



D1.3: A scalable, flexible and mutually
profitable business model for
RESERVIST Network operation

STAM



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 101016041

Author(s):	Tommaso Zerbi (STAM)
Internal Reviewers:	Lucie Soulard (EMC2), Silvia Pavlidou (MIRTEC)
Version:	3.0 – Confidential information deleted
Date of preparation:	16.11.2022
Dissemination Level:	PU

EXECUTIVE SUMMARY

A blueprint of the RESERVIST network, made of 3 different layers, was defined:

- A “Coordination and Monitoring Level” will monitor the health and emergency situations at global level, with the goal to detect them as early as possible and to use early cues for prediction and forecasting in situations where that is possible (e.g. epidemics).
- A “Decision Level” will act as an intermediate level between the market requests and the RESERVIST Cells, in both emergency and standby modes.
- The “Operational Level” corresponds to the RESERVIST Cells, consisting of the product manufacturing companies and the other organisations involved as service providers.

After this definition, the document proposes three different options for the RESERVIST Business Model, with an aim to maintain available the RESERVIST products and services after the end of the project. Two macro-schemas are described here, the former based on a prime contracting approach, the latter on a direct payment from the end-user to the manufacturer.

Each of the manufacturing partners was asked to fill in a capacity questionnaire to provide information on their respective products. The information gathered through this survey was used to define the business models.

In particular, as a result of this survey, a schema of “payment for preparedness” is proposed, involving an external organisation to share the financial risk linked to keeping in stock high amounts of products for a potentially long period.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
Table of contents	4
1. Introduction	5
1.1. Purpose of the Deliverable	5
1.2. Structure of the Deliverable.....	5
1.3. Task input and output.....	6
2. Starting point and Methodology.....	7
2.1. RESERVIST Blueprint	7
2.2. Capacity Questionnaires	8
3. Business models.....	10
3.1 Case 1 – Intermediate Prime Contractor	10
3.2 Case 2 – Interface as a selling agent	11
3.3 Case 3 – Supervised Mode	12
3.3.1 Supervised Standby Mode	12
3.3.2 Supervised Subcontractor	13
3.3.3 Supervised Direct Payment.....	13
3.4 Motivation and elaboration on Proposed Business Model: 'Supervised' and 'Payment for preparedness'	14
4. CONCLUSIONS.....	15

1. INTRODUCTION

1.1. Purpose of the Deliverable

The present Deliverable aims at defining different options for the future economic sustainability of the RESERVIST Cells and network. In particular, the document reports the activities done in Task 1.3 *RESERVIST Network business model and liability*, led by STAM from Month 6 (May 2021) to Month 15 (February 2022) of the project.

The Task aims at drafting a set of schemas for business models for the different RESERVIST products and services, to be adopted in both emergency and “standby” situations. The product and service providers will act after the end of the project in the RESERVIST Cells, and the business models proposed shall be beneficial and remunerative for each of them, according to the different roles they play and the work they do. Moreover, the business models that are identified here are based on a flexible and generalised approach, thus making them suitable to be replicated after the end of the project for other products that may be proposed to make part of RESERVIST value proposition. The proposed business models are based on the three main features required:

- Scalability: the business models have been thought for relatively small networks, based on 1-4 manufacturing companies and some service provider(s); however, the approach proposed can be applied even in case the RESERVIST community grows and the number of manufacturers and products increases;
- Flexibility: the products making part of the RESERVIST value proposition are very different from each other (textile-based products, disinfection equipment, ventilators, etc.). For this reason, the business model must be general enough to be adapted and customized to each of them, independently from the size of the companies, customers, emergency or “standby” situation, etc;
- Mutual profitability: each actor involved in the supply of products and services will be duly remunerated, thanks to the mechanisms proposed by the business model, according to their different roles.

