



Collaborative Network for Industry, Manufacturing, Business and Logistics in Europe



D4.3

Platform User Experience from Logistics Providers' and Data Sharers' Points of View

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Abstract

The main goal of this document is to present the results of two specific validation aspects for the NIMBLE platform. Part 1 of the document summarises the validation of platform functionality related to logistics services and Part 2 deals with data channel facilities implemented in NIMBLE for the sharing of live data, between companies. Such live data may come from production facilities or from logistics tracking, and it may even include data coming from other IT systems.

The findings will be taken on board as additional requirements for the second development phase in which value added services will be included in the platform.

This document (NIMBLE D4.3) is complemented by two more deliverables reporting on validation: D4.2 (Buyers' and Suppliers' validation) and D4.4 (Platform Manager's validation). A further deliverable D4.5 sets the validation in the context of consolidated requirements.

NIMBLE in a Nutshell

NIMBLE is the collaboration Network for Industry, Manufacturing, Business and Logistics in Europe. It will develop the infrastructure for a cloud-based, Industry 4.0, Internet-of-Things-enabled B2B platform on which European manufacturing firms can register, publish machine-readable catalogues for products and services, search for suitable supply chain partners, negotiate contracts and supply logistics. Participating companies can establish private and secure B2B and M2M information exchange channels to optimise business workflows. The infrastructure is being developed as open source software under an Apache-type, permissive license. The governance model is a federation of platforms for multi-sided trade, with mandatory interoperation functions and optional added-value business functions that can be provided by third parties. This will foster the growth of a net-centric business ecosystem for sustainable innovation and fair competition as envisaged by the Digital Agenda 2020. Prospective NIMBLE providers can take the open source infrastructure and bundle it with sectorial, regional or functional added value services and launch a new platform in the federation. The project started in October 2016 and will last for 36 months.

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V0.2	04/04/2018	First workshop at Micuna
V0.3	30/04/2018	Refactoring/restructuring of WP4 deliverables
V0.4	23/04/2018	Micuna 1 st workshop report
V0.5	18/06/2018	Micuna 2 nd workshop
V0.6	04/07/2018	Piacenza workshop
V0.7	18/10/2018	VCD Logistica validation added
V0.8	18/10/2018	Lindbäcks/Podcomp Logistics workshop added
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V1.0	30/11/2018	Final revisions and submission

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Acronyms

Table 1: Acronyms table

Acronym	Meaning
B2B	Business to Business
IoT	Internet of Things
NIMBLE	Collaboration Network for Industry, Manufacturing, Business and Logistics in Europe
PaaS	Platform as a Service
UX	User Experience

1 Validation of Logistics Services in NIMBLE

Over a period of 6 months, 4 releases of the NIMBLE system were validated with respect to logistics services. The majority of validations happened around the furniture use case, and there were further validations done in the other three use cases.

1.1 2018-03-07 Validation Workshop Micuna

The workshop took place at MICUNA's premises in Sollana (Valencia).

Participants: Jorge García, [Oscar Pérez](#), Juan Martín, Cristina, [María José Núñez](#), [Juan Del Agua](#), [Fernando Gigante](#), Vicente Sales, Rafael Porcar, [Marcos Sabater](#), [Rafael Pérez](#)

Remotely connected: [Wernher Behrendt](#), [Suat Gönül](#), [Oliver Jung](#), [Johannes Innerbichler](#)

1.1.1 Workshop agenda and method

<i>Time</i>	<i>Item description</i>	<i>Responsible</i>
15:30	Welcome and overall presentation of the workshop <ul style="list-style-type: none">▪ Objectives of the session▪ Role of participants▪ Agenda and detailed expected workflow▪ Introduction to questionnaires	AIDIMME
15:45	Registration of users and companies	All participants
16:15	Publication of products/services in NIMBLE (single and multiple uploading)	All participants
17:00	Search on products/services	All participants
17:30	Negotiation experimentation (request for information, special rates, etc.)	All participants
18:00	Open discussion covering all processes	All participants
18:30	End of the meeting	All participants

AIDIMME prepared a detailed and personalised agenda with the experimentation of each participant, indicating:

- The role of the participant at each stage of the experimentation (buyer, supplier, manufacturer, logistics, retailer)
- The company and products to be registered
- The searches to be performed in the platform
- The negotiation pairs between participants during the workshop

The participants had laptops available to interact with the platform themselves. AIDIMME staff were assisting the other participants in the use of the platform and addressing specific queries. Technicians from SRDC and SRFG were remotely connected to assist with any issues.

1.1.2 Workshop results

During the workshop, the participants adopted some role: manufacturer (furniture), supplier of raw materials (board, mattresses, fittings, chemical products), logistics providers or retailers. For the negotiation experimentation, a collection of specific negotiation interactions were defined and put in place during the workshop.

Issue	Priority
Registration	
Problems encountered while trying to register in the platform	High
The registration process should be better explained (user registration, company registration, and members invitation)	Medium
The interface should be also available in the Spanish language	Medium
Some key additional information of the company cannot be entered, such as VAT number, activity of the company and website/social media accounts	High
When logged in the platform, not only the name of the user but the name of the company to which belongs should be indicated in the top header	High
A brief summary of the data entered should be shown just after registering	Medium
Publishing	

Items in the top menu are in grey colour, and this seems to be disabled. If they are meant to be enabled, a brighter colour should be used instead	Medium
Once a member of the company has been invited, the text field where the email is introduced should be empty. Currently it looks as if the invitation was not successfully sent	Medium
Different sales options should be reflected in the platform (i.e.: sale of individual items, sales by determined volumes)	Medium
Two kinds of measures are important to be indicated in the platform: the size of the product itself and the size of the package containing the product (logistics size). This approach is also followed by platforms such as Amazon.	High
Publishing through the excel file, fields which are boolean could be filled by using a checkbox.	Low
Many properties may provide a dropdown menu to select one of the possible choices	Medium
The validation of the excel file could be made when this is intended to be close. This way the validation could be more agile so it is not needed to do it against the server each time	Low
The name of the Units (i.e.: the dimensions) could be selected from a dropdown list (cm, m, Kg, etc.)	Medium
The textbox to introduce the Unit seems to be already filled but it should be filled. This seems somewhat confusing if some specific explanation is missing.	Medium
It is not possible to upload products of different categories in the same batch process	Medium
Some properties appear twice in the publishing form (in the default group of properties and in the properties extracted from the taxonomy). This becomes a bit confusing so it is not clear if it is needed to filled them both or which is the one that should be preferably filled.	Medium
Actually the custom properties cannot be defined as Boolean data types	High

