Adaptive Gateways for dIverse muLtiple Environments

D6.5

Innovation and Exploitation Planning and Report

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Abstract

The goal of this deliverable is to provide an additional layer for the exploitation management of AGILE and enable exploitation planning. In this second iteration, the focus is put on the exploitation opportunities for each pilot conducted within AGILE to explore avenues for monetization and go-to-market strategies. To build up on the Business Modelling assessment from the first iteration of this deliverable, a stakeholder-based business modelling approach was chosen to define the business model scenarios of the single pilots as archetypes for AGILE exploitation possibilities. The approach defines the stakeholder environment in which the AGILE-driven solutions of the pilots are integrated and then defines which stakeholders could provide revenue to make the solution sustainable and which users would have to cooperate in order for the pilot-specific business models to be sustainable a the targeted market.

The business model solutions were drafted collaboratively in a workshop on the consortium meeting in Q1 2017 and refined afterwards. The initial conclusions from the business modelling exercise and following research show that each pilot has solid exploitation options and a variety of stakeholder that are likely to provide a sustainable inflow of revenue. The diversity of the pilot business models shows how flexibly AGILE can be deployed, without being limited to a specific application or a specific domain.

Document History

Version	Date	Comments
V0.1	12.03.2017	Initial Structure and Methodology
V0.2	01.04.2017	Business Model Scenarios incorporated
V0.3	03.05.2017	Integrated feedback on Methodology and structure
V0.4	16.06.2017	Implementation of comments from Pilot leaders
V0.5	21.06.2017	Changes from internal review implemented
V1.0	XX.06.2017	Final Document

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Acronyms

Acronym	Meaning
AGILE	Adaptive Gateways for dIverse muLtiple Environments
AQ	Air Quality
QS	Quantified Self
ER	Enhanced Retail
UAV	Unmanned Aerial Vehicle

1 Introduction

The goal of this deliverable is to provide an iterative exploration of the innovation and exploitation potential of the AGILE solution. In this second iteration of D6.4 the focus is set on the exploitation potential of every AGILE pilot.

Having a clear point of view on the exploitation potential the pilots represents a solid basis for the exploitation outline for the rest of the project and beyond. Of course, given the diversity in nature regarding the pilots in AGILE, exploitation options and resulting business models will take different forms and a commercial exploitation will not touch all partners in every pilot.

Deriving an exploitation plan from the insights regarding the different business modelling options is the next logical step that should be pursued with the information given in this deliverable. The different scenarios discussed in this deliverable will provide a number of prerequisites before going to market, which then enables exploitation for every pilot to be planned individually.

The innovative concept of AGILE is still some time away from market, and given the fact that AGILE is intended to be a generic solution that can be applied in a multitude of sectors, the business model scenarios are meant to be a tool for decision support as well regarding route-to-market planning, market selection and even to some extend to further narrow down product specifications. This allows for incorporating assumptions that are currently present in the consortium, combine them with existing knowledge regarding the implementation of AGILE and then validate them further down the line.

2 Methodology

2.1 Choosing the right approach

For driving the exploitation planning further, a business modelling approach was needed that would be able to flexibly adapt to the highly heterogeneous scenarios present in each pilot, while at the same time dealing with increasingly diverse stakeholder environments.

The approach from Albert and Auwermeulen (2017) fulfils these criteria. The approach was originally crafted for Internet of Things (IoT)-driven innovations in Digital Health and originated from a dilemma shared by many domains with IoT-driven innovation: Classic "canvas-based" business modelling is not capable of incorporating the complex stakeholder relations that are present in many cases. The main symptom of this shortcoming is that classical business modelling usually focuses on the "customer-archetype" when it comes to creating the business model. This is applied under the assumption that a single stakeholder is not only the main user of an innovation but at the same time is directly paying for it (Albert & Auwermeulen 2017). As this thinking oftentimes eliminates the possibility of modelling more complex relationships, as is are often the case when dealing with public goods, involvement of platforms, insurances or de-coupled value creation, classic business modelling approaches are not well suited. As the approach from Albert & Auwermeulen (2017) is tailored towards alleviating the listed weaknesses it was chosen for this iteration of the exploitation report and planning. We will explain the advantages of the approach and its background in more detail in the following chapters.

Important to note is that the approach is greatly involving value network theory, hence we will provide a short explanation to bridge eventual knowledge gaps in this regard.

2.2 Value Networks and Business Modelling

Value Networks are theoretical constructs that show the flows of value inside a network of stakeholders in a certain market or otherwise defined environment. They were originally developed because the classical "Value Chain" was no longer capable of describing more complex economic environments such as digital markets (Peppard & Rylander 2006). They usually consist of stakeholders that are dedicated to certain business roles and feature connections that illustrate the flow of value in the form of services, payments and other streams between the different business roles. Their overall goal is to show the creation and capture of value as a result of a networked effort, as opposed to the linear value adding process that is described within a value chain. (Ballon 2007).