1.2. Structure of the Deliverable

After this introductory section, the deliverable is composed by a Chapter dedicated to the overview of the project in terms of governance of the future RESERVIST network, and the rules and protocols that will be followed by the partners in the future of their work together after the end of the project. Aspects such as the use of the RDP and the data processing are taken into account. Section 3 is the core part of the document, containing the description and illustration of the proposed business models, with an explanation of the cashflow among the actors (end-users, customers, interfaces, service providers, product manufacturers, etc.) in the different conditions (e.g., payment for preparedness, emergency, standby, etc.). Section 4 drafts the conclusions and sets the next steps for the future work.

1.3. Task input and output

The content of this deliverable is connected to several different activities in the project. First of all, it takes input from the definition of the RESERVIST network, together with the operational protocols between the different actors. Moreover, the business model is also connected with the adoption of the RDP, whose requirements and developments are done in WP2. Referring to the output of this Task, the final result will be a set of business model options to be customised for each RESERVIST Cell (already being part of the project, and future RESERVIST Cells), according to its products and services defined as value proposition. Finally, the liaison and links to be set up in the project context can be adopted to find key stakeholders for the future sustainability of the RESERVIST network and business.

2. STARTING POINT AND METHODOLOGY

2.1. RESERVIST Blueprint

The RESERVIST network will be working as a cluster of different organizations (companies, RTOs, other clusters, associations, etc.), each of them cooperating to give the end-users of the RESERVIST products the best service and delivery in the quickest way, especially during the emergency situations. However, the network collaborative work must be fully operative in the “normal” or “stand-by” situation, too. This leads to the need of a structured network with well-defined operational protocols, especially for triggering the emergency mode.

This network will work thanks to a continuous sharing of distributors, transport agents and end-users, to create active relationships between partners from different cells and the other sub-networks, to upscale the delivery potentiality of each single organization, and reduce costs and timing. Moreover, the market demand should drive triggering of emergency situation, but something more accurate and more responsive can be done with the presence of a coordination level in the network. This is shown in Figure 1.

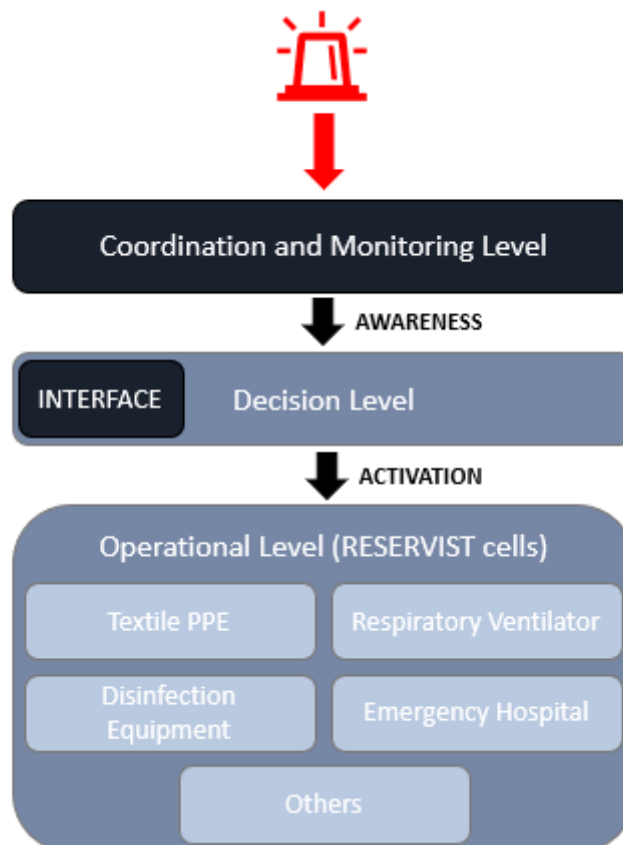


Figure 1: RESERVIST Network Structure

The Figure 1 shows all the different levels of the RESERVIST Network as they are thought to make the business models work in the future. A “Coordination and Monitoring Level” is appointed to monitor the health and emergency situations in general at global level, detecting

them in advance. To have this capability, this level must be represented, or at least supported, by political actors at European level, with strong connections with the National bodies that manage emergency situation (e.g., National Civil Protection bodies). When the Coordination and Monitoring Level detects the possibility of an emergency, it gives this information to the following level, the “Decision Level” of the network.