The meaning of the "Commodity" classification is not clear	Medium
The field to introduce the product description should be larger	High
The images of the products could be enlarged when clicking them	Medium
The uploaded catalogue should be browsed in a more schematic way. Actually the only visualization is a big sequence of product cards containing the main properties. A more practical approach is showing all the uploaded products at a glance, avoiding so many properties.	High
The INCOTERMS options should be selectable from a dropdown menu	High
Icons with information mark do not display any support information	Low
The platform should warn if a product with the same name (or ID) already exists	High
The uploading of image packs should work not only with zip compressing but also with rar files	Medium
Search	
The filters are not friendly enough	Medium
A menu/list with searching categories would be useful	Medium
Some registry of last personal searches would be nice	Low
The search could be improved by filtering by specific property values (price, destination, method of payment...)	High
The autocomplete search could be a great feature	Medium
When some product has been found, it could be useful to be able to inspect the whole catalogue of the company that supplies it	Medium
In the searching results, the field for the description of the product/service is too small, and the mouse has to be used to read the full content	Low

Some basic information of the company that provides the product/service is missing once this is found in the platform	High
The search is not effective sometimes, so it returns products which have nothing to do with what introduced in the text field	High
The search function should be supported by using more dropdown lists instead of free text fields	Medium
When a fitting product, such as a "handle", is searched in the platform, many other items with apparently no relationship with that product appear (A2B transport services, warehouse design, logistics services...). Maybe this is due to the use of this word in the description or in some property values of these services.	Medium
The images in the search results should be enlarged when clicking them	Medium
The logo of the company that supplies the product or the service should appear	Medium
Some information of the organization which sells the product is missing	High
If many companies are published in the platform, the search could become complicated in order to find results if the user does not enter the right words	Medium
The search should be available entering the text in Spanish	Medium
Some option to export the list of elements found in an Excel file could be very useful	Medium
A search option based on browsing categories could be nice in order to make it more intuitive to the user	High
The white spaces in the text introduced for search often cause that no results are found	High
Negotiation	
From a business point of view, it is not "correct" that who demands the service also indicates the price	High

In a negotiation about the transport, it could not be possible to indicate the dates desired for the transport	High
Sometimes the system hangs when trying to send a message or requesting negotiation to some partner	High
Some option to print directly the documents received during the negotiation could be useful	Low
It is important to show some information about the company with which the user is negotiating	High
In some negotiation processes, additional fields are missing to perform an optimal negotiation	Medium
At some moment, the ongoing negotiations carried out about supplying of wood board, have been lost. No successful negotiation has been achieved in the end.	High
The platform often hangs during the negotiation process, what has often avoided performing successful negotiations	High
The negotiation process has required the validation of the involved users/companies by the administration, which became an important bottleneck. This should be done automatically or by the company representatives.	High



Figure 1 – First validation workshop at Micuna

1.2 2018-06-18 Logistics Validation Workshop Micuna

The workshop took place at AIDIMME's premises in Paterna (Valencia) and with a parallel group in MICUNA. The validation was based on Release 3.

1.2.1 Workshop agenda and method

<u><i>Time</i></u>	<u><i>Item description</i></u>	<u><i>Responsible</i></u>
11:30	Welcome and overall presentation of the workshop <ul style="list-style-type: none"> Objectives of the session Role of participants Agenda and detailed expected workflow Introduction to main questionnaire and additional logistics one 	AIDIMME
11:45	Registration of users and companies	All participants
12:15	Publication of logistics services in NIMBLE	All participants
13:00	Search on products/services	All participants
13:30	Negotiation experimentation (request for information, special rates, etc.)	All participants
13:45	Open discussion covering all processes	All participants
14:00	End of the meeting	All participants

AIDIMME prepared a detailed and personalised agenda with the experimentation of each participant, indicating:

- The role of the participant at each stage of the experimentation (buyer, supplier, manufacturer, logistics, retailer)
- The company and products to be registered
- The searches to be performed in the platform
- The negotiation pairs between participants during the workshop

The participants had laptops available to interact with the platform themselves. People from AIDIMME have been punctually assisting the other participants in the use of the platform and solving specific doubts. Technicians from SRDC and SRFG have been remotely connected to assist demands on company/user validation processes and other technical issues and doubts.

1.2.2 Overall vision of the workshop

Each participant in the workshop will use all the functionalities running available on the NIMBLE platform, which are related to the different business processes. They are mainly 4 processes:

- Register a member on the platform
- Register a company on the platform by using the previous member account
- Publish some products/services
- Search products/services, filtering by parameters and comparing retrieved items
- Negotiate with suppliers or potential customers

Once the platform has been extensively used and experimented by the participants, they will be involved in 2 more activities:

- Fill the questionnaire about usability and other parameters about the platform considering the use of NIMBLE in the logistics scope
- Fill the specific logistics-focused questionnaire, which gives more emphasis on issues detected in the previous workshops about the Buyers validation
- Participate in an open discussion to comment detected problems and recommendations of users



Figure 2 – Flow of validation activities in the workshops (Source: AIDIMME)

1.2.3 Proposal of user activity during the workshop (example)

Users should have access to the NIMBLE platform (through desktop computer or laptop), basic technical support and both questionnaires available. The recommended steps to be carried out by each participant in the workshop are the following:

- The user enters the platform and register a personal account
- Create a new company in the platform introducing corresponding business information

- Introduce products/services in the platform, by using the frontend available to upload single products or by using an Excel file template to multiple product uploading

The user adopts the **seller role**, offering logistics services:

- The user enters the platform
- Publishes logistics services by using the single mode. Example of service:
 - Groupage service from city A to city B
 - Palletized goods
 - Order picking: weekly
 - Delivery time: 1 week from picking
 - Rate: variable depending on delivered volume
 - Insurance: loss and damage of goods
 - Extra services: collection to clients, delivery at end customer's home
 - The customer is responsible of proper packaging of goods
- Publishes logistics services by using the multiple mode. Example of service #1:
 - Inspection of shelves
 - Duration of inspection depending on the kind of warehouse and surface
 - Expertise engineering on warehouse design and improvement of logistics processes
 - Generation and sending of digital report
 - Insurances: civil liability and compliance with PRL normative during the inspection
- Example of service #2:
 - Packaging engineering
 - Consulting on product packaging for any distribution cycle
 - Transport simulation laboratory with particular equipment: free fall, compression, vibration, horizontal impact
 - Accredited laboratory by ENAC and ISTA under normative for transport simulation testing
 - Engineering team with expertise on sectors such as food, automotive, habitat, orthopaedics, medical
 - Support on the deployment of improvement solutions

