

# EMPOWER

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**Project Officer:** Mr. Walter Mauritsch

## Business model methodology

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## Executive Summary

This deliverable is the second deliverable in Work Package 3 (WP3) and the third deliverable to be completed in the EMPOWER project. WP3 covers a variety of aspects in producing the business model component for the EMPOWER toolbox, one of the main deliverables of EMPOWER. The deliverable describes the methodology that will be used to design sound business models for EMPOWER services (T3.3 “Business model development for lead cities”) and also includes guidelines for the implementation of those models in the living labs (WP5), together with examples of criteria to assess the models impact (WP6). The objective of T3.2 “Methodology and process for business model design” has been to:

- develop the methodology and process of how to get to committed business model designs, in general and specifically for the Living Lab Cities.

This deliverable has been developed in parallel to deliverable D3.1 “International review of business models and best practice” and builds on the results generated in T3.1 “International review of business models and best practice” and consequently presented in D3.1. The review performed in T3.1 generated four overall challenges for services that significantly should stimulate CFV users within a city/region to shift to other travel options.

- How to create a customer relationship?
- Which value to offer to customers?
- How to create a large user?
- How to monetise societal benefits?

In order to cope with these challenges, T3.1 generated ten key success factors for designing and implementing incentive-scheme based business models promoting the reduction of Conventionally Fuelled Vehicles (CFV) usage. These key success factors are operationalized into six core principles used to design the Business Model Methodology, see Table ES 1. Consequently, the methodology presented is based on these six principles to ensure that the work effort targets the challenges identified for EMPOWER services and that the modelling work is managed towards the key success factors identified. The six core design principles are as follows:

- **Evolutionary development.** The foundation of the methodology is that it is designed to organize the work effort as an evolutionary process. A business model is not a static entity. It evolves over time to meet the conditions for the business at specific times during its lifecycle. The methodology will thus result tentative models for organizing the business at different stages pointing out difference e.g. in value propositions and revenue streams.
- **Collaborative process.** The methodology is designed to facilitate a collaborative process, which means 1) that business modelling is not viewed as a separate activity decoupled from e.g. technical design or incentive development, 2) that the design and assessment of artefacts is regarded as joint process involving perspectives from different organizations or stakeholders. The process that the methodology comprises provides thus methodological support to facilitate stakeholder involvement and joint activities to both design and evaluate outcomes.
- **Stakeholder involvement.** The methodology advocates multi-stakeholder involvement to avoid that the business setup is defined only from the viewpoint of the service provider. A win+win+win situation must be defined for the incentive-based business model to succeed. This requires that attractive value propositions for multiple stakeholders are identified within a specific city/region. The method contains techniques for identifying and involving stakeholders and also guidelines for facilitating diverse groups of participants in workshop settings.

- **Sustainability adapted.** EMPOWER services should generate both commercial and societal benefits. Therefore, the methodology is not only designed to identify commercial benefits for the services reducing CFV usage, but is also adapted to identify and incorporate societal values and resources. Furthermore, it addresses how to generate societal streams of benefits and how these can be monetized in order to build and operate a system where there are no clear and direct monetary benefits for a region or a city.
- **Modern structure.** The business model methodology relies on a modular design configured with models (i.e. guidelines, criteria and method support) that have been proven practical and valuable both in literature and current practice. The novelty of the methodology lies in the configuration of the used models as these are derived from different disciplines – i.e. information systems, management, transport studies and innovation theories – providing state-of-art modelling techniques, implementation guidelines and assessment criteria to speed-up the development process and enable easy communication of results.
- **Integrated marketing and communication approach.** Three of the four challenges in developing successful EMPOWER services are, according to D3.1 (see above), related to user aspects. The requirement to develop an effective marketing and communication approach using social innovation for the participating cities/regions has also influenced the design of the business model methodology.

The following table shows the mapping of the Key Success Factors to these six Core Design Principles. Key Success Factors identified in T3.1 (consider chapter 5 in D3.1 “International review of business models and best practice”)		Core Design Principle
1)	Incentive-scheme business models require a <b>strategic marketing approach</b> 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.	Integrated marketing and communication approach
2)	An Incentive-scheme business model is <b>not a static entity</b> . It should be viewed as an evolutionary process that involves continually changes in the business model setup and also the organizational design.	Evolutionary development
3)	Incentive-scheme business models should <b>evolve in terms of the value proposition</b> . 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.	Evolutionary development
4)	An incentive-scheme <b>business model should be developed intertwined with the technical solution</b> ; i.e. the design of the technical system and the incentives that operationalize the value propositions in the model	Collaborative process
5)	An incentive-scheme business model should be <b>designed for a multi-sided market</b> 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.	Stakeholder involvement
6)	An incentive-scheme business model should be a <b>win+win+win enabler</b> 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.	Stakeholder involvement
7)	Incentive-scheme business models promoting the reduction of CFV use <b>rely in early stages on operator funding</b> , but alternative and complementing <b>commercial revenue streams can be created and should be identified</b> for a situation when the system reaches a large user base.	Evolutionary development
8)	An incentive-scheme business model should be developed based on <b>available techniques and best practice</b> . 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.	Modern structure
9)	An incentive-scheme business model should provide a <b>comprehensive and attractive model</b> 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.	Stakeholder involvement
10)	Incentive-based business models should be designed <b>mindfully in respect to sustainability</b> . E.g. in the choice of partners, combining distribution channels, consider re-use or cradle-to-cradle in the value proposition, etc.	Sustainability adapted

Table ES 1: Key Success Factors, Core Principles and Methodology Impact

Figure ES 1 show the components of the business model methodology used within this deliverable.

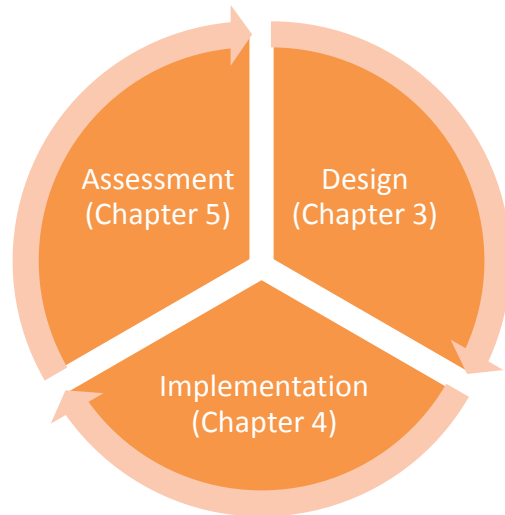


Figure ES 1: Components in the Business Model Methodology

The Design component will organize and support the upcoming modelling efforts that will be performed in T3.3 in M4-M8. This component is described in terms of activity structure, styles used to organize workshops and guide facilitator behaviour, stakeholder involvement and preferred methods and models that will be used as support at different stages during the design work. The step-by-step implementation of this component to organize T3.3 is presented sections 3.3 and 3.4, consider Figure ES 2 (or the Appendix).

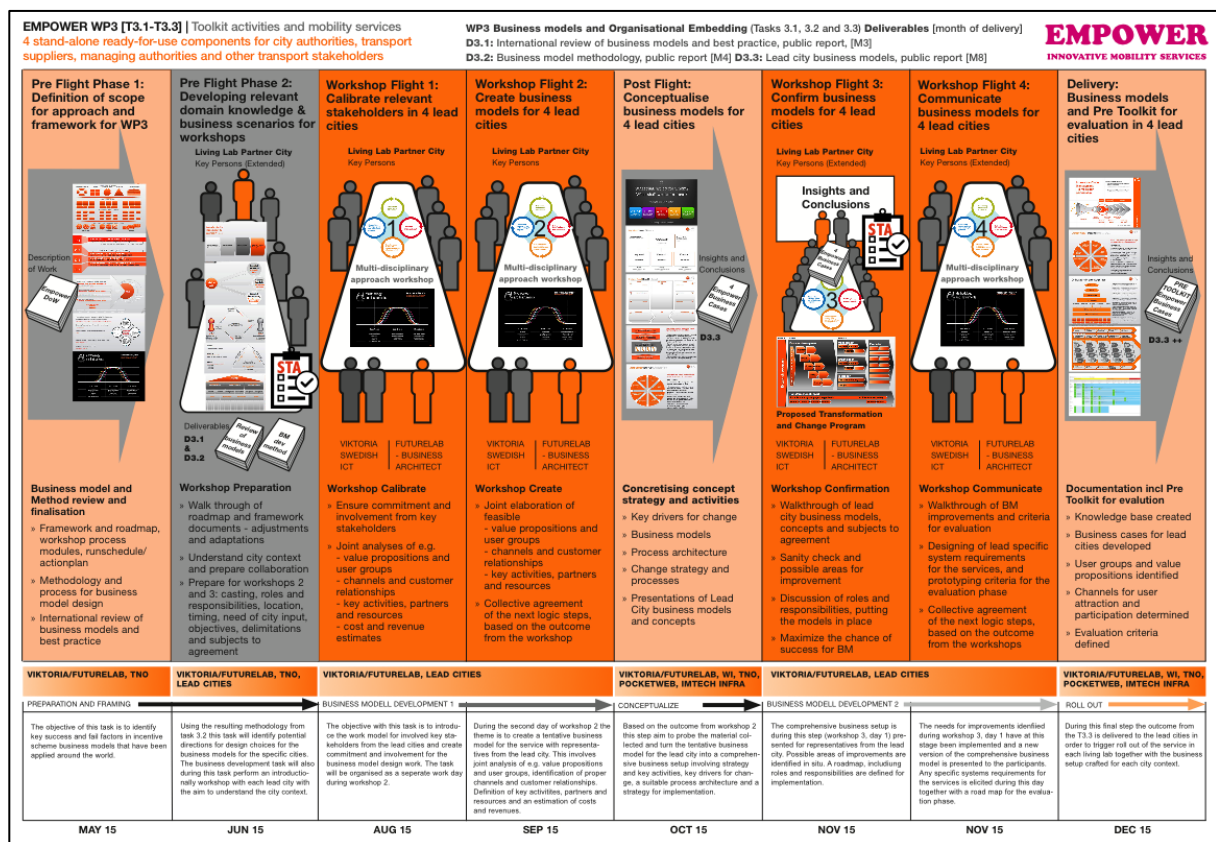


Figure ES 2: The Business Model Design Component in EMPOWER

The Implementation component will organize and support the efforts to implement and test the business models during the Living Lab Trials that will begin in 2016 within T5.2 “Living Lab Experiments”. As it will be an integrated component of the Living Lab operation plans developed in T5.1 “Operational Preparation”, it is only partly complete. This component is presented in terms of an overall approach. It provides guidance how the content of the business model designs (to be presented in D3.3) should be used to define the living lab implementation design (see Table ES 2). It also provides an account of how reviewed models and methods in D3.1 can support the implementation work that will be organized in T5.1 “Operational Preparation” and implemented in T5.2 “Living Lab Experiments”.

Outcome from Task 3.3 as will be described in D3.3		Input in Task 5.1
Pillar	Business model component	Impact on Living Lab Operational Preparation
Product	Value Proposition	The value propositions stated in the business plan will support the living lab coordinators with shaping offers to users as well as stakeholders to attract them for participating in the living lab. Examples of stakeholders are incentive providers who must be attracted by the value that the EMPOWER service provides.
Customer Interface	Customer Segments	For each living lab, the business model will state primary and non-primary customers / users. This information will be imperative for the coordinators of the living labs as they are responsible for the recruitment of relevant participants to the lab. There must be a good fit between the intended users described in the business models and the actual participants that are recruited to the labs.
	Customer Relationships	One of the challenges identified in T3.1/D3.1 is related to creating customer relationships between a city or road authority and CFV users when no accessible relationships are in place that can be used as basis to add new value to. The business model design has addressed this challenge for each living lab. This means that the living lab coordinator can use these findings as a base to establish a good relationship between the city and user groups, for example by using proxy organisations.
	Channels	The business models will provide direction for possible channels for marketing the EMPOWER service to users and stakeholders, incentive provisions, etc. This can be used by the living lab coordinator to set up the living lab and to organize the experiments.
Infrastructure Management	Key Resources	The business model will state key resources for launching, operating and maintaining the service. Some resources will be in place which the living lab coordinator can utilize, others have yet to be acquired, which the coordinator must ensure if they are needed to operate the living lab.
	Key Activities	The business model will state key activities for launching, operating and maintaining the service. Some activities will be in place which the living lab coordinator can utilize, others have yet to be realized, which the coordinator must ensure if they are needed to operate the living lab.
	Key Partnerships	The business model will state key partnerships for launching, operating and maintaining the service. Some partnerships will be in place which the living lab coordinator can utilize, others have yet to be organized, which the coordinator must ensure if they are needed to operate the living lab.
Financial aspects	Revenue Streams	The business model design will provide insights into expected revenue streams for different stages in the EMPOWER service lifecycle. The living lab coordinator can use this to plan the operation of the lab and also define criteria to assess if these revenue assumptions are realistic based on the results from the trials. These findings will enable the project to determine if the services put to trial in EMPOWER are economically feasible.
	Cost Structure	The business model will provide insights into what the service will cost at different stages such as launching, building user base, retaining users in the scheme, operational costs etc.

