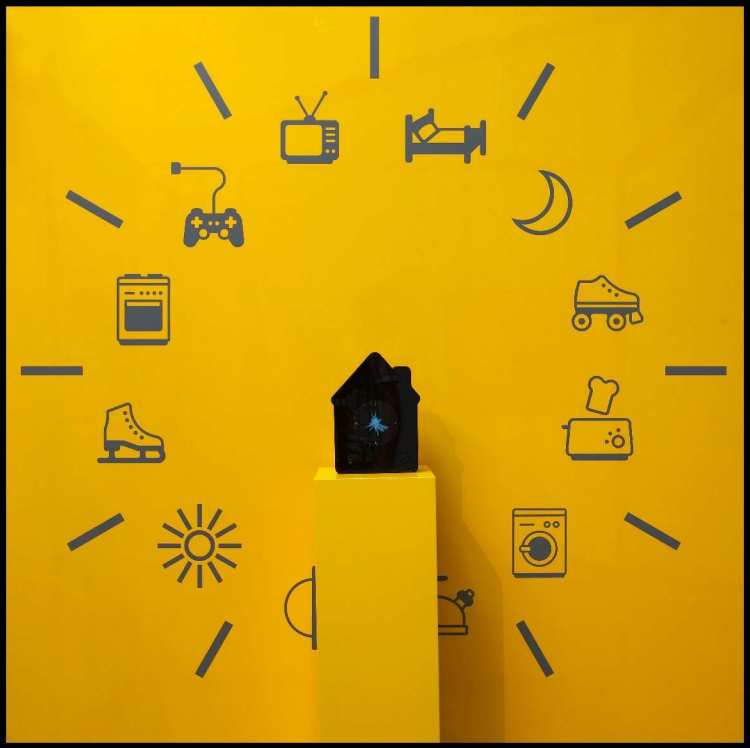
You will see how easy you can save money, fuel and become an even better driver!



SMART METERS/ FEEDBACK

Picture by Leantricity (2013) to illustrate smart meter fears

Country	case	Theory or model used	Policy or Societally driven
Netherlands	Jouw Energie Moment	Expectancy Value Theory; Design with Intent, Interpretation for sustainable behaviour	societally
	PowerMatching City Hoogkerk	Value action gap theory	Mixed, subsidy from policy and part of larger policy programme
New Zealand	Responses to Time Varying Prices for Electricity	Classical Economics and marketing	societally
Switzerland	Smart Metering Zurich Pilot EWZ	behavioural economics and social norms/ comparisons	societally
	Smart Metering EKT Dietikon	behavioural economics	societally
Norway	Demosteinkjer	Theory of Planned Behaviour	societally
Italy	Time of Use Tariff	Classical Economics	societally
Austria	€CO2-Management	Classical economics	policy
	Energy Neighbourhoods 2	Shared learning	societally
Sweden	Clockwise	Constructivist Learning Theory, collaborative learning	societally
Portugal	In Demand	Combination of participatory and sociological approaches	societally
USA	Opower	Cialdini's social psychology theory	societally
UK	CHARM	social norms approach, practice theory	societally



Clever feedback design - THE ENERGY AWARE CLOCK (SWEDEN)

Image from http://eye-like.fr/mag/static-project-design-technologie-comportements/

Once upon a time... There were nine families living in nine identical houses in Ursvik - a small, small suburb in a very cold and dark country called Sweden.

Every day... The families wasted a lot of energy just going about their lives.

But, one day... The families were asked if they would like to participate in an experiment organised by a creative research institute. They would get something called The Energy AWARE Clock and after three months researchers would interview the families about their experience with the clock. The clock was no ordinary clock. In fact, it was connected to the energy meter of the house and measured the household's electricity use. It displayed this in inspiring circular graphs so that the family could follow their own behavioural pattern on the level of one minute, one day and one week.

Because of that... The families learned about how much electricity their individual appliances used and reflected about what a kWh really is and started to discuss energy use with their neighbours. During the first three weeks they really learned a lot about their own household consumption.