The terms 'Business Model' and Business 'Modelling' have been increasingly discussed in scientific literature in the last 15 years, bringing more and more attention to their use and application (Wirtz et al., 2016). Business Models are structured management tools, which are widely acknowledged to have a substantial impact on success of a company, whereas the process of constructing a Business Model and determining its validity is called Business Modelling (Magretta, 2002). Concerning finding market applications and creating socio-economical value through IoT-driven innovations, Business Modelling seems to be the answer to alleviate the complexity-issues of certain market environments. As progress in Business Modelling has not caught up with the rapidly advancing technological developments, novel strategic approaches to find these models are of the utmost importance. The concrete reasons for this importance are that in order to succeed, most IoT-driven innovations need to identify the added value that drives them and generates revenue, involve a wide range of business-enabling stakeholders, adapt its go-to-market strategy to the market-specific regulations and bring all the necessary complex information into a structured concept (van Limburg et al., 2011)

2.3 The Albert & Auwermeulen Business Modelling approach

In order to construct Business model recommendations from the knowledge gathered during the pilots, a Business Model methodology developed at imec has been chosen. The approach from Albert & Auwermeulen (2017) is a recent Business Modelling approach tailored towards creating Business Models in complex environments, involving numerous stakeholders. The approach also alleviates the severe weaknesses that other current approaches such as the Osterwalder Business Model Canvas (Osterwalder 2010) show when applied in these domains originating from considerations around health and digital health environments (Albert & Auwermeulen 2017).
The approach based on the concept of selecting and analyzing stakeholders. Stakeholder theory has its origins in 1984. Freeman defined stakeholders as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman, 1984). Cleland (1986) introduced stakeholders and stakeholder management by highlighting the importance of stakeholder identification, classification, analysis, and management approach formulation. During the last decade, many authors stated the importance of stakeholder management in

projects (Morris et al. 2006; Winter et al. 2006). The approach follows the generic definition of stakeholder according to freeman.

The Model is organized in a step-by-step fashion. It is tailored to work around an innovative product or service, henceforth called "innovation". The core of the approach is comprised of the so-called stakeholder information-categories. These categories provide the means of thoroughly researching each identified Stakeholder with regards to his function, revenue structure, decision making, experienced changes through the introduction of the innovation, willingness to pay and willingness to contribute. Each category also features a set of core-questions. The information categories represent the means to properly assess the role of a stakeholder in a potential Business Model as well as what the prerequisites are for fulfilling this role. Each step is explained below: **Understand, Environment, Define Stakeholders, Investigate Stakeholders and Assemble.**

Understand

The initial challenge is to thoroughly understand and preliminarily define what the core of the innovation is that is intended to be brought to market. The key questions that are to answer in this step are: What added value is the innovation intended to give? Who is the target-population for the innovation to be used by? Who is anticipated to gain added value from the Innovation? For this initial phase other more generic Business Model Tools such as the Osterwalder Canvas (Osterwalder, 2007) can be utilized, including literature on how to define a company's basic value proposition. Important to note is that the approach distances itself from forcing a company to answer to a certain need specifically, as it can lead to the oversight of generic desires of businesses and individuals such as efficiency gains and increased income among the companies that we interacted with.

Scope

After an initial understanding of the innovation has been reached and the added value has been initially defined, the approach demands a scoping into suitable target markets, which usually means picking target-countries. There are cases when a further sub-segmentation (e.g. regional markets) makes sense. The scope of targeted segments has to be determined for each new innovation separately. Scoping is crucial as, depending on the way target markets are organized, Business Models may face the need to be adjusted accordingly and stakeholders can be anticipated to operate differently. It is also of importance to present a first assessment as to how the innovation is envisioned to be deployed, in which environment. Criteria for choosing a country could be: innovation-specific regulations concerning the innovation, a similar market compared to countries where the innovation is already deployed among others.

Key questions to answer in this step are: In which environment is the innovation intended to be deployed? In which country/countries is the innovation intended to be launched?

Environment

In this step, a systematic review of all potentially relevant stakeholders in the targeted environment, consisting of market and country, is provided. Key questions for this step are: How is the targeted market organized? How do public stakeholders (if at all) interact with the market, e.g. are there subsidies? Which stakeholders in the target environment could be important for the innovation? Which regulations/policies are likely to have an impact on the deployment of the innovation?

Define Stakeholders

In order to prepare a shortlist of stakeholders for in-depth analysis, this step incorporates narrowing down stakeholders introduced in the previous step. The knowledge gathered in the "Environment"-segment is hereby used to define the stakeholders deemed necessary for the innovation to be brought to market and to generate revenue. Key questions in order to select the stakeholders are: Which stakeholders will have to be interacted with in order to register the innovation or apply for eligibility for subsidies? Which stakeholders will use/be in contact with the innovation? Which stakeholders are critical showstoppers for the innovation to be

implemented? Which stakeholders' cooperation is anticipated to be crucial in order for the innovation to work as intended?