Table ES 2: Linking the Business Model Designs to the Living Lab Implementation Designs

The Assessment component will be used to evaluate the interventions performed in Living Labs. As it will be an integrated component of the Living Lab operation plans developed in T5.1 “Operational Preparation”, it is only partly completed.

The presentation of the methodology is concluded with chapter 6 displaying the results of a self-assessment of strengths, weaknesses, opportunities (value) and threats (challenges) related to the methodology as well as the implementation of the methodology in EMPOWER (see ES Table 3). The assessment highlights important issues that will be monitored in the use the methodology to ensure that it enables the project to productively generate, test and evaluate sound business models for the services in EMPOWER.

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• The methodology stimulates <i>evolutionary design</i> of sound business models for EMPOWER services that aim to reduce CFV usage</li> <li>• The methodology is based on a <i>collaborative approach</i> that acknowledges the value of bringing external participants to the design process and facilitates that the outcome of the process is transferred to later activities within the project.</li> <li>• The methodology stimulates <i>involvement of stakeholders</i> through its workshop structure. This is imperative as the investigation performed in T3.1 states that a win+win+win situation must be defined and establish in order for EMPOWER services to succeed.</li> <li>• The methodology develops business models that are <i>sustainability adapted</i>. That means, for example, that the identification of monetized revenue streams is complemented by the identification of societal benefits.</li> <li>• The novelty in the methodology relies in its configurations of <i>modern structures</i> (methods and models) that are pulled from different fields, such as innovation management, transport studies, information systems and management.</li> <li>• The methodology includes an <i>integrated marketing and communication approach</i>, which means that the business models that will be defined not only will describe the internal structure of the businesses that should operate the EMPOWER services, but also how the value with these services should be communicated to intended users through traditional marketing campaigns and also the use of social media and networking.</li> </ul>	<ul style="list-style-type: none"> <li>• The methodology, especially the implementation and assessment component, are dependent on structures that will be developed in later stages of the project in order to be finalized.</li> <li>• The methodology needs active stakeholder involvement in order to work effectively.</li> <li>• The methodology will be used to develop business models with several instances that describe the evolution of the business operating the service. The weakness with evolutionary design is that it is more complex to communicate than a static general model.</li> <li>• One tentative risk is that the methodology is so heavily connected to the key success factors and the challenges identified in T3.1. During the continuation of the project other success factors or challenges may surface which require other components in the methodology.</li> </ul>
Opportunities (values)	Threats (challenges)
<ul style="list-style-type: none"> <li>• The methodology is a <i>comprehensive tool</i> that is easy to use and communicate which will enable the creation of sound models that in turn can create committed cities to implement the services</li> <li>• Through the grounding of the methodology in best practice it is a <i>proven technique</i> that will foster an efficient and productive process that in turn will facilitate that the EMPOWER toolkit will comprehensive.</li> <li>• The methodology is <i>anchored in the challenges</i> identified in T3.1 for EMPOWER services operated by city authorities or road agencies, which means that it will address those and similar challenges during design work.</li> <li>• The methodology will <i>initiate rapid progress</i> in EMPOWER and WP3, and ensure that the early work performed in this work package will ignite and facilitate the effort in parallel work packages in the project.</li> </ul>	<ul style="list-style-type: none"> <li>• No mobilization of required stakeholder involvement</li> <li>• The evolutionary approach to develop business models results in complex models which are too hard to implement.</li> <li>• The outcome from the utilization of the method has no or limited impact on other tasks (development, incentive design, trials).</li> <li>• Input from parallel tasks needed to develop, implement, and assess the business models does not reach the team when the method is used in spite of good efforts.</li> <li>• If the methodology is followed too strictly and not adapted due to changes in the conditions (key factors, challenges), then this creates the threat that the team does not pick up the changes in the conditions and develop business setups that does not become sound for the city / region.</li> </ul>

Table ES 3: Business Model Methodology SWOT

# 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
Magnus Kuschel	POCKETWEB	magnus@pocketweb.de
Caroline van der Weerd	TNO	caroline.vanderweerd@tno.nl
Anders Hjalmarsson	VIKTORIA	anders.hjalmarsson@viktoria.se
Dirk van Amelsfort	VIKTORIA	dirk.van.amelsfort@viktoria.se
Christian Alçenius	FUTURELAB (sub-contractor)	ca@futurelab.se

## Deliverable

Work Package	3
WP Name	Business models and organisational embedding
Deliverable	D3.2
Name	Business model methodology

## History

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V0.3	2015-05-30	Chapter 2 developed based on early findings in T3.1
V0.5	2015-06-12	First version of Chapter 3 created, revision of Chapter 2
V0.7	2015-07-20	Second version of Chapter 3 created, Chapter 2 completed Chapter 4 and 5 developed
V0.8	2015-08-10	Chapter 3, 4 and 5 finalized, SWOT performed and Chapter 3 developed
V0.9	2015-08-17	Summary completed and draft report distributed for internal review
V1	2015-08-31	Report finalized and submitted to EC

## Distribution

Date	Recipients	Action
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2015-08-27	EMPOWER partners	Draft for comment
2015-08-31	EC	Submission of finalized report

## Short abstract

Based on EMPOWER Deliverable 3.1 and the use of complimenting resources, a Business Model Methodology is outlined in this deliverable in order to support and organize the work effort that should be performed to develop sound business models for the services that should be tested in four Living Lab Cities participating in the project. This deliverable includes an account how the methodology has driven the organization of the modelling work that will be performed at a later stage in the project and consequently provide input to both other tasks within WP3 as wells as tasks in other Work Packages.

## Relation to other WPs

Relation to other WPs (also consider section 1.1)	
WP 1	No strong direct links of T3.2 with WP1
WP 2	No strong direct links of T3.2 with WP2
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. T3.2 provides insights to WP 4 on important components of successful business models.
WP 5	D3.2 transform the key success factors derived in D3.1 in to guide lines for implementing business models in urban environments. WP5 will use these guidelines in the design of the Living Lab (LL) operations (T 5.1, T5.2) and further on in the scheme design within WP5.
WP 6	D3.2 include a number of assessment criteria that act as basis for designing appropriate components in the evaluation method developed in T6.3 in WP6 and used in the assessment performed in T6.4.
WP 7	The guidelines for designing and implementing business models in urban environments will act as input for the roll out of results in take-up cities (T7.4).

Challenges and Risks	
1	Deliverable deadline shortly after project start and during holiday season. ‘
2	The implementation and assessment components of the Methodology are integrated parts in deliverables produced in WP5 and WP6. These deliverables have not been developed when T3.2 was performed. The finalisation of component 2 and 3 will be performed within T5.1 and T6.3. D3.2 provides early input to these future tasks.

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			
3			



## Table of content

Table of content .....	9
Figures .....	9
Tables .....	10
1 Introduction .....	11
1.1 Goals and Contribution to other Tasks and Deliverables in EMPOWER.....	11
1.2 Main Results and Innovations.....	11
1.3 Approach Applied in Task 3.2 .....	12
1.4 Document Structure .....	14
2 Core principles for the Business Model Methodology.....	15
3 Method Component 1: Business Model Design.....	17
3.1 Introduction: Purpose and Scope .....	17
3.2 Approach and Workflow.....	17
3.2.1 Six Key Activities .....	17
3.2.2 Workshop and Facilitation Styles .....	19
3.2.3 Stakeholder involvement.....	20
3.2.4 Preferred Methods and Model Support.....	20
3.3 Implementation of the Design Component in EMPOWER .....	22
3.3.1 Preparing Business Model Design in EMPOWER [M1-M2] .....	22
3.3.2 Calibrating Participants in Business Model Design [M4-M5] .....	22
3.3.3 Creating Building-blocks for Business Model Design [M4-M5] .....	23
3.3.4 Constructing Comprehensive Business Models [M5-M6] .....	23
3.3.5 Corroborating Business Models with Participants and Stakeholders [M7].....	24
3.3.6 Communicating Validated Business Models [M7-M8] .....	24
3.4 Overview of Method Component 1 in EMPOWER .....	25
4 Method Component 2: Business Model Implementation .....	26
4.1 Introduction: Purpose and Scope .....	26
4.2 Approach.....	26
4.3 From Business Model Design to Living Lab Operational Preparation.....	26
4.4 Reviewed Models and Method Support.....	27
5 Method Component 3: Business Model Assessment .....	29
5.1 Introduction: Purpose and Scope .....	29
5.2 Approach.....	29
5.3 Examples of Assessment Areas and Criteria.....	29
5.4 Reviewed Models and Method Support.....	30
6 Methodology Assessment: Strengths, Weaknesses, Opportunities and Threats .....	32
References.....	34
Appendix.....	36

## Figures

Figure ES 1: Components in the Business Model Methodology .....	4
Figure ES 2: The Business Model Design Component in EMPOWER.....	4
Figure 1.1: Components in the Business Model Methodology .....	13
Figure 1.2: Approach Applied in T3.2 .....	14
Figure 1.3: Time Planning of T3.2.....	14
Figure 3.1: The Preparation Activity as Implemented in EMPOWER .....	22
Figure 3.2: The Calibration Activity in EMPOWER.....	22
Figure 3.3: The Creation Activity as Implemented in EMPOWER .....	23
Figure 3.4: The Construction Activity as Implemented in EMPOWER .....	23
Figure 3.5: The Corroboration Activity as Implemented in EMPOWER .....	24

Figure 3.6: The Communication Activity as Implemented in EMPOWER..... 24

Figure 3.7: The Business Model Design Component in T3.3 EMPOWER ..... 25

Figure 3.8: The Influence of the Business Model Methodology in EMPOWER..... 25

Figure 5.1 Examples of Areas of Assessment and Criteria for Assessing Business Models..... 30

**Tables**

Table ES 1: Key Success Factors, Core Principles and Methodology Impact..... 3

Table ES 2: Linking the Business Model Designs to the Living Lab Implementation Designs ..... 5

Table ES 3: Business Model Methodology SWOT..... 6

Table 1.1: Contributions of this Deliverable to EMPOWER Innovation Outputs ..... 12

Table 2.1: Key Success Factors, Core Principles and Methodology Impact ..... 16

Table 3.1: Preferred Method and Model Support in Method Component 1..... 21

Table 4.1: Linking the Business Models to the Living Lab Implementation Designs ..... 27

Table 4.2: Method and Model Support in Method Component 2 ..... 28

Table 5.2: Method and Model Support in Method Component 3 ..... 31

Table 6.1: Strengths, Weaknesses, Opportunities and Threats with the Methodology ..... 33

# 1 Introduction

This deliverable is the second deliverable in Work Package 3 (WP3) of the EMPOWER Project. The Work Package covers a variety of aspects in producing the business model component for the EMPOWER toolbox, i.e. the main deliverable of EMPOWER. In its core, WP3 involves the analysis of the four within EMPOWER developed services from a business model perspective (T3.3). Task 3.1 “International review of business models and best practice” and T3.2 “Methodology and process for business model design” provide important conditions to develop the lead city business models in T3.3 “Business model development for lead cities”. Using the experiences from T3.1-T3.3 as baseline along which the outcomes from the living lab operations (WP5) and the evaluation work can be performed (WP6), Task 3.4 “Generic business case and toolkit development” in turn will produce generic business cases and templates to be included in the EMPOWER toolbox. This first chapter in D3.2 introduces the deliverable and discusses its goals, main results and innovations, as well as the approach applied and concludes with a brief overview of the document structure.

## 1.1 Goals and Contribution to other Tasks and Deliverables in EMPOWER

The goal of Task 3.2 is to:

- develop the methodology and process of how to get to sound business model designs, in general and specifically for the Living Lab Cities.

