



*Smart system of renewable energy storage based on **INtegrated EVs and bAtteries to empower mobile, Distributed and centralised Energy storage in the distribution grid***

Are Platform-based business models relevant in the energy market?

Dagfinn Wåge – Head of Innovation Lyse AS (WP9 Business models)



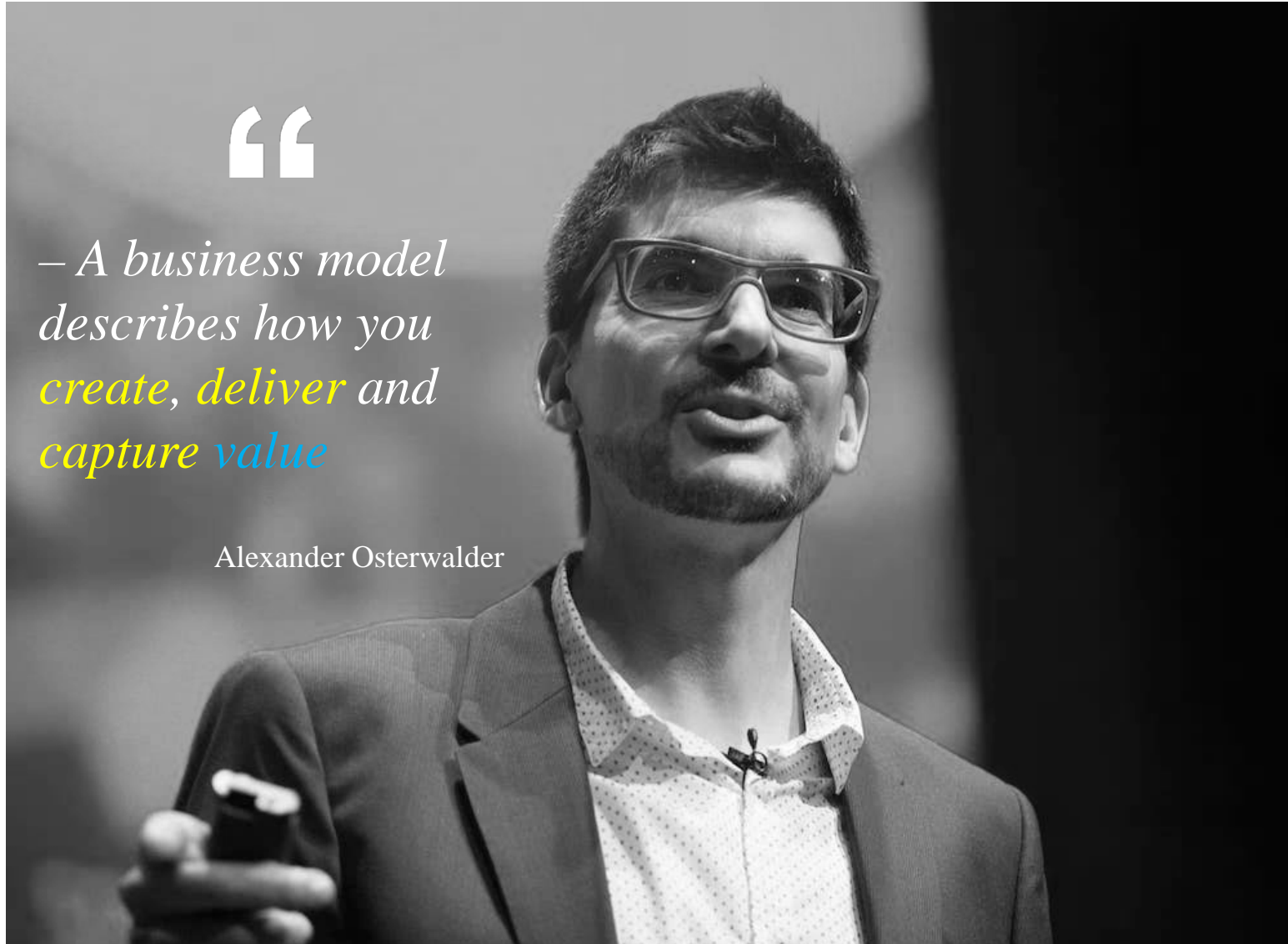
This project has received funding from the *European Union's Horizon 2020 Research and Innovation programme* under Grant Agreement No 731148.