Investigate Stakeholders

The investigation of the shortlisted stakeholders is the core-piece of the approach. As shown in Figure 1, each stakeholder selected in the previous step is analyzed regarding function, revenue structure, decision-making, and situation with and without the introduction to the innovation, willingness to pay and willingness to cooperate.

It is important to note that not necessarily all of the categories have to be filled out for every stakeholder, as some might not make sense. For example, when analyzing a public agency that determines which services are eligible for application in a city environment, it is highly unlikely that willingness to pay will play a role, if the organization is not a subsidizing actor in the system.

Assemble

The final step of the approach consists of drawing the conclusions from the previously gathered and structured information. Filling in the categories for every identified stakeholder allows combining the results in a comprehensive stakeholder databank. This step is the most variable in the approach, heavily dependent on the nature of the innovation. The assembling of a Business Model from the stakeholder databank is based around the idea that every stakeholder has certain prerequisites to fulfill an envisioned role in the final Business Model. As it is assumed that revenue generation is the main purpose of deploying the innovation, the assembling starts with stakeholders that have an identified willingness to pay. It is then analyzed what the prerequisites for the identified willingness to pay are. In our experience in Digital Health innovation, "unlocking" willingness to pay usually involves contribution from other stakeholders, which then leads to a cascade of dependencies of stakeholder cooperation. After all necessary prerequisites for stakeholder contribution (non-monetary and monetary) are defined, an informed decision can be made with regards to which willingness(es) to pay should be exploited and which stakeholder configuration would be the most feasible. The same goes for identified crucial non-monetary contributions, approached by identified willingness to contribute und their prerequisites.

Key Questions to ask for this step are: Which stakeholders are possible revenue generators? What are the prerequisites for these stakeholders to provide revenue for the company deploying the innovation? Which stakeholders are contributing critical non-revenue generating functions? What are the prerequisites for these stakeholders in order to perform these functions? The result of answering the key-questions and assembling the stakeholders is a tangible to-do list and a stakeholder configuration that is tailored to the targeted environment for the innovation.

Analyzed Category	Key-Question
Function	What are general actions a stakeholder performs in the target market? What is the potential function in interaction with the innovation?
Revenue Structure	How does stakeholder generates revenue? What type of revenue does the stakeholder generate?
Decision Making	How autonomous is the stakeholder making business-related decisions? What are they based on? What are specific decision-making procedures?
Situation without the Innovation	What is the status quo in current operations for this stakeholder?
Situation with Innovation	What changes for this stakeholder with the introduction of the innovation?
Willingness to Pay	Under which circumstances is the stakeholder willing to pay in general? What part of the innovation is the Stakeholder willing to pay for?
Willingness to Contribute	Under which circumstances is the stakeholder willing to cooperate in general? What are the prerequisites for the stakeholder to contribute to the Business Model?

Figure 1 Stakeholder Category Analysis

3 Results

This section will present the different business model scenarios per pilot. It will feature the graphical representation of the outcome of the business modelling activities as well as an explanation incorporating the reasoning why willingness to pay was assumed, which stakeholders were deemed critical and what cooperation and contribution is mandatory for the planned business model to be sustainable.

The business model approach from Albert & Auwermeulen 2017 was deployed with regards to business model generation. Some steps were conducted more intensively; stakeholder cards were not generated to cater more to the pilot reality as to make the research too much exploratory. For the next iteration of this deliverable and when there is more insight from the pilots, there will be a more detailed analysis of stakeholders in a smaller scale to validate the business model concepts presented here. The analysis of the environment and scoping as well as

the assembling step were conducted in congruency with the pilot leaders and the mentioned workshop. The results were complemented with desk research and assessment by consensus within the consortium.

All graphs shown in the pilot discussions aim to represent all potential options for sustainability at one glance, whereas in real life implementation it is highly likely that initially only a few or one scenario for revenue generation per pilot will be realized. In addition there will be no specific assumptions made about the form or composition of the business entity that would implement the business models in the end, as this is highly dependant on the contractual agreements that would have to originate from the AGILE project. It is for example highly likely that BioAssist would lead and most prominently operate any exploitation actions resulting from Pilot A, but there are many different options for doing so, such as partnering with another AGILE partner who provides complimentary services, founding a new company together that leads operations, engaging with the whole consortium in a joint venture and more. Although these scenarios are important, they are negligible with regards to the Business Model configurations as they were drafted in a way to only incorporate non-consortium competencies when of critical importance, whereas stakeholders such as buyers and users would not be differently configured, no matter which form the business entity that exploits the AGILE pilot is comprised or organized.