The “Decision Level” is the first one belonging to the inner boundaries of the RESERVIST consortium, consisting of the project partners. In particular, this level acts as the first interface between the market requests and the RESERVIST Cells. Here, a single entity will act as the prime contractor to sell products and guarantee the quickest delivery and promptness of the network. In case of an emergency, the interface will receive the warning from the Coordination and Monitoring Level and will take a decision on activating the lower level, the Operational one.

The “Operational Level” is basically composed by the RESERVIST Cells, consisting of the product manufacturing companies and all the other organisations involved as service providers. The Cells are composed by the different layers of the supply chain (raw materials, components, etc), and other stakeholders (product designers, partners working on the quick repurposing of production lines, quality and certification service providers, etc.). Moreover, it is important to underline the openness of the RESERVIST Network: the Operational Level will not only comprise the already existing Cells (the Cells set up in the course of the project), but also any other high-demand product will be able to be integrated and a new Cell within this level.

In the future, this network and structure will be formalized by an agreement, which will be signed by all the organisations willing to be involved in any of the different layers. Most probably, the economic sustainability of the network will be pursued by selling the products on large scale, without making the partners pay any membership fee.

2.2. Capacity Questionnaires

A benchmarking work was done by STAM as the task leader on the RESERVIST product manufacturers. The goal of this action was gaining a deep understanding of the current capacity to promptly respond to an emergency. Indeed, the aim of the future network is to give quick responses to the market in case other demand peaks are reached, for pandemics or other kinds of emergencies requesting these products.

The task leader prepared a simple questionnaire to collect data on some key aspects such as the availability of products in stock in normal situation, and the logistics for order processing and delivery. Moreover, the pricing policies were investigated by the partners, together with the need for a “payment for preparedness” schema for the manufacturers, to ensure the future promptness of response in case of emergency. Here follows the complete list of questions that were asked to the RESERVIST manufacturing companies.

- *DESCRIPTION OF THE PRODUCT*
 - *Name of the product*
 - *Location address*
 - *Description of the product*
 - *Picture*
 - *Essential information*
 - *Certifications and compliance to norms*

- *Properties*
- *Risks*
- **CAPACITY**
 - *Stock availability*
 - *Availability to keep items on stock for rapid supply*
 - *If yes, stock in home warehouse or need to find another location*
 - *Minimum and/or maximum quantity to keep in stock*
 - *Due date*
 - *Requested payment to keep products in stock (if any) (i.e., would you ask for a “payment for preparedness” in order to keep in stock some items? If yes, how much would you estimate)*
 - *Manufacturing availability*
 - *Cost for keeping capacity*
 - *Order requirements*
 - *Minimum quantity to be ordered*
 - *Maximum quantity to be ordered (within a certain time)*
 - *Other requirements*
 - *Estimated delivery time*
 - *Delivery time*
 - *Delivery time Ex Works (the goods are finished in the factory and ready to be transported)*
 - *Conditions that can affect the delivery time (e.g., geographical location of end-user, magnitude of the order, etc.)*
 - *Transportation*
 - *Transportation methodology (internal or external management, management in case of emergency, etc.)*
 - *Price*
 - *Price, price range*
 - *Contact information*

The questionnaires were filled in by the manufacturing companies in RESERVIST Consortium.

At a glance, the main observation is the generally low capacity in stock, except for the masks. The preparedness to a future emergency needs to be supported by a business model helping companies to enlarge or guarantee the availability of the stock. For this reason, all the manufacturing companies expressed their need of getting a “pay for preparedness” schema, that would lower the risk of having a high number of not sold items after production. This schema will be analysed further in the Business Models. The Capacity Questionnaires represented the starting point to investigate the benchmark and needs of manufacturing companies to be compliant with RESERVIST general goals in the future and paved the way to propose different approaches to mutually profitable Business Models in Section 3.