The user adopts the **buyer role**, searching for logistics services:

- The user searches for services, looking for:
 - A groupage route to a B destination, in order to send single pallets with weekly periodicity
 - A company that offers door-to-door transport services of "complete" truck with 33 pallets of a given good
- Select different services in order to evaluate the available information

The user adopts the **seller role**, selling logistics services:

- The user receives requests for information about consultancy services to do technical inspections of shelves
- Prepares and send the corresponding information to the potential customer
- Receives offer from the customer, confirming the interest

1.2.4 Workshop results

The table below includes a summary of the user feedback retrieved during the workshop (we omitted the assignment of priorities because this is now done in a separate process):

Conclusions collected (issues and comments)
Registration
It is not possible to add general information about the company: history, teams, capabilities, relevant projects (maybe the description field could be used for that purpose).
As guidelines for the user, a filled form could be shown at several points, not only the user/company registration. Same approach may apply to the multiple product publication, by providing an excel file template filled with one example product or service.
The registration process is quick and easy and leading to a satisfactory usage.
The registration process is simple.
Some relevant information of the company is missing: the market, the CNAE (code of activity).
If some error is made, the system does not display where is the error.
Publishing
For those companies that offer global logistics services, it is difficult to publish them so they are forced to choose little and specific services to fit the information in the platform.
It is mandatory to fix a price for each service, but this often depends on the business volume, which is usually agreed with the particular customer.
It is difficult to publish services which depend on the customer needs. They are so personalised-to-customer services that it is not possible to add a row for each service that the company may offer in the Excel file for publication.

When a new custom property is added, this is not easy to locate afterwards and not easy to know how to edit it. This could be placed next to those standard properties.
It is needed to be able to indicate several possible prices for the same service.
It is hard to find the error when the publishing service fails due to some missing or incorrect attribute filling.
It is hard to understand every property, so most of them are not applicable to the service to be published. Thus, the publishing process is not appropriate for most logistics services.
Not able to define the service proposed in the data schema provided by the platform.
This functionality of the platform must be improved to make it more intuitive.
The process of entering data in the Excel template must be improved, indicating the input fields to be filled.
It is difficult to be aware of the usefulness of many properties to be filled in the definition of the service.
This service is very little intuitive.
The Excel approach to upload services is a very good idea. However, some guidelines could be a bit more elaborated, including further explanations.
The user does not which category is right for their logistic service.
Some e-class features seem to confuse the user. Difficult to fit the logistics service features with the e-class properties.
Some properties, such as the Total capacity, may have a dropdown to select the Units.
Some properties, such as Transportation Mode or Transport Means could be also selected form a dropdown.

The tooltips that appear when the mouse is over the information icon of the properties, are a very valuable resource to guide the user. However, the duration of the tooltip appearance is quite short.
The Edge browser does not enables the Publish of products in the single mode.
Search
If the user is looking for concrete logistics services (i.e.: furniture assembly service), it is quite hard to check the capabilities of the suppliers.
The filters are often not suitable to find very specific information about the logistics services published in the platform.
The searches should be more specific. Enabling the filtering in order to do not appear so many results.
After some service is found after searching and selected, it would be very useful to inspect more services or products provided by the supplier of the selected service.
The data are not clear.
The supplied and the requested data appear as mixed.
The seach process has resulted in a bad experience.
It seems that many categories are not useful enough.
It could be implemented the search of various properties at the same time ("..."+"..."+"...")
The searching screen is very similar to the publishing screen. This is confusing.
Negotiation
The process seems not to be very intuitive.
The users cannot watch the same negotiation process in a single conversation thread. Every conversation has only two steps: to pose a question and have it answered.

It is not clear how to share documents with partners.
It is not possible to write a description about the topic the users are negotiating.
The negotiation path is quite rigid, with very few data, and the supplier usually is not able to submit a proper offer.
Not able to negotiate properly.
The changes performed during the negotiation (the new information) are not remarked (i.e.: what the manufacturer proposes, what the supplier answers).
It could be especially useful to generate a kind of report of the negotiation workflow when finished.
To integrate an alert system to identify you have some negotiation request.
Before to start the negotiation process, it is useful to see the public information about that company.
The information response could be a Textarea instead of a long textbox, in order to improve the readability.
When a partner sends any response in the negotiation, the user could be somehow notified in the platform, besides the email notification. Actually the user is aware of any response only if this is navigating the Dashboard.
General comments
It could be great to receive from the platform some confirmation message when you finishing every action, in order to confirm you have done well. When you make a mistake, it will be good to receive a message with the possibilities to solve it.
A lot of information on the same screen seems to confuse the user. At the bottom of the screen, you do not find the button to confirm the action (publish, negotiate, etc).
Using the Edge browser, sometimes the page is automatically reloaded.

1.2.5 Scanned questionnaires

The individual responses of the 1st questionnaire (general) are available in the following link: [Responses questionnaire #1 2180618.pdf](#). Note that these are only accessible from inside the project wiki on Confluence.

The individual responses of the 2nd questionnaire (logistics-focused) are available in the following link: [Responses questionnaire #2 2180618.pdf](#). Note that these are only accessible from inside the project wiki on Confluence.



Figure 3 – Some workshop impressions – Logistics in NIMBLE Release 3

1.3 Results of Logistics Workshops at Micuna 2018/10/03

Explanation about how to fill the tables of users' feedback:

Issues	Possible	Easy	Confident
	Y/N	1-5	Y-N

- Possible: If the issue has been addressed or not (value: Yes/No)
- Easy: How easy it was to address the issue (value: 1 (min.) to 5 (max.))
- Confident: How confident did you feel that the issue was successfully addressed (value: Yes/No)

The user can add any additional issue at each table. Furthermore, there is a specific area for comments.

1.3.1 PUBLISH.

The user adopts the **seller role**, offering logistics services:

- The user enters the platform
- Publishes logistics services by using the **single service upload**.

