



EMPOWER

Grant agreement n°: 636249

Start date: 1 May 2015

Duration: 36 months

Area: Mobility for Growth: Societal Challenges

Project Officer: Mr. Walter Mauritsch

International review of business models and best practice

Version: 1

Due date of deliverable: 31 July 2015

Actual submission date: 31 July 2015

Dissemination level: Public

Responsible partner: VIKTORIA

Executive Summary

This deliverable is the first deliverable in Work Package 3 (WP3) and the second deliverable in the EMPOWER Project. WP3 covers a variety of aspects in producing the business model component for the EMPOWER toolbox, i.e. the main deliverable of EMPOWER project. The deliverable is a public report that presents the preparation work performed in Task 3.1 (T3.1) and includes an international review of business models and best practice. The goals of T3.1 has been to:

- identify potential directions for design choices for the EMPOWER business models based on current business model trends and literature on business models.
- cover example cases of intended positive incentive services in transportation, like public transportation customer loyalty programs (e.g. such as in Montreal and Singapore), peak reward programs from the Netherlands.
- identify challenges and key success factors for incentive-scheme based business models that have been applied around the world as well as documented in literature on business models from different fields.

The first objective is covered in chapter 2 and 3. In chapter 2 key concepts regarding business models are described and summarized. This description will act as an important input to other tasks within the EMPOWER project, especially T3.2 which has as objective to define the methodology that should be used to develop incentive-scheme based business models for the four lead cities/regions involved in the project. In addition to definition of key concepts, chapter 2 also address business model innovation and in section 2.2.1 presents important trends in business modelling, for example the trend to move from ownership to access (sharing economy), omnichannel, utilization of big data, scarcity and sustainability and social innovation in business models. Social business models are also covered (section 2.2.2) and the chapter is concluded by exploring business model trends through the lens of a case which uses an incentive-scheme based business model to organize the business setup.

In chapter 3 an in-depth literature review of key sources is presented with the objective to identify key take-away from business model literature to be used in EMPOWER. In all, 20 literature sources are covered by the systematic review from the field of strategic marketing, information systems, transportation, innovation and management (section 3.2 to 3.21), displaying the value that these sources have on business model design, implementation and evaluation. Key take-away's from each source is also presented for each case, see the table below (ES:1).

Reference	Key take-away
Kotler & Zaltman (1971)	Driving social change requires a strategic marketing approach (e.g. four "P's": price, product, promotion, and place, see section 3.2) and is more than promotion alone.
Osterwalder (2004)	Solid business models are made up of the nine building blocks Value proposition; Customer Segments; Customer Relationships; Channels; Key resource; Key activities; Key partnerships; Revenue streams; and Cost structure.
Osterwalder et al. (2005)	Business models can be positioned on different levels in relation to an organization and the development of business models should be interlinked with the development of the information system that should support the business.
Enquist & Juell-Skielse (2010)	In Business model development a choice should be made for a niche or holistic service approach.
Demil & Lecocq (2010)	A business model is not a static entity. It should be viewed as an evolutionary process that involves continual changes in the business model setup and also the organizational design.
Zott et al. (2011)	The EMPOWER project will test services that distribute incentives that enable people to make smart travel choices. The value that the EMPOWER services provide for stakeholders lies in the new value that is created through the provision of positive incentives. The value in EMPOWER is that its services should create new value connected to smart travel choices.
Limonard et al. (2011)	The business model canvas can be used for the design of "fuzzy" innovative concepts by going from the Key resources, to the Value proposition, Customer Relationships, Distribution Channels and Customer segments, and then back to Key activities.
Burkhart et al. (2011)	A set of assessment indicators to support the evaluation of business model impact. The main assessment indicators are: Application field, Knowledge gaining, Delimitation, Level of aggregation,