What is a Business model?

“

– *A business model describes how you create, deliver and capture value*

Alexander Osterwalder



Business models in the Future Energy Market

Customer centric trends



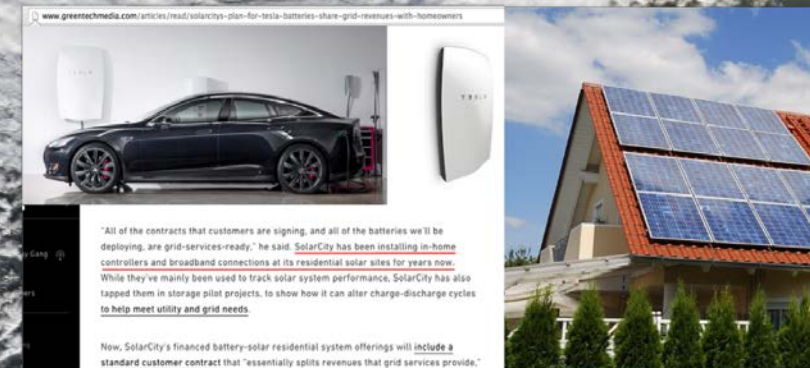
Digital technologies (i.e. IoT)



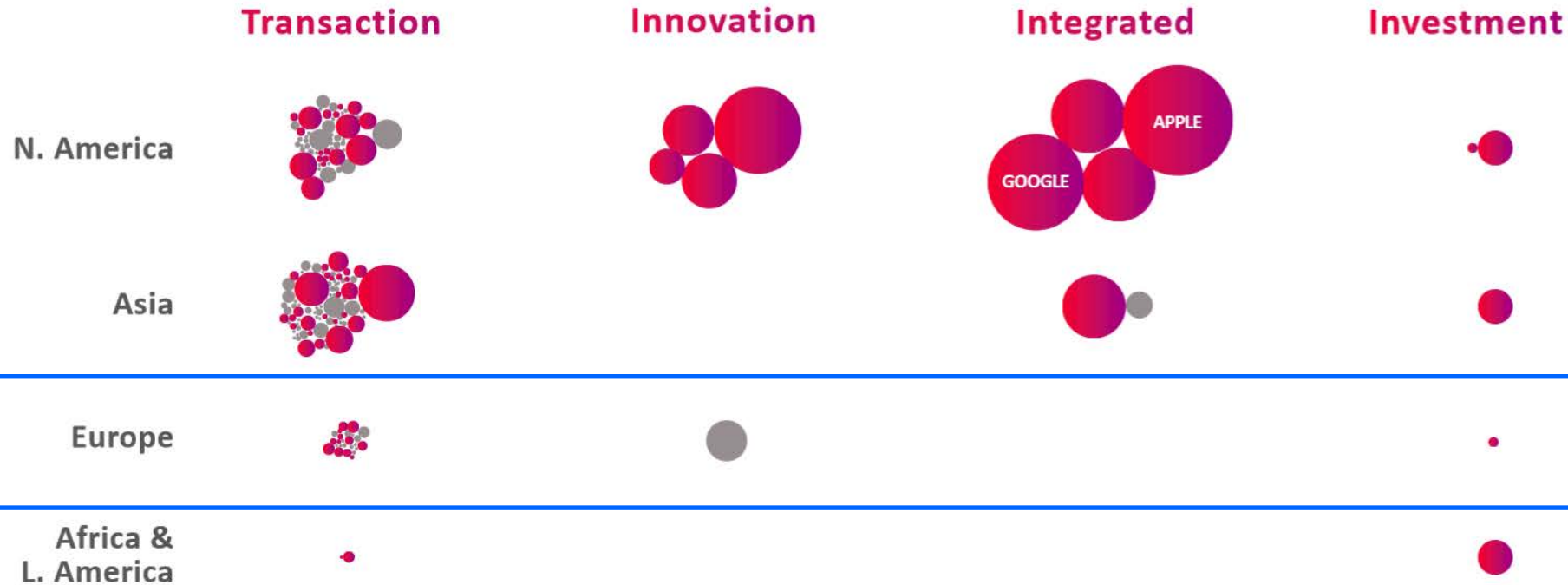
Customer friendly regulation

Through the revised Directive, these new rules will put consumers at the heart of the transition – giving them more choice and greater protection. Consumers will be able to become active players in the market thanks to access to smart metres, price comparison tools, dynamic price contracts and citizens' energy communities. At the same time, energy poor and vulnerable consumers will enjoy better protection.

