The SIT4Energy project has received funding from the German Federal Ministry of Education and Research (BMBF) and the Greek General Secretariat for Research and Technology (GSRT) in the context of the Greek-German Call for Proposals on Bilateral Research and Innovation Cooperation, 2016

SIT4Energy

Project Acronym:	**SIT4Energy**
Project Full Title:	**Smart IT for Energy Efficiency and Integrated Demand Management**
Project Duration:	**36 months (01/03/2018 – 28/02/2021)**

DELIVERABLE 2.1
Gamified and other Marketing Strategies based on SIT4Energy Framework

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Task	**T2.1 – SIT4Energy 3Ps: Product, Positioning, Pricing**
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SIT4Energy

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Authors List

Leading Author				
First Name		**Last Name**	**Beneficiary**	**Contact e-mail**
Siranush		**Akarmazyan**	**ITML**	**siranush@itml.gr**
Co-Author(s)				
#	**First Name**	**Last Name**	**Beneficiary**	**Contact e-mail**
1	Ana Isabel	Grimaldo Martinez	HOST	ana.grimaldo@hochschule-stralsund.de
2	Christopher	Schneider	SHF	Christopher.schneider@stwhas.de
3	Konstantinos	Peppas	CERTH	kpeppas@iti.gr
4	George	Tsakirakis	ITML	gtsa@itml.gr

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Executive Summary

This document sets out the first steps towards SIT4Energy product/services proposition, pricing strategy and positioning. In this context, this document presents the initial definition and proposed methodology to be applied within the project. Moreover, it defines the SIT4Energy mission together with some assumptions-risks and go-to market resources while givens an overview about the existing pricing models of similar energy efficient systems and services which could help to choose the most appropriate SIT4Energy pricing model. Additionally, it defines the value chain and outlines the main incentives (including some gamified based) for the SIT4Energy customers to change behaviour and/or becoming more engaged in energy related actions.

The study is mainly focused on the two basic wings of SIT4Energy ecosystem, i.e. the SIT4Energy Smart Dashboard (web app) and the SIT4Energy mobile App. As the SIT4Energy platform and its individual components are currently under the development stage, detailed analyses for these components will be conducted in the next version of this deliverable when more tangible results and insights will be available. In agreement with the proposal statement, the final design of the SIT4Energy product (together with its individual components) proposition and pricing strategy will be given in the second update of the document (M22).

Gamified Marketing Strategies have not been addressed in this document and are foreseen to be addressed in the second version of this deliverable.

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List of Acronyms and Abbreviations

Term	Description
DSO	Distribution System Operator
HUA	Harokopio University of Athens
SaaS	Software as a Service
B2B	Business-to-business
B2C	Business-to-consumer

1. Introduction

1.1 *Scope and objectives of the deliverable*

The purpose of this report is to provide an initial design of the SIT4Energy product proposition, and pricing strategy and sketch the initial value chain. The document sketches several SIT4Energy suitable pricing strategies and deal with customer appealing incentives which support the acceptance of the SIT4Energy platform coupled with the its components.

The first step in SIT4Energy product proposition is the overview of the SIT4Energy target market and its customer segments. This is following by stating the SIT4Energy missions together with some assumptions-risks and go-to market resources. Furthermore, the given overview of the existing pricing models of similar energy efficient systems and services could help to choose the most appropriate SIT4Energy pricing model. Finally, the defined value chain together with incentives (including some gamified based) will help to boost the interest of SIT4Enegy target customers, to change their behaviour and/or becoming more engaged in energy related actions.

1.2 *Structure of the deliverable*

The deliverable is built as follows:

Section 1: gives a brief introduction to the purpose of the deliverable and its contribution,

Section 2: This part presents the SIT4Energy Product Proposition:

Section 3: This part presents the overview of existing price models

Section 4: Product Positioning and promotion: This chapter

Section 5: Concludes the report

1.3 *Relation to Other Tasks and Deliverables*

The figure below illustrates the relationship between the current work and the other activities in the project.

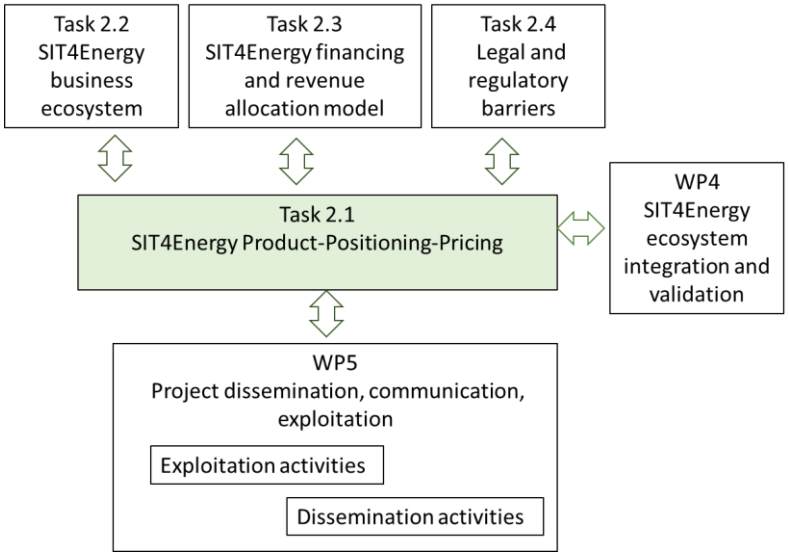


Figure 1. SIT4Energy Task 2.1 and related activities

2. Product Proposition

The following section includes an overview of the two wings of SIT4Energy product, i.e. the SIT4Energy Smart Dashboard (web app) & the SIT4Energy mobile App. The overview contains information that describes the two wings of the product, how they were created and the way they will be marketed.