3.1 Pilot A: Quantified Self

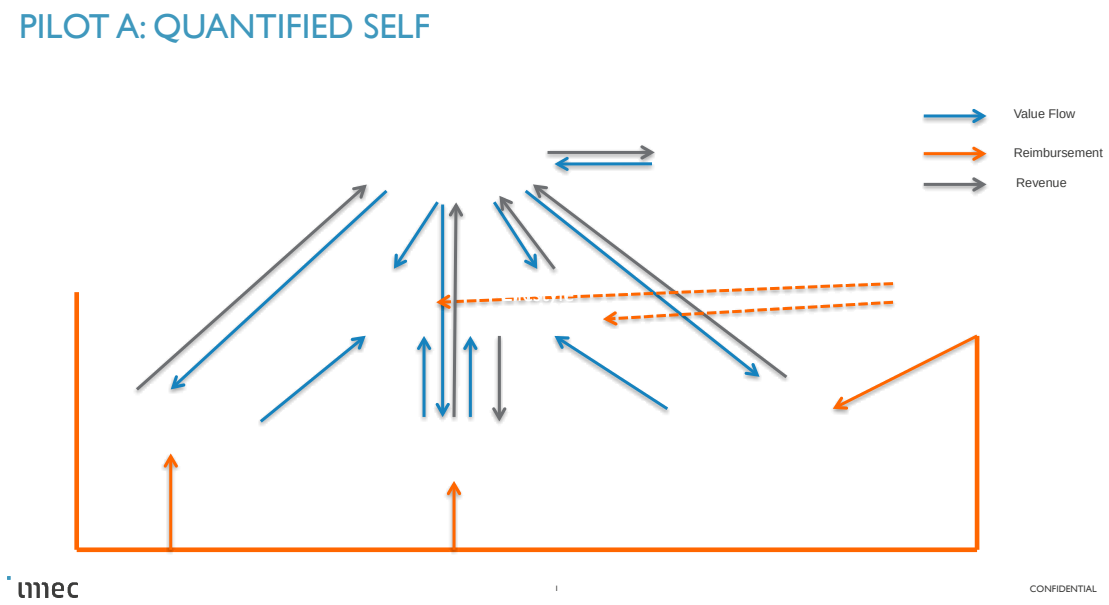

Figure 2: Pilot A Business Model Configuration

The Business Model configuration for the Quantified-Self Pilot incorporates a single business entity that manages all AGILE-powered quantified self solutions, offering customizable sensors for personal and professional use that are enabled through AGILE-driven gateways. The exact nature of the service, for example which sensors will be incorporated, how far the self-quantification will be pursued etc. will be further explored as the pilots and their evaluation continues.

The most important partner for the QS-Solution provider is one (or multiple) sensor manufacturer, which would provide the necessary sensor hardware for the Quantified-Self solution. The main individual users of the solutions were identified to be individuals with either the intrinsic motivation or the clinically implied need for self-measurement of vital parameters, making them separable in two segments: Patient User and Lifestyle User. The patient user is defined as an individual suffering from a chronic medical condition, whose treatment could be either simplified or enhanced through the availability of sensor data from day-to-day. The lifestyle user, on the other hand, is characterized by their desire to quantify themselves on the basis of non-medically induced reasons, be it for example prevention or fitness purposes. The advantage for both types of regarding the AGILE-enabled services mainly lies in abandoning the need for a "Smartphone-mothership" for every sensor and having real-time data directly uploaded as long as the user is occasionally close to an AGILE gateway. This allows for easier installation in a private as well as (medically) professional setting and enables also the simple utilization by elderly users, as there is no need for a self-setup and/or operating a smartphone.

Due to the fact that the lifestyle user has an intrinsic motivation to utilize the service, we assumed that this type of user could also provide direct revenue to the QS service provider, as they are willing to pay for the service on their own. Of course the same could be assumed for the patient user, however due to the European nature of the research project, we chose to assume the "European standard" of either a health insurance or a health system either directly or indirectly paying for the service should it be deemed medically necessary. Looking at the majority of European health systems, we chose the most likely scenario, which would include

the public health system reimbursing the most likely professional users of the QS solution: Physiotherapists and Dietitians. Of course practically it is also possible (depending on the environment that actors operate in) that the QS solution provider could also directly sell the solution to them. Which option to choose for practical exploitation depends greatly on the actual healthcare system of the targeted market and whether or not the QS solution will be registered and approved as a medically valid treatment/diagnostic tool. At the same time it is possible that a private insurance either substitutes or complements the role of the public insurer/health system. In this scenario we also found very likely that private insurance companies could act as a directly reimbursing body which would require both individual user types to directly purchase the QS service (indicated by the dotted reimbursement lines in Figure 2). In addition, we also considered fitness studios to be also a potential revenue-providing entity in the business model configuration. Although these studios would not directly use the data, they would provide the infrastructure that would enable their customers to use the QS solution in conjunction with their facilities. This makes two scenarios possible: The studios paying the QS provider to enhance their own value proposition towards their customers or the QS provider applying a freemium business model to reach more lifestyle users.

