

## D6.01

# Business models for services

## [Report]

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## 1 INTRODUCTION

For the development of the business plans for QM services the Strategyzer© methodology and terminology has been used. The resulting business models should be self-explanatory, but for deeper understanding of the business modeling design process, the reader might need to study or consult the Business Model Generation Handbook<sup>1</sup>.

Strategyzer© offers templates to describe, design, challenge, invent and pivot business models. Both templates;

- Value Proposition Canvas: helps tackle the core challenges of every business – creating compelling products and services customers want to buy;
- Business Model Canvas (BMC): a strategic management and entrepreneurial tool. A canvas with 9 building blocks designed to visualize how all the pieces of the business model fit together and reinforce each other;

have been used by Quantum partners e7 for services in the segment of Technical monitoring (TMon), and Factor4 for the service segment of Post-occupancy evaluation (POE).

The Business Model Canvas was developed to visualize how all the pieces of business model fit together and reinforce each other. The 9 building blocks create a thread to walk an audience (e.g. investors, future customers, colleagues) through a story which pitches your Value propositions: explains which customers you are targeting, why and how they will want to pay for the Value propositions, and which resources and activities are required to create and deliver the Value propositions. If this story makes logical sense to the audience, so for example you don't have an "orphan element" that doesn't connect to another business model building block (e.g. a revenue stream without a customer who is paying for a value proposition), the business model might have potential. These pitches are described under §3.2 and 3.3, and should be evaluated together with the accompanying canvasses (see Appendix 1 and 2).

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<sup>1</sup> Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers Paperback – July 13, 2010, by Alexander Osterwalder (Author), Yves Pigneur (Author)



## 2 INTERFACES TO OTHER TASKS

In order to embed Deliverable D6.01 properly into the QUANTUM project, there are several interfaces to other tasks.

### Interface to Task 1.6

Task 1.6 is the main basis for Task 3.1. This Task in turn builds on the generic quality management process which was developed in Task 1.2.

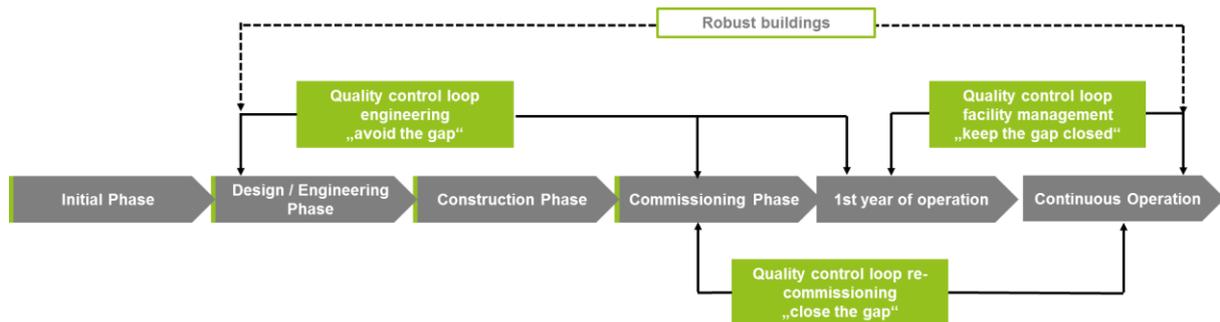


Figure 1: Quality Securing Process in the built environment

For each project development step, specific quality management tasks were defined. A first recommendation of responsibilities and interfaces to other project participants was elaborated. These quality management tasks have been reviewed, completed with further tasks and the responsibilities and interfaces to other project members have been sharpened. After the feedback process within the project team, the quality management process was finalised.

A main output of task 1.6 was the definition of gaps, why these quality management tasks are not done in common projects. These gaps are the basis for the definition of ideal framework condition. The main questions of the task were:

- What would be the ideal framework condition to implement the necessary quality management tasks?
- What tasks have to be done to get these ideal framework condition and to close the gap.