It builds on and is strongly linked to the results developed in T3.1, and creates together with D3.1, a shared common starting point for T3.3 as well as input for the design of the EMPOWER toolbox with regards to business model development performed in T3.4. The results presented in this deliverable are consequently related to the following other parts of the project:

- T3.3 (Business model development for lead cities) – The methodology presented in D3.2 will together with findings D3.1 act as preparation for the collaborative business modelling process performed in T3.3.
- T3.4 (Generic business case and toolkit development) – In this deliverable not only the methodology for designing business cases is presented. The deliverable includes insights into business model implementation and assessment, which will be used in T3.4 to transform the results from the living lab trials into generic business cases for take up cities.
- WP 4 (Mobility Services Infrastructure) – This deliverable will through the work performed contribute to the development of EMPOWER services and specifically components that will improve the business success of future implementations
- WP5 (Experimentation and show casing) – This deliverable will transform the key success factors derived in D3.1 in to guide lines for implementing business models in urban environments. WP5 will use these guidelines in the design of the Living Lab (LL) operations (T 5.1, T5.2) and further on in the scheme design within WP5.
- WP6 (Whole-societal assessment of EMPOWER interventions) – D3.2 include a number of assessment criteria that act as basis for designing appropriate components in the evaluation method developed in T6.3 in WP6 and used in the assessment performed in T6.4.
- Task 7.4 (Roll out in take-up cities) – The guidelines for designing and implementing business models in urban environments will act as input for the roll out of results in take-up cities.

## 1.2 Main Results and Innovations

The main result in this deliverable is a methodology and process that primarily, but not exclusively, will govern the work in T3.3 to generate committed business model designs for the Living Lab Cities

participating in EMPOWER. It will be based on the review of state-of-the-art in the field of business modelling with the purpose to ground the working model to be used in EMPOWER on sound theories. Besides presenting a business model design methodology, it will also provide guidelines for business model implementation, to support the process for testing the business model designs for the EMPOWER services within the Living Labs. It also includes a set of criteria to assess the implementation of the business model designs in the Living Lab Cities. Together with D3.1, this deliverable prepares other tasks in the project to develop, implement and assess business models for the envisioned EMPOWER services. In Table 1.1 we connect this deliverable with the stated EMPOWER innovation outputs and discuss how this deliverable directly and/or indirectly will contribute to the fulfilment of these five overall outputs.

EMPOWER innovation output	Contribution of this deliverable
New EMPOWER mobility services to provide innovative positive policy measures	The deliverable will provide early input in the design of a comprehensive framework of measures to evaluate the impact of EMPOWER services.
The EMPOWER toolkit that aims to support different stakeholders to choose and implement positive policy interventions in urban areas	The deliverable presents guidelines and criteria to develop, implement and assess business models for EMPOWER services. This collective set of tools will be used to develop the generic business model component within the EMPOWER toolkit.
Evidence of the impact of new positive incentives on behaviours	N/A
New and improved organisational models for successful implementation of positive policy measures	The deliverable presents guidelines and criteria to develop, implement and assess business models for EMPOWER services. This collective set of tools will be used to develop the generic business model component within the EMPOWER toolkit.
Innovation in the evaluation method for new mobility services	The deliverable includes sets of criteria that can directly impact the development of indicators for assessing the effects of business model implementation in relation to EMPOWER services

Table 1.1: Contributions of this Deliverable to EMPOWER Innovation Outputs

### 1.3 Approach Applied in Task 3.2

The main objective of T3.2 is to provide a methodology, for managing the effort of developing committed business models within EMPOWER. In order to organize the work, a structured approach was used, which was interlinked to the work performed in T3.1 (definition of key concepts, review of trends and literature in relation to business models). However, to complement D3.1 as primary resource for developing the methodology, other resources were utilized. For example, resources on how to structure and facilitate business modelling workshops and resources on how the methodology design should be assessed in terms of strengths and weaknesses. The deliverable consists of three major parts, linked to the three components of the business model methodology, see figure 1.1.

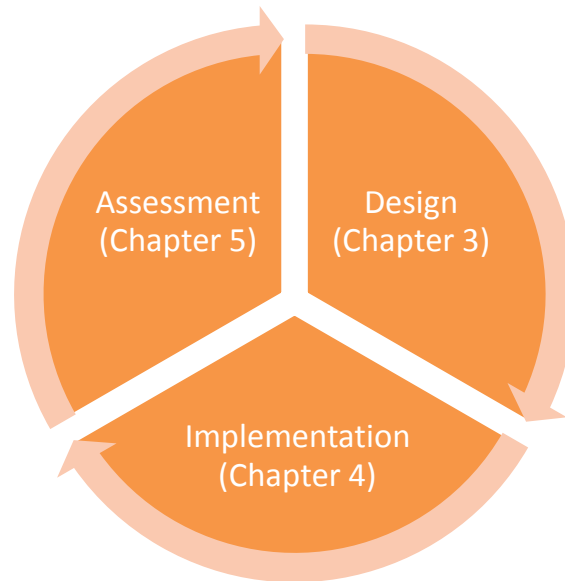


Figure 1.1: Components in the Business Model Methodology

Figure 1.2 illustrates the approach in T3.2 to develop the deliverable. The first component is a structured workflow of how to perform **business model design** in relation to digital services that aim to reduce the utilization of conventional fuelled vehicles (CFVs). The methodology is derived from the key concepts presented in D3.1 as well as advice presented in literature sources reviewed in this deliverable. In the development of a professional methodology, experiences from FutureLab (sub-contractor in the project assigned to provide professional support in WP3 tasks), have served as a source of inspiration for improving the first component of the method. In addition, contemporary findings from re-search performed on workshop facilitation have been applied in order to design and organize the collaborative work approach presented in this first method component.

The second component, **business model implementation**, includes guidelines on a high level for the implementation of the results from the business model design in an organizational setting. The design of this component relies mainly on the findings presented in D3.1 chapter 2 regarding business model evolution and the strategies for business model implementation identified in chapter 3 in D3.1. Also experiences from previous professional projects have been used in the work process to develop of this component.

The third component, **business model assessment**, resulted in a set of criteria that will be used in evaluating the implementation of the designed business models in the four Living Lab cities/regions. These criteria are derived from criteria identified in the literature review performed in T3.1 and are also based on the experiences resulting from reviewing the six state-of-art solutions presented in chapter 4 in D3.1.

The work in T3.2 is finished with a self-assessment of the business model methodology in terms of strengths and weaknesses. This assessment is performed using the SWOT technique as guideline for determining Strengths, Weaknesses, Opportunities and Threats of the proposed methodology. The results from the self-assessment are used as a base to discuss the value but also the limitations with the methodology presented in chapter 3 to 5.

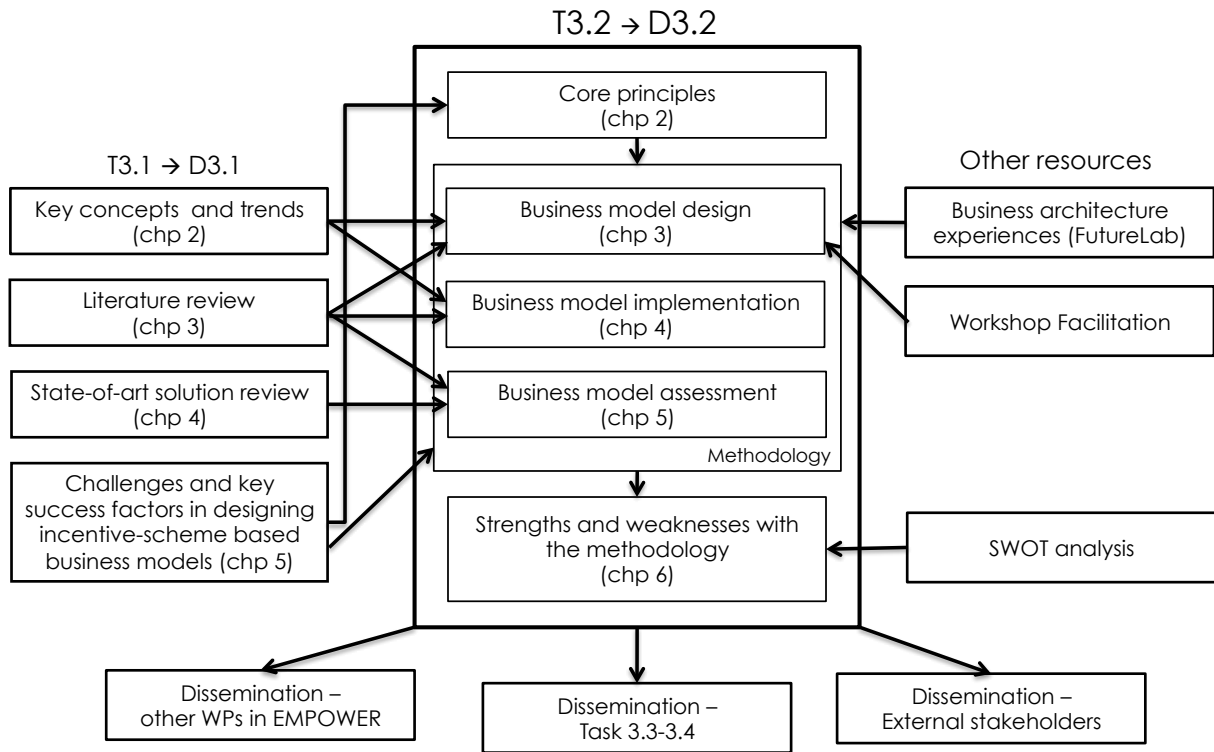


Figure 1.2: Approach Applied in T3.2

T3.2 was performed in M1-M4 of the project, in parallel to T3.1 and in the initiation of T3.3. After the EMPOWER kick-off meeting in May in Leeds, a systematic process was defined for M1-M4 to perform activities in T3.2. The detailed work structure for the task is presented in Figure 1.3.

EMPOWER Detailed Work Structure of T3.2	M1-M4													
	M1		M2				M3				M4			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Lead partner: Viktoria Involved partners: TNO, PocketWeb														
Meetings to coordinate WP3														
Planning of T3.2														
Onsite work sessions in T3.2 with representatives from lead cities														
Definitions of core principles														
Development of method and process for business model design														
Development of guidelines for business model implementation														
Development of criteria for business model assessment														
Assessment of strengths and weaknesses in the model														
Finalization of D3.2														
Internal review														
Submission of D3.2 to EC														

Figure 1.3: Time Planning of T3.2

## 1.4 Document Structure

The deliverable starts with the presentation of the core principles underlying the methodology (chapter 2). These core principles are derived from the challenges and key success factors in designing incentive-scheme based business models presented in chapter 5 in D3.1. The core principles are followed by the description of the first component in the methodology: guidelines and the process for business model design (chapter 3). The second component in the methodology is presented chapter 4 in terms of guidelines for implementing results from the business model design. In chapter 5 a set of criteria is presented for assessing business models in relation to EMPOWER services. The report is concluded with chapter 6, where a self-assessment of values and limitations in the methodology is presented.

## 2 Core principles for the Business Model Methodology

The review presented in D3.1 generated four overall challenges for services that significantly should stimulate CFV users within a city/region to shift to other travel options. The challenges are connected to the technical system, incentive provision and business model design for solutions of this type:

- 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 CFV is needed less?
- Challenge 3: How is a large user base generated, using for example social networking, without continuous expensive marketing campaigns?
- 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?

In order to cope with such challenges T3.1 generated ten key success factors for designing and implementing incentive-scheme based business models promoting the reduction of CFV use. In T3.2 these key success factors have been operationalized into six core principles for the Business Model Methodology. The motive for the transformation is to ensure that EMPOWER follows a methodology in WP3 that is based on the key success factors identified in literature and contemporary best practice. The key success factors and the six core principles are displayed in table 2.1, which thereby display the link between success factors and the principles used to define the method presented in chapter 3-5.