But then... They didn't use the clock for learning anymore. Rather, the clock was domesticised into the households and was subsequently used to check that everything was normal and that no unnecessary electricity use was going on. They clock became like a member of the family.

Because of that... The nine families in Ursvik got interested in energy use, reduced their use of some appliances and increased their use of others.

And, ever since then... The Energy AWARE Clock was developed into a product, which may now be bought off the shelf in the shop.
THE END.


Unsere Energiejagd
AUFSPÜREN - EINSPAREN - GEWINNEN
Going energy hunting - ENERGY NEIGHBOURHOODS 2 (AUSTRIA) www.energiejagd.at

Once upon a time.... Households all over Europe were very energy inefficient. Austria was slightly better than some other countries but people still liked to have 23C inside their flats when it was -20C outside.

Every day... Clever policymakers were trying to come up with new ways to make people be more energy efficient.

But, one day... The Intelligent Energy Europe programme funded an 'Energy Hunt' programme where neighbourhoods from 16 countries were pitted against their City Council with the goal to save 9% energy each.

Because of that... 8 Austrian cities took part in this programme, with 35 neighbourhoods participating in the 'hunt'.

But then! They realised that it was quite difficult to get people to monitor their own energy consumption, as this project was done without clever smart meter technology. So they found the early adopters and made them into 'Energy Masters' who were leading the other households in the competition and made sure that they were monitoring their consumption.

So, finally... they showed that bringing people together in a group with a common goal and a strong social learning component inspired them to save quite a lot of energy - up to 26% in the winning household! 20 households saved more than the 9% that was their bet against the city.

And, ever since then... some energy saving habits that were learned during the competition are still embedded in the households as are some of the friendships made during the hunt.

THE END.

A Story on Design Theories informed smart metering interventions

We will design a product or technology which will also design your behaviour

Don't worry, in most cases this doesn't mean we will blatantly manipulate you in order to get data or other valuable information for utilities or to push a technology on you that's pretty useless to you!

Trust us, we know what is best for you and the economy. Oh, and the planet of course!

So, we may need to stop thinking like engineers cause then we only design for other engineers - you may not be as interested in graphs or kWh as we are

We know you like design that is clean, easy to understand, engaging and fun

The more fun it is, the more you will engage with it and the more energy you will save

Energy doesn't need to be boring or invisible anymore, a key goal is to show you when you are using energy and how (much)

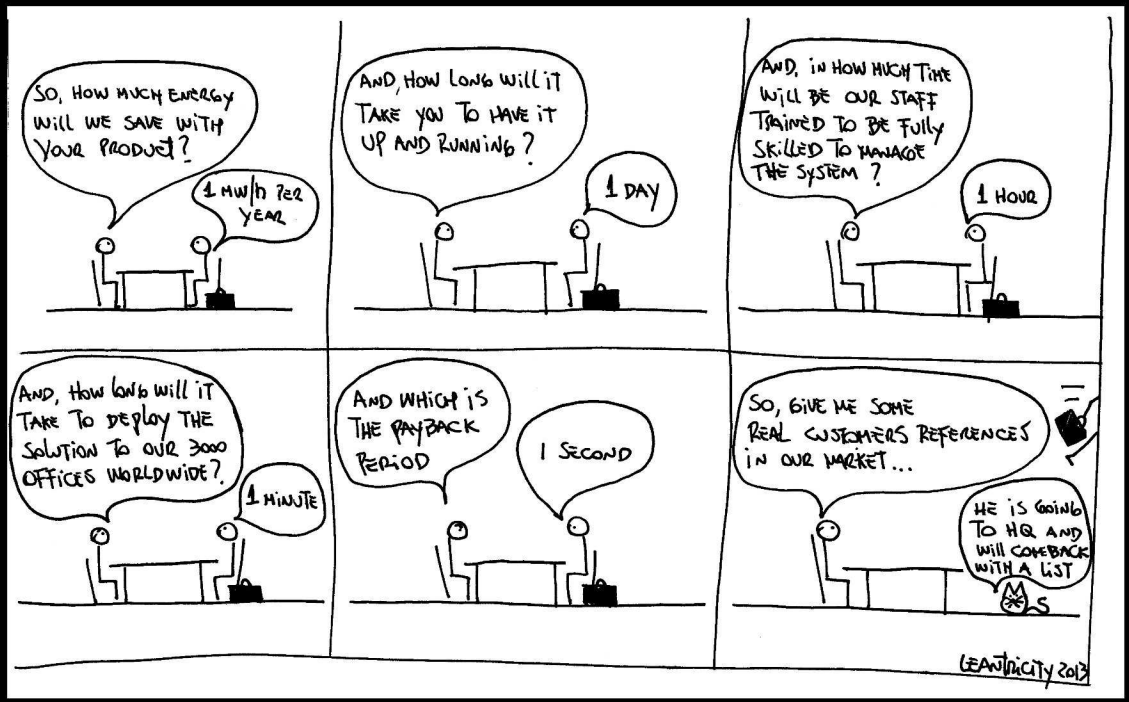
Feedback needs to be in a prominent position, so the design of the feedback system will impact on where it is located in the house - we need to design something you want to have hanging on your best wall