The product proposition formulates a statement that depicts the strategic oversight on the product's success - why prosumers and/or consumers will adopt. Factors of risk and assumptions will also be listed.

Finally, the proposition presents the needed resources (in terms of business investment) to bring the product to market.

2.1 *SIT4Energy Smart Dashboard Overview and market*

Smart Energy Management dashboard exploits smart analytics to analyze consumption data, behavioural patterns and external context information (e.g. pricing, weather) for providing personalized insights and recommendations for optimizing energy production-consumption patterns. It is an intelligent recommendation service, which gives individualized recommendations for action at appropriate moments addressing energy consumers and prosumers in a personalised manner.

2.1.1 Functional Overview (HOST)

The Smart Energy Management Dashboard (SEMD) for integrated energy management for prosumers scenarios will support the analysis of efficiency potentials in the local energy production and consumption. The Smart Energy Management Dashboard will exploit smart analytics to analyse consumption data, behavioural patterns and external context information (e.g. pricing, weather) to support utilities and end-users in their analysis and decision-making for optimizing energy production-consumption patterns. Furthermore, the dashboard will provide personalized insights (e.g. specification of the type of analysis) and recommendations for optimizing energy production-consumption.

The information presented in the Smart Energy Dashboard will be collected mainly from the smart meters installed in the customers' households. Additional information will be integrated from external services (e.g. weather forecasting services) to provide a more detailed analysis.

2.1.2 Main Functions (HOST)

The Smart Energy Dashboard could facilitate the utilities the analysis of their customers' energy consumption. The selection of different factors such as weather conditions, energy prices among others, could allow them to create personalized visualizations. In addition, the utilities could interact with the information presented in the Dashboard to analyse it and identify insights in the energy demand and supply. In this way, it will facilitate the identification of consumption patterns to support them to determine strategies to optimize energy consumption.