3. BUSINESS MODELS

This Section is dedicated to the definition of five different Business Models. All of them take in different measures the features of mutual profitability, scalability and flexibility, and have different levels of benefits and drawbacks. The methodology followed was based on sketching first a high number of different models, and then shortlisting them after a deep analysis phase internally and together with external stakeholders. The next paragraphs describe the models and financial flows in the different cases.

3.1 Case 1 – Intermediate Prime Contractor

The first Business Model is based on the presence of a prime contractor partner internally to the RESERVIST consortium (the so-called “INTERFACE”), working as both a customer attractor, thanks to its commercial network, and a prime contractor. The customer is, in Case 1, the end-user, that directly closes agreements with the INTERFACE. The coordination and monitoring level of the RESERVIST network is not supervised but is autonomous, directly managed by project partners, having the task to monitor continuously the global situation, in terms of emergency raising and demand peaks, to activate the Cells. As far as the financial flow is concerned, the INTERFACE gets paid by the end-user and in turns pays the RESERVIST partner(s) engaged with a subcontracting schema, to be regulated in the future by a “Business Agreement” to be signed between the RESERVIST network partners. The business of the INTERFACE is based on retaining a percentage as prime contractor; this percentage will be defined in the “Business Agreement” and will depend on the volume of the contract.

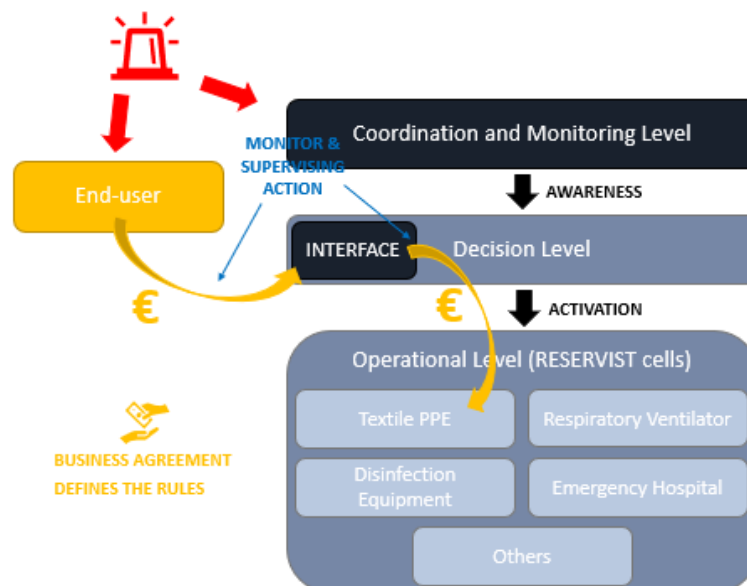


Figure 2: Case 1 - Intermediate Prime Contractor

Pros: the customer could prefer this model, since it represents a simpler management modality from its point of view. The customer will have to be interfaced with only one actor (the INTERFACE). This model foresees the presence of the INTERFACE as the project manager for the delivery of the needed goods to the customer, carrying on the liability of quality and timing of delivery in front of the customer. The liability can be reflected on the single partners

within the network (e.g., the manufacturers of products) within the business agreements. This role will make the INTERFACE an orchestrator to manage complex requests by the customers; this will increase its own added value and, according to the business agreements, its own turnover.

Cons: this model does not foresee any high-level monitoring of emergency situations, and the RESERVIST Cells must be essentially triggered from the market requests, without a real differentiation between “standby” and “emergency” situations; moreover, the liability concentrated on the INTERFACE could be seen as a drawback if not duly managed within the business agreements; this would require a careful definition of liabilities in delivery in each single case in the agreement documentation. Moreover, the manufacturers would completely bear the risk of investment for production and stock maintenance, since no “payment for preparedness” mechanism is implemented by this model.

