

Greening the enterprise 2.0

How ambient ICT can help us save energy

2.0

Meta study: *The role of ICT in saving energy*

<https://doc.telin.nl/dsweb/Get/Document-84503>



| Kennis voor zaken



Telematica
Instituut



"Around two-thirds of the energy used by a mobile phone is lost when it is unplugged after charging but the charger itself is left in a live socket."

Kirsi Sormunen, Vice-President of Environmental Affairs at Nokia



Sources of energy savings

1. Energy efficient processes
2. Energy use ICT itself
3. Better use through awareness

1. Energy efficient processes

- Optimisation
 - E.g. up to date weather information for routeplanning
 - Intermodal shipping
- Re-use
 - Using cooling water to grow shrimps
- Dematerialisation
 - E.g. voice mail, SaaS
- ICT an important enabling factor
- Difficult in the case of chain of companies (who benefits)
- Rebound effects





2. Energy efficient ICT



2. Energy efficient ICT



2. Energy efficient ICT



3. Awareness

- Smart Metering
- Ambient Intelligence
- Flexible prices of energy

***20% to 30% of
savings are
possible in
households and
offices!!!***





In the United States

Case Stavanger: Bi-Monthly invoice

After three years:

- .8% savings on energy
- .Extra 4% with statistics



Invoice Detail					
			Invoice		
			Invoice Number	1036	
			Date	Oct 17, 2005	
			Salesperson	Sally Jones	
Ship To:			Bill To:		
Dag's High Tech Services 803 West 600 South American Fork, UT 84003			Dag's High Tech Services 803 West 600 South American Fork, UT 84003		
Invoice#	Term	Due	Net Discount	Discount Date	
7090074	Net 30	Nov 16, 2005	0%		
Qty	Description	Quantity	Unit Price	Total	
2	Timer Cartridge	2	\$444.00	\$1,332.00	
1	200000 1150 Capex - Used	1	\$653.00	\$653.00	
5	Plates	5	\$112.00	\$560.00	
4	Diodes	4	\$44.00	\$176.00	
4	Diodes	4	\$250.00	\$1,000.00	
				Total	
				Discount	-\$0.00
				Sub Total	\$3,350.00
				Tax	\$158.56
				Shipping	\$0.00
				Total	\$3,508.56
				Total Due	\$3,508.56

Pre-Paid



1001 Klimaatoplossingen

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1001 Klimaatoplossingen

De wereld kampt met een groot klimaatprobleem. De oplossingen zijn er. Als Nederlandse technologische industrie maken wij er duizenden. Op deze website treft u een selectie aan van slimme producten en diensten die direct zorgen voor een duurzame toekomst. Wij roepen de overheid op er voor te zorgen dat consumenten en bedrijven de investeringen in deze klimaatvriendelijke producten snel terugverdienen. Onze 1001 Klimaatoplossingen zijn het bewijs dat techniek helpt!

Duurzaam ontwikkelingsbeleid: ArcelorMittal lanceert Solano®

Staalconcern ArcelorMittal heeft de European Subcontracting and Engineering Fair (ESEF) in... [Lees meer](#)

Bosch-sensor SMB380 uitgeroepen tot product van het jaar

Het Duitse elektronikamagazine Elektronik heeft de triaxiale acceleratiesensor SMB380 van B... [Lees meer](#)

Topondernemers presenteren klimaatoplossingen op catwalk in Tweede Kamer

Vijftien ondernemers presenteerden tijdens een catwalk in de Tweede Kamer hun innovatieve ... [Lees meer](#)



CO₂-reductie

Energiebesparing

Meer duurzame energie

techniek helpt!

ecoMeter
ENERGY MONITOR

16:00
16:00



310

PowerW

COST
NOW

kW



311



Smart Metering

- Base level use
- Peak use: when and what
- Collective feedback and collective intelligence
- Glanceable displays