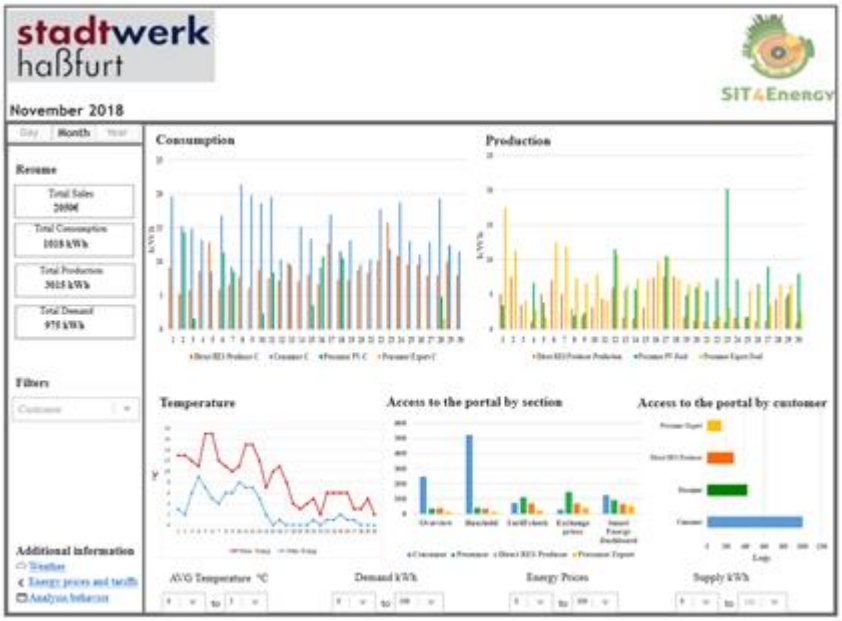


Figure 2. Main screen in the Smart Energy Dashboard mock-up for the utilities

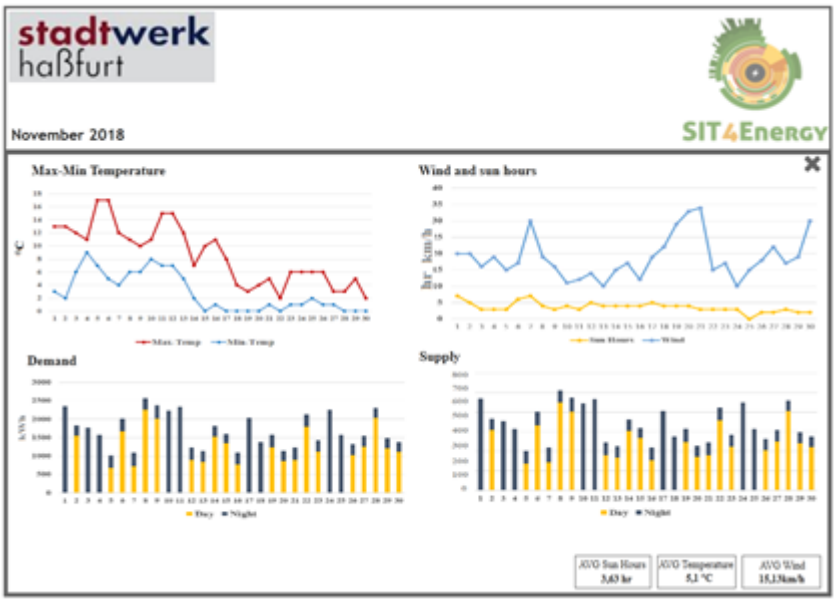
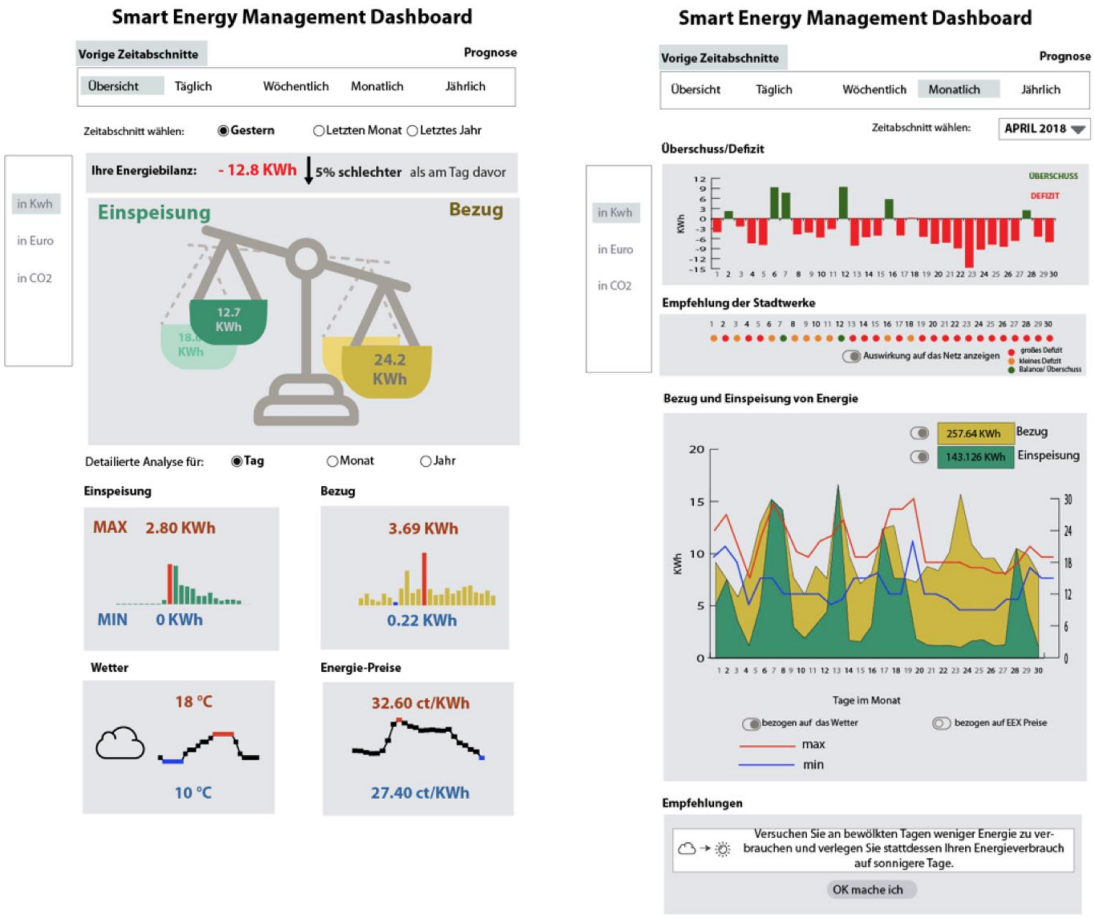


Figure 3. Weather data in the Smart Energy Dashboard mock-up for the utilities

The main idea of the smart energy dashboard for prosumers presented in Figure 4 is that it visualizes the energy balance achieved by prosumers: the energy they produced (fed back to the grid) and the energy they consumed (the energy they procured from the grid), during the various time segments, such as: daily, weekly, monthly or yearly. In this way, based on analysing their historical consumption and production, prosumers can adjust their consumption and production in the future to achieve a positive balance. Based on available information prosumers receive recommendations from utility as well as SIT4Energy recommender about optimizing their energy production/consumption.



(a) **(b)**

Figure 4. Smart energy dashboard (mock-up) for the prosumers: (a) start screen of the smart energy dashboard; (b) the monthly view of the dashboard including weather and recommendations

2.1.3 Smart Dashboard Target Market (SHF)

Marketing the SIT4Energy Smart Dashboard solution requires to consider all the different groups of consumers at which the product is aimed. In this case, the two identified consumers are residential prosumers and utility companies. The Smart Energy Management Dashboard will be a valuable tool for residential prosumers. This product will provide visual data, which allows prosumers to track their own energy production and consumption patterns. More so, this tool will be able to give prosumers external context information about pricing and weather, in order to help them in their decision making process for optimizing their energy consumption/production patterns.

The other target market in focus here are utility companies and DSOs, which will benefit from using the Smart Energy Management Dashboard by enabling them to observe end-user's daily energy consumption patterns. DSOs can use this dashboard to analyse data to make grid operations more efficient. For example, when considering energy distribution, the Smart Energy Dashboard will help optimize the balance of production and consumption. When considering the emerging flexibility market, the dashboard will enable DSOs to investigate flexibility potentials. For utility companies, the dashboard will help balance sales and purchases of the required amount of energy regarding billing processes. For example, to develop new tariff models, which are linked to the energy stock price.

Using dashboards to track energy patterns is nothing new. Many dashboard companies agree that visual representation of energy consumption and production is an effective way to change consumption patterns. Consequently, in recent years, dashboards have been flooding the market. Therefore, it is

important to consider already existing products and services to forecast the potential effect of the SIT4Energy Dashboard. We will address the identified competition in Section 3.1 of this deliverable. Enforcing a well-developed product, as well as accumulating knowledge about existing pricing models of developed dashboards and their success is essential in ensuring the longevity of the SIT4Energy Dashboard. Examples of competing products can be found in section 2 of deliverable 2.2 "Existing business models comparisons and cross study".

2.2 *SIT4Energy Mobile App Overview and market*

A user-friendly mobile app through which users become aware of real energy efficiently benefits, by the provision of personalized insights and recommendations to optimize their energy consumption patterns, adopt new energy saving habits and help them save money on their energy bills.

