Project News: April 2018

The third me^2 project newsletter provides you with an overview of findings of the Amsterdam Pilot (incl. comparison to Lisbon Pilot), further platform developments, market analysis as well as business modeling results. Feel free to contact us directly or post any comments at https://www.linkedin.com/groups/8545691.

me^2 – Final Event

We are glad to invite you to the **final public me^2 project event on 3rd May 2018, 2:30 PM in Coimbra/Portugal.**

Venue: Hotel D. Inês (https://www.donaines.pt/)

Limited seats, so if you are interested, please send us an email with your name, organization and contact to: teixeira@mediaprimer.pt and info@mediaprimer.pt until 30 April 2018. **Participation is free of charge.**

me^2 – Amsterdam Pilot Results

Mid-January a community challenge was organized that encouraged Dutch pilot participants to postpone their charging session until after 20:00, to not increase the energy demand during the evening peak hours. Thirteen participants joined the week long community challenge, with many of them being able to delay their charging session until after 20:00 on multiple occasions throughout the week. Data analysis shows that during the challenge these participants reduced their energy usage from electric vehicle charging by 31,98% during the evening peak hours (17:00 – 20:00).

me^2 – Amsterdam: Feedback from Interviews

During the month of November, 33 Dutch pilot participants were interviewed to gather feedback on the me^2 system, which would help the me^2 team to improve the platform further.

Participants gave valuable feedback, also because the majority of participants already have experience with other energy management platforms. To summarize the feedback on improvements, participants are looking for more detailed and household specific information. This can be done by monitoring more individual appliances, but also by receiving tailored, and possibly data-driven, suggestions to further improve their energy efficiency. This could also include a short summary of their energy usage pattern at the end of every week via email, so they can gain a quick overview. Some participants, particularly the ones with solar panels, were also interested in overviews that provided a comparison between energy consumption and energy production (from either solar panels or from energy suppliers).

This would help them in matching their consumption curve with the overall energy production curve, giving users with solar panels the option to optimally use their own solar energy. Considering the community challenges, users were also interested in more mechanisms that enabled the accumulation of Greenpoints, besides the overall energy reduction rewards and the peak-hour reduction rewards that they received during the pilot. A new mechanism, for instance, would reward users with solar panels for optimally using their own solar energy by increasing their energy demand during sunny parts of the day.

me^2 – Amsterdam: Final Workshop

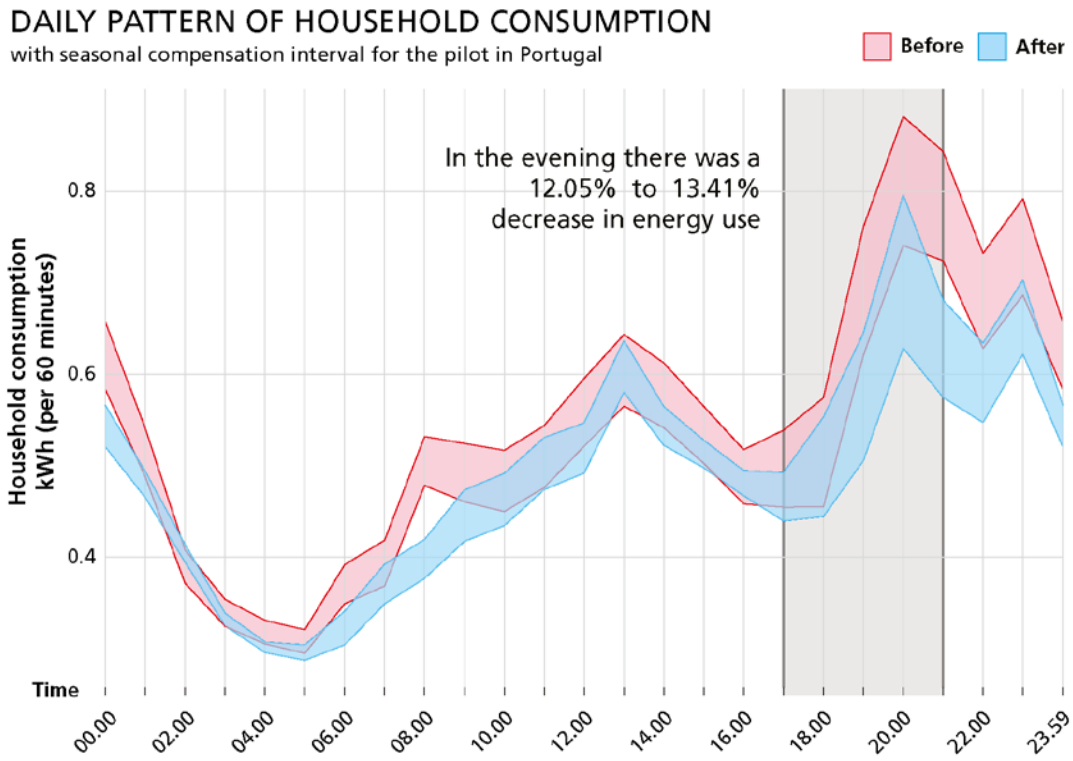
The Dutch pilot officially ended on the 28th of February. On the 7th of March, the HvA organized a closing workshop for interested participants. Aside from presenting some of the pilot results, the participants engaged in a fruitful discussion about community engagement and the applicability of a community feature. Participants were in general enthusiastic about communicating with like-minded fellow community members. Location based community would be, for instance, convenient for sharing at home generated solar power. For communication, sharing ideas and information, an effective online community would not need to be location based, but rather the topic would be more important.