And we need to make sure you will want to keep checking it automatically and alter your behaviour, even after its initial fun factor has worn off

If we could only design something as clever and engaging as Apple products - everyone would love saving energy then, right?

DSM smart metering recommendations

1. TIME ISN'T ALWAYS MONEY.
2. TECHNOLOGY ISN'T EVERYTHING.
3. MAKE SURE THERE IS CLEAR VALUE FOR THE CUSTOMER.
4. AUTOMATONS DON'T TEACH AS WELL AS REAL PEOPLE.
5. FIND AND CONVINCE THE 'LUDDITES' THAT YOUR TECHNOLOGY WILL WORK FOR THEM.
6. THE HOME AND THE HOUSEHOLD DYNAMICS HOLD YOUR KEY.
7. SOCIAL CUES ARE MORE POWERFUL THAN TECHNOLOGY.
8. MY HOME IS MY CASTLE AND I KNOW WHAT I'M DOING.
9. DON'T SELL IPHONES TO PEOPLE WITH NO POWER.
10. FOCUS NOT ON INVIDIDUALS BUT THEIR PRACTICES.
11. PARTICIPATION IS KEY.
12. NO ONE LIKES WASTE.
13. TELL ME HOW I'M DOING COMPARED TO MY NEIGHBOURS.



SMALL TO MEDIUM ENTERPRISES

Cartoon from Leantricity (2013) showing the frustrations of dealing with short-sighted SME Management in the Verdiem project (Spain)

5. SMEs: observations

Country	case	Theory or model used	Policy or Societally driven
Netherlands	De Groene Daad (The Green Deed)	Nudge	society
New Zealand	EECA SME Crown Loans Scheme	Originally based on TPB; changed to social learning and social norm theories	policy
	Timber industry	Energy Cultures Framework	society
Switzerland	Energy-Model and SME-Model from (EnAW)	Neoclassical Economics Social norm	policy
Norway	Finnfjord AS	Economics, Rogers Diffusion of Innovation	society
Sweden	Energy Save	Collaborative engagement	society
Spain	Verdiem	Economics	society
Belgium	Build4Change	Nudge	society

The Swiss Government's EnAW Programme

Image from www.enaw.ch

Once upon a time...the Kyoto protocol targets became relevant for Switzerland. Everyone had to cut CO2- emissions which meant that Swiss companies also had to make their contributions.

Every day...some SMEs do their best to not only work cost-effectively but also energy efficiently. But not every SME has the knowledge, the competencies and the will to make their business climate-friendly.

But, one day...this was exactly what the government wanted the Swiss businesses to do.

Because of that...the government introduced a CO2-fee on combustibles and gas.