Potential savings

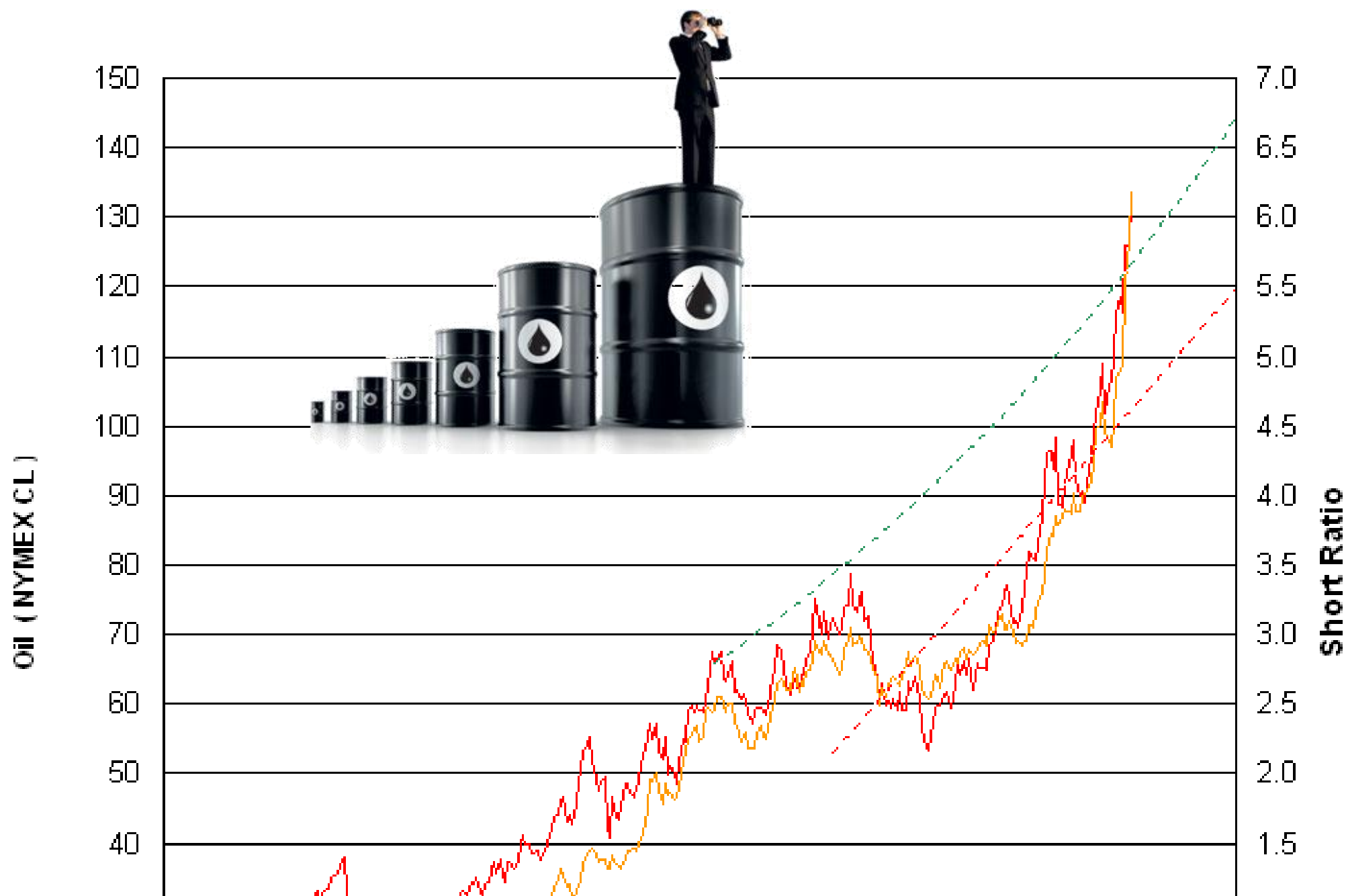
- 45% of consumers quote lack of insight into detailed use
- On average a saving of 22% is thought possible
- 10% savings in offices and homes is to be expected
 - 40% total energy use
 - Savings can be 4% by intelligent feedback and surroundings
- More efficient use of green Energy by optimisation

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Kyoto: 6%

Crude Oil (NYMEX CL) vs Large Trader Short Ratio plus Simmons/Tierney Bet



Research needed

- What *feedback* systems do we need?
- How do you *influence* people?
- What Ambient *Intelligence* is possible?
- **What works in real life?**

The Living lab approach

Living Lab Methodologies

- Access to customers, users, citizens
- Objective and subjective data
- Real life (usage in context)
- Un-obtrusive
- Dynamic social networks



Amsterdam Living Lab:

User driven innovation in context



Goal: open innovation environment

- Share knowledge
 - between science and business
- Open testbed
 - for new applications and media
- Professionalising approach
 - Based on living labs
- Market focus
 - With commercial parties



Vision Amsterdam Living Lab

- To create a large scale testbed environment in the Amsterdam area focused on the use of ICT and new media
 - Measurement of use and experience
 - Assets: Toolkit , Substantial user base
 - Internationally known and used
 - Feedback for Science and Companies
 - Open Innovation Ecosystem
 - Attracting companies
 - Boosting social science
 - user centred design, user behavior,
 - new service development, ...



Living Lab Smart Energy

- Between 2009 and 2012 450.000 households will have smart metering
- Test with 100 households
 - September 2008 to April 2009 to 15.000 households
- Testbed for new types of feedback and ambient intelligence
- Offices?

Thank You!!

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