Example of service #1:

- Groupage service from city A to city B (for instance: Valencia to Barcelona)
- Palletized goods
- Order picking: weekly (Mondays or Wednesdays)
- Delivery time: 1 week from picking
- Price: variable depending on delivered volume. For a volume inferior to 10 m³ = 30 €/m³; for a volume between 10 – 20 m³ = 26 €/m³; for a volume higher than 20 m³ = 22 €/m³.
- Insurance: loss and damage of goods
- Extra services: collection to clients, delivery at end customer's home
- The customer is responsible for proper packaging of goods

Feedback:

Issues	Possible	Easy	Confident
	Y/N	1-5	Y-N
Select the right product category	Y	2	N
Explain the origin & destination	Y	2	N

Explain the product characteristics you can manage	N	1	N
Time (lead time, picking time, etc.)	Y	4	Y
Price	Y	3	N
Other services	N	2	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- There are several categories, but you do not know which category fits with your service. A tree structure would help in order to see the level of every category.
- You cannot type variable prices according to the quantity to transport.
- We did not find a place where to put all the possible routes with their origins and destinations that your logistics company can support.

- Publishes logistics services by using the **upload multiple services**

Example of service #1:

- The same service features than in the previous one.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Select the right product category	Y	2	N
Explain the origin & destination	Y	2	N
Explain the product characteristics you can manage	N	1	N
Time (lead time, picking time, etc.)	Y	4	Y
Price	Y	3	N
Other services	N	1	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

The same as in the other system to publish.

1.3.2 SEARCH.

The user adopts the **buyer role**, searching for logistics services:

- The user searches for services, looking for:
 - A groupage route to a B destination, in order to send 2 pallets every week during the next 2 years.
 - The requirements you are looking for this service are:
 - Delivery time: maximum 1 week (counting since you send the order to the transport supplier). You expect to have prepared the goods every Tuesday or Wednesday (depending on manufacturing processes), and every week you will send the order to pick up the products one day before.
 - The picking and truck load operations will be always between 8:00h – 10:00h AM, because is the slot when your company will have 1 dock available for external logistics companies.
 - The customer's warehouse in destination B does works after 20:00h. Then, the delivery has to be before this time.
 - The volume per pallet will be between 4 – 6 m³. It will depend on the specific orders you have to deliver every week.
- Identify if the results show the goal of your search.
- Use the filters to reduce the number of results:
 - Country: Spain
 - Transport mode: groupage.
 - Delivery time: maximum 1 week
- Select the service you think fits better with your goal.
- Check if you can find all the service features you need.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
The search offers results according to the goal	N	5	Y
The filters help you to focus your search	Y	3	Y
The information about the service transport is useful to evaluate it	N	2	Y

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- You can see results (physical products) that you do not expect when you are searching about logistics services
- The filters do not help because, for the same topic, there are different words.
- The information you see about the logistic supplier is not enough to make decisions about to contract or not. You need to ask a lot of information in a request.

1.3.3 NEGOTIATE.

Request for information.

The user adopts the **buyer role**, making an **information request**:

- Q1.- You need a clarification about delivery time. You need a maximum of 7 days since you send the order to the logistics supplier. Does this fit with the company's operations?
- Q2.- You want to ask if the pallets need to have a label with the volume (m³) and weight (kg) in order to prepare the final bill.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to ask both questions?	Y	4	Y
Were you able to share all the required information with the provider during the negotiation?	Y	4	Y

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

This is the easier part of the system, and it works perfectly.

The user adopts the **seller role**, answering an information request:

- Q1.- Yes you can manage
- Q2.- It is not necessary.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to ask both questions?	Y	4	Y
Were you able to share all the required information with the provider during the negotiation?	Y	4	Y

Negotiation.

The user adopts the **buyer role**, making the first order:

- Quantity: 2 pallets (12m³, 15kg).
- The supplier has to pick up the pallets in the warehouse (the warehouse is not in the same location than the headquarters) the company has in:
 - City: Almussafes (Valencia, Spain)
 - Direction: Albufera street, 26
 - Postal code: 56987
 - Direction: Tarradellas street, 32
 - Postal code: 63215
 - The expected delivery time is 1 week from today.
 - The products will be:
 - 4 seats – reference: 569865G
 - 2 tables – reference: 87845Y
- The picking and truck load operations will be always between 8:00h – 10:00h AM, because is the slot when your company will have 1 dock available for external logistics companies.
- The customer's warehouse in destination B does works after 20:00h. Then, the delivery has to be before this time.
- The destination direction is:
 - City: Hospitalet Llobregat (Barcelona, Spain)

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to write all the information about the order?	N	2	N
Were you able to share all the required information with the provider during the negotiation?	N	1	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- We did not find how to type in the destination.
- At some point, during the negotiation, you have to share with the logistics supplier information about the postal code of different customers where you need to deliver your products, the reference codes of your products, etc. So you need to share files in PDF, word, or something similar.

The user adopts the **seller role**, receiving the first order negotiation:

- Calculate the right price which applies, taking into account the quantity the buyer wants to deliver.
- Modify the price.
- You need to inform that to achieve the delivery time you need to do the pick up on Monday (not next Monday). So they have packaged the pallets in advance.
- Send the answer.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the new information?	N	2	N
Is it possible to write all the information about the order?	N	2	N
Were you able to share all the required information with the provider during the negotiation?	N	1	N

The user adopts the **buyer role**:

- Read the answer.
- Accept the new conditions.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the new information?	Y	3	Y
Is it possible to write all the information about the order?	Y	4	Y
Were you able to share all the required information with the provider during the negotiation?	N	2	N

...			
-----	--	--	--

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

...

1.3.4 Order preview.

The user adopts the **buyer role**:

- See the order preview information.
- Add some additional clauses about insurance conditions.
- Eliminate some clauses you consider do not fit with your company.
- You need to load a pdf document with the delivery note, where you indicate the products you will deliver (4 seats – reference: 569865G, 2 tables – reference: 87845Y)
- Accept and send the order.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the information about the order? (quantities, type of products, origin, destination, price, etc.)	N	3	Y
Is it possible to write new information about the order?	N	1	N
Is it possible to delete new information about the order?	N	1	N
Is it possible to share some documents? (for instance a delivery note)	N	1	N
...			