2.2.1 Functional Overview

The mobile app developed within SIT4Energy will be validated at HUA Campus by having its academic staff as end-users. The app will allow its users to access information on how they can reduce electricity consumption on their working space. However, the scope of the application could also be extended to actions that these users could perform in the household as well.

Users of the SIT4Energy mobile app will be provided with a clear overview of their working space's total energy consumption via specific dashboards. The app will also include necessary menus, tools & selectable options that help a consumer outline energy consumption patterns, based on some general pre-configured recommendations. Furthermore, it will provide parameterizable options for warning or informative or action-prompting notifications that the app can send to the user to help them achieve their personalized targets set by the adopted energy patterns.

2.2.2 Main Functions

The SIT4Energy mobile app consisted of the following main components:

- My profile
- My consumption
- My Savings
- Tips & notifications
- Settings

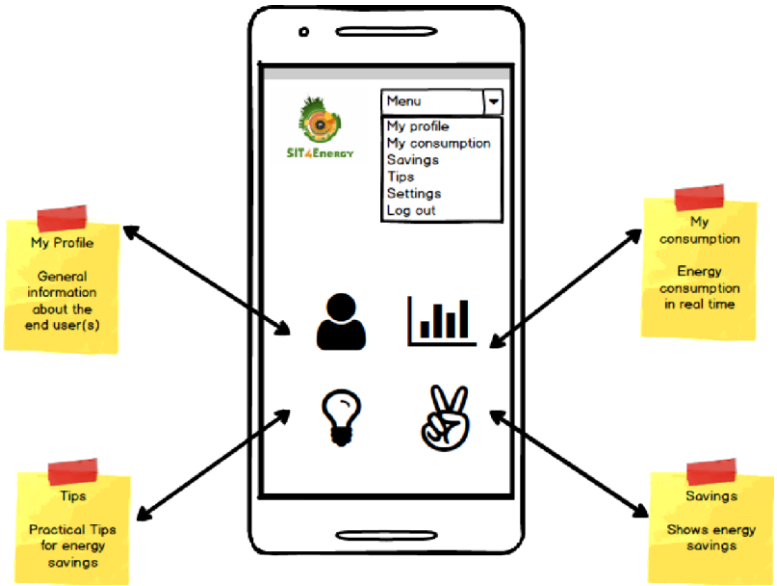


Figure 5. The Main Functions of the SIT4Energy's mobile app

*2.2.3 **Mobile App Target Market***

The SIT4Energy target market is the general consumer market. This is highly competitive market with challenging attributes such as shifting brand loyalties, short terms of app usage/high frequency of app abandonment, volatile app popularity, rapid decrease of interest after adoption, high exposure to public reviews, banalization, etc.

Competition is fierce in the market of consumer apps and there are over 4 million apps available in the Apple App Store and Google Play combined[1]. Thus, any mishap related with the provision or operation of a mobile app can have immediate impact from which it can be hard, if not impossible, to recover. Consequently, not only originality but also execution is crucial for the survival and the success of such a product. Below, some key elements of the target market are highlighted:

- The real-time Web: interactive, responsive and engaging
- Big data: the new contextualized consumer experience
- Design: Simplicity
- Execution: Agility

Expectations for applications in the consumer space are constantly changing. To succeed, business processes need to be faster, easier and smarter [1].

*2.2.4 **SIT4Energy components***

The following table presents the list of the SIT4Energy six assets/components. Detailed information about these components have already been presented in D5.5: Exploitation Strategy and Plan.

Table 1 Overview of SIT4Energy components/assets

Asset name	Short characterization
User activity tracking engine	Rule-based engine for user activity tracking and characterization. It will deliver services inferring the class of users' actions in different micro-moments
Micro-Moments Detection Tool	Real time analysis and classification of end-user behaviour to accurately detect the optimal timeframe to engage end-users
Recommendation Engine (RE)	Algorithms using Machine learning and rule-based systems and recommending energy efficiency actions from aggregated consumption/production data, and user context data
Mobile App with Enhanced Vizualisation schemes	The Mobile App comprising of a visualization module, analytics procedure and an activity tracking module for micro-moments detection
Context-aware attention triggering service	Service that will consider the input regarding the activity tracking capabilities and micro-moments, and include respective user type models as well as input from the mobile recommendations use context required for completing the context model, based on a developed user-centered model
Smart Energy Management Dashboard	User-centered tool with smart visual analytics for analyzing energy production and consumption patterns together with behavioural analytics of utility customers.

The targeting market, as well as the product proposition, pricing strategies and product positioning of these components will be explored in the second version of this deliverables (M22) when more tangible results and insights will be achieved.

2.3 ***SIT4Energy Mission Statement***

The SIT4Energy Mission is a real-time, energy awareness and energy management services provision to both consumers and prosumers on a daily basis.

(key words: awareness, energy saving habits, real-time, energy efficient practices, daily activities)

*2.3.1 **Assumptions***

Based on the scope of the SIT4Energy project four essential assumptions have been defined as follows:

- Ultimate goal is to achieve real time synchronization between the data collected and processed by the solution and the notifications sent to users
- Micro moments and best practices around them will be defined and considered for daily activities
- Users will have the option to decide about the frequency of the prompts and recommendations they receive
- Recommendations concern the adoption of energy saving practices which will lead to positive and efficient behavioural patterns (habits)

*2.3.2 **Risks***

The following four aspects should be considered when analysing the SIT4Energy project outcome:

- Technical and procedural setbacks (concerning the solution's development and integration)
- Incongruity between customer feedback (market research) and projects programmatic objectives
- Cultural appropriation
- Attributes of consumer apps' market

*2.3.3 **Go-to-market resources***

In the frame of the project the following go-to-market resources will be utilized:

- Test & validate use cases via pilot demos
- Public consultation & Standardization
- Project Website
- Dissemination
- Social marketing
- Digital promotion tools
- Consortium dynamics (B2B & academic networks, commercial resources, energy consumption data & models, etc.)