3.2 Case 2 – Interface as a selling agent

The second Business Model puts in direct contact the customer with the RESERVIST Cells. The customer is still the end-user of the products, and the RESERVIST Cell triggering mechanism is the same as in Case 1. A company is still the INTERFACE, with the role of attracting customers and doing commercial activity for the network. In this case, the customer directly closes agreements with the product providers in the Operational Level, after the INTERFACE has done a pre-commercial offer as a first filter. Also in this case, the coordination and monitoring level is autonomous, and does a monitoring action on the financial flows and Business Agreement rules compliance. In this case, the INTERFACE gets paid for its commercial work by the RESERVIST product provider who was contracted by the customer. Again, the amount paid to the INTERFACE will be defined in the “Business Agreement” and will depend on the volume of the contract.

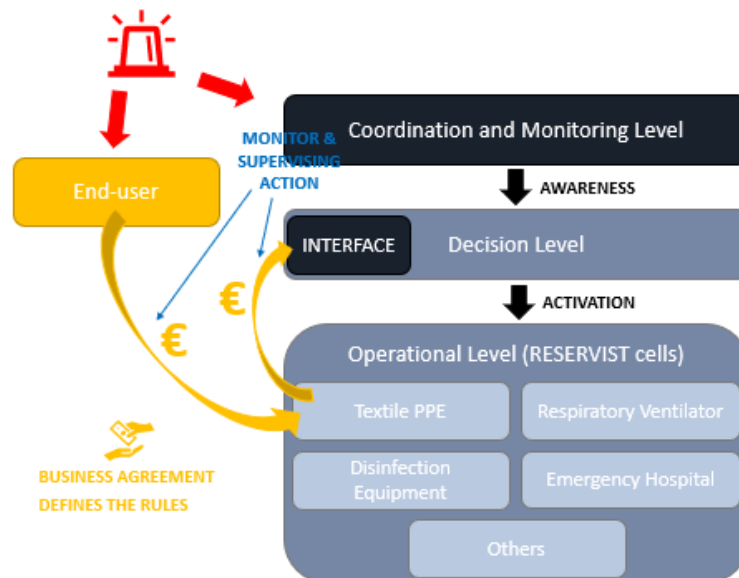


Figure 3: Case 2 - Interface as a selling agent

Pros: in this model, the contracts are closed by the manufacturing companies, who are the experts of each single product. This would ensure a full awareness of technical and functional features of the products while defining the agreements with the customers. This direct relationship between the customer and the manufacturer would allow a more straightforward

management of the delivery, quality control and payment. In this way, the liability would fall on who really does the delivery, without the need of specifying the responsibility borders in the internal business agreements.

Cons: this model would be suitable only for very simple market requests, with a customer asking products from only 1 provider; since it does not foresee any intermediary or project manager, this model would be harder to manage for complex requests with products coming from more than one manufacturer. In such a case, the internal business agreement would need to specify a “leader” for the delivery, thus modifying the model itself. Otherwise, it can create confusion and problems to the customer. Moreover, as seen for Case 1, this model does not foresee any high-level monitoring of emergency situations, and the RESERVIST Cells must be essentially triggered from the market requests, without a real differentiation between “standby” and “emergency” situations; moreover, the manufacturers would completely bear the risk of investment for production and stock maintenance, since no “payment for preparedness” mechanism is implemented by this model.

3.3 Case 3 – Supervised Mode

In this case, an external authority is introduced, with the role of providing support to the RESERVIST network. In particular, this external stakeholder (or community of stakeholders) can be involved to integrate the “payment for preparedness” schema into the Business Model.

3.3.1 Supervised Standby Mode

Here, an external entity (e.g., one or more public authorities) pays the INTERFACE for the preparedness of the network, and the INTERFACE acts as a prime contractor, like in Case 1. Within this schema, each RESERVIST manufacturer receives a payment for preparedness from the INTERFACE, that will retain the amount necessary to cover the maintenance costs of the RDP as the main digital infrastructure of the ecosystem. This works, while a “normal” situation is detected by the external authority, without emergency.