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!	
-	The information about the order is not complete
-	You cannot modify or add or delete anything

The user adopts the **seller role**:

- See the order preview information.
- OPTION A. Reject because one clause does not fit with your company.
- OPTION B: You agree.
- You want to share a pdf file with other transport routes you consider could be interesting for this new customer (marketing information)
- Accept it and continue.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the information about the order? (quantities, type of products, origin, destination, price, etc.)	N	3	Y
Is it possible to write new information about the order?	N	1	N
Is it possible to delete new information about the order?	N	1	N
Were you able to share all the required information with the provider during the negotiation? (for instance, a delivery note)	N	1	N
...			

Order confirmed.

The user adopts the **buyer role**:

- See the order confirmed information.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Do you have the same information as in the preview?	N	1	N
Do you have information to control if the <u>pick up</u> , and delivery activities are on time?	N	1	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- Difficult to control if the activities have been carried out according to the initial conditions

1.3.5 UX-questions around Nimble

After having tested the NIMBLE platform, we would also like to you as informant to reflect upon some further issues the NIMBLE Platform *per se*.

Logistics services

1. What logistics processes would trigger your use of NIMBLE?
2. What logistics processes would you want to get support for in your supply chain?
3. What kind of logistics collaboration do you think could be performed in a collaboration platform? (Please give motivation)
4. Which logistics collaboration activities would be most beneficial to perform via a platform such as NIMBLE? (Please give motivation)

Please write your answers here

1. All of them. As a logistics provider, I want to show all my capabilities. (transport, storage, inventory control, etc.).
2. My goal is to be visible and to find new customers which demand my logistics services.
3. To share a warehouse or transport capacity between logistics suppliers in order to achieve better service for my customers.
4. To share a warehouse or transport capacity between logistics suppliers in order to achieve better service for my customers.

(*) Note: We consider we need a clarification about **collaboration concept**. Everyone in the room have different opinion about that.

NIMBLE collaboration value:

1. What do you regard to be most valuable – rank these (please give motivation – why rank this way):
 1. Save time
 2. Save money
 3. Networking
 4. Idea generation

Areas of improvement:

1. Can you give an example of one of your logistics processes that is specifically problematic today and that could be improved? If so, in what ways?
2. For to strengthen your business, what other kinds of services would you like to see? (Value-added services).
3. In what type of relations?
4. How can collaboration be strengthen with NIMBLE? Why?

Please write your answers here

1. To find new suppliers in a new geographical area or a new type of service where you are not expert and you do not know how to start to look for it.
2. Traceability.
3. **Not clear**
4. We think that collaboration implies to work with current suppliers /customers. It is difficult with new ones.

User's view on NIMBLE's idea:

1. What do you see as possible to negotiate for via a platform? Why/why not?
2. What would/could motivate you to start using the NIMBLE B2B-platform?
3. What would/could prevent you from using the NIMBLE platform?

Please write your answers here
<ol style="list-style-type: none">1. Yes, it is. In fact, it is already possible with the current version.2. The possibility to find new customers or new suppliers for new components or services we need to add in our value chain.3. To lose time using it: few users in the platform, searching that does not offer accurate results, suppliers which do not answer the requests, complicated use.

1.4 Results of Validation Workshop VCD Logística 2018/10/18

Explanation about how to fill the tables of users' feedback:

Issues	Possible	Easy	Confident
	Y/N	1-5	Y-N

- Possible: If the issue has been addressed or not (value: Yes/No)
- Easy: How easy was to address the issue (value: 1 (min.) to 5 (max.))
- Confident: How confident did you feel that the issue was successfully addressed (value: Yes/No)

The user can add any additional issue at each table. Furthermore, there is a specific area for comments.

1.4.1 PUBLISH.

The user adopts the **seller role**, offering logistics services:

- The user enters the platform
- Publishes logistics services by using the **single service upload**.

Example of service #1:

Note:

The Company can manage a different set of logistics service. The service is always tailored to the specific needs of every customer. They offer their capacity in their warehouse, their trucks, network, and their knowledge to deliver the service.

In Nimble they consider cannot type a specific service with concrete delivery time, price, origin, and destination, etc. because every service is different according to the customer needs.

Therefore, the company wants to publish a unique and generic service which makes visible the company's capabilities.

In the next pictures, it is shown the company's activities.



Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Select the right product category	Y	3	N
Explain the origin & destination	N.A	N.A	N.A
Explain the product characteristics you can manage	N	3	3
Time (lead time, picking time, etc.)	N.A	N.A	N.A
Price	N.A	N.A	N.A
Other services	N	2	N
...			

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- It does not apply the questions about origin & destination, time, and price because are variable according to the type of service the customer will demand.
- To see the categories tree helps the user to select the right category for their service. Micuna did not find this option.
- The company did not understand which kind of information they had to type in every section. Different people type different content for the same topic. For instance: what they have to type in the topic about “total capacity”? The warehouses capacity (they have 2, and a network of collaborators), the number of trucks, the average capacity of trucks (in kg or in m3?). Transport means, they can use all of them. Environmental emission: it does not have the sense to write the information about only one truck.

Publish Logistics Product

All published products must belong to at least one category, which will describe the product and help

All Categories ▾

Search Category...

Categories
▸ Transport service
▸ Transship service
▸ Unload service
▸ Value-added service (logistics)
▾ Warehousing service
▸ Dispatching service (logistics)
▸ Filling service
▸ Issue material service
▸ Refilling
▸ Relocate goods service
▸ Storage of transport mean
▸ Storage service
▸ Transfer to stock
▸ Warehousing service (other)

Transportation Service Details

Service Type: ①	Global logistics services (transport, warehousing, bonded warehouse, ...)
Supported Product Nature:	All kind of products: multiproduct
Supported Cargo Type: ①	All kind. Multi-freight
Total Capacity: ①	50 m2
Estimated Duration: ①	2 working days
Scheduled Days: ①	Transport service is available all days in the week, warehouse only in working days

Applicable Countries

Applicable Countries: ①	Around all the world
-------------------------	----------------------

Shipment Stage

Transportation Mode: ①	truck, sea
Carrier Party: ①	Ourselves

Transport Means / Equipment

Transport Means: ①	trucks, container ship
Associated Equipment: ①	2 warehouses of more than 50.000 m2, a job shop, and bonded warehouse, container warehouse
Equipment Humidity Percent: ①	
Refrigerator Indicator: ①	No
Equipment Characteristics: ①	

Environmental Emission

Emission Type:	We have an award for ouer low emissions
Value Measure: ①	

Also, some topics were extremely specific for the global service they wanted to show. They have different storage facilities, different types of trucks, and they are used according to the customer's orders.