	State of business models, Purpose, Underlying type of business, Support during company lifecycle, Support during product/service lifecycle, Point of view, Addressee of business models, Scope, Components, Relation between components, Notation, Process of representation, Evaluation and metrics.
Zolnowski & Böhmman (2011)	Provides insights to what white spots core business modelling approaches has which enables the project to complement the models selected to enhance the business model creation within EMPOWER. Provides 19 evaluation criteria which can be used as base for developing indicators within EMPOWER
Bie et al. (2012)	Make sure to do develop a value proposition that does not only address one stakeholder group. The EMPOWER service will have several stakeholder groups and should thus provide different value for these groups.
Ferro & Osella (2013)	Eight business model archetypes that act as inspiration in the development of EMPOWER service business models: e.g. Premium Product / Service, Freemium Product / Service, Open Source Link, Infrastructural "Razor and Blades", Demand-Oriented Platform, Supply-Oriented Platform, Free as Branded Advertising, White-Label Development.
Berkers & Roelands (2013)	When multiple stakeholders are involved, a common vocabulary regarding the EMPOWER tool/service should be established in the beginning and all the perspectives on "value" should be taken into account.
Klang et al. (2014)	In the design of the business models, the business modellers in T3.3 must be sensitive to that business models are understood differently by different stakeholders and adopt the language depending on target audience.
Bocken et al. (2014)	Business model archetypes that will inspire the design of business models for the EMPOWER services: Maximise material and energy efficiency; Create value from 'waste'; Substitute with renewables and natural processes; Deliver functionality rather than ownership; Adopt a stewardship role; Encourage sufficiency; Re-purpose the business for society/ environment; and Develop scale-up solutions.
Janssen & Zuiderwijk (2014)	In order to achieve social change EMPOWER envisions that social media and networking can be used as incentive for supporting people to make smart travel choices.
Kranenburg et al. (2014)	The article provides key recommendations when developing viable business models for sustainable transport solutions: business modelling should begin early on in the innovation project; customers and their needs should be the basis for the business setup design.
Butzin et al. (2014)	Respect the fact that in the "right" side of the Business Model Canvas (regarding the Customers), multiple dynamics can be at play and made use of such as (social) networks, active and passive citizens, capacity building among citizens for empowerment, etc.
Peters et al. (2015)	The article provides a framework to analyse and assess the implementation of business models in complex service settings. The framework can be used to structure the business model evaluation in EMPOWER.
Rauter et al. (2015)	Each building block in Osterwalder's Business Model Canvas can be considered from a sustainability perspective, e.g. in the choice of partners, combining distribution channels, consider re-use or cradle-to-cradle in the value proposition, etc.
Herrador et al. (2015)	State-of-the art case examples is provided, including Commute Greener, that will inspire and influence the design of business models for the EMPOWER services.

ES:1: A summary of contributions from the literature review

Chapter 3 is concluded by a outline of the impact that the literature review will have on different work packages and tasks in EMPOWER, acting as a guideline how to use the knowledge base developed in T3.1 not only for the business model design in the project, but also incentive design (WP1), systems development (WP2, 4 and 5) and evaluation (WP6).

Task 3.1 also included a state-of-art review of solutions that have implemented incentive-scheme based business models. Six cases have been reviewed based on categories derived from business model literature: key stakeholders, customers, value proposition, elementary offerings provided and an analysis of the basic revenue streams for each solution. The cases addressed in the review are (1) Mobidot (the Netherlands), (2) SMART (the Netherlands), (3) Commute Greener (International), (4) Travel Smart Reward (Singapore, US), (5) Merci (Canada) and (6) SUDS (the Netherlands). The review is presented in chapter 4 with a case-by-case presentation (4.2-4.7) as well as a case comparison (4.8) with a concluding elaboration on the lessons relevant for the EMPOWER project. The comparison is displayed in Table ES:2.