### Interface to Task 3.3

Task 3.1 is the basis for Task 3.3. The final description of the single tasks of the quality management process, will show those tasks, where precise project descriptions have to be done to use Technical Monitoring to test the performance of the building. Templates for functional descriptions of the building technology will be elaborated.

### Interface to Task 3.5

Task 3.5 collected input from experiences out of pilot projects. These experiences showed if the developed services are practicable or have to be adapted in some way.

### Interface to Task 6.1

This Task 3.1 interacts with Task 6.1. For each service, there will be a business model. Task 3.1 and 6.1. decided together, which services shall be elaborated in detail and for which service, business models will be developed.



### Interface to Tasks 6.2, 6.3, 6.4, 6.5 and 6.6

Based on these business models, business plans were developed starting with D6.05 as an initial approach to be discussed with consortium partners during a technical meeting (D6.04: Minutes of the technical meeting). After the technical meeting partner feedback was processed into D6.06 and completed with conclusions for most consortium partners' local markets, either in the form of:

- An implementation roadmap for partners developing POE and/or TMon Value propositions;
- Or a motivated conclusion on the market potential for partners without business development intentions (e.g. University of Athens).





### 3 THE BUSINESS MODELS

#### 3.1 Service segments

In WP3 services for QM were identified and defined. These services are grouped in 2 main service segments, which are related to the respective tools or methods used:

- Comfortmeter for Post-Occupancy Evaluation
- Performance Test Bench for Technical Monitoring

The services are summarized in the table underneath:

Structure	Reference	Reference specification
<b>Service Segment 1</b>	Post Occupancy Evaluation	Comfortmeter
<b>Service 1-1</b>	For Customer Segment 1	Landlords
<b>Service 1-2</b>	For Customer Segment 2	Tenants
<b>Service Segment 2</b>	Technical Monitoring	Performance Test Bench
<b>Service 2-1</b>	For new constructed or comprehensive refurbished buildings in first operation phase	Commissioning
<b>Service 2-2</b>	For longer existing buildings	Energy management based services

Table 1: Overview of the Service segments

Notes:

- In Service Segment 1, combinations of Customer Segment 1 (landlords) and 2 (tenants) are possible, e.g. building owners who are also the users. When this is the case with a prospect, the ‘pains and gains’ of both Customer Segments may be applicable.
- Service Segment 2-1 can be differentiated depending on the time when the service provider is entering the project. Ideally, the service starts in the initial or design phase but also a start after the hand-over is possible. However, the value propositions are limited the later the QM project starts.
- Energy Performance Contracting (EPC) may be considered as a third service segment (this alternative has not been elaborated in this business plan because of the large variety in existing and possible new EPC business models), or it may be considered as comprehensive business model for energy services providing that may include both Service Segment 1 and Service Segment 2. This said, Comfortmeter (POE) as well as PTB (TMon) may be part of EPC (see D6.03):
  - Comfortmeter can serve as an indicator for performance based remuneration, helping both the customer with maximal comfort as the ESCO with detailed information out of the report. EPC contracts with a performance-based POE (e.g. SmartEPC) or guaranteed comfort level, are thus to be regarded as ‘Channels’.
  - PTB helps the ESCO to improve performance as a means of internal quality management, which also serves the customer.

#### 3.2 Service segment 1: Post-occupancy evaluation

Before we pitch the business models it should be clarified that Factor4 is developer and main distributor of Comfortmeter. To develop the European market potential for POE, the business models





are conceived with Factor4 as a Key partner to the local QM Providers who sell the POE Value propositions with the use of Comfortmeter.

The Business model canvas is attached in Appendix 1.

### 3.2.1 Service 1-1: for landlords of office buildings

To landlords of office buildings our Value proposition offers a cheap but high quality service to quickly have a complete vision on tenant's satisfaction improvement opportunities, combined with knowing which investments will improve the real estate and rental value from the tenant's perspective. The use of Comfortmeter allows a continuous objectively measured improvement, and thus creates a long term strategic partnership with landlords for all comfort related products and services.