The following table shows the mapping of the Key Success Factors to these six Core Design Principles. Key Success Factors identified in T3.1 (consider chapter 5 in D3.1)	Core Design Principle
1) Incentive-scheme business models require a <b>strategic marketing approach</b> 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.	Integrated marketing and communication approach
2) An Incentive-scheme business model is <b>not a static entity</b> . It should be viewed as an evolutionary process that involves continually changes in the business model setup and also the organizational design.	Evolutionary development
3) Incentive-scheme business models should <b>evolve in terms of the value proposition</b> . 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.	Evolutionary development
4) An incentive-scheme <b>business model should be developed intertwined with the technical solution</b> ; i.e. the design of the technical system and the incentives that operationalize the value propositions in the model	Collaborative process
5) An incentive-scheme business model should be <b>designed for a multi-sided market</b> 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.	Stakeholder involvement
6) An incentive-scheme business model should be a <b>win+win+win enabler</b> 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.	Stakeholder involvement
7) Incentive-scheme business models promoting the reduction of CFV use <b>rely in early stages on operator funding</b> , but alternative and complementing <b>commercial revenue streams can be created and should be identified</b> for a situation when the system reaches a large user base.	Evolutionary development
8) An incentive-scheme business model should be developed based on <b>available techniques and best practice</b> . 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.	Modern structure
9) An incentive-scheme business model should provide a <b>comprehensive and attractive model</b> 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.	Stakeholder involvement

10) Incentive-based business models should be designed <b>mindfully in respect to sustainability</b> . E.g. in the choice of partners, combining distribution channels, consider re-use or cradle-to-cradle in the value proposition, etc.	Sustainability adapted
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Table 2.1: Key Success Factors, Core Principles and Methodology Impact

The methodology for business model design, implementation and assessment is consequently based on six underlying principles to ensure that the work effort addresses the challenges identified and is managed towards the key success factors identified. These principles are:

- **Evolutionary development.** The foundation of the methodology is that it is designed to organize the work effort as an evolutionary process. A business model is not a static entity. It evolves over time to meet the conditions for the business at specific times during its lifecycle. The methodology will thus result tentative models for organizing the business at different stages pointing out difference e.g. in value propositions and revenue streams.
- **Collaborative process.** The methodology is designed to facilitate a collaborative process, which means 1) that business modelling is not viewed as a separate activity decoupled from e.g. technical design or incentive development, 2) that the design and assessment of artefacts is regarded as joint process involving perspectives from different organizations or stakeholders. The process that the methodology comprises provides thus methodological support to facilitate stakeholder involvement and joint activities to both design and evaluate outcomes.
- **Stakeholder involvement.** The methodology advocates multi-stakeholder involvement to avoid that the business setup is defined only from the viewpoint of the service provider. A win+win+win situation must be defined for the incentive-based business model to succeed. This requires that attractive value propositions for multiple stakeholders are identified within a specific city/region. The method contains techniques for identifying and involving stakeholders and also guidelines for facilitating diverse groups of participants in workshop settings.
- **Sustainability adapted.** EMPOWER services should generate both commercial and societal benefits. Therefore, the methodology is not only designed to identify commercial benefits for the services reducing CFV usage, but is also adapted to identify and incorporate societal values and resources. Furthermore, it addresses how to generate societal streams of benefits and how these can be monetized in order to build and operate a system where there are no clear and direct monetary benefits for a region or a city.
- **Modern structure.** The business model methodology relies on a modular design configured with models (i.e. guidelines, criteria and method support) that have been proven practical and valuable both in literature and current practice. The novelty of the methodology lies in the configuration of the used models as these are derived from different disciplines – i.e. information systems, management, transport studies and innovation theories – providing state-of-art modelling techniques, implementation guidelines and assessment criteria to speed-up the development process and enable easy communication of results.
- **Integrated marketing and communication approach.** Three of the four challenges in developing successful EMPOWER services are, according to D3.1 (see above), related to user aspects. The requirement to develop an effective marketing and communication approach using social innovation for the participating cities/regions has also influenced the design of the business model methodology.

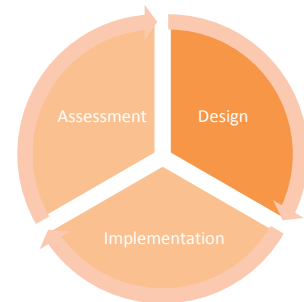


## 3 Method Component 1: Business Model Design

### 3.1 Introduction: Purpose and Scope

The Business Model Methodology described in this deliverable consists of three components: Business Model Design, Business Model Implementation and Business Model Assessment. The two latter components will be described in chapter 4 and 5. In this chapter the focus is directed towards the Business Model Design component. The purpose of this first component is to organize the design of appropriate business models for EMPOWER services that aim to reduce the usage of CFV by providing positive incentives to stimulate travellers to shift to other modes of transportation. The scope of the method component is to develop a business setup for the service that fits the conditions in the specific city or region wherein the service will become operational.

In EMPOWER this component is used to organize the work performed in T3.3 (during M4-M8) with the purpose to develop sound business models for the EMPOWER services that are tested in the four Living Lab Cities / Regions participating in the project. The implementation of the component in EMPOWER is described in section 3.3 and 3.4 in this chapter.



The business setup for the city / region will, as an outcome of using this component, be described in models that cover:

- 1) the market in which the service will be operated (including stakeholders, partners and competitors);
- 2) the business logic for the service (e.g. value proposition, revenue streams);
- 3) appropriate organizational processes for running the service as a viable business (e.g. organisational structure);
- 4) an integrated marketing and communication strategy (e.g. how to use social media to build a critical user base).

Following the principle *evolutionary development*, the outcome from using the method component will be several instances of the business model that illustrate how the operation of the service as a business is expected to evolve over a defined time frame.

### 3.2 Approach and Workflow

Following the *Collaborative process* principle, the business model design component is constructed with active stakeholder participation as an imperative aspect. The component is thus divided into key activities through which stakeholders are engaged in the process, instructed in the methodology, facilitated to provide building-blocks needed for the business model construction, engaged to corroborate the final outcome and involved in the transferring of the outcome to the business model implementation phase (see chapter 4).

#### 3.2.1 Six Key Activities

The six key activities that constitute the process in the business model design component are thus: Preparation, Calibration, Creation, Construction, Corroboration, Communication.

### Preparation

The first activity, *prepare*, is meant to setup and prepare the collaborative design process. The design starts with defining an appropriate objective for the modelling task based on domain knowledge about the conditions in the region / city. Next, selecting and adapting the tools that should be used in later stages in the process, as well as identifying and engaging appropriate participants from relevant stakeholder groups in the process (such as representatives from service providers, incentive providers, city or regional government, users etc.).

### Calibration

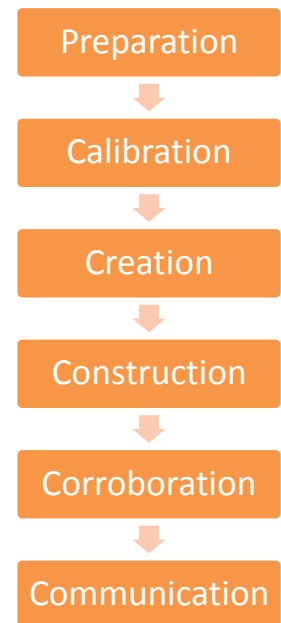
The preparation activity is followed by the *calibration* activity. The objective of this activity is to ensure that the engaged participants understand and accept the outcome from the preparation phase and that the methods that are used to develop the business setup become familiar (also for the technical system). During the calibration activity further domain knowledge may arise, which serves as a trigger for further scoping of the modelling assignment, the need for alternative models or other domain knowledge that can be utilized in order to effectively and jointly create the building blocks necessary to construct the business models. The calibration activity is performed as a workshop in close adjacency to the creation activity that follows the calibration, guided by process facilitators.

### Creation

The aim with the third activity in the business model design component, *creation*, is to, with the support of mindfully selected methods (see section 3.2.4), develop the building blocks needed to create a sound business setup for the EMPOWER service. This activity is performed collaboratively, in one or several workshops with the aim not to fully develop the business model as such, but rather address and conceptualize the basis needed in order to construct the model. This activity includes a) the definition of the market in which the service will be operated (including stakeholders, providers, partners and competitors), and b) the business logic for the service (e.g. value proposition, users/customers, channels, revenue streams, societal benefits, customer relationship, key activities, resources, partners as well as cost structure). Following the core principle *Integrated marketing and communication approach* this activity also will address how to a) create relationships with CFV users b) offer value to these users stimulating them to change behaviour c) create a significant user based without solely relying on traditional marketing techniques. In addition, it will not only identify commercially based revenue streams for the service, but instead also target the identification of societal values that the service brings to the society in the city / region wherein the service will be operated, following the principle *sustainability adapted*.

### Construction

The jointly performed third activity will generate the basis to construct a sound business model for the EMPOWER service at hand. This conceptualization will consequently be performed by the facilitators of the process in the fourth activity. Following the *evolutionary development* principle, the construction phase aims to not only develop one instance of the business model; instead the aim is to develop one instance that covers the introduction of the service on the market to bring users on-board to the scheme and furthermore one or several instances of the business setup explaining the business logic for the service when the operation leaves the launch stage and moves into a more regular phase with the aim to retain users and create long term effects. This means that the business setup should not only include the business logic for the service but also appropriate organizational



processes for running the service as a business at different stages during its lifecycle (e.g. organizational structure), and an integrated marketing and communication strategy (e.g. how to use social media to build a critical user base). Following the principles of *modern structure* and *stakeholder involvement* the outcome of this phase will follow best practice and generate a comprehensive and attractive model that can easily be evaluated and communicated within and outside the project.

### *Corroboration*

In the *corroboration* phase the participants from the creation phase are invited to evaluate the outcomes that come forth from the business model building blocks that they jointly created. In order to broaden the perspective, additional key partners will be invited, who were identified in the business model design. Also, to involve themselves in the scheme and if relevant, additional stakeholders may be invited to the corroboration workshop. The purpose of this activity is thus twofold, 1) to create the conditions to improve the model, 2) to prepare the move from modelling to implementation.

### *Communication*

The *communication* phase is the final activity in the process that constitutes the business model design component. When this stage is reached, the business setup for the EMPOWER service that should be tested in the city / region is so mature that it represents a comprehensive approach for how the service should be organized as a business when it is launched, and how to involve incentive providers and actual users. It will be an approach that encompasses more than one instance of the business model as the business model will evolve with the lifecycle of the service. The model and the implications of the model for the service will at this stage be suitable for circulation within the organization (to affected work packages in EMPOWER), but also externally to facilitate dissemination and engagement of stakeholders not involved in the development effort. An important outcome of this phase is a roadmap for the implementation of the business model, which will act as a bridge from the design to the implementation phase.

## **3.2.2 Workshop and Facilitation Styles**

In order to ensure a collaborative effort with high level of efficiency, the Business Model Methodology uses a proven setup to organize the workshops that will be a main resource in developing the outcome. The setup is labelled “In-novation Flights” and organizes a workshop into an effective work meeting by dividing the work effort into five generic stages using the flight as metaphor: take-off, climbing, cruising, descending, and landing. The facilitators of the workshops plan each collaborative workshop using this metaphor and guide the participants through the tasks and different stages. In these stages the participants will utilize preferred methods and models as support (see section 3.2.4) and the facilitators will use different facilitation styles to manage the work effort.

Hjalmarsson et al. (2015) propose four different styles of facilitation to support collaborative modelling based on modelling skills’ maturity within the group and the purpose with the modelling effort. In early stages of the business model design (preparation / calibration) when the purpose is to collect domain knowledge and the modelling maturity within the group is anticipated to be low, the facilitators will act as “driving engineers” to build the relationship in the group as well as to elicit domain knowledge from the group. As the modelling maturity increases, the style of the facilitators will change to “catalysing artists” that allow the group to drive the work effort with less control from the facilitators than in the beginning of the workshop. In the create and construct phases the purpose is to develop to-be models (that is, models that explain a future stage of a process or business). At this stage, the facilitators will initially act again as “driving artists”. A shift to the style of “catalysing engineer” which relies more on supporting the participants with following the rules of the method rather than the driving artist style which focusses more on engaging participants in the work effort, takes place when the outcome is to be formalized in results (Hjalmarsson et al. 2015)

### 3.2.3 Stakeholder involvement

Stakeholder involvement is imperative for this component. Stakeholders from different groups will be involved in the process: e.g. living lab management (EMPOWER internal), service providers (EMPOWER internal and/or external), proxy organisations (EMPOWER external), and incentive providers (EMPOWER external).

In many other approaches stakeholder involvement is relevant only in the beginning of a project and then sporadically throughout the project, for example to review outcomes and participate in full swing to perform the acceptance testing of the results (e.g. of a system). In the business model design component stakeholder involvement is imperative however, with different goals, throughout the whole process. The reason behind this is that the outcome -the business setup- should be operated by the stakeholders. The facilitators are therefore only enablers of the modelling process, translating the decisions that are made during the process into the models describing the setup. The responsibility of the business setup will gradually during the design process be transferred from WP3 to stakeholders within the project, the living labs, as well as externally to the project organization, which in turn engages stakeholders outside the project organization that are involved in the living labs. In order to create an efficient work organization, the project uses gradual stakeholder involvement. This means that a core group of participants from different stakeholder groups will be established in the preparation and calibrate phase. This group will create the building blocks that are to be transformed into the tentative business model. The group is then, during the corroboration and communication phase, extended with additional participants from the stakeholder organization already involved, and with additional representatives from organizations that have been identified as key partners in the conceptualization phase.