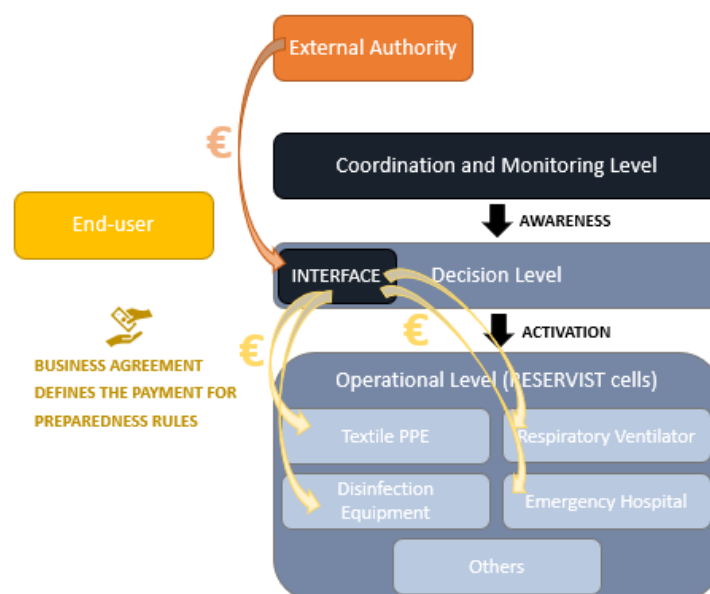


Figure 4: Case 3 – Supervised Standby Mode

3.3.2 Supervised Subcontractor

When an emergency situation arises, it is monitored together with the market demand for emergency-related products by the external authority and by the market itself (the “end-user” in the schema in Figure 5). Now, the INTERFACE acts as a prime contractor for two different flows of money: i) the payment for the delivery of products, coming from the end-users, and ii) the payment for preparedness to keep the stock availability as high as possible for the future demand peaks, to avoid any downtime of the supply chain in case the demand peak lasts for a long period. Like in Case 1, the Operational Level will be paid by subcontracts done with the INTERFACE, regulated by the “Business Agreement”.

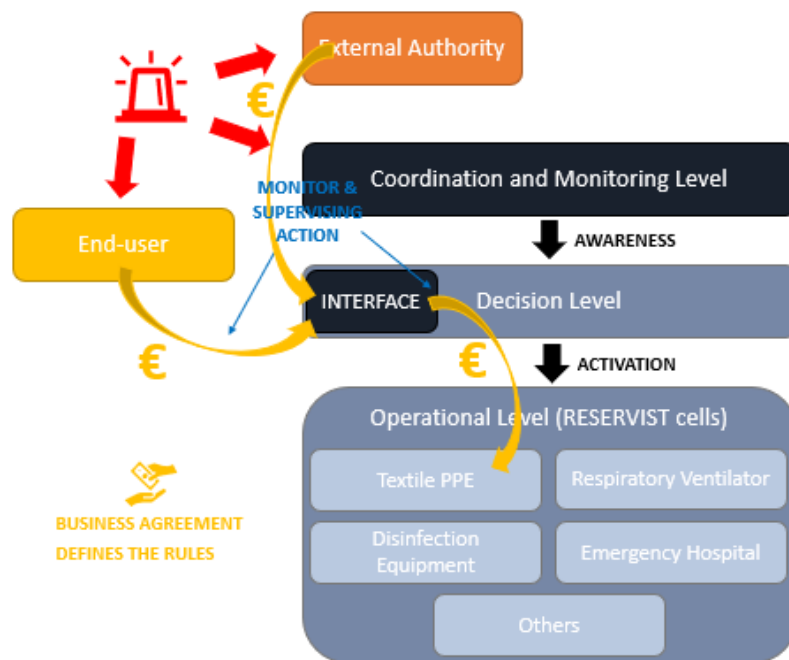


Figure 5: Case 4 - Supervised Subcontractor

3.3.3 Supervised Direct Payment

The emergency situation monitoring and mode changing triggering are the same as in the previous case. The prime contractor is not foreseen in this schema, but the first receiver of the money is the manufacturer at the Operational Level. The INTERFACE is a market agent like in Case 2, and the manufacturers get directly paid by the External Authority for preparedness. At the same time, while selling products to the end-users, they get paid for them, and the INTERFACE receives a percentage of the total volume of the contract for its selling work.