3.2 Pilot B: Open Field and Cattle Monitoring

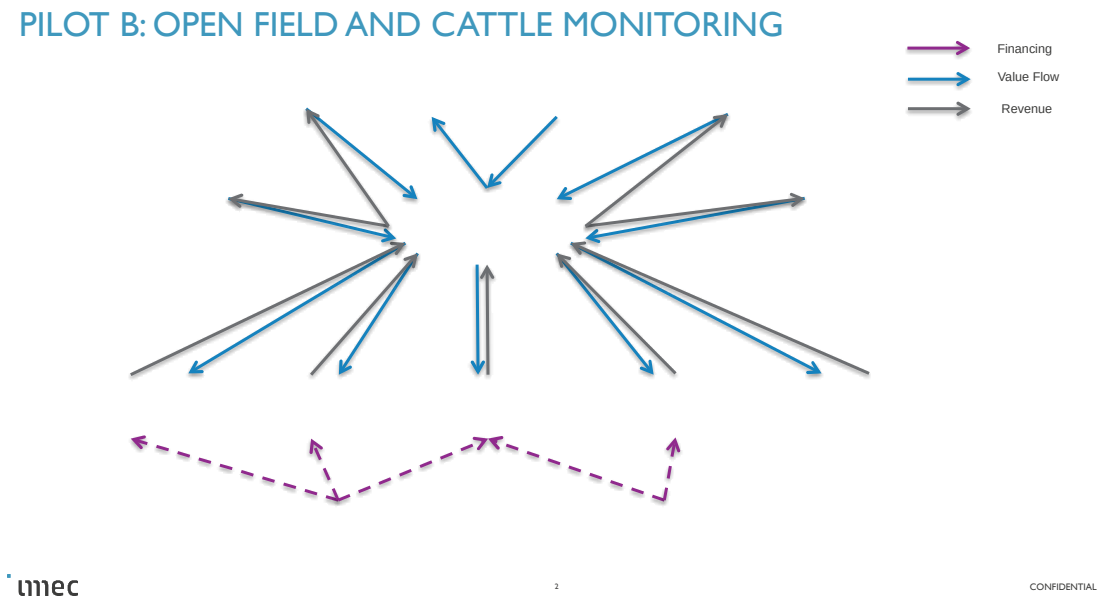

Figure 3: Pilot B Business Model Configuration

Pilot B features the highest amount of needed partners when it comes to implementation of exploitation opportunities: According to the information distilled from the workshop exercise a Sensor Data provider, a cloud storage provider, one or multiple UAV manufacturer and a hardware partner for the sensors would form the preferred setup of partnering companies. The highest likelihood of this type of partnerships would be a pay-for-service partnering model that allows for maximal flexibility when it comes to providing resources for the core monitoring service provider.

Regarding revenue-streams, this pilot has the most straightforward set-up in the sense that there are several "customer-type" users that are deemed to have Willingness to Pay for the offered monitoring service: Wildlife preservations would be able to directly purchase the full service to track animals in vast areas which could either enhance their existing operations by being able to

track better or more while at the same time enables them to safe cost as less personnel would have to go out in person or even use expensive vehicles such as helicopters and airplanes. Universities and Research Organizations are very similar in the type of relationship, although their value proposition differs a bit from the one for the wildlife preservation: In both cases the monitoring service provider would offer them the opportunity to conduct research projects with lower cost and better coverage as well as pre-collected data from previous projects if legally available. This relationship would make the universities as well as the research organizations more of a project-based customer whereas the desired relation with the wildlife preserve would be a permanent one.

All three of the described customer archetypes have one important factor in common: They are likely to be financed or influenced by governmental structures, which makes regional an national governments important stakeholders, as their willingness to pay could be congruent or at least highly influencing regarding the willingness to pay of the mentioned institutions that would be the direct purchasing entity regarding the monitoring service.

NGO's are also a potential customer for the service, although their function could be a hybridized function of research organizations and wildlife preserves as NGOs that would be interested in airborne animal monitoring could have a wide variety of KPIs. In addition, research organizations and NGOs are potentially controlled by private sponsors (e.g. Gates foundation) which would then, similar to governments, be also a key-influencer regarding revenue flow for these stakeholders.

Farmers are the last segment of payers and fit in the business model configuration like classical customers: Farmers request the service of cattle monitoring in exchange for a monetary fee.

The community is somewhat of an special component to the business model configuration: An active community could be a effective way of enhancing an existing service, creating publicity and receiving feedback for products and services on a voluntary basis. At the same time such as a community has to be cared fore und will only continue to exist as long as it derives perceived value from its affiliation towards the monitoring service provider.