### 3.2.4 Preferred Methods and Model Support

Following the *Modern structure* principle (see chapter 2 proven methods identified in the literature as well as in the analysis of current trends in business model innovation will be used in the different activities constituting the component. Table 3.1 provides an overview of what and when identified methods will support the modelling process.

Source	What	When
Kotler & Zaltman (1971)	<ul style="list-style-type: none"> <li>Provides a set of planning variables to design the value proposition for the EMPOWER service.</li> <li>Provides examples on channels to use in order to promote social change.</li> <li>Splits a potential market into four general types (primary, secondary, tertiary, and miscellaneous, representing the array of stakeholders involved in social change).</li> <li>Exemplifies drivers for social change.</li> </ul>	Calibrate, Create, Construction
Osterwalder (2004)	<ul style="list-style-type: none"> <li>Provides a set of nine elements to develop viable business models for the EMPOWER services. The elements clarify the planning variables that Kotler &amp; Zaltman (1971) suggest and broaden the scope by providing additional elements.</li> </ul>	Calibrate, Create, Construction, Communication
Osterwalder et al. (2005)	<ul style="list-style-type: none"> <li>Provides a comprehensive definition of what a business model is, that supports the involvement of key persons in each lead city.</li> <li>Provides a level structure which makes it possible to structure the transformation of lead city business models (T3.3) into generic business cases (T3.4)</li> </ul>	Calibrate, Create, Construction, Communication
Enquist & Juell-Skielse (2010)	<ul style="list-style-type: none"> <li>Deepens the elaboration into how to perform value proposition design.</li> <li>Holistic service oriented business models: explains the business for a service that addresses the needs of multiple customers providing full support.</li> <li>Niche service oriented business models: explains the business for a service that addresses the need from a niche customer group providing specific support to this segment.</li> </ul>	Construction
Demil & Lecocq (2010)	<ul style="list-style-type: none"> <li>Illustrates how the choices of e.g. key resources, organizational setup and value definition are interlinked.</li> </ul>	Construction
Zott et al. (2011)	<ul style="list-style-type: none"> <li>Informs that value creation goes beyond the organizational border and occurs in a value network—which can include suppliers, partners, distribution channels, and coalitions that extend the organisation’s resources.</li> </ul>	Calibrate, Create, Construction
Limonard et al. (2011)	<ul style="list-style-type: none"> <li>Provides a method based on the core elements introduced by Osterwalder (2004).</li> <li>The method allows EMPOWER to map and scope the business ecosystem in each lead city.</li> <li>Enables EMPOWER to demonstrate how technical design has an impact on networked business environments.</li> <li>Supports the fuzzy, creative process of (service) idea generation.</li> </ul>	Calibrate, Create, Construction, Communication

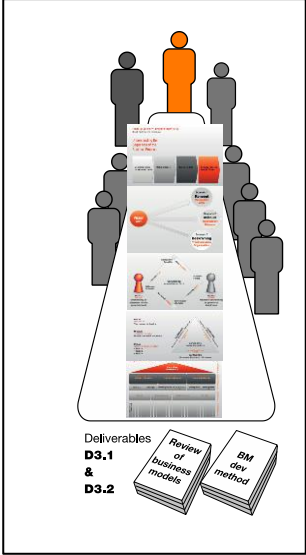
	<ul style="list-style-type: none"> <li>Facilitates the dialogue between different disciplines.</li> </ul>	
Burkhart et al. (2011)	<ul style="list-style-type: none"> <li>Provides a summary of different business model concepts.</li> <li>Reviews 30 business model concepts based on the 17 criteria derived from literature, which gives an overview of how different business modelling techniques can support the development of viable business models.</li> </ul>	Create, Construction
Zolnowski & Böhmann (2011)	<ul style="list-style-type: none"> <li>Analysis of what 15 different modelling approaches bring to development of business models, in terms of objective, structure, modelling process and representation. The Osterwalder (2004) methodology needs for example to be complemented with additional support in order to model the value flow, social benefits and address legal aspects connected to the business. This is, according to Zolnowski &amp; Böhmann, not covered by Osterwalder (2004).</li> </ul>	Create, Construction
Bie et al. (2012)	<ul style="list-style-type: none"> <li>Provides a reference case that can inspire/support the design of the value proposition for the services that EMPOWER will test in the lead cities.</li> <li>Identifies key stakeholders that could constitute an ecosystem for the EMPOWER services: city, travellers, community, and 3rd party providers of services.</li> <li>Exemplifies the implementation of a service that aims to support travellers to make smart transport choices based on mobility sensing.</li> </ul>	Calibrate, Create, Construction
Ferro & Osella (2013)	<ul style="list-style-type: none"> <li>Presents eight archetypical business models as points of reference in the design work.</li> <li>The metaphor business model archetype will be used to inspire the development of the business model templates that should be included in the EMPOWER toolbox.</li> </ul>	Construction, Communication
Berkers & Roelands (2013)	<ul style="list-style-type: none"> <li>The article provides insights about the value that a sensor-based service platform creates for different stakeholders.</li> <li>The article addresses the business situation wherein an organization (service provider) creates value by enabling direct interactions between two (or several) distinct types of connected customers (e.g. an incentive provider and a traveller (incentive receiver)).</li> <li>Illustrates the multi-sided market for traffic applications.</li> </ul>	Calibrate, Create, Construction, Communication
Klang et al. (2014)	<ul style="list-style-type: none"> <li>The article demonstrates that different target groups view business model concepts differently. This is of importance in EMPOWER being an innovation consortia that involves practitioners (from different areas, public/private), scholars/researchers and the public.</li> </ul>	Communication
Bocken et al. (2014)	<ul style="list-style-type: none"> <li>The article provides eight business model archetypes, illustrated with their respective value proposition, delivery and capture, that can stimulate and catalyse the development of appropriate business models for the EMPOWER services.</li> <li>Introduces the concept of sustainability benefit to complement value creation in terms of monetary revenue streams.</li> </ul>	Construction, Communication
Janssen & Zuiderwijk (2014)	<ul style="list-style-type: none"> <li>The article provides six “infomediary” business model archetypes that can stimulate and catalyse the development of appropriate business models for the EMPOWER services.</li> </ul>	Construction, Communication
Kranenburg et al. (2014)	<ul style="list-style-type: none"> <li>The article provides three new business models and four adapted existing business models that can stimulate and catalyse the development of appropriate business models for the EMPOWER services.</li> </ul>	Create, Construction, Communication
Butzin et al. (2014)	<ul style="list-style-type: none"> <li>Business modelling should be viewed as one of several practices that are to be performed in the context of social innovation and change.</li> <li>A single perspective is not appropriate in social innovation; instead, collaboration across organizational borders and stakeholder domains should be stimulated.</li> </ul>	Communication
Peters et al. (2015)	<ul style="list-style-type: none"> <li>The article provides three new business models for complex digital services that can stimulate and catalyse the development of appropriate business models for the EMPOWER services.</li> <li>The article is based on a design science research approach which can be an appropriate technique to use to present the outcome from task 3.3 in EMPOWER.</li> </ul>	Create, Construction
Rauter et al. (2015)	<ul style="list-style-type: none"> <li>The article provides insights into the relationship between business strategy, the business model and operational activities.</li> <li>The article summarizes business model work using Osterwalder (2004) as primary modelling approach</li> </ul>	Create, Construction, Communication
Herrador et al. (2015)	<ul style="list-style-type: none"> <li>Provides state-of-the art case examples within the same domain as EMPOWER, with meta-services and incentive insights, that can be used within the project to stimulate appropriate business model designs for the four lead cities.</li> </ul>	Calibrate, Create, Construction, Communication

Table 3.1: Preferred Method and Model Support in Method Component 1

### 3.3 Implementation of the Design Component in EMPOWER

The business model design component is implemented in EMPOWER during M1-M8 to organize the work in T3.3. In this section an overall account is given of how in practice the method was and will be used to organize and plan the activities from preparation to communication.

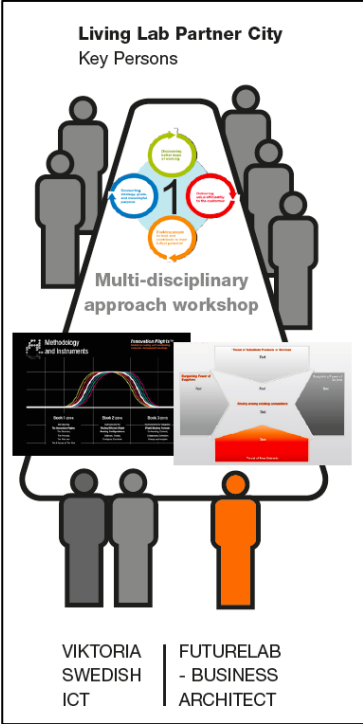
#### 3.3.1 Preparing Business Model Design in EMPOWER [M1-M2]



The preparation phase was performed in parallel to T3.1, T3.2 and the initiation of EMPOWER as project. At an early stage, preparation meetings were planned in all Living Lab cities in order to define the objective for the business modelling task as well as set up city specific plans for the business modelling design performed. The meetings were performed in Gothenburg on June 11, Enschede on June 12, Helsinki on June 23 and in Manchester on June 26 (all 2015). Attending the preparation meetings were the living lab managers from each city, together with internal and invited external stakeholders from different groups (the latter were identified as possibly having an interest in EMPOWER and the services that will be developed and tested within the project). The preparation workshop generated four tentative run-schedules for the modelling work during M4-M8. They also generated ideas on additional organizations to involve in the project as well as input that further enhanced the methodology and the work at the time to complete D3.1.

Figure 3.1: The Preparation Activity as Implemented in EMPOWER

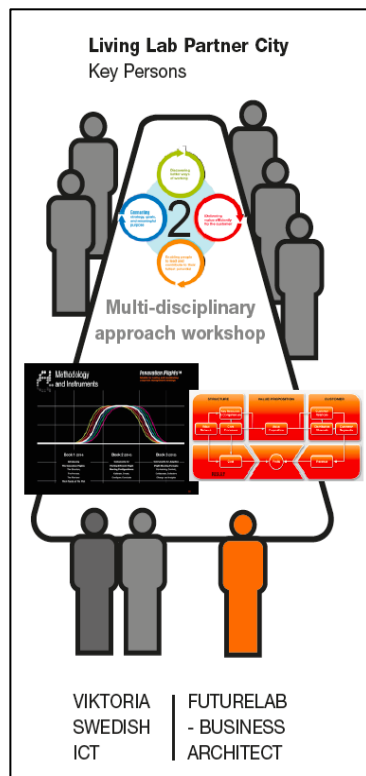
#### 3.3.2 Calibrating Participants in Business Model Design [M4-M5]



The calibrate activity will be performed in workshops in each living lab city during M4-M5. It will trigger the creation tasks that enable the project to develop appropriate building blocks for sound business models for each city / region participating as lead city in EMPOWER. The objective of the task is to calibrate the participating representatives from each stakeholder organisation in terms of modelling objective, methodology and expected outcome. It will be performed in close adjacency to the first workshop. During the “take-off phase” of the workshop, the project will be explained to the participants and the methodology that will be used through-out the business model design will be presented and discussed. In order to build design momentum, the group will then receive a presentation of the service that should be implemented in the specific living lab. The aim is to introduce the participants to the service but also to scope the modelling activity and create boundaries for what the modelling should address and what should be performed in other tasks within the project. During the calibration phase, city representatives will also present other ongoing activities aiming to reduce CFV; this will provide important domain knowledge and enable the group to understand whether the market for the EMPOWER service is mature in the specific area.

Figure 3.2: The Calibration Activity in EMPOWER

### 3.3.3 Creating Building-blocks for Business Model Design [M4-M5]



Each calibration workshop will be followed by a creation workshop. The aim is to utilize the momentum developed during the calibration workshop to jointly identify and determine the market for the EMPOWER service in each lead city. Using this as a basis, a SWOT analysis will be performed to position the EMPOWER service on that market. These two activities will enable the group in each city to conceptualize the EMPOWER service as not only a technical system but also as a business that needs to be operated in order for the service to have an impact on CFV usage. The creation activity will then continue with an elaboration into the business logic for the service in the city. This will involve: the definition of key target groups for the service; the value proposition for these target groups; how customers should be reached in terms of appropriate channels; how customer relationships should be created and maintained; what key activities are needed to run the service as a business; the key partners that have to be connected in order to run the service as a business; the resources needed. Both revenue streams and societal benefits with the service will be identified for the service, as well, and special focus will be directed towards identifying how the service should be marketed in each city using appropriate channels for communication. The creation workshop will be followed by extended work throughout M5 to further shape these building blocks.