Digital business models (platform)



PLATFORM COMPANIES BY TYPE

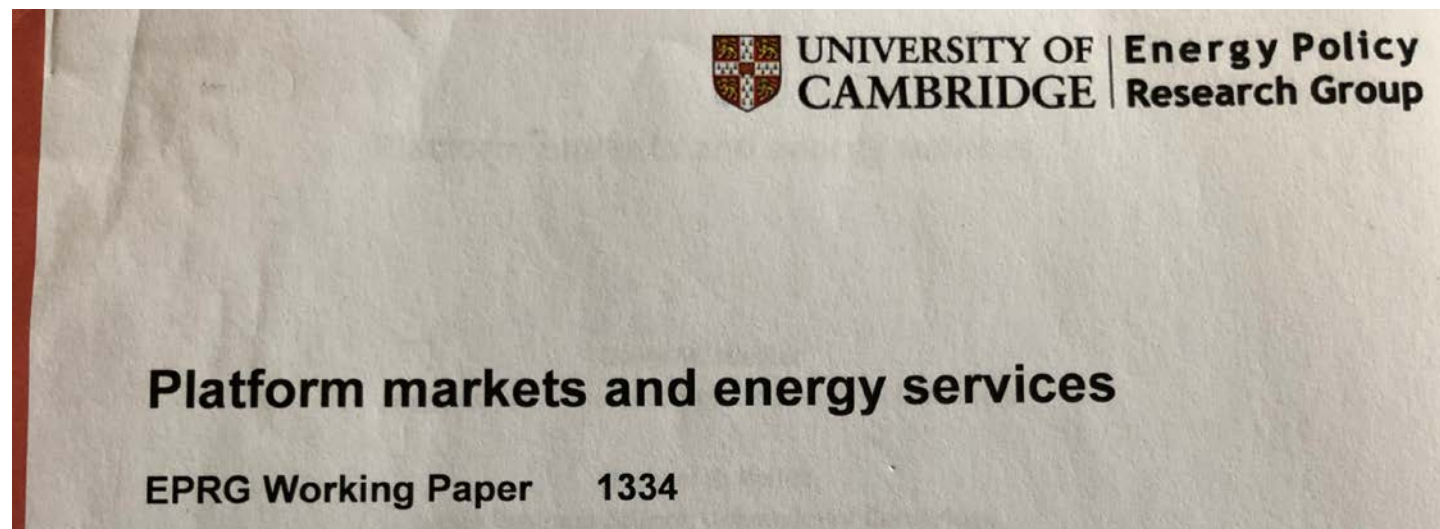


SOURCE: Global Platform Survey, The Center for Global Enterprise, 2015

FIGURE 7

Note: Each bubble represents a company sized by market cap as of December 1, 2015

*“A platform market is a market where user interactions are mediated by an intermediary, the platform provider, and are subject to network effects. **As opposed to a marketplace or trading exchange, a platform intermediary must offer inherent value beyond the simple mediation process for the two sides of the market.** This added-value usually comes from ICT and the associated complementary innovation that increases utility and attractiveness of the platform to all user groups.”*



Why focus on platform and ecosystem based business models in the INVADE project? (from D9.1)