They would prefer to load also some pdf file with more information about their facilities, truck fleet, etc, and pictures about that.

Publishing logistics services by using the **upload multiple services**

Example of service #1:

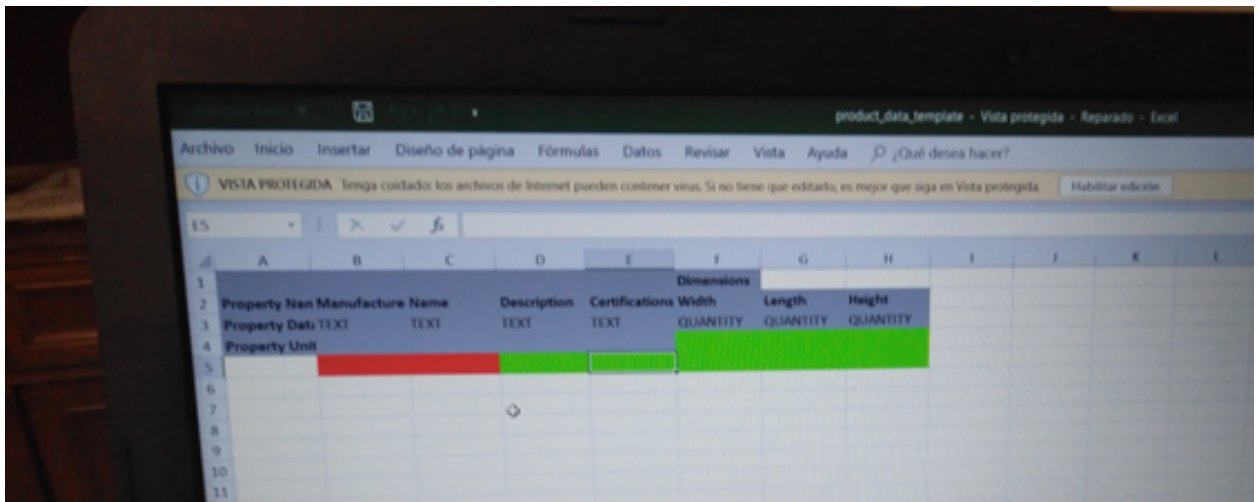
- The same service features than in the previous one.

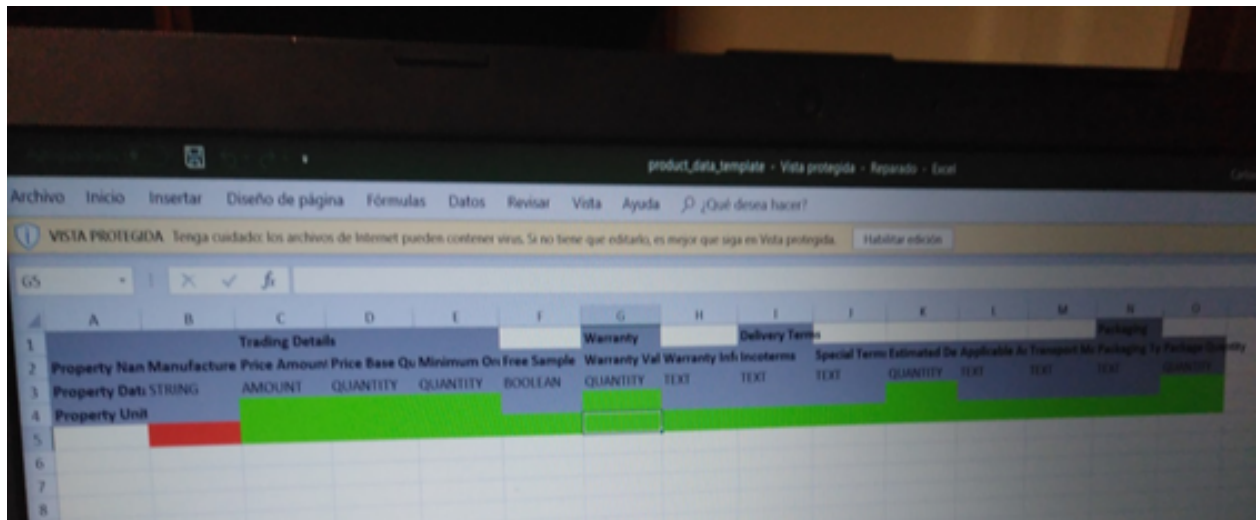
Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Select the right product category	Y	3	N
Explain the origin & destination	N.A	N.A	N.A
Explain the product characteristics you can manage	N	1	N
Time (lead time, picking time, etc.)	N.A	N.A	N.A
Price	N.A	N.A	N.A
Other services	N	2	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- It does not apply the questions about origin & destination, time, and price because are variable according to the type of service the customer will demand.
- The Excel template seems do not have the same topics than the single product view. The user considers very annoyingly to work with it. It is confusing to see questions about dimensions, quantity, ...
- They would prefer to use the single view.





1.4.2 SEARCH.

The user adopts the **buyer role**, searching for logistics services:

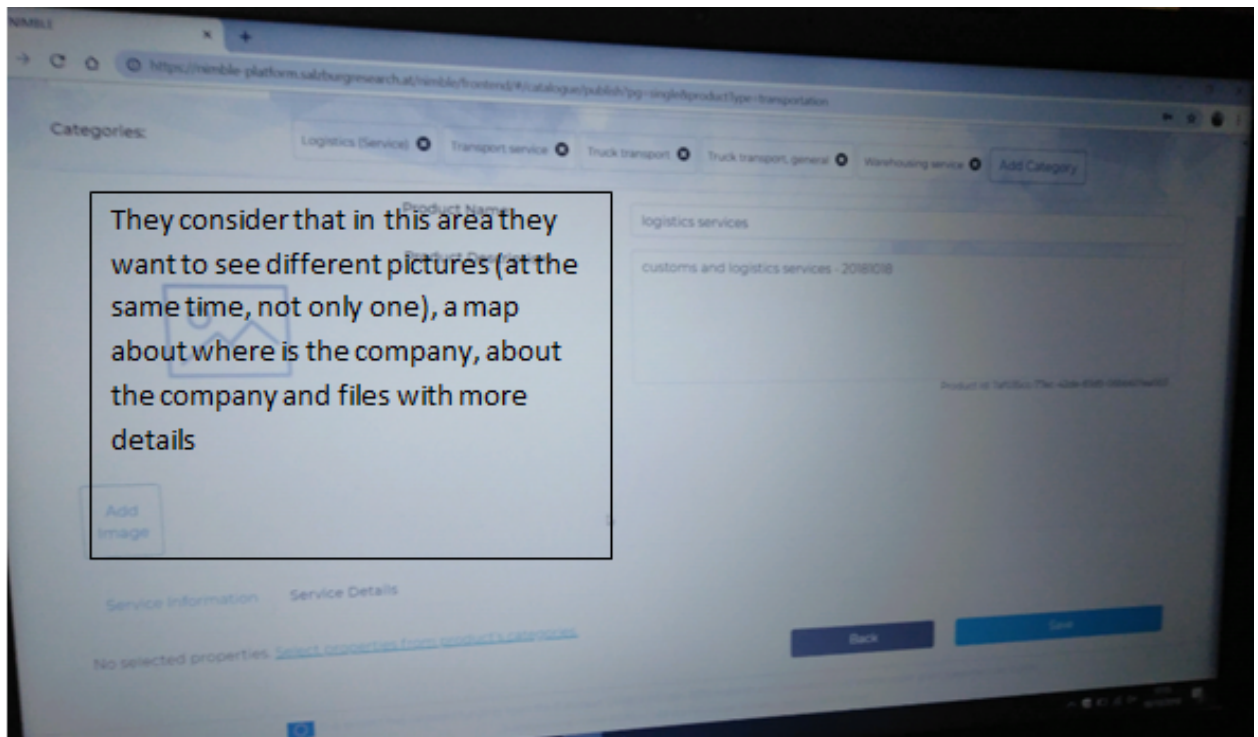
- The user searches for services, looking for:
 - A groupage route to a B destination, in order to send 2 pallets every week during the next 2 years.
 - The requirements you are looking for this service are:
 - Delivery time: maximum 1 week (counting since you send the order to the transport supplier). You expect to have prepared the goods every Tuesday or Wednesday (depending on manufacturing processes), and every week you will send the order to pick up the products one day before.
 - The picking and truck load operations will be always between 8:00h – 10:00h AM, because is the slot when your company will have 1 dock available for external logistics companies.
 - The customer's warehouse in destination B does works after 20:00h. Then, the delivery has to be before this time.
 - The volume per pallet will be between 4 – 6 m³. It will depend on the specific orders you have to deliver every week.
- Identify if the results show the goal of your search.
- Use the filters to reduce the number of results:
 - Country: Spain
 - Transport mode: groupage.
 - Delivery time: maximum 1 week
- Select the service you think fits better with your goal.
- Check if you can find all the service features you need.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
The search offers results according to the goal	Y	4	Y
The filters help you to focus your search	N	3	Y
The information about the service transport is useful to evaluate it	N	3	Y

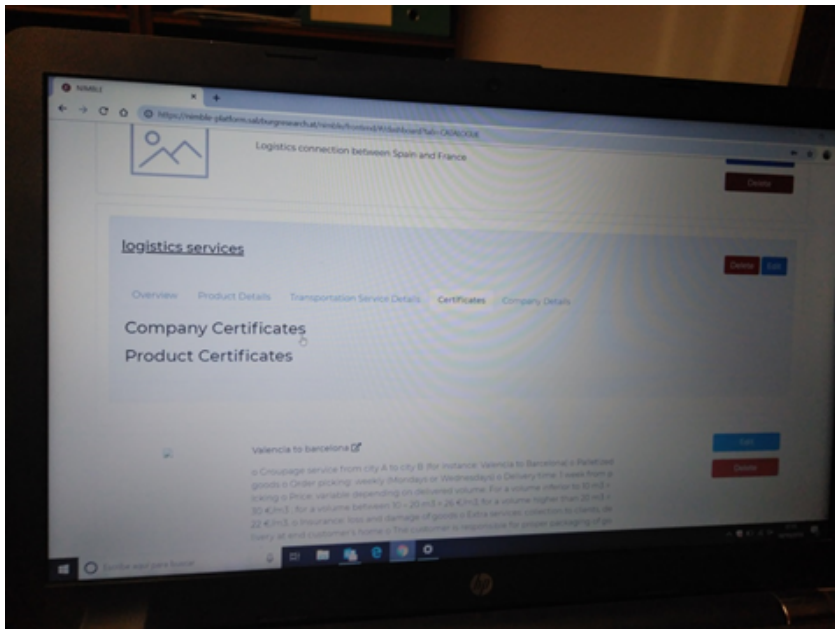
Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

When you click on one option you see a lot of topics and items. They consider it would be great something more visual. The description bigger (more area in the screen) with pictures about the facilities, the number of docks, trucks, etc. With pdf files available to see information about the company and the capabilities they have to offer different logistics services.

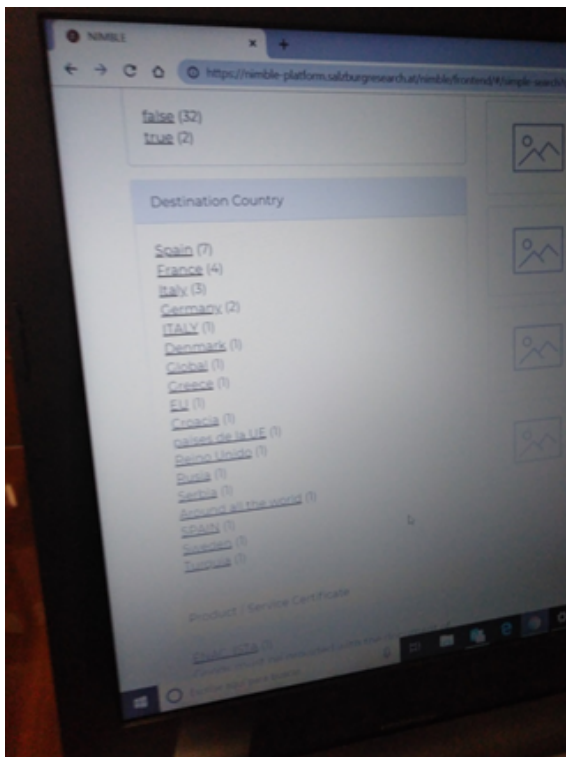


- They think that in logistics it is more important the company, than the specific information about one specific service.