3.3 Pilot C: Air Quality and Pollution Monitoring

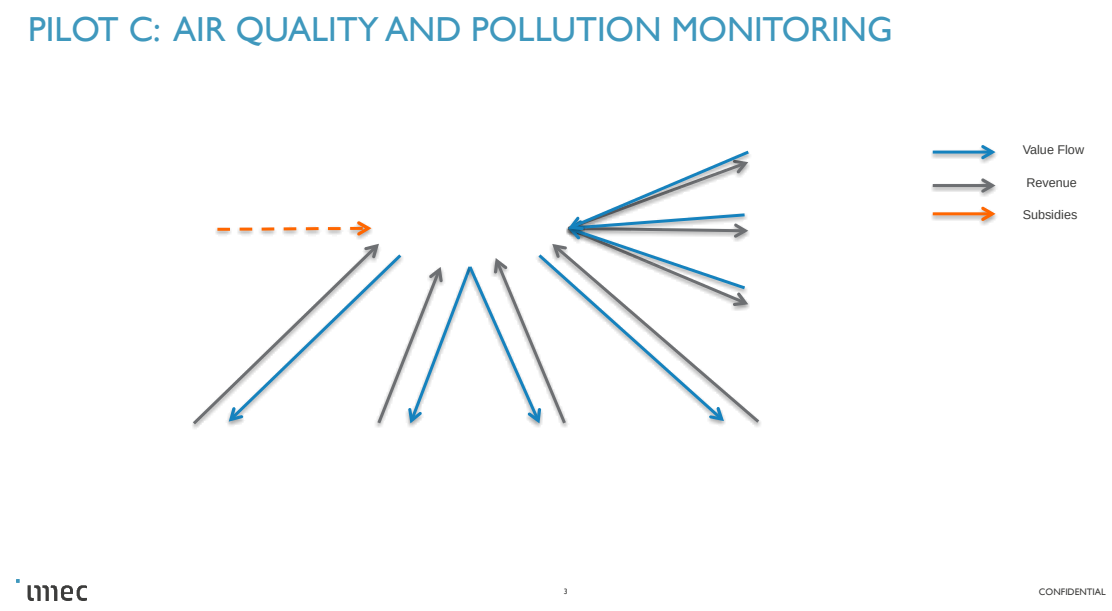

Figure 4: Pilot C Business Model Configuration

Pilot C's Business Model configuration revolves around offering an Air Quality Monitoring solution. There were three core-profiles identified to serve as partners providing a critical contribution to the Business offering of the AQ monitoring provider: a specialized data analytics company to process and analyze all received sensor data, on-site integrators and maintenance companies that are specialized in building, installing, and maintaining the monitoring system into the respective targeted environments, and a cloud-storage provider that would be able to provide the infrastructure to store and distribute the substantial amounts of collected data. Potential customers for the AQ monitoring services were identified to be public institution, industrial companies who have a potential impact on air quality, companies that need to protect their workers or other stakeholders from harmful air quality conditions, local authorities and citizens. All mentioned stakeholders were identified to have a substantial willingness to pay and need no intermediaries or adjacent stakeholders to enable them paying for the AQ monitoring solution directly. Only for citizens, specific air quality services can be setup to freely provide general information about air quality and related news/suggestions.

The willingness to pay from local authorities was identified with regards to air-pollution related agendas that are present in many different municipalities all over Europe and are oftentimes targeted towards reducing car traffic for the sake of lowering air pollution. Having detailed insight into where and how air quality is deteriorating the most is lowering cost and adding efficiency to many of these efforts, which is the core of the value proposition towards cities for the AQ monitoring service. Almost the same value is presented towards regional governments, but on a larger scale, with a potentially much broader deployment. Application on national levels is of course also feasible, but the scenarios depicted in Figure 4 were deemed the most realistic in terms of customers.

Industrial companies were also deemed a customer with a clear willingness to pay, as long as they would be responsible to measure air quality in relation to compliance with regulation. The offered service in this case would propose added value by increasing efficiency and reducing cost for measurements, making it easier to comply with regulations. Although governmental bodies play a significant role in these circumstances, no scenarios were identified in which they played a significant role in influencing the purchasing decision of an industrial player, assuming the respective air quality regulating legislation is already in place.

The final type of customer is represented by companies that are in need to measure the air quality inside or closely around their facilities, either in order to prevent damage for assets or to protect their own workforce and other stakeholders, be it out of own interest or because they are force through legislation. In all of the cases the offered solution would enable them to measure air quality more easily as well as more flexibly, due to the ability to freely deploy sensors and upload data remotely, making these types of companies having a particularly strong anticipated willingness to pay. Interesting with regards to revenue creation is also the fact that subsidies from national government could also play a role in deploying the service.