me^2 – Pilot Comparison

After completing both the Portuguese and the Dutch pilots, data analysis shows very different results for the two communities.

An analysis of electricity data from the participating households showed that the average peak hour consumption of the Portuguese pilot community was reduced by 13.4% between the start and the end of the pilot (see figure below). This resulted in a smoother load curve, with 17 out of 30 analysed having more than 10% less variance. Importantly, this period coincided with going from winter to summer, i.e. from a period of high to low overall consumption. The potential seasonal effect was estimated with Portuguese energy usage data. In the figure, the upper range of the green curve shows the measured data at the end of the pilot, whereas the lower range shows seasonally compensated data. With seasonal compensation, peak hour reduction was 12%. Costs of electricity consumption were calculated using Portuguese market prices, showing that 16 out of 30 households could reduce their electricity costs by more than 10% (given dynamic market prices) if they kept following the consumption pattern during the pilot.

The Dutch data, on the other hand, showed that consumption remained similar or even increased between the start (September '17) and the end (February '18) of the pilot. Notably, the seasonal effect was the opposite of that in Portugal, combining cold weather and reduced photovoltaic production. Seasonal compensation using Dutch external energy usage data brought the overall peak hour increase down from 10% to 4.5%. 15 out of 27 users analysed achieved a 10% smoother load curve, with seasonally compensated data. Since the energy usage, especially during peak hours, was not reduced by much, neither were the costs. On the contrary, they remained stable apart from a slight increase towards the end of the period, coinciding with cold winter weather in the Netherlands.



me² – Further Platform Developments

The developed me² system consists of three layers. MediaPrimer continiuosly developed a Community Layer for the front-end users (B2C), households and EV drivers as already presented in the last project newsletters. In the last phase of the project VPS developed a Business to Business (B2B) interface for energy providers on the back end, as well as the Market² ('market square'), which connects the community with energy-related products and services.

Market²

The Market² is the urban, online marketplace of the me² project that supports communities to enhance their sustainability and energy savings. It enables access to products and services that can help communities reach their sustainability goals and/or to create and promote new offers to community members. Through the Market², community members can receive tailored suggestions for new energy-efficient services and appliances, based on which data they choose to provide.

B2B platform

The B2B platform is the interface for the community manager and energy providers. It enables them to access all community data (aggregated consumption, aggregated generation, EV charging information), set up demand response programmes and optimise energy management in communities, allowing them to take full advantage of the flexibility of the me² energy communities.