3. Overview of existing price models

The SIT4Energy pricing strategy must consider the different nature of the two wings of the product, i.e. the web-based Smart Dashboard and the Mobile App.
Considering also the various delivery models, different approaches need to be examined, including pricing strategies such as one-off licensing, subscription, free, freemium or paymium.
The course towards a pricing strategy must consider the relative markets the product is addressing, i.e. consumer vs prosumers, examine the competition-if any and finally, provide sustainability.
"Pricing is more about human behaviour than about numbers".

3.1 *Smart Dashboard wing pricing models*

In order to assess the different pricing models for the Smart Energy Management Dashboard, it is needed to differentiate between two pathways. One pathway defines the relationship between two businesses and entails the exchanges of a good or service between two or more utility companies (B2B). The second pathway defines the relationship between a business and a potential customer, which entails the exchange of goods or services between utility companies and end-users (B2C).

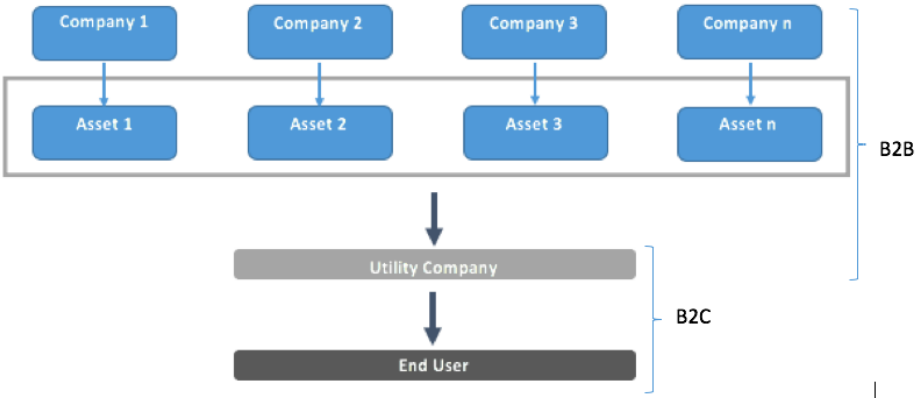


Figure 6. B2B and B2C pathways

In the following section the different pricing models will be briefly outlined and subsequently the pricing strategies which deem to be the best fit for the two models (B2B and B2C) will be outlined. Since the application will follow a Software as a Service (SaaS) pricing model, three of the main strategies used in this domain are considered.

3.1.1 Free with ads

This strategy is fairly easy to define, it refers to users being able to access and use an application for free. Therefore, users are not charged directly, rather, the revenue comes from someone else. In most cases, revenue is acquired through advertising companies who pay to display their ads throughout the application.

3.1.2 Freemium

This strategy is used for an application offering both free (simple and basic features of the application) and premium/paid (more advanced and additional features of the application) services to its customers. The Freemium strategy is very popular since it allows users to get an idea of the application, however, does not allow for advanced usage unless the individual subscribes to a payment option.

3.1.3 Free Trial

This pricing strategy includes customers being able to use the full version of an application for a period of time (e.g. 30 days). This strategy will let users get an idea of the full range of features of an application. In most cases, after the 30 days free trial period, the subscription to the application will be renewed automatically if the user did not cancel the subscription during the first 30 days. The first 30 days serve as a 'hook' to persuade customers to commit to the application.

3.1.4 B2B Optimal Pricing Strategy

Since the Energy Management Dashboard is a software which one company is planning to offer to another through the B2B pathway, it is important to consider a pricing strategy, which fits the Software as a Service business model. Most commonly used are Freemium and Free Trial pricing strategies. Both strategies offer companies the opportunity to engage with the software and learn about its features, however, will limit their usage if the company does not upgrade or continue payment.
When comparing both strategies, it is important to consider which model will most likely yield the most profitable results. Even though, the Freemium model does offer some advantages, for example by attracting lots of customers and spreading the word about the application, it does come with limitations. First, a clear model needs to be established which seeks solutions to convince companies/individuals to upgrade from the free version to the premium version. In order for a Freemium model to work, lots of individuals will need to use the software, if the pool of users is rather small a Freemium model does not seem to be the right fit.
Considering the above comparison, it deems most profitable to use a Free Trial approach when considering the B2B market. However, when examining a larger pool of customers, for example the B2C market, a Freemium approach can be considered as a profitable choice.

3.1.5 B2C Optimal Pricing Strategy

Considering the already existing dashboards on the market and their pricing strategies, it seems reasonable to apply a Freemium model when considering the B2C pathway. Through using this model, end-users get a chance to explore the dashboard and its features, however, will be limited in their usage. It will be necessary to think about the range of pricing options available and which features are included in each. Giving end users a variety of options to fit their individual need will be most likely to yield profitable outcomes. Of course, it is necessary to evaluate how many users are expected to engage with the application. A general rule for the Freemium model states that the more end-users a potential application accumulates the more likely a Freemium model will work. Therefore, it is important to consider the size of the market and funding abilities, as well as potential benefits which can be potentially received from Freemium users beforehand.