Figure 3.3: The Creation Activity as Implemented in EMPOWER

### 3.3.4 Constructing Comprehensive Business Models [M5-M6]



Besides generating the building blocks for sound business models, the Creation Activity will engage the participating stakeholders to create local conditions for the business setup to succeed. These “to-do’s” will be manifested through a set of formalized agreements that will be defined at the end of the creation phase. These agreements will govern the work that the lead city representatives will do during M5-M6. Meanwhile, the modelling facilitators will transform the building blocks into comprehensive business models for the services in each lead city. Each business model will be displayed through a set of models that will communicate different aspects of the business setup. The business model for each city will be part of the first version of D3.3. It will consist of a market analysis, a description of the business logic, a communication and marketing plan and a tentative organizational plan visualizing the pro-cesses needed to operate the service as a business in the specific city / region. In order to coordinate the work, tele-conferences will be organized to ensure that the building blocks are interpreted correctly and as intended. The tele-conferences will also review the progress that the cities make in order to create appropriate local conditions for implementing the service with the corresponding business models. This will include inviting additional stakeholders to the process and will be performed in collaboration with the preparation efforts performed in WP5.

Figure 3.4: The Construction Activity as Implemented in EMPOWER

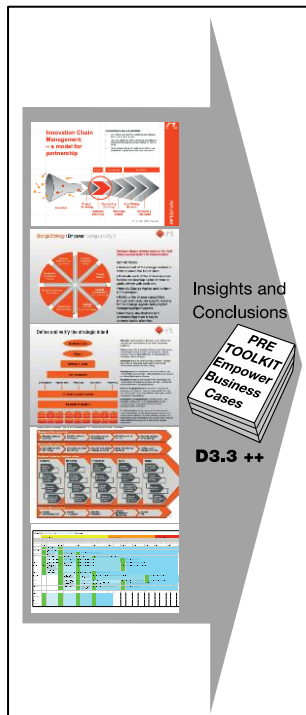
### 3.3.5 Corroborating Business Models with Participants and Stakeholders [M7]



The tele-conferences performed in the Construction Activity will enable a cumulative assessment of the outcomes generated in that task. However, in order to finalize the business models for each lead city, a workshop will be organized in each city to validate the business setup. The workshop will include a walkthrough of the business model building blocks and a sanity check of the assumptions made in the setup. It will also stimulate the participants to provide suggestions for improvements. The walkthrough and refinement of the results from the Construction Activity will trigger a discussion about roles and responsibilities for implementing the business setup in the city. For instance, should an organization be established in order to run the service and implement the business model, or should the service be implemented within an existing organisation setup? The aim of the assessment is thus to create conditions for successful implementation of the business model. The outcome of this activity is two-fold; on the one hand it consists of a set of improvement suggestions that will act as requirements for finalising the business model, and on the other hand will serve as a basis to create a roadmap for implementing the business model within the living lab trial, in cooperation with responsible partners from WP5 (see chapter 4). Representatives from WP4 (technical development), WP5 (living lab operations), and WP6 (evaluation) will be present at these workshops in order to ensure the link between the outcome from WP3 and the tasks that at this stage are initiated in these WPs.

Figure 3.5: The Corroboration Activity as Implemented in EMPOWER

### 3.3.6 Communicating Validated Business Models [M7-M8]



The last activity in the Business Model Design phase will focus on communicating the results of T3.3. It will present the comprehensive models to stakeholders within and outside the project. The models are thus finalized in such a way that they can be communicated to stakeholders, however, as the ambition is to review and improve them through living lab trials, they will be subjected to further refinement and improvement. During M7 a formal sign-off will be organized where the responsibility to test the business setup within each lead city / region is transferred from WP3 to representatives from the living labs. The plan is that this sign-off will be performed at the second project meeting, planned in M7. During this final phase, specific system requirements will be defined based on the business model designs, and sets of assessment criteria will be defined for each lead city / region. The system requirements will be developed in collaboration with responsible partners from WP4, and the assessment criteria will be developed in collaboration with responsible partners from WP6 and will be included in the overall assessment procedure for EMPOWER developed within this WP (see chapter 5). The Communication Activity will be completed in M8 with the final version of D3.3 finalized and submitted to EC.

Figure 3.6: The Communication Activity as Implemented in EMPOWER



### 3.4 Overview of Method Component 1 in EMPOWER

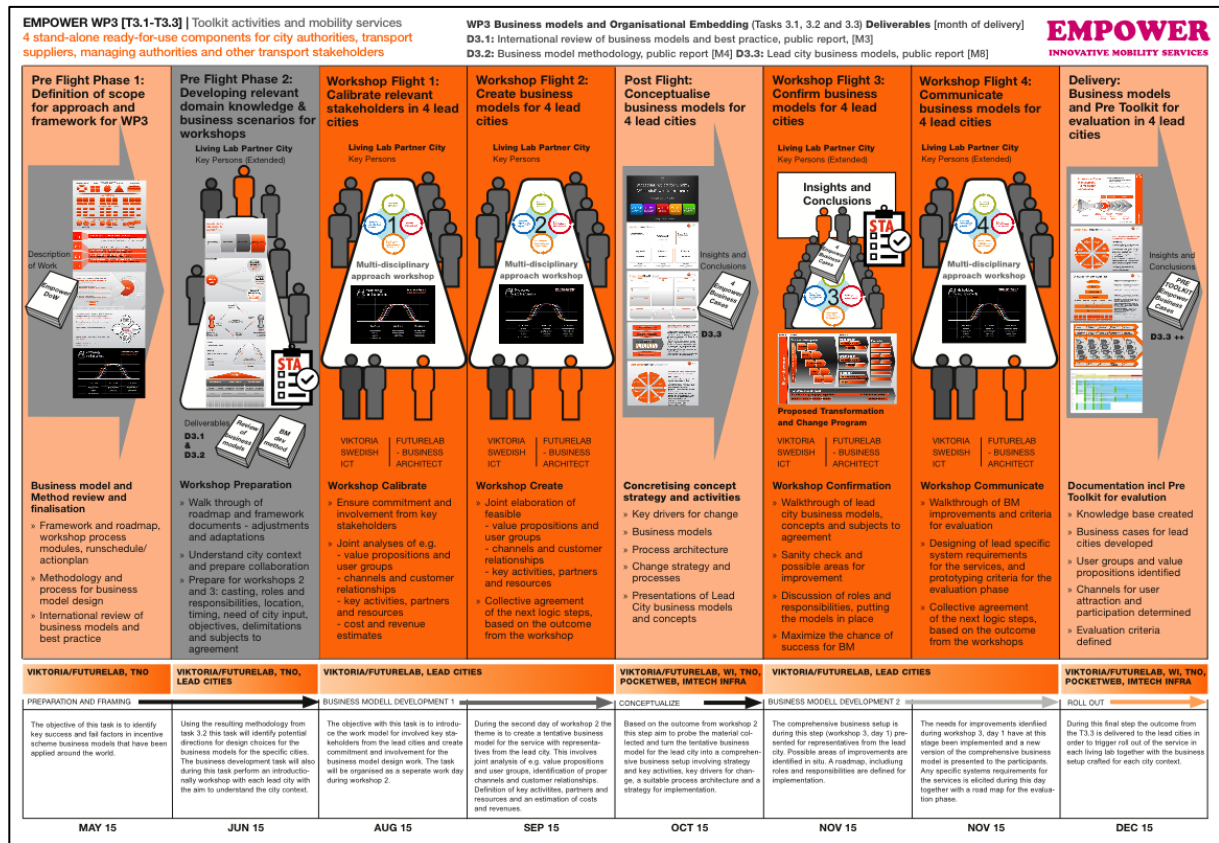


Figure 3.7: The Business Model Design Component in T3.3 EMPOWER

Figure 3.7 provides an overview of the implementation of the Business Model Design Component as implemented in EMPOWER and described above (also consider Appendix). In total four preparation workshops will be performed and sixteen workshops to calibrate, create, confirm and communicate sound business models for the EMPOWER services developed and tested in the four Living Lab cities. The results from this first component will, as shown in figure 3.8, be implemented in T5.2 “Living Lab Experiments” and then evaluated in T6.4 “Assessment of interventions”. The second method component in the Business Model Methodology provides the support for the preparation and operation of T5.2 by displaying guidelines for business model implementation (see chapter 4), and the third method component Business Model Assessment will provide support for the preparation and operation of T6.4 by providing evaluation criteria (see chapter 5).

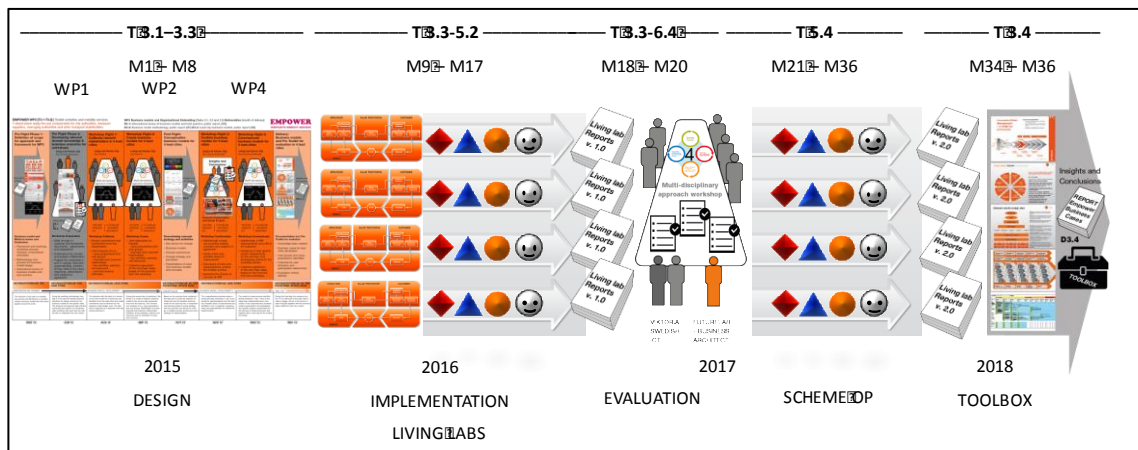
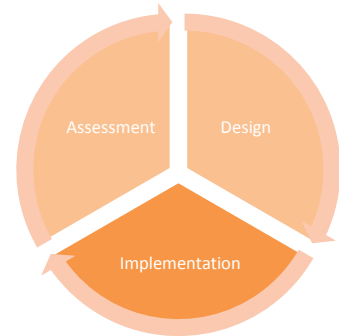


Figure 3.8: The Influence of the Business Model Methodology in EMPOWER

## 4 Method Component 2: Business Model Implementation

### 4.1 Introduction: Purpose and Scope

The purpose of this second component is to support the implementation of the results derived from the Business Model Design process described in chapter 5. The implementation of the business models should be performed as an integrated sub-part of the implementation plans for the living lab trials organized by WP5 in the EMPOWER project. As such, method component 2 will support the activities performed in T5.1 "Operational Preparation" and T5.2 "Living Lab Experiments". As these two tasks at this point (during the creation of D3.2) have either just been initiated or not yet begun, no detailed planning of this step can be given similar to the presentation of the first component. The account in this chapter describes instead the overall approach of how business models should be implemented in the living labs, as well as guidelines on how to use the business model designs in preparing the operation of the living labs.



### 4.2 Approach

During the final stages of method component 1, corroboration and communication (see section 3.2.1, 3.3.5, 3.3.6), roadmaps have been developed to bridge the gap between the business model design and the implementation plan that the living lab coordinators prepare. It is assumed that these roadmaps will differ between the four living labs, as the conditions for running the EMPOWER services will differ amongst the labs. The assumption is that these differences are identified during M4-M8 when the business models are being designed.