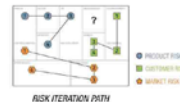
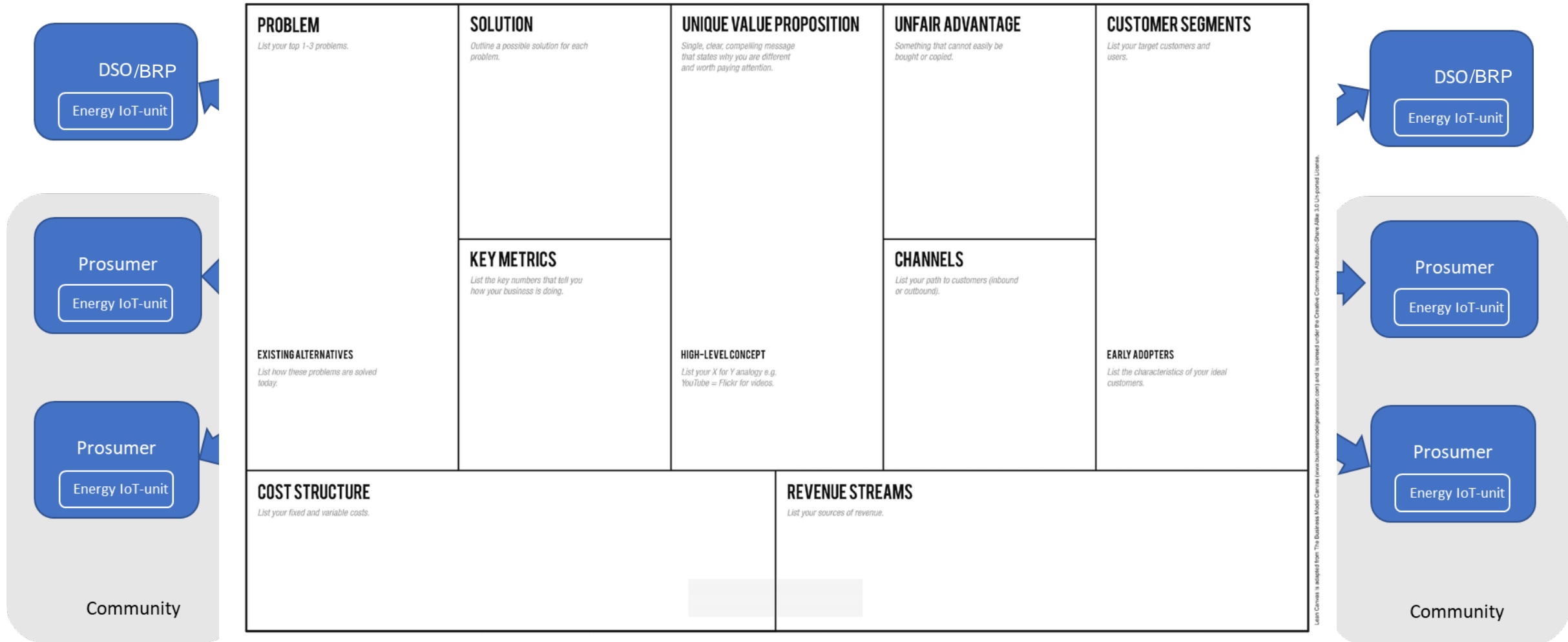
Table 1: Flexibility services covered by INVADE. (Y: yes; N: no)

- Fast growth in prosumers and smart consumers enables disruption of traditional actors. The INVADE project is one of very few «flexibility projects» focusing on the prosumer/customer perspective.
- Energy IoT enables two-way flow of data towards all parts of the energy market, especially the end-customer side.
- The tremendous impact experienced by PBBM in other industries