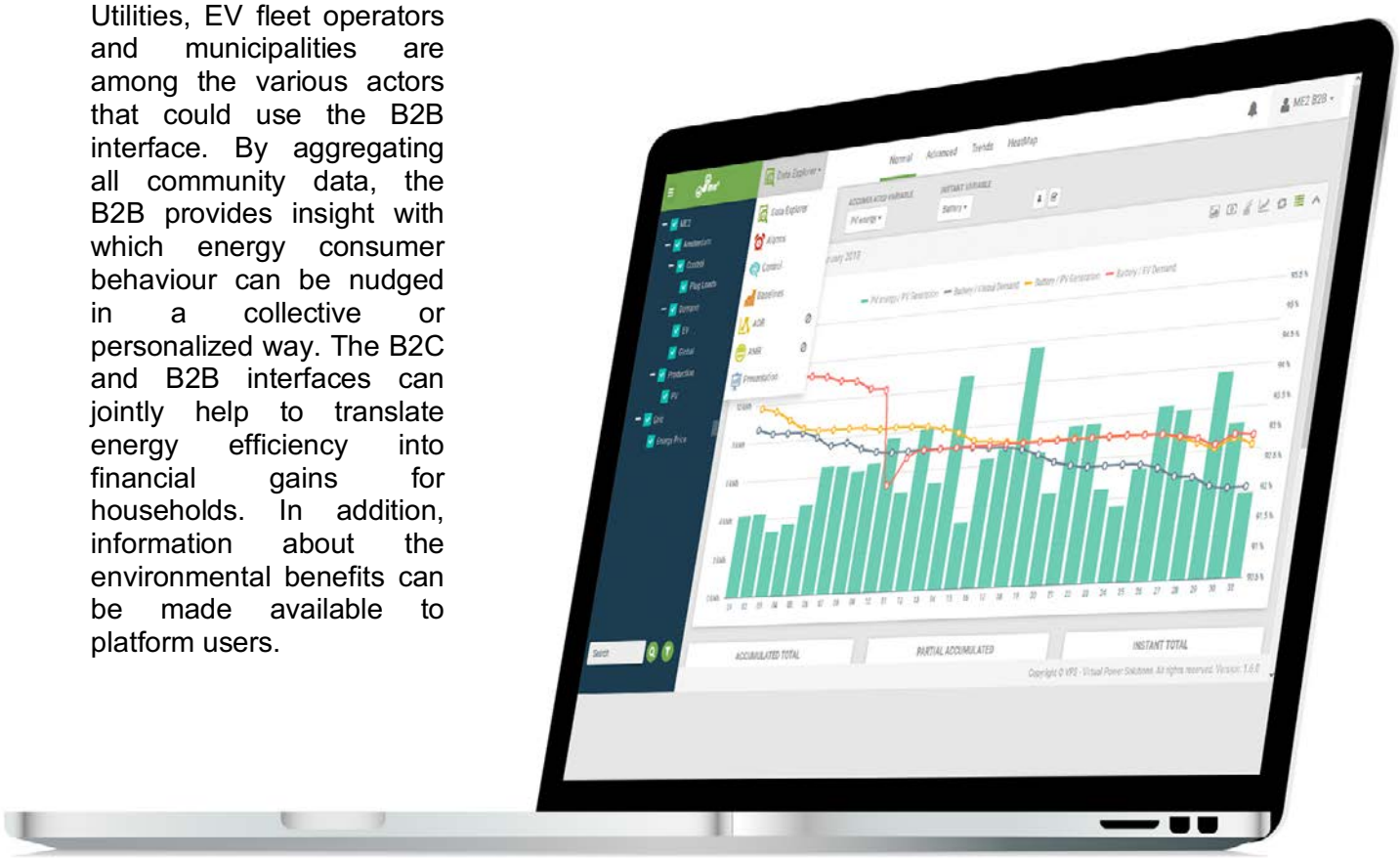
The development of the B2B platform allowed the introduction of innovative services to me² stakeholders and gave them a better understanding of the potential value creation for them.

The three layers of me² are connected at a website developed by the project team, available at

www.me2.energy.

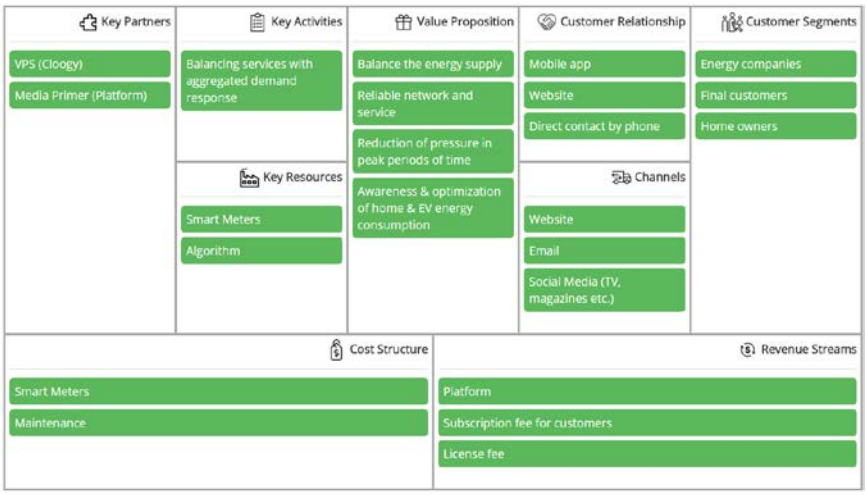
B2B Interface

Utilities, EV fleet operators and municipalities are among the various actors that could use the B2B interface. By aggregating all community data, the B2B provides insight with which energy consumer behaviour can be nudged in a collective or personalized way. The B2C and B2B interfaces can jointly help to translate energy efficiency into financial gains for households. In addition, information about the environmental benefits can be made available to platform users.