#	Description of solution	Key stakeholders	Target customers	Value proposition	Elementary offerings	Basic revenue model
1 Mobidot	Platform-based service enabling personalizing and incentivising end-user mobile services	Multiple, e.g. cities, transit operators, employers, travellers, service providers	Organizations: e.g. city mobility and traffic management authorities, transit authorities	B2B solutions where low cost personal level travel data or capabilities to influence travellers behaviour are the main value drivers	Multiple: analysis of travel behaviour, incentive provision, behavioural change mechanisms	From operators (e.g. cities): Licensing, Pay-per-user service provision, and support fees from customers
2 SMART	End-user mobile service that enables traveller to understand travel behaviour, organize traveling and be stimulated to make smart travel choices	Multiple, e.g. city government, service providers, incentive partners and systems developers	Individuals: car commuters and commuters in general	B2C solution for travellers to understand and organize travel behaviour. The city or transit operator can stimulate travellers to make smart travel choices	Multiple end user features (e.g. mobility profile, multi-modal route planner) delivered through a mobile application, a website and a web shop	From operators (e.g. cities): less investments in infrastructure, monitoring multi-modal traffic flows and surveys on travel behaviour
3 Commute Greener	End-user service providing ways to measure and reward improved everyday travel behaviours as well as enable smart ride-sharing including social network features.	Multiple: e.g. city authorities, employers and equivalent organisations that enable contacts with end-users who mainly is driving CFVs	Organizations: corporations, city authorities concerned with congestion and environmental impact from CFV use	The solution offer expertise and a scalable system set-up enabling cities, corporations and citizens to gain measurable results and improve everyday travel.	Multiple: e.g. campaign tool, measurement tool for travel behaviour, reward tool to stimulate smart travel change, ride-sharing support and social network features	From operators: the solution is sold to the operator as a campaign tool or as pay-per-use service
4 TSR	End-user service wherein public transit users receive transferable points, based on CEPAS card transactions, for using public transit weekdays with a boost on time slots where the demand on the system is lower	Multiple: city authorities, transit operators, service providers	Individuals: public transit users	B2C solution that enables customers to earn monetary rewards for using public transit. Tier levels and lottery system is added to increase attractiveness. The value for the operator of the solution is to spread demand of public transit from peak hours.	Website for registration, social media application for lottery and game and information. Solution connected to CEPAS public transit card.	From operators: the solution reduces transit operation costs through peak spreading
5 Merci	End-user service wherein public transit users get personalised location based offers from engaged external partners	Multiple: city authorities, transit operators, third party providers of offers (in Montreal 340 merchants and 1000 event partners), service providers	Individuals: Public transit users	B2C solution that enables customers to get personalised and location based offers where higher tier levels, i.e. more transit use, results in better offers. B2B solution: a cost efficient channel for merchants to reach consumers	Multiple: Website of link to social media for registration. public transit card number is coupled to account and transaction data is retrieved from the transit operator back-end system.	From operators: reduction in transit operation costs through peak spreading and increased revenues from ticket sales From engaged external partners (future): minor fee
6 SUDS	Slim uit de Spits (Smart away from peak hours) is an end-user service aimed towards car travellers in the regional network to avoid peak hours and be rewarded for that change in behaviour	Multiple: city of regional authorities, commercial service provider and project management	Individuals: car travellers using the road network on a regular or incidental basis	B2C solution: initially a monetary reward, which was later converted to a point based system to promote changes in travel behaviour. Next to this, an app provide a fun factor and feedback on the travellers' behaviour.	Multiple: app with features for tracking trips and provide pre-trip traffic information. Website that provides overview information and registration.	Main flow from operators: publicly funded scheme. Secondary flow: involvement of private partners

ES:2: Comparison of state-of-art solutions using incentive-scheme based business models

The final objective with T3.1 to identify key success factors for incentive-scheme based business model implementation. Using the investigations performed in T3.1 the report ends with four challenges that acts as barriers for developing incentive-based solutions that aim to reduce CFV usage:

- Challenge 1: How create customer relationships between a city or road authority and CFV users when no accessible relationships are in place that can be used as base to add new value on?
- Challenge 2: Offering value so that travellers will choose other travel options than the car. Where is the value for the CFV user to shift modality? Why would they chance on a

perceived second best travel option? How do the incentives provided solve the life puzzle in a way so that the CDV is needed less?

- Challenge 3: How is a large user base generated without continuous expensive marketing campaigns using for example social networking?
- Challenge 4: How can societal benefits be monetized in order to build and operate the system if there are no clear and direct monetary benefits for operators such as road authorities or cities?

Ten key success factors concludes the report providing support in the design and implementation of incentive-scheme based business models within EMPOWER promoting reduction of CFV use:

1. Incentive-scheme business models require a **strategic marketing approach** to attract both users and incentive providers to the scheme, utilizing not only traditional expensive marketing campaigns but also mindfully designed social media utilization to create impact.
2. An Incentive-scheme business model is **not a static entity**. It should be viewed as an evolutionary process that involves continually changes in the business model setup and also the organizational design.
3. Incentive-scheme business models should **evolve in terms of the value proposition**. The model should not be over-engineered to suit only one ideal situation, rather should the design meet conditions connected to different phases: e.g. a value proposition when the service is introduced, a value proposition to build user base and user engagement and a value proposition when extensive user base is reached.
4. An incentive-scheme **business model should be developed intertwined with the technical solution**; i.e. the design of the technical system and the incentives that operationalize the value propositions in the model
5. An incentive-scheme business model should be **designed for a multi-sided market** that goes beyond the dyadic relationship between one buyer and one seller, and might require the design of new relationships between customers and suppliers or the utilization of proxy organisations that provide such relationships to the market.
6. An incentive-scheme business model should be a **win+win+win enabler** providing value to several different stakeholders and customers (service operator, incentive partners, travellers). The value that the EMPOWER services provide for stakeholders lies in the new value that is created through the provision of positive incentives that in turn should be connected to smart travel choices. The perspective of different stakeholders should be included when the business model is designed.
7. Incentive-scheme business models promoting the reduction of CFV use **rely in early stages on operator funding**, but alternative and complementing **commercial revenue streams can be created and should be identified** for a situation when the system reaches a large user base.
8. An incentive-scheme business model should be developed based on **available techniques and best practice**. EMPOWER will use state-of-art modelling techniques and existing business model archetypes to speed-up the development process and enable easy communication of results.
9. An incentive-scheme business model should provide a **comprehensive and attractive model** for the business setup. When multiple stakeholders are involved, a common vocabulary regarding the EMPOWER tool/service should be established in the beginning and all the perspectives on “value” should be taken into account.
10. Incentive-based business models should be **designed mindfully in respect to sustainability**. E.g. in the choice of partners, combining distribution channels, consider re-use or cradle-to-cradle in the value proposition, etc.

Document Information

Main editor

Name	Anders Hjalmarsson
Partner	VIKTORIA
Address	Viktoria Swedish ICT, Lindholmospiren 3A, SE - 417 56 Göteborg Sweden
Phone	+46 70 7567870
Email	Anders.hjalmarsson@viktoria.se

Authors

Name	Partner	Email
Marcel Meeuwissen	ENSCHUDE	m.meeuwissen@enschede.nl
Marcel Bijlsma	MOBIDOT	marcel.bijlsma@mobidot.nl
Alexander Köppen	POCKETWEB	alexander@pocketweb.de
Magnus Kuschel	POCKETWEB	magnus@pocketweb.de
Caroline van der Weerd	TNO	caroline.vanderweerd@tno.nl
Benjamin Groenewolt	TWENTE	benjamin@keypoint.eu
Anders Hjalmarsson	VIKTORIA	anders.hjalmarsson@viktoria.se
Dirk van Amelsfort	VIKTORIA	dirk.van.amelsfort@viktoria.se

Deliverable

Work Package	3
WP Name	Business models and organisational embedding
Deliverable	D3.1
Name	International review of business models and best practice

History

Version	Date	Changes
V0.1	2015-05-20	Table of content created and plan for Task 3.1 designed
V0.3	2015-06-04	Chapter 1 and 2 created
V0.5	2015-06-10	Chapter 3 created
V0.7	2015-07-15	Chapter 1, 2 and 3 revised, chapter 4 and 5 completed
V.9	2015-07-20	Summary completed and draft report distributed for internal review
V1	2015-07-31	Report finalized and submitted to EC

Distribution

Date	Recipients	Action
2015-07-20	EMPOWER internal reviewers	Draft for comment
2015-07-27	EMPOWER partners	Draft for comment
2015-07-31	EC	Submission of finalized report

Short abstract

Through a literature and case study review ten key success factors to support the design and implementation of incentive-scheme based business models within EMPOWER promoting reduction of CFV use were identified, which will provide input to both other tasks within WP 3 as well as tasks in other Work Packages.

Relation to other WPs

Relation to other WPs (also consider section 1.1)	
WP 1	The (review) work in WP 1 is relevant to WP 3 as the value proposition and incentives are partly defined there. T3.1 is relevant to WP 1 as it provides inputs from several cases where incentives have been or are being used to influence behaviour.
WP 2	No strong links with WP 2 although the social networks as a tool for user uptake which is used in some of the cases described in T3.1 may be relevant for WP 2.
WP 4	The business models consists of different parts, like value propositions and communication channels to users, which are all relevant for the work in WP 4. T3.1 provides insights to WP 4 on important components of successful business models.
WP 5	This deliverable will develop key success factors for implementing business models in urban environments. WP5 will use these success factors in the design of the Living Lab (LL) operations and further on in the scheme design within WP5.
WP 6	This deliverable will identify indicators for evaluating business models in urban environments. WP6 will use these indicators in the design of the evaluation protocol for evaluating the business impact in the lead cities.
WP 7	No strong direct links of T 3.1 with WP 7

Challenges and Risks	
1	Deliverable deadline shortly after project start and during holiday season.

Deviations from the proposal (positive and negative)	
1	No deviations from the proposal

Dissemination Activities - proposed or actual			
	Activity eg conference presentation, workshop, publication	Target Audience	Feedback from testing (if applicable)
1			
2			