Flexibility customer	Flexibility services names		Flexibility references			
	USEF	EG3	USEF	USEF15	EG3	INVADE
DSO	Congestion management	Short term congestion management	Y	Y	Y	Y
	Congestion management	Long term congestion management	Y	Y	Y	N
	Voltage control	Voltage / Reactive power control	Y	N	Y	Y
	Grid capacity management	(Grid losses)	Y	N	Y	N
	Controlled islanding	-	Y	N	N	Y
	Redundancy (n-1) support	-	Y	N	N	N
	Power quality support	-	N	N	N	N
BRP	Day-ahead optimization	Portfolio optimization	Y	Y	Y	Y
	Intraday optimization	Portfolio optimization	Y	Y	Y	Y
	Self-balancing	Portfolio optimization	Y	Y	Y	Y
	Passive balancing	-	Y	Y	N	N
	Generation optimization	Generation capacity adequacy	Y	Y	Y	N
TSO	Primary control	Frequency control (FCR)	Y	N	Y	N
	Secondary control	Frequency control (FRR)	Y	N	Y	N
	Tertiary control	Frequency control (RR)	Y	N	Y	N
	National capacity market	-	Y	N	N	N
	Congestion management	Congestion Management	Y	N	Y	N
	Grid capacity management	(Grid losses)	Y	N	Y	N
	Controlled islanding	-	Y	N	N	N
	Redundancy (n-1) support	-	Y	N	N	N
	-	Reactive power control	N	N	Y	N
Prosumer	toU optimization	-	N	N	N	Y
	Wmax control	-	N	N	N	Y
	Self-balancing	-	N	N	N	Y
	Controlled islanding	-	N	N	N	Y

Our business model framework MUST be able to address these facts

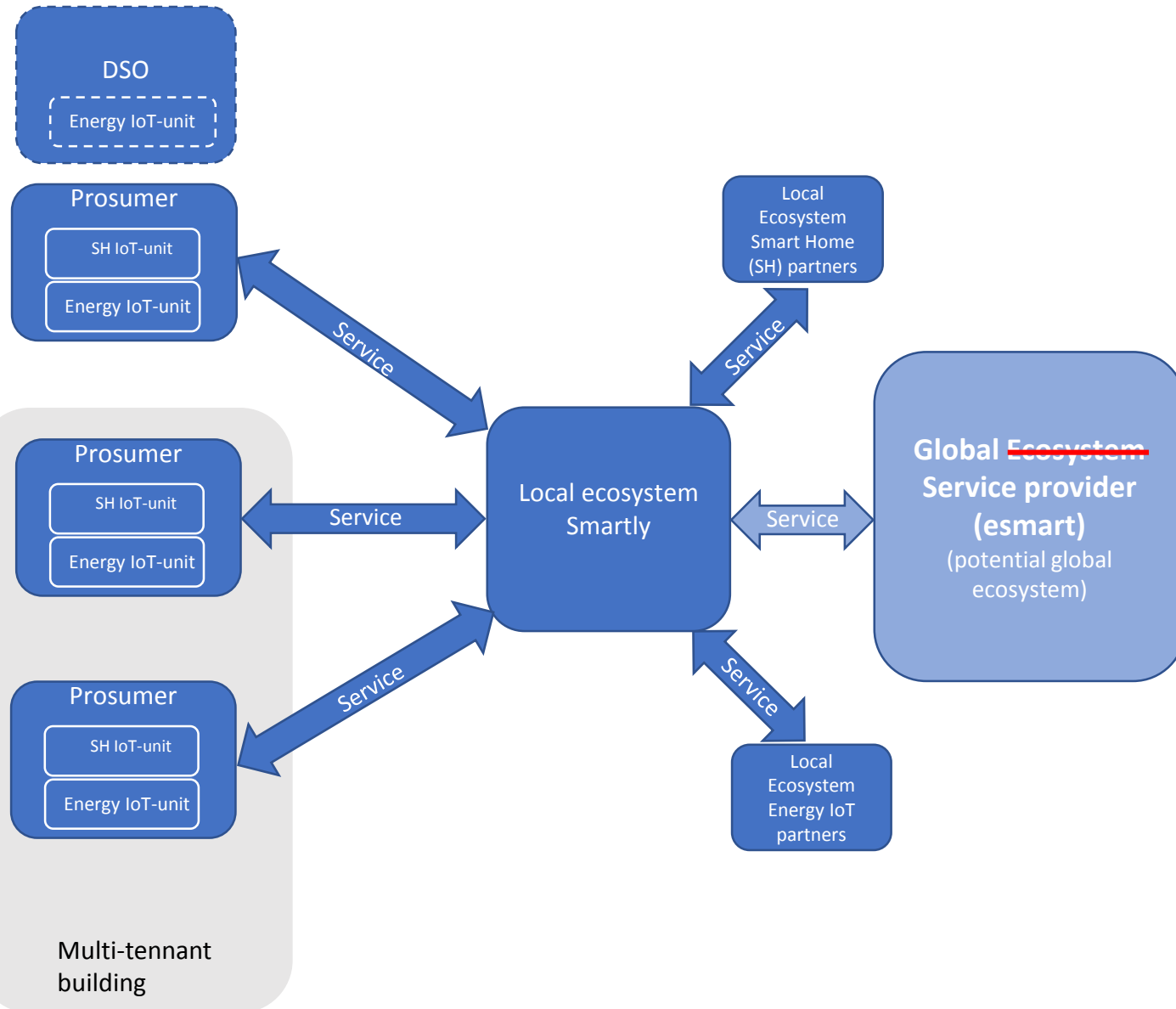
The combined use of the generic INVADE business model framework and Lean Canvas