Osterwalder & Pigneur (2010) provide guidelines for how to implement business model prototypes in practice. They argue that when the initial business model design has been stabilized, it should be translated into an implementation design to ensure momentum and prevent that the model becomes a separate entity decoupled from the process, service or business that it describes. This perspective, that ensuring momentum is a key factor, is core in the approach for business model implementation in the EMPOWER methodology. In practice this means that the business models developed in M4-M8 should influence the design and operation of the living labs, as it is the living lab that represent the implementation momentum in EMPOWER. The models should thus influence the objectives governing the living lab trials, support in specifying the milestones for the labs, influence the recruitment of participants, the definition of who should participate, and so on. The implementation phase will therefore be outlined in the living lab operation plan that uses the business model as input. WP3 will still be active after M8 to support WP5 in managing uncertainties connected to the implementation as well as providing developing mechanisms to quickly discover and manage the business setup based on feedback from the trials. Furthermore, WP3 will be preparing T3.4 starting in year 2, which deals with transforming the insights from the living lab trials into generic business cases as a part of the EMPOWER toolkit.

### 4.3 From Business Model Design to Living Lab Operational Preparation

Table 4.1 below provides guidelines for ensuring a strong link between the outcomes from T3.3 and the work that should be done by the living lab coordinators to set up the different labs in WP5.

Outcome from Task 3.3 as will be described in D3.3		Input in Task 5.1
Pillar	Business model component	Impact on Living Lab Operational Preparation
Product	Value Proposition	The value propositions stated in the business plan will support the living lab coordinators with shaping offers to users as well as stakeholders to attract them for participating in the living lab. Examples of stakeholders are incentive providers who must be attracted by the value that the EMPOWER service provides.
Customer Interface	Customer Segments	The business model will for each living lab state primary and non-primary customers / users. This information will be imperative for the coordinators of the living labs as they are responsible for the recruitment of relevant participants to the lab. There must be a good fit between the intended users described in the business models and the actual participants that are recruited to the labs.
	Customer Relationships	One of the challenges identified in T3.1/D3.1 is related to creating customer relationships between a city or road authority and CFV users when no accessible relationships are in place that can be used as basis to add new value to. The business model design will have addressed this challenge for each living lab. This means that the living lab coordinator can use these findings as a base to establish a good relationship between the city and user groups, for example by using proxy organisations.
	Channels	The business models will provide direction for possible channels for marketing the EMPOWER service to users and stakeholders, incentive provisions, etc. This can be used by the living lab coordinator to set up the living lab and to organize the experiments.
Infrastructure Management	Key Resources	The business model will state key resources for launching, operating and maintaining the service. Some resources will be in place which the living lab coordinator can utilize, others have yet to be acquired, which the coordinator must ensure if they are needed to operate the living lab.
	Key Activities	The business model will state key activities for launching, operating and maintaining the service. Some activities will be in place which the living lab coordinator can utilize, others have yet to be realized, which the coordinator must ensure if they are needed to operate the living lab.
	Key Partnerships	The business model will state key partnerships for launching, operating and maintaining the service. Some partnerships will be in place which the living lab coordinator can utilize, others have yet to be organized, which the coordinator must ensure if they are needed to operate the living lab.
Financial aspects	Revenue Streams	The business model design will provide insights into expected revenue streams for different stages in the EMPOWER service lifecycle. The living lab coordinator can use this to plan the operation of the lab and also define criteria to assess if these revenue assumptions are realistic based on the results from the trials. These findings will enable the project to determine if the services put to trial in EMPOWER are economically feasible.
	Cost Structure	The business model will provide insights into what the service will cost at different stages such as launching, building user base, retaining users in the scheme, operational costs etc.

Table 4.1: Linking the Business Models to the Living Lab Implementation Designs

#### 4.4 Reviewed Models and Method Support

In addition to the fact that the outcome from T3.3 will serve as input for the design and operation of the living labs, the results from the review of literature performed in T3.1 can add insights to the operation of the living labs and provide advice to the coordinators when implementing the EMPOWER services from a business perspective. Table 4.2 elaborates on this, summarizing the support the models and methods identified in literature review (T3.1) will provide in the implementation design performed in T5.1.

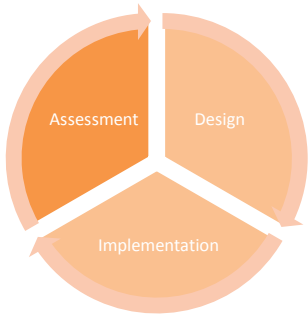
Source	What
Kotler & Zaltman (1971)	<ul style="list-style-type: none"> <li>Provides examples on barriers to successfully achieve social change.</li> </ul>
Osterwalder (2004)	<ul style="list-style-type: none"> <li>Provides insights into how the application of business models drive change and information systems design and implementation.</li> </ul>
Osterwalder et al. (2005)	<ul style="list-style-type: none"> <li>Provides insights about the position of business models in an organizational setting vis-à-vis e.g. the organizational setup, IT-infrastructure and strategy.</li> <li>Provides insights into the alignment of the strategy of a business and the information system that should support the business.</li> </ul>
Enquist & Juell-Skielse (2010)	<ul style="list-style-type: none"> <li>Clarifies the value proposition in terms of elementary offerings provided to customers.</li> <li>Exemplifies patterns for business models based on the holistic or the niche approach.</li> </ul>
Demil & Lecocq (2010)	<ul style="list-style-type: none"> <li>Explains that a business model is not a static entity;</li> <li>Business model implementation should be viewed as an evolutionary process;</li> <li>Implementation of a business model should be viewed as a change process that involves different versions of the model that in turn are appropriate for the evolutionary stage that the service has reached;</li> <li>And explains how changes in the business model could be either voluntary or reactions to changes that originate/emerge from the business environment.</li> </ul>
Zott et al. (2011)	<ul style="list-style-type: none"> <li>Describes how the business model can be seen as part of a comprehensive framework for enabling systemic change and innovation, together with products, infrastructure and other enablers.</li> </ul>
Limonard et al. (2011)	<ul style="list-style-type: none"> <li>Provides a case study that illustrates how the methodology put forward by the authors can be applied by the innovation consortia</li> </ul>
Burkhart et al. (2011)	<ul style="list-style-type: none"> <li>Limited value for Business Model Implementation. Provides some experiences in relation to business model implementation, however already covered by Demil &amp; Lecocq (2010).</li> </ul>
Zolnowski & Böhmman (2011)	<ul style="list-style-type: none"> <li>Clarifies that most business modelling techniques are general and do not specific provide support when business models are created for businesses that should operate e-services.</li> </ul>
Bie et al. (2012)	<ul style="list-style-type: none"> <li>N/A – implementation aspects not covered in the article.</li> </ul>
Ferro & Osella (2013)	<ul style="list-style-type: none"> <li>The article provides experiences from businesses that have utilized the archetypes introduced in the paper. The experiences will guide how the business models developed in EMPOWER will be tested in the living labs.</li> </ul>
Berkers & Roelands (2013)	<ul style="list-style-type: none"> <li>Provides a running case that illustrates the implementation of a smart horizontal service platform bringing value to different actors.</li> <li>Presents experiences from implementing the service platform which can be used as guideline for the Living Lab operations in EMPOWER.</li> </ul>
Klang et al. (2014)	<ul style="list-style-type: none"> <li>The article highlights that the business models developed in the EMPOWER project should be described differently depending on project phase and different target audiences involved in the process.</li> </ul>
Bocken et al. (2014)	<ul style="list-style-type: none"> <li>Constitutes a set of reference cases with experiences that support the implementation of business models in the EMPOWER project.</li> </ul>
Janssen & Zuiderwijk (2014)	<ul style="list-style-type: none"> <li>The article provides an insight that social media is rarely used in the business setup beyond the purpose of rating and discussion.</li> </ul>
Kranenburg et al. (2014)	<ul style="list-style-type: none"> <li>Informs that scaling up can be a challenging process and governmental support is viewed as crucial.</li> <li>Suggests to focus on business models that prove to be (economically) viable in the long term, supported by the public sector during the initial phase.</li> </ul>
Butzin et al. (2014)	<ul style="list-style-type: none"> <li>N/A – Implementation aspects not covered in the report</li> </ul>
Peters et al. (2015)	<ul style="list-style-type: none"> <li>The article provides three running cases describing how the business models were implemented in the case organizations.</li> </ul>
Rauter et al. (2015)	<ul style="list-style-type: none"> <li>The article describes a set of drivers of business models for sustainability that are argued to be of importance when such business models are implemented.</li> </ul>
Herrador et al. (2015)	<ul style="list-style-type: none"> <li>Provides running examples of business model implementation that state important experiences to take into account when the business models are implemented in EMPOWER during 2016-2017.</li> </ul>

Table 4.2: Method and Model Support in Method Component 2

# 5 Method Component 3: Business Model Assessment

## 5.1 Introduction: Purpose and Scope

The purpose of the third component in the Business Model Methodology is to support the assessment of the business model when it is put to use in the Living Lab Trials. The assessment of the business model will be performed as an integrated sub-part of the whole assessment of the Living Lab Trials; in other words, it is not a separate activity decoupled from the assessment governed by WP6 in EMPOWER. The assessment model in EMPOWER will be designed in T6.3 “Assessment Criteria and Goals” and performed in T6.4 “Assessment of interventions”. These activities will be initiated in the beginning of M12 and this chapter thus provides early input to the preparation work performed within WP6.



## 5.2 Approach

The approach used to assess the impact that the business model will have in the living lab trials is based on a comprehensive structure that operationalizes specific assessment criteria and measures to capture the impact. The approach provides a structure to assess the business model in terms of 1) the conceptualization/construct (a model) they are, 2) the model’s capability to create internal impact (i.e. the model’s ability to organize the lab), 3) the model’s capability to create external impact (i.e. the model’s ability to create and deliver value), 4) the model’s capability to expand the business beyond the test arena (e.g. its capability to facilitate up-scaling). These four areas of assessment, grounded in theory and best practice (see section 5.4), will be included in the assessment model developed in T6.3 to assess the capability that the four business models generate through the Living Lab Trials. The result from the evaluation will be used to enhance the business models and also as a base to develop generic business cases and create the input in regard to business models and evaluation strategies in the EMPOWER toolkit.

## 5.3 Examples of Assessment Areas and Criteria

The approach for assessing business models in EMPOWER will use sets of criteria covering different aspects of the business model and its capability to create impact. The approach will be finalized in T6.3. Early input to that design process is provided in table 5.1. The proposed areas and criteria are grounded in the challenges presented in chapter 2 and will gradually be expanded with complementing criteria parallel to the design of the lead city business models in T3.3.

Area of assessment	Assessment Criteria	Proposed Areas and Criteria	Description
Design	Fit	<ul style="list-style-type: none"> <li>- Does the initial business model design model items address and integrate:                             <ul style="list-style-type: none"> <li>o Business aspects (e.g. value proposition, target customers, customer relationships, channels etc.)</li> <li>o Marketing and communication plan</li> </ul> </li> </ul>	The first example of assessment criteria target the assessment area <i>Design</i> and refers to the design of the business model, i.e. the output from T3.3 delivered in D3.3. Two examples of assessment criteria are provided. Firstly, “Fit” refers to how the various building blocks constituting the business tie into each other and complement one another.

		<ul style="list-style-type: none"> <li>○ Organisational processes</li> </ul>	er. Secondly, "Alignment" refers to how the business model as a whole matches the designed system that has been developed and the implementation strategy that has been designed for the living lab.
	Alignment	<ul style="list-style-type: none"> <li>- Does the business model align with the technical system developed?</li> <li>- Does the business model align with the implementation design?</li> </ul>	
Internal impact	Comprehensiveness	<ul style="list-style-type: none"> <li>- Do the involved partners understand the business model?</li> </ul>	The second example of assessment criteria target the assessment area <i>Internal impact</i> and refers to the impact that the business model has on the actual practice in which the model is realized. "Comprehensiveness" refers to if the model is understandable by the organisation that should use the model, and "stickiness" refers to if the model fits the organization and is being used in daily business.
	Stickiness	<ul style="list-style-type: none"> <li>- Does the model fit the organization's needs?</li> <li>- Is the model used within the practice or does the business follow an alternative logic?</li> </ul>	
External impact	Efficiency in delivering value	<ul style="list-style-type: none"> <li>- Does the business model in an efficient way deliver value to e.g. <ul style="list-style-type: none"> <li>○ Customer groups</li> <li>○ Incentive providers</li> </ul> </li> </ul>	The third example of assessment criteria target the area <i>External impact</i> and refers to the impact that the business model has outside the practice that uses the model. "Efficiency in value delivering" refers to the models capability to deliver value to different customer groups and providers of incentives etc. "Lock-in", also known as switching costs, refers to the capability of the model to enable the business to either create loyal returning customers (users) or create win-win partnerships with providers and enablers. "Uniqueness" refers to the degree that the business model sets the business apart from other businesses of its kind on the market. "Recurring revenue creation" refers to the models capability to either generate monetized revenues on a regular basis or societal benefits.
	Lock-in	<ul style="list-style-type: none"> <li>- Does the business model enable the business to create loyal repeat customers?</li> <li>- Does the business model enable the business to create win+win partnerships with providers and enablers?</li> </ul>	
	Uniqueness	<ul style="list-style-type: none"> <li>- How does the business model set the business apart from other services of its kind in the market?</li> </ul>	
	Recurring revenue creation	<ul style="list-style-type: none"> <li>- Does the business model generate monetized revenues?</li> <li>- Does the business model generate societal benefits?</li> <li>- Does the business model generate recurring monetized revenues?</li> <li>- Does the business model generate recurring societal values?</li> </ul>	
Scalability	Growth capability	<ul style="list-style-type: none"> <li>- Does the model allow growth in terms of users and transactions?</li> </ul>	The fourth example of assessment criteria target the area "Scalability" which refers to the capacity of the model to enable and support up-scaling of the business.
	Growth speed	<ul style="list-style-type: none"> <li>- Does the model facilitate fast up-scale of the business in terms of users and transactions?</li> </ul>	

Figure 5.1 Examples of Areas of Assessment and Criteria for Assessing Business Models

## 5.4 Reviewed Models and Method Support

Table 5.2 summarizes the support models and methods identified in literature review (T3.1), which in turn will provide in the finalization of the assessment approach in T6.3.