But then... the Swiss Energy Agency of the Economy started additional work to help SMEs become greener. And they made a deal with the government to support these SMEs, who take voluntary actions of getting energy- and CO2-efficient.

Because of that... there are now 2313 SMEs involved in the EnAW-program, which sounds actually pretty good. However, this is not even 1% of all SMEs and larger companies in Switzerland! But those few participants reached the CO2-emissions-reduction goal of the government.

So, finally...the programme is a success in terms of CO2 and energy reduction. But there are still 99% of all companies, who still have to be motivated to follow the early adopters! **The end.**

FINNFJORD - the world's most energy efficient ferro-silicon smelter (NORWAY)

Once upon a time...Finnfjord, a small, family-owned business far north of Norway's Arctic Circle decided to become the world's first carbon neutral ferrosilicon plant.

Every day...its owners and clever staff pondered how to go about this immensely difficult task.

But, one day...they found a clever way to make use of the plant's excess heat and offgases, which would produce electricity for the company and vastly increase their energy efficiency.

Because of that...they struck an agreement with the Norwegian government, that they would receive a sizable grant which would help them implement their grandiose idea.

But then! They discovered that there were a lot of technical difficulties to overcome, resulting in a year's delay of work and a significant budget overrun. Still, when it was started, the new boilers immediately lowered demand by a very large amount, thus proving the feasibility of the project.

Because of that...other, larger, multi-national companies are now making use of Finnfjord's innovativeness to improve their own efficiency, but of course at much less risk. This has unlocked significantly more funds from the government. However, it does not seem fair from the forerunners' perspective, as Finnfjord took on most of the risk and developed and trialled the technology in the first place.

So, ultimately...there was a clash between two Norwegian policies - one stimulating increased energy efficiency, the other stimulating innovation.

But finally, the end result was very successful, with energy savings of up to 35% for an upfront investment with a payback time of 7-8 years. Norway's ferrosilicon plants are fast becoming the most environmentally friendly in the world, thanks to our small family business with its big ideas (and some help by the government).

THE END.

A Story on Energy Cultures in SMEs

We know that there are different Energy Cultures in each SME and that someone coming from the outside, telling you what to do according to some generalist scheme, is not going to go down well

You may like the way you do things and think you are doing them in a rather capable manner already

Or you may be stuck in a way of doing things because that's how all other SMEs in your sector are doing it

So, it is important that you help us understand how your business works by listening to you and your staff

We can then use a framework to explain the different elements that need to work together

There are external drivers including commercial pressures, technology networks and supply firm interventions which you can't do anything about

But there are also internal drivers, how you use energy ("practices"), your physical technologies and infrastructure ("material culture"), and mental models of what is normal or appropriate ("norms"), which tend to become self-reinforcing

The best way to break through these locked-in Energy Cultures is to bring in trusted outside expertise and to find a CEO who is willing to take a risk and be an innovator

Then we also need someone capable who can introduce the new technology or process into the business

There may need to be some money in it for you in order to nudge you to do it

Or there may be some competitive element, that you simply want to be the first or the best

DSM SME recommendations

1. IT CAN'T ALL COME FROM THE TOP OR THE BOTTOM.
2. BENCHMARK YOUR HEART OUT.
3. IT'S ALL ABOUT THE PEOPLE.
4. I WANT WHAT YOU WANT, SO LET'S DO IT.
5. DON'T BE AFRAID TO LOSE THE NAY-SAYERS.
6. NUDGING IS WHAT IT IS: A NUDGE, NOT A LIFE SAVER.
7. SHOW WHO'S A LEADER.
8. TAILORING IS ESSENTIAL.
9. THEY LEAD - OTHERS FOLLOW.
10. CONSULTANTS DON'T CARE AS MUCH ABOUT YOUR COMPANY AS YOUR STAFF DO.
11. TRUST IS EVERYTHING.


blurb

The Task began in February 2012 and will end December 2014.

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Austria
Belgium
Netherlands
Sweden
Switzerland
Norway
New Zealand
Italy
South Africa

In kind: UK

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