Lean Canvas

Created by Spahn59 // Online version available at www.leancanvas.com

Applying the framework on the Norwegian pilot partner



Industrial shift

Lean Canvas

Ecosystem partners

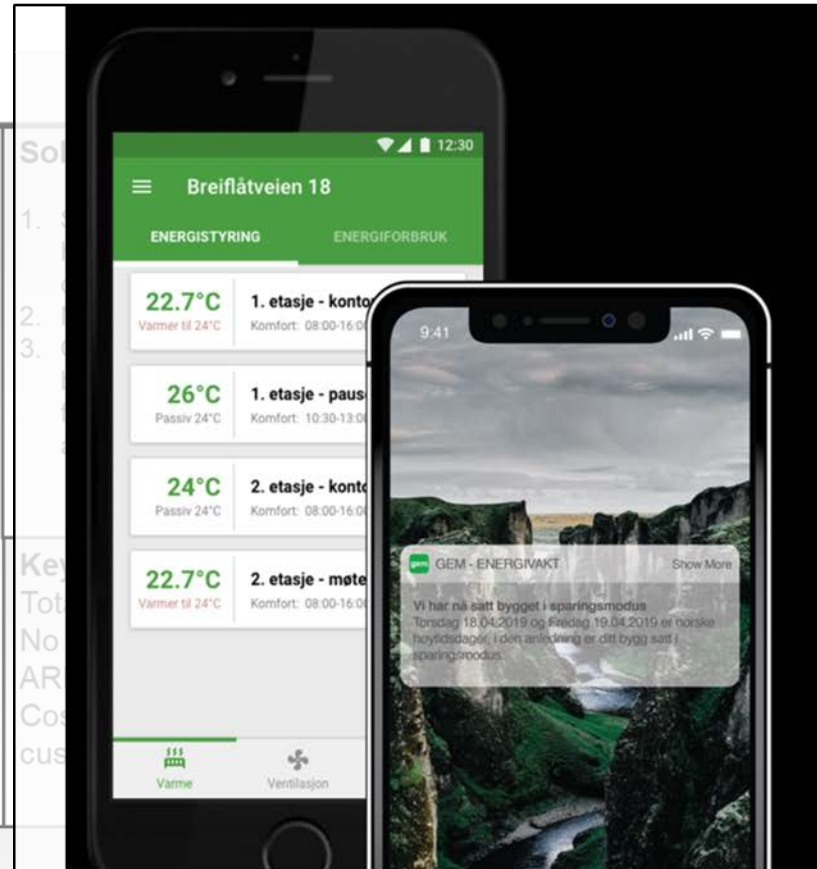
Schneider
Esmart
Eaton
Fronius

Problem

1. Customers do not understand the energy markets, especially the concept of flexibility.
2. Customers do not want more work in their everyday life.
3. Customers want to save money on their energy bill.
4. Prosumers cannot exploit their own solar production optimally.
5. Multi-tenant customers and EV-cost

Cost Structure

Customer Acquisition costs
Investment in equipment
Installation and operation
Personnel (wages)



gem – Energivakt

En enkel, standard grunnpakke som leveres ferdig installert til fastpris hos kunde, inkl. sluttkontroll og samsvarserklæring.