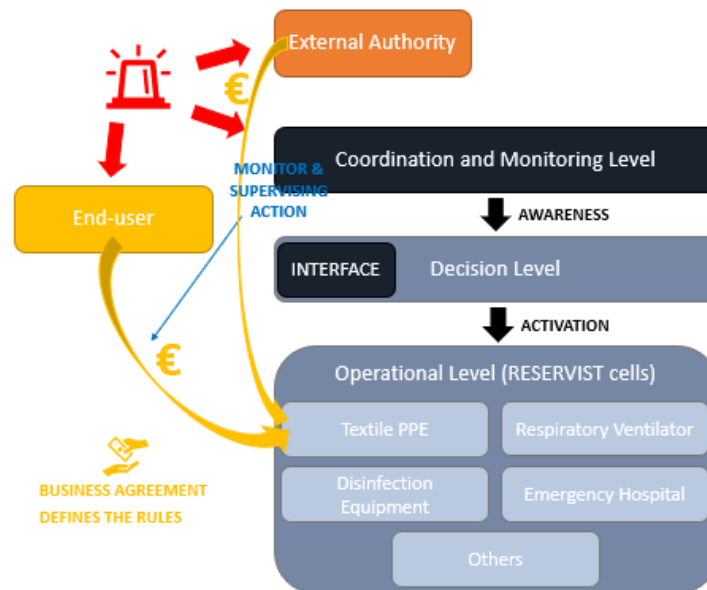


Figure 6: Case 5 - Supervised Direct Payment

3.4 Motivation and elaboration on Proposed Business Model: 'Supervised' and 'Payment for preparedness'

The main advantage of the 'supervised payment for preparedness' business model is the shared risk: the manufacturers would *not* completely bear the investment of production and maintenance of products and stocks, but an external public authority would support them in being ready to deliver in a quick way once an emergency arises. From the perspective of the public authority, this model would work as an insurance, where an amount of money (the 'insurance fee') is periodically paid to be "protected" against major damages coming from an uncovered emergency in the future.

According to the different products (e.g., long or short expiration date), this insurance fee can be used by manufacturers to ensure a certain stock availability, or to ensure a pre-defined production rate capacity that would be preferable to avoid wasting products that may have expiration dates. For these reasons, the supervised model is the one that will be taken into account in the future project activities. Indeed, the goal is to work out term sheets among the consortium members to be able to propose to public authorities a 'preparedness insurance'. This work of putting in place the necessary business agreements is currently being implemented.

Referring to the best way to manage an emergency delivery (sub-model), the considerations about a 'prime contractor' and a 'direct sales' mode (see sections 3.1 and 3.2) can open two different paths, which are outlined here below:

- An 'INTERFACE-based' model is the preferred one, when a complex request is done by a customer, involving more than one manufacturer: in this case, the network will need a project manager or orchestrator for the delivery, and auxiliary management activities;
- A 'direct sales' model can be adopted to simplify the process, but only in the case a customer needs products from only one manufacturer. In this case, a contract could be set-up between the customer and the manufacturer, and the INTERFACE would be paid only for its commercial and customer-engagement effort.

4. CONCLUSIONS

The work reported in this deliverable was dedicated to the definition of different options for RESERVIST Business Models. Two main macro-schemas were identified, the former based on a prime contracting approach, the latter on a direct payment from the end-user to the manufacturer, with a lighter involvement of the network manager or “INTERFACE”.

In both cases, the manufacturing partners expressed the need to minimize or share the risk of ensuring that the product availability will be guaranteed for future emergencies. For this reason, a schema of “payment for preparedness” was hypothesized, involving a third party not belonging to the group of end-users, to define an agreement with the RESERVIST partners and support the cells to keep working after the end of the project.

The task is quite streamlined with other activities within the project. In particular, for what liaisons are concerned, the partners are going to keep on the research for one or more external entities able to give this kind of support. This is the case for some EC agencies and National Contact Points for Civil Protection. Furthermore, the outcome of this deliverable will be integrated into the training materials. Finally, and most importantly, a draft of a business agreement based on the proposed model will be prepared in the next period.