Building certifications will serve as an important channel to boost sales if Comfortmeter could be pre-approved, and might initialize an up-selling strategy.

### 3.2.2 Service 1-2: for office tenants

To office tenants the Value proposition offers a cheap but high quality service to quickly have a complete and prioritized overview of improvement opportunities for productivity and employee's satisfaction related to the work environment. The service report can also support investment negotiations with the landlord. The use of Comfortmeter allows a continuous objectively measured improvement, and thus creates a long term strategic partnership with landlords for all comfort related products and services.

## 3.3 Service segment 2: Technical Monitoring

For Technical monitoring it is more logic to define the Value propositions in function of a building phase. Because of this, the link with the canvasses attached in Appendix 2 is less clear.

### 3.3.1 Service 2-1: for new constructed or comprehensive refurbished buildings in first operation phase

The service "Technical Monitoring for new constructed or comprehensive refurbished buildings in first operation phase" (in this project often called "Quality Management for building performance") has the main focus on achieving "performance as intended" of the building technology in the frame of the commissioning process and the first year of operation.

The service starts ideally within the initial phase before any design & engineering contract is signed (The various possible start times are taken into account by different service descriptions (task 3.01)). This is because there are many tasks, interfaces and responsibilities to be clarified between the different project members and which needs to be included explicit into their contracts. The quality manager supports the building developer to define and clarify those which affect the later building performance and energy consumption.

During the design and engineering phase, the quality manager defines and controls the requirements of the functional specifications to be implemented by the engineering team. This can be supported by providing tailored templates to specify the functions of the building technology as well as performance indicators clearly. These functional descriptions have to be quite detailed to be able to deviate explicit states and associated operational rules; performance indicators need to be controllable. Requirements also include the determination of those operational data which must be historicized and made available to the QM for the later functional checks.





Based on the functional specifications described by the engineers, the QM transfers the functional specification in the software tool (performance test bench) and links the defined model (TARGET) with the operational data (ACTUAL) in order to create so-called Active functional descriptions.

During the commissioning phase, performance tests can be conducted. Therefore, actual data from a test operation are implemented into the software tool and opposed to the target specification. The level of quality (system or building performance) can be evaluated quickly and visualized using customized plots in the software presentation.

The quality manager supports the project team to identify performance faults and accompanies the building operator within the first months of operation (in an ideal way for 24 months) to adjust the building technology as planned.

### 3.3.2 Service 2-2: for existing buildings

The main difference of the Technical Monitoring for existing buildings to the service for new buildings is that the QM Manager has no influence on the quality of functional specifications during the design and construction phase and no influence on the quality process during commissioning phase. The QM Manager has to work with the existing functional specifications (if applicable).

If the functional specifications are suitable described, the QM Manager again transfers these information in the software tool (performance test bench) similar to the service for new buildings and goes on the same process as for new buildings. Most likely, especially for buildings or systems which are in operation for more than 2 years, functional specifications might not be applicable. Then, systems are tested against expert rules, which cover typical faults and performance gaps based on individual knowledge of the service provider, and in close cooperation with the responsible operations manager.





## 4 CONCLUSION

During the technical meeting (D6.04) the proposed business models were approved for further elaboration with local market research. Whether or not the business models offer viable standalone business potential for QM Providers, will be the conclusion of the resulting business plans (D6.06).





**5 APPENDIX 1: POST-OCCUPANCY EVALUATION BUSINESS MODEL CANVAS**

**quantum**

Quality management for building performance



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## **6 APPENDIX 2: TECHNICAL MONITORING BUSINESS MODEL CANVAS**

QUALITY MANAGEMENT-SERVICES FOR THE BUILDING PERFORMANCE OF NEW CONSTRUCTION AND COMPREHENSIVE REFURBISHMENT PROJECTS - COMMISSIONING