Pris fra xx kr pr mnd.*

Leieavtale over 3 år, alt inkludert

*Prisen fastsettes basert på størrelse på bygg og antall styrte enheter

Forutsetninger:

- ☐ Betingelser tegning av Lyse strøm abonnement
- ☐ Bygg uten SD anlegg
- ☐ Eksisterende utstyr hos kunde støttes av styringssystemet
- ☐ Kablet internett på installasjonssted

Long term low revenue streams from leasing-service
Long term low revenue streams from operation-service

Application of BM framework outside the project

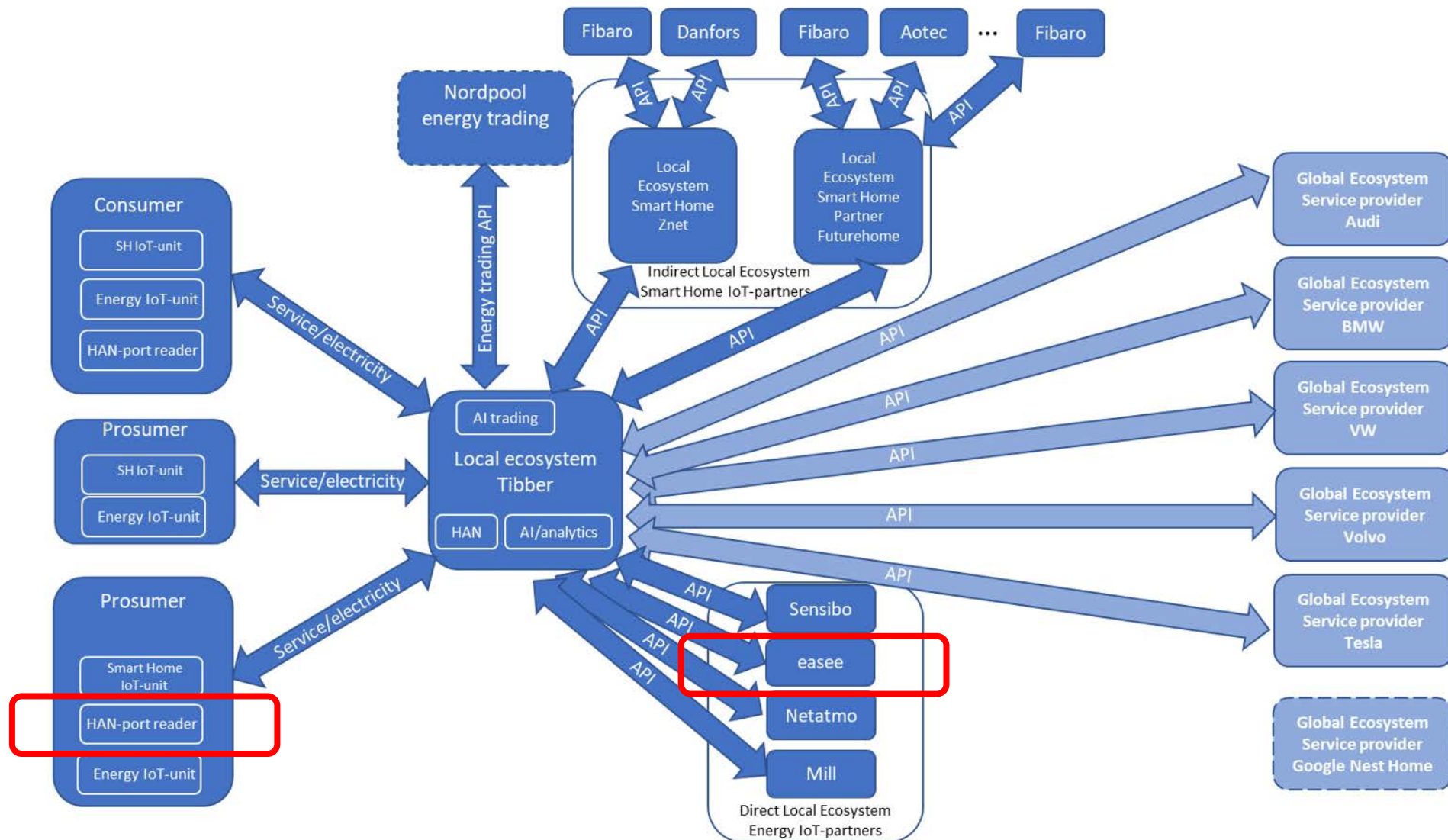


Figure 2 Mapping of Tibber into the Invade business model framework

Industrial shifts – an inherent part of PBBM



The risk of bypassing from Global PBBM and ecosystems

www.greentechmedia.com/articles/read/solarcitys-plan-for-tesla-batteries-share-grid-revenues-with-homeowners