3.4 Pilot D: Enhanced Retail Services

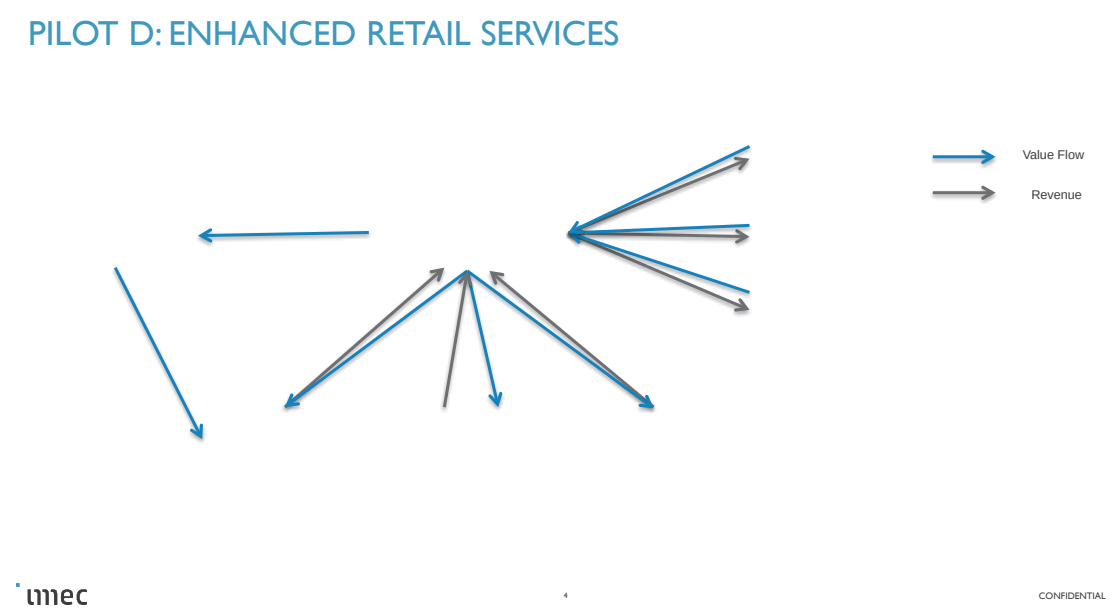

Figure 5: Pilot D Business Model Configuration

For the enhanced retail case, a differentiation into different paying segments was more urgently needed than for any other case, as there is some significant service diversification and value proposition differentiation depending on the customer/buyer segment. The service provided for example towards the retailer is one the one hand of course tailored to bring efficiency gains by enabling sensor-based assessment of how full shelves are and what customers tend to buy and where. On the other hand, the value proposition of the ER service provider is directly pointed towards the retail customer that is supposed to have an enhanced experience. This experience is intended to trigger increased revenue or brand value towards the retailer, which in turn will makes the retailer willing to pay the ER service provider. Marketers and Data Brokers on the other hand would be only willing to pay, if there is existing business with a substantial amount of retailers and retail customer data is available. If that is the case, the consortium identified a wide variety of opportunities for companies such as these to be willing to purchase data regarding customer behavior and habits in connection to retail purchases. The last of the identified customers is represented by manufacturers of retail goods that are interested in getting more insights in as to how their goods are treated, represented, and sold in a retail environment. Similar to the marketers and data brokers, prerequisite for this type of business interaction is an existing business relationship with a substantial amount of viable retailers. As the variety of manufactured goods is very large, a future narrowing down or compartmentalization of this customer segment will have to be performed for the next iteration of this deliverable.
Partner-wise, similar partners as in the other described scenarios are needed: A partner that is able to provide and develop different types of gateways for different retail-settings, a specialist for on-site integration, and a cloud-storage provider for storing and relaying the collected information.