3.2 *Mobile App wing pricing models*

The right pricing model and strategy not just for a software app but for any product or service provider is a big challenge. First there are the user expectations, then the competition and of course the various other socio-economic attributes of the market, as for example the potential substitute products, the incline of the consumers to substitute or downrightly abandon products because of price, availability or any other reason, etc.
Therefore, scanning and tracing quantitative market elements, such as i.e. average sectorial pricing is always essential.
The goal is to achieve the right balance between price and value and make the product, the apps in our case, sustainable and even more so, profitable.
Essentially, when referring to mobile apps, certain pricing models have been outlined by the market which can be efficiently classified to belong into one of the following general categories:

- Free
- Freemium
- Paid
- Paymium
- Subscription

3.2.1 Free apps

There are two types of free pricing strategies: Free apps that are free to download with revenue coming from in-app advertising and free apps that are completely free without containing any ads or ways to make purchases in them. A free app is an effective model to attract many users. Free applications with In-app advertisements act as platforms for advertising revenue. Advertisers rent space inside the app, and users interact with these ads when they use it. Gaming apps are the most common examples with

in-app advertisements. Many weather apps are another typical example of free to use, ad-displaying environments. Users downloading a free app typically expect to deal with ads, but they still want the ads to be relevant to them and to the app. Customization and monitoring are essential to keep users engaged and loyal and not having them quit the app because they feel annoyed by the advertising included in it. Checking that the ads in an app are interesting and non-disruptive is a good way to keep users happy. Regular and consistent user feedback can also help.
The free apps without ads or in-app purchases usually act as add-ons to an established product or service. Their purpose is to act as a promotion channel that encourages and conveys users to another revenue generation platform. Such apps leverage features like coupons to be used in a store, discount notices, and other information that prompts the user to proceed to an action, mostly outside of the (free) app. This way an application can be another marketing channel acting as a reference point for an enterprise. Companies also create free apps to facilitate customer service and to aid customer retention efforts.

*3.2.2 **Freemium***

The freemium pricing model also provides the app for free to download, so it can be said that it is a modified version or even an evolution of the free model. This type of apps includes additional tiers, features or incentives that users can choose to pay for. It is possible to distinguish the types of freemium apps in three main categories:

- Free download of the application and payment for upgrading in levels, accessing premium features or in-app currency and boosters (these are most relevant in gaming).
- Full featured download of the app, including premium functions but for a specific, limited, period. After that the user needs to pay to continue to use the full-fledged version.
- Free app with advertising that gives the user the option to pay in order to have it ad-free.

The freemium model tends to become the most common app pricing model. The initial procurement for free attracts much organic traffic, which has the potential to be monetized in the paid upgraded versions. Even more so, the popularity of this model makes it familiar for users to expect to pay for something that would enhance their experience, especially if they have tested and enjoyed it, even partly, for free. Proper development and efficiently positioned a freemium app (especially a gaming app) can become a continuously stream of income.
Special care must be taken in this pricing model in what relates with the prompts for (the paid) upgrades. They need to be managed properly or else, they can be perceived as an irritation by the users.
Another important issue is the increased development effort necessary for customizing and adjusting in-app purchases and keep the app fresh and engaging.
A freemium app can perform well or bad depending on how it's positioned.
As with free apps, freemiums work best when the goal is to attract a lot of users. Unlike free apps, however, users want more since they're expected to pay for upgrades and premium features.
Conclusively, the base for the success of a freemium app remains the offering of an adequate amount of free features and not manipulating consumers with tricky upgrade notifications. These simple elements can keep a freemium app continuously in good standing.

*3.2.3 **Paid apps***

This is a straightforward pricing model. The users pay once to download the app and then it's theirs to use without any additional charge. Once users pay, they own the app and all its features.
Paid is a common app pricing strategy although with time, is losing in popularity. This creates an amount of risk in terms of monetization especially if there is a free app with similar functionality already available.
The paid model remains a solid and feasible means of conducting a revenue strategy for certain apps, such as niche B2B apps designed for targeted use. Examples can be medical and legal apps, created for professionals who wouldn't mind paying for a very useful app.
Additionally, companies with lots of loyal customers or fans, like well-known brands, can afford to promote a paid app that offers a desirable unique function.

Special care must be taken from the vendors side so that the initial price does not serve as a barrier for prospective users.
Finally, it is important to have marketing efforts that are exceptionally strong, precise and consistent. This is necessary, first and foremostly in order to convince the consumer to pay upfront to acquire the app and equally important, to retain the customers, as a paid app that doesn't deliver is more likely to receive lots of bad reviews than flawed free apps and have users abandoning it altogether. Allowing consumers free limited trials of a paid app with no pressure or commitment to purchase it is a great way to encourage and convince potential customers to ultimately purchase the product.

*3.2.4 **Paymium apps***

With the "paymium" model the user needs to pay to acquire the app and there are additional features that can be accessed for an additional cost. Paymium is a form of app pricing that combines the paid pricing model with in-app purchases as in freemium apps. It is increasing in popularity as it can provide extra revenue streams beyond the initial purchase. Evidently, for such an app to stay successful it is paramount to employ increased effort in making new exciting content, unique useful features, and game levels (in the case of paymium gaming apps) that users can subscribe to or pay for.
For this pricing model to work the value must come from the content of the app. Benefits must be constantly showcased in order to have consumers paying for additional tiers and features, beyond the initial purchase.
This is another delivery model that calls for great marketing and strong reputations to unlock the potential to provide great revenue streams. Communication with the consumers should be clear and straightforward from the beginning to avoid frustration and loss of customers.
High-quality design, content and functionality are of utmost importance.