"All of the contracts that customers are signing, and all of the batteries we'll be deploying, are grid-services-ready," he said. SolarCity has been installing in-home controllers and broadband connections at its residential solar sites for years now. While they've mainly been used to track solar system performance, SolarCity has also tapped them in storage pilot projects, to show how it can alter charge-discharge cycles to help meet utility and grid needs.

Now, SolarCity's financed battery-solar residential system offerings will include a standard customer contract that "essentially splits revenues that grid services provide,"



6.2.2 Applicability of the platform-based business model framework in the energy industry

The first question in the interview was directly commenting on the PBBM framework put forward in deliverable D9.4. Here respondents were asked if they agreed with the disruptive potential of the PBBM model and how it was depicted in the framework.

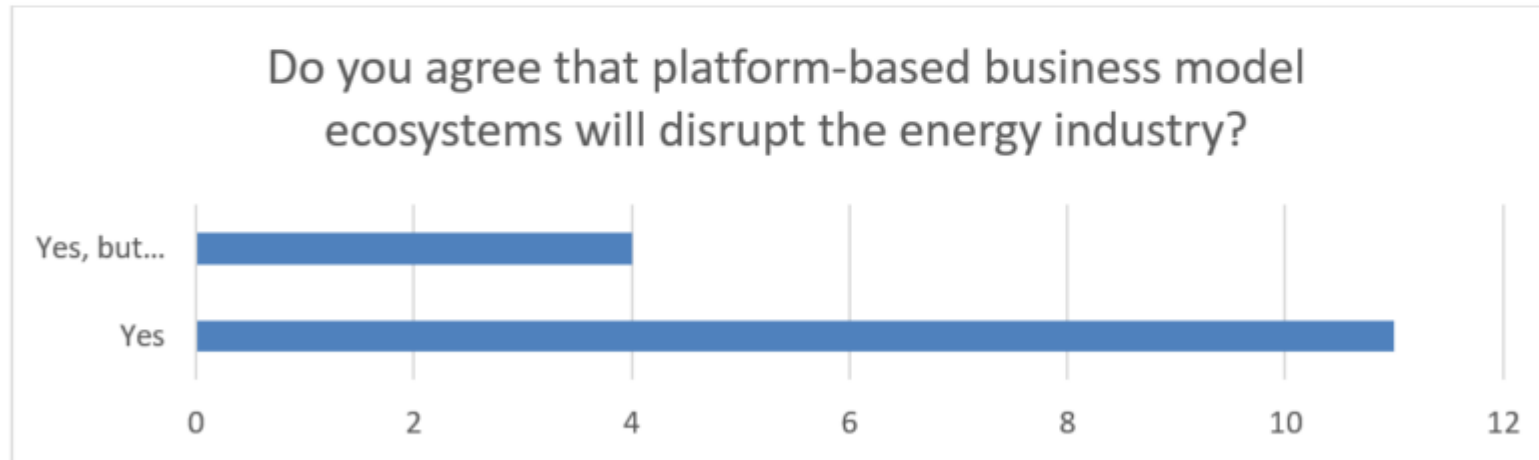


Figure 7: Stakeholder interview feedback: Disruptive nature of PBBMs.

- New entrants are exploiting platform based business models and are now entering the European energy market.
- There are two main flexibility service categories; end-user flexibility (down-stream) and market place/trading exchange (up-stream)
- Sourcing is crucial, and therefore the end-user flexibility market seems more mature. Especially in the business segment where companies already have effect based tariffs.
- Platform based business models usually starts with a core service other than flexibility services. They are relevant – BUT...not for all the pilots
- The market for upstream flexibility (trading and market place) is still immature mainly because of regulation barriers.



Thank You!

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