3.5 Pilot E: Port Area Monitoring for Public Safety

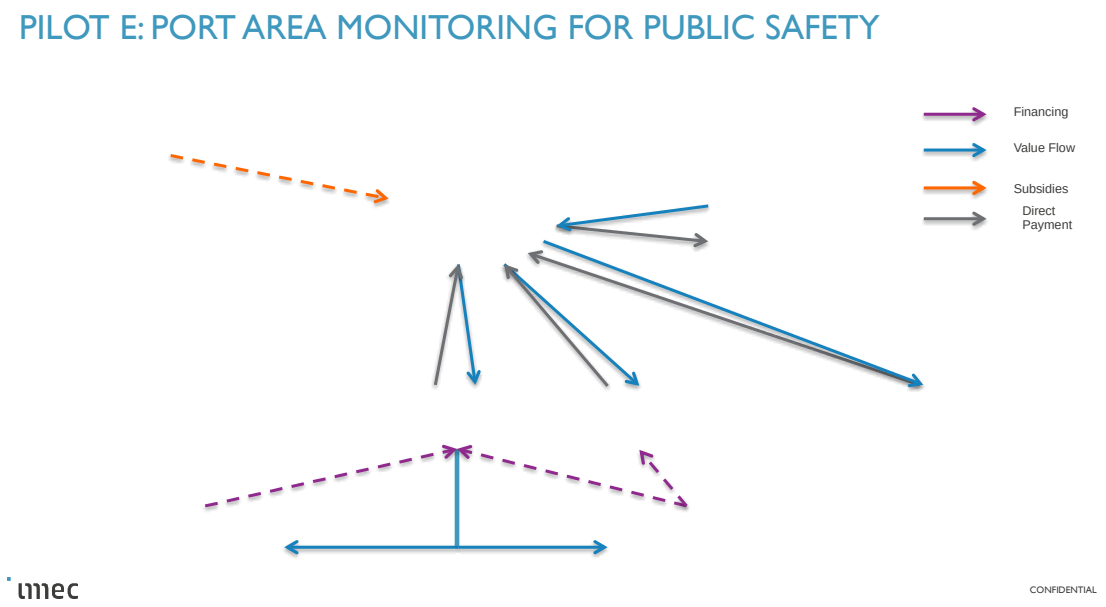

Figure 6: Pilot E Business Model Configuration

The service offering of Pilot E revolves centrally around a provider of UAV-enabled air monitoring, with an AGILE-powered gateway mounted on the drone that is capable of collecting, encrypting, and transmitting data in flight. The only identified partner that would be needed besides competencies found in the consortium is a UAV or "drone" manufacturer, who could provide and continuously co-develop the drones needed for different and expanding surveillance tasks. Regarding customers, there are multiple options. The most closely examined within the pilot are port authorities and fire departments. In each case the drone-monitoring provider would offer the respective customer an aerial view on areas of interest that is only enabled by outfitting a drone with an AGILE-powered gateway. The fire departments could use the service to have a look at fires without having to put personnel in harms way, while at the same time coordinating fire fighting and rescue activities from the air. The port authority could use the drones to prevent or more quickly respond to accidents in conjunction with the fire departments. In all cases, the service offered represents an enhancement of the activities performed by the stakeholders, while at the same time avoiding resource spending and harm to personnel.

All main customers however, depending on in which country the solution would be deployed, are with high likelihood highly regulated and exclusively financed by public bodies, may it be cities or regional (only in very rare cases federal) governments. This means that the added value for the main customers has to be provided in such a way that the respective public body behind it also perceives it as valuable, which oftentimes implies at least a break-even regarding cost. Another option for a customer would be a private security company that could use the surveillance service to either enhance their own value proposition or to save personnel cost by substituting them with a UAV.

Specific to this use-case is federal budgets and decision makers have to be taken prominently into account as interest in internationally relevant areas such as ports are oftentimes regarded to be part of a federal responsibility. This interest could also lead to additional funding, probably through subsidies, that could make the AGILE-driven service more cost-efficient.

4 Conclusion

From this baseline overview, it is clear that every single one of the various pilots has multiple avenues of exploitation that are possible. The AGILE gateway is used in a very diverse manner in the pilots and although there is this heterogeneous use, the business models regarding requirements have some similarities. This compatibility is important, as it will allow individual partners to exploit results from the project in their respective businesses and draw from synergies and added knowledge from other pilots. It is also possible that some reoccurring needed partners, such as hardware providers, could be either sourced from within the consortium or chosen for multiple use cases, therefore leveraging negotiation power when contracting as well as pooling resources to increase efficiency. It is clear that the integrated solution that AGILE promises to be will be exploitable as such, but at the same time it will allow several partners to build on and exploit the results of the pilots even without a further commercialised, integrated platform. The different scenarios show that the Business Models could be sustainable with and without a complete integration of all partners, but the option of profiting from cooperation is also present, giving the project a good outlook on successful exploitation due to its flexibility in execution.

Going out from the described scenarios, it becomes apparent that one of the most important value-adding factors lies within the flexibility of deploying AGILE, and its potential to be successfully deployed in a variety of environments. By combining hardware and software in an integrated platform, developers and IoT companies are offered an out-of-the-box solution that can take care of a variety of typical IoT challenges (sensor management, gateway management, security, interfaces, flexibility, use of various standards, protocols and so on). It is precisely this flexibility and the overall genericity of the platform that is its main strength: AGILE can be deployed and applied in such a wide variety of scenarios and environments that it can also be exploited or commercialised in such diverse contexts. The pilots show that this is possible.

In future versions of this deliverable, a continuing effort will be made to involve all partners in gathering more insight and information. There will be a closer look on the development of the pilots and more divers input will be gathered regarding the opinions and willingness to pay as well as to contribute by key-stakeholders, using the same business modelling method.

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