*3.2.5 **Subscription***

In a subscription-based model, users pay a monthly or annual fee (sometimes auto-renewing) to continue using an app. This pricing model is used for apps coming from industries such as press (newspaper apps), dating apps, music streaming apps (like Spotify) etc.
This model has gained momentum over the past few years. Some big vendors (like Apple or Spotify) are firmly committed with subscriptions models and are vigorously offering incentives to grow their customer base. The goal for subscription app makers is to keep users on board for periods longer than a year, as this is essential for the feasibility of their endeavors.
Once registering a solid and wide base of subscribers an app vendor can safely consider steady revenue streams. A subscription can also be perceived as a softer approach than asking for direct payment, providing consumers with a notion of paying only if they continue to find value in the app. The subscribers of an app show commitment to the product presenting an opportunity to build long-lasting and loyal customer relationships. For this to be achieved, an app vendor needs to continuously provide value to the subscribers' base. Relevant updates and new features need to be added regularly.

3.3 ***Solution Pricing & Sustainability***

As stated in Section 2.2, it is at this point more apparent that the choice of the right pricing model that will make an app feasible and sustainable must consider different perceptions and identify with the proper target audience. To this end, market research, engineered around a properly chosen focus group is useful in order to gain knowledge on what a part of potential users think about the app and how much they'll be willing to pay for it or its additional features.
Having an input from outside can help a developer see the gap between the perceived valuation and how the end users value the app. It is possible that the focus group might not necessarily get the value right, still though they can give a base to build upon. Feedback can also be used to improve user experience and features.
Viewing an app just like another product to be introduced and sold in a market, in effect considering the basic laws of supply and demand can be the starting point.
The right price is the price that consumers are willing to pay. The product should play for the market. If apps differ from other products it is that the sheer market saturation causes a very short commercial life cycle. Users may download an app, use it once or a few times but getting them to regularly reopen and

using it constantly may be an ambitious and hard to achieve objective. It takes hard work to keep users engaged and coming back for more. In this sense, wrong pricing can become a barrier even before the download takes place. Potential customers could be repelled by what can be perceived as unjustified cost, or they may delete an app they've downloaded after receiving too many pop-ups or simply not getting value for the money they spent. Consequently, in the course of defining the means of sustainability, the work will need to be focused around the following factors:

Target market: Identifying the target audience is a fundamental element of the app creation process and settles as well on the right pricing model and the promotion strategy.
For example, SIT4Energy will target the people who have money to spend or for people looking to save more money? Some parts of the target audience, like i.e. students or younger consumers in general, will likely ignore apps that aren't free, while experts in a field of industry or professionals or even simply consumers taking good care of their working environment may recognize benefits in spending money on an app that can provide them with value and help them save money, energy or both.

Competition: Surveying the market, identifying and studying existing or potential competition. If there are players that offer free apps in a certain area, a paid app serving the same or similar purpose may be hard or impossible to succeed. Similarly, the pricing level of an app should be set to be in balance and/or at a comparable level with the general level of the competition; in case of a pricing gap an app can probably get less traffic and make less money. Still if a product has distinguishable value features and functionality not found in similar apps, users could be willing to pay premiums.

Google Play vs Apple Store: Mobile app marketing data has shown that Apple product users are more open to paying for apps than their Android counterparts. This fact relates with the profile and demography of individuals using Apple devices and those who use Android. Regardless, getting people to pay for Android apps has proven to be daunting. Therefore, it is important to take into account the potential audience of the app stores during app planning & development.

Pricing strategies and tactics for mobile apps are not as straightforward as their definition may appear. It is rather more useful to approach the issue in a holistic and non-arbitrary manner. Marketing and promotion strategies, along with the competitive landscape and characteristics of the targeted audience such as demographics, behaviour, geography, income levels, etc., need to be somehow considered and worked upon, all along the way. The pricing strategy ideally needs to reflect the value of the app, meet market expectations and achieve business goals
However, in a market with abundance of ideas and developments, it is practically more challenging than ever for apps to stand out and remain relevant. Keeping up with trends and user expectations becomes the top priority for an app developer that creates a product that gets in front of the eyes of the general consumer.

4. SIT4Energy Product Positioning and Promotion

The positioning of the SIT4Energy services can be shown via

- Value Chain
- Incentives for the customers (communication and promotion)

4.1 *SIT4Energy Value Chain*

The SIT4Energy value chain is a strategy tool used to analyse internal SIT4Energy activities. Its goal is to recognize, which activities are the most valuable that add value to the final product delivery. Figure 7 depicts the expected SIT4Energy product value chain, based on Michael Porter's [2] concept description and adapted for the software solutions and services comprising the project at hand.

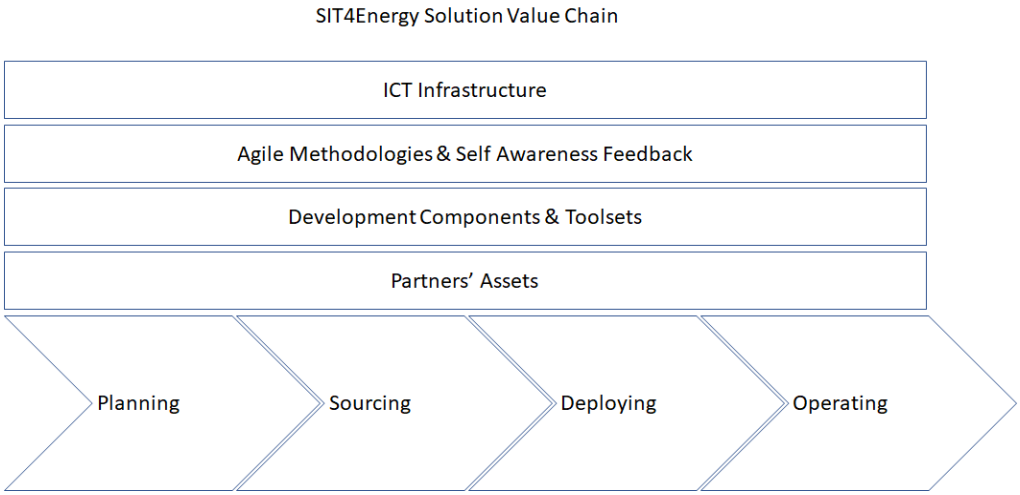


Figure 7. SIT4Energy Value Chain

Stemming from traditional manufacturing industry processes, the value chain analysis serves two main purposes in the development of a product:

- Cost management and reduction
- Differentiation in product features

Each of these two targets of the analysis requires a different approach.
In the case of cost management and reduction, operational functions such as supply chain, production and distribution are reviewed and valued to detect the points and procedures that could be altered and improved in order to reduce production cost and/or increase revenue.