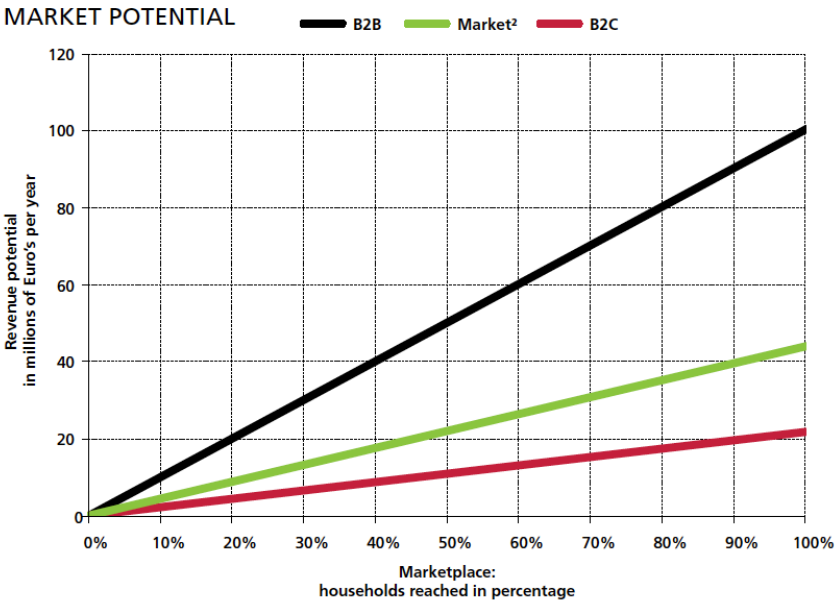


me² – Business Model and Market Analysis

During the project three main business areas were identified – Business to Customer (B2C), Business to Business (B2B) as well as a the Market². For each business segment the Business Model Canvas was used to collect and structure necessary efforts in value prosposition and partner structures. For instance, the upper right figure shows the Market² Canvas developed during the project.



The market analysis that was conducted yielded insights into future ways and chances for exploitation of the B2C, B2B and Market² segments. Revenues in the B2C segment are generated by fees for the optimisation of electricity consumption costs at the household level.



In the B2B segment, revenues are created by licencing the platform to other utilities (e.g. electricity, heat or gas utilities, EV aggregators). Moreover, the developed Market² offers the opportunity to realise further revenues by gathering fees from vendors who sell products on the Market². Based on the field test findings, combined B2C, B2B and Market² potentials on European level were calculated as shown in the left figure. Accordingly, it was assumed that existing smart meters can easily be equipped with meter-data interfaces in the future.

Based on the me² market analysis data, a business plan case study (for a company selling the developed me² products) was carried out. In parallel, a detailed IPR agreement of all project partners was defined. For business planing, staff and equipment costs in Portugal (company headquarters in Lisbon) as well as sales offices in the Netherlands and Germany were considered. However, detailed business plan calculation results and corresponding parameter variations revealed the following risk factors with high economic impact:

- The estimated number of employees required for customer acquisition and care might be too low.
- The estimated customer acquisition rate might be too high.
- Customer interest may be low (as seen in the field tests).
- B2B and Market² revenues might be lower than expected.

It is therefore recommended to improve the developed solutions further by implementing additional functionalities – for instance, selling and buying electricity or grid capacities (for fast EV charging) directly through the platform and its members or trading Green Points for platform offerings or Market² products.

The deliverable containing the me² market analysis that was conducted will be publicly available by the end of May 2018.

www.me2-project.eu

Partners

CONTACT PROJECT COORDINATOR

Dr. Halldora Thorsdottir
Researcher and Project Manager me^2
Urban Technology Research Programme
Amsterdam University of Applied Sciences

School of Engineering Weesperzijde 190
1097 DZ Amsterdam | B6.22
PO Box 1025 | 1000 BA Amsterdam
M +31 (6) 11854060
W www.hva.nl/urbantechnology

PROJECT WEBSITE
www.me2-project.eu

LinkedIn GROUP
https://www.linkedin.com/groups/8545691