Source	What
Kotler & Zaltman (1971)	<ul style="list-style-type: none"> <li>• Through its sets of planning variables, channel design principles and market segments the paper provides a basis for designing assessment indicators to evaluate the effects of business model implementation.</li> </ul>
Osterwalder (2004)	<ul style="list-style-type: none"> <li>• Nine core elements that can be used as base for assessment indicators.</li> <li>• Numerous projects have before utilized Osterwalders (2004) concepts for business model design (e.g. van Kranenburg 2014) which enables easy comparison and cross-case evaluation.</li> </ul>

Osterwalder et al. (2005)	<ul style="list-style-type: none"> <li>Relates the nine core elements of a business model to a balanced scorecard setup that may stimulate the design of appropriate indicators to study the effect of business model implementation.</li> </ul>
Enquist & Juell-Skielse (2010)	<ul style="list-style-type: none"> <li>Provides a structure for how assessments of business models can be presented (see chp 4 in D3.1).</li> </ul>
Demil & Lecocq (2010)	<ul style="list-style-type: none"> <li>Assessment of business implementation shall take into account what evolutionary stage the business model has reached.</li> </ul>
Zott et al. (2011)	<ul style="list-style-type: none"> <li>Provides a set of criteria to be used to assess and compare business model implementation effects, such as “what mechanisms enable the business model to influence outcomes?”</li> </ul>
Limonard et al. (2011)	<ul style="list-style-type: none"> <li>Supports the evaluation of design choices and structures a feedback loop between the evaluation efforts and techno-economic design work in the project</li> </ul>
Burkhart et al. (2011)	<ul style="list-style-type: none"> <li>Provides, based on a literature review, 17 criteria with corresponding attributes that can be used to develop assessment indicators for the evaluation of business models.</li> </ul>
Zolnowski & Böhmman (2011)	<ul style="list-style-type: none"> <li>Provides insights into what white spots core business modelling approaches have. This enables the project to complement the models selected to enhance the business model creation indicators within EMPOWER.</li> <li>Provides 19 evaluation criteria which can be used as base for developing indicators for the assessment model in T6.3</li> </ul>
Bie et al. (2012)	<ul style="list-style-type: none"> <li>Exemplifies how Living Lab Evaluation can be organized in terms of data collection, using both the mobility service as such as a collector of evaluation data (with indicators implemented) and user observations/surveys as means to collect experiences.</li> </ul>
Ferro & Osella (2013)	<ul style="list-style-type: none"> <li>The outcome from EMPOWER may 1) verify, improve and clarify the business archetypes in the article, 2) provide additional archetypes not covered in Ferro &amp; Osella (2013).</li> </ul>
Berkers & Roelands (2013)	<ul style="list-style-type: none"> <li>N/A – Assessment not covered in the article</li> </ul>
Klang et al. (2014)	<ul style="list-style-type: none"> <li>The article provides a model that could be used to develop generic business models (to be implemented in the EMPOWER toolbox) based on the experiments performed in the living labs.</li> </ul>
Bocken et al. (2014)	<ul style="list-style-type: none"> <li>The outcome from EMPOWER may 1) verify, improve and clarify the business archetypes in the article, 2) provide additional archetypes not covered in Bocken et al. (2013).</li> </ul>
Janssen & Zuiderwijk (2014)	<ul style="list-style-type: none"> <li>The outcome from EMPOWER may 1) verify, improve and clarify the business archetypes in the article, 2) provide additional archetypes not covered in Janssen &amp; Zuiderwijk (2014).</li> </ul>
Kranenburg et al. (2014)	<ul style="list-style-type: none"> <li>Measuring effects and making them visible for different target audiences contributes to the awareness of the benefits for stakeholders. Exploit the technical opportunities for measuring, informing and influencing travel behaviour (see Bie et al. 2014).</li> </ul>
Butzin et al. (2014)	<ul style="list-style-type: none"> <li>The report provides several sets of evaluation techniques that could be used to assess the impact of the business model during the Living Lab trials.</li> </ul>
Peters et al. (2015)	<ul style="list-style-type: none"> <li>The outcome from EMPOWER may 1) verify, improve and clarify the business archetypes in the article, 2) provide additional archetypes not covered in Peters et al. (2015).</li> </ul>
Rauter et al. (2015)	<ul style="list-style-type: none"> <li>N/A – Assessment not covered in the article</li> </ul>
Herrador et al. (2015)	<ul style="list-style-type: none"> <li>Provides an illustrative example how the business models developed within EMPOWER can be evaluated and also presented to different target audiences.</li> </ul>

Table 5.2: Method and Model Support in Method Component 3

## 6 Methodology Assessment: Strengths, Weaknesses, Opportunities and Threats

The main objective of T3.2 is to provide a methodology, by transforming the results presented in D3.1, to manage the effort to develop committed business models within EMPOWER. Together with T3.1, T3.2 supports preparatory tasks for the efforts that should be performed within WP3 and also WP5 and WP6 during EMPOWER. The methodology is based on research on business modelling from different fields, as well as best practice. However, as this is a preparation deliverable, it has not been verified within the project yet. In order to evaluate the capacity of the methodology prior to use and also to identify and manage uncertainties with the methodology, a self-assessment has been performed to summarize the strengths and opportunities (values) that the methodology possesses, as well as the weaknesses and threats (challenges) within the methodology. These SWOT-items may be addressed during M4 to M20 when the methodology is used and extended in T3.3 “Business model designs for lead cities”, T3.4 “Generic business case and toolkit”, T5.1 “Operational Preparation”, T5.2 “Living Lab Experiments”, T6.3 “Assessment Criteria and Goals” and T6.4 “Assessment of interventions”. The self-assessment has been organized as a SWOT (Strengths, Weaknesses, Opportunities and Threats) and is displayed in table 6.1.

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• The methodology stimulates <i>evolutionary design</i> of sound business models for EMPOWER services that aim to reduce CFV usage</li> <li>• The methodology is based on a <i>collaborative approach</i> that acknowledges the value of bringing external participants to the design process and facilitates that the outcome of the process is transferred to later activities within the project.</li> <li>• The methodology stimulates <i>involvement of stakeholders</i> through its workshop structure. This is imperative as the investigation performed in T3.1 states that a win+win+win situation must be defined and established in order for EMPOWER services to succeed.</li> <li>• The methodology develops business models that are <i>sustainability adapted</i>. That means, for example, that the identification of monetized revenue streams is complemented by the identification of societal benefits.</li> <li>• The novelty in the methodology relies in its configurations of <i>modern structures</i> (methods and models) that are pulled from different fields, such as innovation management, transport studies, information systems and management.</li> <li>• The methodology includes an <i>integrated marketing and communication approach</i>, which means that the business models that will be defined not only will describe the internal structure of the businesses that should operate the EMPOWER services, but also how the value with these services should be communicated to intended users through traditional marketing campaigns and also the use of social media and networking.</li> </ul>	<ul style="list-style-type: none"> <li>• The methodology, especially method component 2 and 3, are dependent on structures that will be developed in later stages of the project in order to be finalized.</li> <li>• The methodology needs active stakeholder involvement in order to work effectively.</li> <li>• The methodology will be used to develop business models with several instances that describe the evolution of the business operating the service. The weakness with evolutionary design is that it is more complex to communicate than a static general model.</li> <li>• One tentative risk is that the methodology is so heavily connected to the key success factors and the challenges identified in T3.1. During the continuation of the project other success factors or challenges may surface which require other components in the methodology.</li> </ul>
Opportunities (values)	Threats (challenges)
<ul style="list-style-type: none"> <li>• The methodology is a <i>comprehensive tool</i> that is easy to use and communicate which will enable the creation of sound models that in turn can create committed cities to implement the services</li> <li>• Through the grounding of the methodology in best practice it is a <i>proven technique</i> that will foster an efficient and productive process that in turn will facilitate that the EMPOWER toolkit will be comprehensive.</li> <li>• The methodology is <i>anchored in the challenges</i> identified in</li> </ul>	<ul style="list-style-type: none"> <li>• No mobilization of required stakeholder involvement</li> <li>• The evolutionary approach to develop business models results in complex models which are too hard to implement.</li> <li>• The outcome from the utilization of the method has no or limited impact on other tasks (development, incentive design, trials).</li> <li>• Input from parallel tasks needed to develop, implement, and assess the business models does not reach the team</li> </ul>



<p>T3.1 for EMPOWER services operated by city authorities or road agencies, which means that it will address those and similar challenges during the design work.</p> <ul style="list-style-type: none"> <li>• The methodology will <i>initiate rapid progress</i> in EMPOWER and WP3, and ensure that the early work performed in this work package will ignite and facilitate the effort in parallel work packages in the project.</li> </ul>	<p>when the method is used in spite of good efforts.</p> <ul style="list-style-type: none"> <li>• If the methodology is followed too strictly and not adapted due to changes in the conditions (key factors, challenges), then this creates the threat that the team does not pick up the changes in the conditions and develop business setups that does not become sound for the city / region.</li> </ul>
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Table 6.1: Strengths, Weaknesses, Opportunities and Threats with the Methodology

The strengths of methodology rely in that it has been developed based on the extensive review work performed in T3.1, which has been transferred into six core principles guiding the method design. This has resulted in a comprehensive tool that is easy to use and communicate. The latter means that it has successfully been used as one of the mechanisms to mobilize engagement for T3.3. Other values are that the methodology is based on proven techniques and that it incorporates the challenges identified for the EMPOWER service which will facilitate that these challenge are addressed in the business model design.

The methodology also possesses weaknesses. The implementation and assessment components are not finalized as they depend on structures that will be developed in later stages of the project. However, by acknowledging this, the progress made in this deliverable could be used as early input to trigger these coming activities. The method also requires active stakeholder involvement in order to work effectively. Its comprehensive nature as well as the use of existing business model archetypes to catalyse the work will reduce the effects of this weakness. Another weakness is that the methodology is constructed to develop business models that describe an evolutionary scenario of the business logic for the service; as evolutionary designs often are more complex to communicate in a comprehensive way than a static model explaining the business model on a general level.

Being a comprehensive tool the methodology facilitates the effort to create business models that in turn can create committed cities to implement the services developed in EMPOWER. This opportunity is enhanced by the fact the tool also is based on proven techniques that will foster efficient and productive work processes. The tool is also anchored in the challenges for implementing services that aim to reduce CFV in urban areas which will ensure that it will address those and similar challenges during the design work.

One threat in using the method is that required stakeholder involvement might fail. This risk has been mitigated in T3.2 by involving the lead city representatives in the development of the methodology. The methodology has been used on-site in all the participating cities to plan the activities in M4-M8. Another risk is that the outcome from using the method becomes too complex to implement within the timeframe of the project. This risk will be mitigated through the involvement of living lab representatives and responsible actors from key WPs and tasks in the project. By involving actors, the aim is to ensure that the outcome from the method will have an impact on other tasks in the project and also to ensure that these tasks fuel the business model design with necessary input to develop sound and viable business models for the EMPOWER services that are to be tested in the four Living Lab Cities.

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# Appendix