In the case of differentiation of product features, the review of the supply chain-production/development-distribution functions is performed in order to recognize the procedure of creating value features that could differentiate the product. This part of the analysis is performed in conjunction with the products' target market and its competitive landscape.

Porting this model in the SIT4Energy solution development environment, we can define four main product development functions, namely Planning, Sourcing, Deploying and Operating.
Since software development functions differ from traditional manufacturing operations, the product development functions were adjusted as follows:
"Sourcing" is the equivalent of the inbound logistics function (i.e. procurement of raw material resources for production) in the case of traditional manufacturing.
"Deployment" function is the equivalent of outbound logistics of manufactured products in traditional industry.
"Operating" includes the product supply and product after sales support functions.
Sales and marketing activities can be distributed across the Deployment and Operating main functions.
Below, a draft outline of the main operational functions has been drawn:
Planning:

- Coordinating assets
- Optimize & integrate interfacing between actors
- Requirements management
- Traceability processes

Sourcing:

- Select & qualify development components
- Manage usage, update attributes and report used components

Deploying:

- Connect product distribution channels with software development & delivery

Operating:

- Build reliable, resilient & adaptive tool stack & business processes
- Integrate tool stack & processes into the whole product value chain

4.2 *Communication and Promotion*

Software Applications' marketing is a fast pace environment, complete with different players and rules. Nevertheless, the common issue for marketers in the software industry remains basic: how to market their applications. Apparently, old and new marketing approaches come in question. Challenges in the industry of software applications relate around the (mostly novel) delivery channels, audience targeting, product positioning, downloads vs users, app store optimization, and naturally user retention. It is about the user experience, not just the application.

Conventionally, companies developed apps to provide them for usage to their customers with a marketing strategy focused on the software itself. As the software and the applications industry and particularly its mobile segment is continuously growing and consequently maturing, promoting a software application as the set of the features that it possesses as a product is an inadequate method. Consumers are now exposed to a vast number of apps, for every use and every industry.

So, as vendors in other mature segments of the market, app marketing is not just about the product but even more about the experience that comes from its use.

Even more, what is important is that this experience is uniquely different and superior to any other experience the consumer might previously had and eventually how the app will simplify their lives.
To set the right coordinates and navigate the ever-changing waters of the digitally driven app marketing, a plan needs to face the issues stemming from these challenges.

4.2.1 SIT4Energy activities, channels and incentivisation

There is a broad consensus that the best approach to dealing with any potential customers is to use the partnership's existing professional networks and contacts. Frequently used customer engagement activities, channels and incentivisation are listed in the following subsections. Among them, the most suitable and applicable options will be selected by SIT4Energy partners and will be deployed in the frame of the project.

4.2.2 Activities

- Define brand messaging and positioning
- Define monetization (pricing) strategy
- Create a pitch deck to promote the solution to potential sponsors and/or investors. It showcases the company, the app, the management team, the go-to-market strategy and related tactics and activities.
- Set up Google Alerts: Detect where people are talking about the problem the app solves. Also track where people are talking about the app directly by setting up a branded keyword alert.
- App Localization according to market surveys of different focus groups in Germany and Greece
- A/B testing: Run pilots of different app versions to different focus groups
- SEO

- In-campus promotion: Directly target audiences with physical means, i.e. billboards, posters in academic and corporate premises
- Promo Video to be used in traditional media and digital (viral) channels
- Appeal to App Review Sites to feature the solution
- Respond to All Reviews: Provide personalised communication to existing and potential users
- Apply for Awards
- Write a press release
- Write Newsletters
- Create a press kit page and post it on the website: All relative press kit material is compressing into a .zip file. Add the Press Kit link in the appropriate metadata field in iTunes Connect.
- Roll Out frequently new updates
- Monitor performance
- Install a heat map on your mobile app.

*4.2.3 **Channels***

- Pilot demos
- Public consultation & standardization
- Publications, info days, dissemination activities
- Tech Partners & their resources
- Website of the project and the application
- Blog
- App Store Optimization
- Social marketing and influence groups
- Email campaign tools

*4.2.4 **Incentives***

- Gaming Strategy converting user results: i.e. listening or quiz games around energy related issues, set personal goals and provide awards based on the results, and more
- Offer free trials for levels of the app that will be under a paid provision policy
- Promo codes -Coupons generated online associated with sponsoring activities. Involve industry stakeholders
- Run a Contest organically and/or involving industry stakeholders
- Referrals Policy with referring incentives for existing users

5. Conclusions

In this deliverable a thorough market overview has been achieved, by analysing numerous existing or potential competitive solutions to both proposed products. This analysis has offered the partners a good insight of the status of the relative markets. The first approach steps towards the SIT4Energy product-positioning-pricing have been made. The given overview of the existing pricing strategies will help to define the most suitable SIT4Energy pricing model, while the illustration of the value chain based on Michel Porter approach, will assist to come up with activities that are the most valuable to add value to the final SIT4Energy products/services delivery.

References

[1] https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/
[2] Porter, Michael E., "Competitive Advantage". 1985, Ch. 1, pp 11-15. The Free Press. New York.