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
<ul style="list-style-type: none"> <li>- Software Developer and provider of Performance Test Bench</li> <li>- Cooperation partners with synergetic services (as project managers)</li> </ul>	<ul style="list-style-type: none"> <li>- Consulting for contracts regarding interfaces between relevant stakeholders</li> <li>- Define quality management concept</li> <li>- Consulting on monitoring concepts for quality insurance</li> <li>- Giving templates for design description</li> <li>- Quality control of design along target goals and needed information</li> <li>- Technical Monitoring                             <ul style="list-style-type: none"> <li>--- Create active functional descriptions for integration into software</li> <li>--- Organise and execute performance tests</li> <li>--- Indication of poor performance</li> </ul> </li> <li>- Recommendation of improvement measures</li> <li>- Continuous monitoring of energy performance</li> </ul>	<ul style="list-style-type: none"> <li>- Safety to find faults still in guarantee period</li> <li>- Safety to find the causer of a fault</li> <li>- Overall supervision for building performance</li> <li>- No site visit necessary</li> </ul>	<ul style="list-style-type: none"> <li>- Building owner (Corporate) or Building user and Building owner/developer (Non Corporate):                             <ul style="list-style-type: none"> <li>--&gt; ordering party</li> </ul> </li> <li>- Project Manager (technical steering and controlling) of Building development and Construction Supervision:                             <ul style="list-style-type: none"> <li>--&gt; co-operation partner</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Corporate Building owner/developer or Building user</li> <li>- Project Manager (technical steering and controlling) of Building development</li> </ul>
	<p style="text-align: center;"><b>Key Resources</b></p> <ul style="list-style-type: none"> <li>- Software tool</li> <li>- Special know how on project development processes, service descriptions</li> <li>- Know-how on necessary tasks during the design and construction process</li> <li>- Knowing the difference between energy monitoring and the necessary monitoring for quality insurance of the performance</li> <li>- Know how on support of engineering process</li> <li>- Know-how on necessary software tools to support quality insurance service</li> <li>- Know-how on organising, executing and analysing</li> </ul>		<p style="text-align: center;"><b>Channels</b></p> <ul style="list-style-type: none"> <li>- topic relevant and target group relevant associations</li> <li>- topic- and target group relevant events</li> <li>- public relation</li> <li>- Websites</li> <li>- personal contacts</li> <li>- cross selling</li> </ul>	
	<p style="text-align: center;"><b>Cost Structure</b></p> <ul style="list-style-type: none"> <li>- Consultants salary</li> <li>- training of consultants</li> <li>- Software licence fee</li> </ul>		<p style="text-align: center;"><b>Revenue Streams</b></p> <ul style="list-style-type: none"> <li>- service fee depending on volume (responsibilities, project phase, task, complexity and size of building (technology), interfaces with other project members</li> <li>- Software licence fee</li> </ul>	

QUALITY MANAGEMENT-SERVICES FOR THE BUILDING PERFORMANCE OF NEW CONSTRUCTION AND COMPREHENSIVE REFURBISHMENT PROJECTS - COMMISSIONING

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<b>Cost Structure</b>		<b>Revenue Streams</b>		
<ul style="list-style-type: none"> <li>- Consultants salary</li> <li>- training of consultants</li> <li>- Software licence fee</li> </ul>		<ul style="list-style-type: none"> <li>- service fee depending on volume (responsibilities, project phase, task, complexity and size of building (technology), interfaces with other project members</li> <li>- Software licence fee</li> </ul>		

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	<p style="text-align: center;"><b>Key Resources</b></p> <p>- Software tool</p> <p>- Special know how on project development processes, service descriptions</p> <p>- Know-how on necessary tasks during the design and construction process</p> <p>- Knowing the difference between energy monitoring and the necessary monitoring for quality insurance of the performance</p> <p>- Know how on support of engineering process</p> <p>- Know-how on necessary software tools to support quality insurance service</p> <p>- Know-how on organising, executing and analysing performance tests</p>		<p style="text-align: center;"><b>Channels</b></p> <p>- relevant associations of common target group</p> <p>- relevant events of common target group</p> <p>- common associations and those events</p> <p>- public relation (for common target group)</p> <p>- Websites</p> <p>- personal contacts</p> <p>- cross selling</p>	
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