- In the information, they found a space to write about prices and certifications. When they tried to type about this on the “publish screen”, they did not find how to do it.



The filters do not help because the same concept has different options to click.



1.4.3 NEGOTIATE.

Request for information.

The user adopts the **buyer role**, making an **information request**:

- Q1.- You need a clarification about delivery time. You need a maximum of 7 days since you send the order to the logistics supplier. Does this fit with the company's operations?
- Q2.- You want to ask if the pallets need to have a label with the volume (m³) and weight (kg) in order to prepare the final bill.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to ask both questions?	Y	4	Y
Were you able to share all the required information with the provider during the negotiation?	Y	4	Y

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- They consider it is very important to share information.
- It is important to have alerts.

The user adopts the **seller role**, answering an information request:

- Q1.- Yes you can manage
- Q2.- It is not necessary.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to ask both questions?	Y	4	Y
Were you able to share all the required information with the provider during the negotiation?	Y	4	Y

Negotiation.

The user adopts the **buyer role**, making the first order:

- Quantity: 2 pallets (12m³, 15kg).
- The supplier has to pick up the pallets in the warehouse (the warehouse is not in the same location than the headquarters) the company has in:
 - City: Almussafes (Valencia, Spain)
 - Direction: Albufera street, 26
 - Postal code: 56987
 - Direction: Tarradellas street, 32
 - Postal code: 63215
 - The expected delivery time is 1 week from today.
 - The products will be:
 - 4 seats – reference: 569865G
 - 2 tables – reference: 87845Y
- The picking and truck load operations will be always between 8:00h – 10:00h AM, because is the slot when your company will have 1 dock available for external logistics companies.
- The customer's warehouse in destination B does works after 20:00h. Then, the delivery has to be before this time.
- The destination direction is:
 - City: Hospitalet Llobregat (Barcelona, Spain)

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to write all the information about the order?	N	2	N
Were you able to share all the required information with the provider during the negotiation?	N	2	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- It is very difficult with specific topics. It would be better to share descriptive documents describing the customer needs and the possibilities the logistics provider have to cover it.

The user adopts the **seller role**, receiving the first order negotiation:

- Calculate the right price which applies, taking into account the quantity the buyer wants to deliver.

- Modify the price.
- You need to inform that to achieve the delivery time you need to do the pick up on Monday (not next Monday). So they have packaged the pallets in advance.
- Send the answer.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the new information?	N	2	N
Is it possible to write all the information about the order?	N	2	N
Were you able to share all the required information with the provider during the negotiation?	N	1	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- It is very difficult with specific topics. It would be better to share descriptive documents describing the customer needs and the possibilities the logistics provider have to cover it.

The user adopts the **buyer role**:

- Read the answer.
- Accept the new conditions.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the new information?	N	2	N
Is it possible to write all the information about the order?	N	2	N
Were you able to share all the required information with the provider during the negotiation?	N	2	N

1.4.4 Order preview.

The user adopts the **buyer role**:

- See the order preview information.
- Add some additional clauses about insurance conditions.
- Eliminate some clauses you consider do not fit with your company.
- You need to load a pdf document with the delivery note, where you indicate the products you will deliver (4 seats – reference: 569865G, 2 tables – reference: 87845Y)
- Accept and send the order.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the information about the order? (quantities, type of products, origin, destination, price, etc.)	N	2	N
Is it possible to write new information about the order?	N	2	N
Is it possible to delete new information about the order?	N	2	N
Is it possible to share some documents? (for instance a delivery note)	N	2	N

The user adopts the **seller role**:

- See the order preview information.
- OPTION A. Reject because one clause does not fit with your company.
- OPTION B: You agree.
- You want to share a pdf file with other transport routes you consider could be interesting for this new customer (marketing information)
- Accept it and continue.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the information about the order? (quantities, type of products, origin, destination, price, etc.)	N	2	N
Is it possible to write new information about the order?	N	2	N
Is it possible to delete new information about the order?	N	2	N
Were you able to share all the required information with the provider during the negotiation? (for instance, a delivery note)	N	2	N

1.4.5 Order confirmed.

The user adopts the **buyer role**:

Feedback:

Issues	Possible	Easy	Confident
	Y/N	1-5	Y-N
Do you have the same information as in the preview?	N	2	N
Do you have information to control if the <u>pick up</u> , and delivery activities are on time?	N	2	N

1.5 Results of Eco House workshop, Lindbäcks 2018-10-16

The workshop addressed the validation of NIMBLE R4 in Logistics, for Lindbäcks and Podcomp.

Explanation about how to fill the tables of users' feedback:

Issues	Possible	Easy	Confident
	Y/N	1-5	Y-N

- Possible: If the issue has been addressed or not (value: Yes/No)
- Easy: How easy was to address the issue (value: 1 (min.) to 5 (max.))
- Confident: How confident did you feel that the issue was successfully addressed (value: Yes/No)

The user can add any additional issue at each table. Furthermore, there is a specific area for comments.

1.5.1 PUBLISH.

The user adopts the **seller role**, offering logistics services:

- The user enters the platform
- Publishes logistics services by using the **single service upload**.

Example of service #1:

- Groupage service from city A to city B (for instance: Öjebyn to Sundsvall)
- Palletized goods
- Order placement in advance maximum: 3 weeks.
- Order placement in advance minimum: 2 days.
- Order picking: weekly (Mondays to Fridays)
- Delivery time from Supplier to customer: 3 day from picking
- Price: variable depending on delivered volume and distance. For a volume inferior to 10 m³ = 30 €/m³; for a volume between 10 – 20 m³ = 26 €/m³; for a volume higher than 20 m³ = 22 €/m³.
- Insurance: loss and damage of goods
- Extra services: Inside storage
- The customer is responsible for proper packaging of goods

Feedback: We did not publish a liner service. Please see our comments below.

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Select the right product category	Y	4	Y
Explain the origin & destination	N	1	N
Explain the product characteristics you can manage	N	1	N
Time (lead time, picking time, etc.)	N	1	N
Price			
Other services			

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- The logistic services seem to be designed to serve logisitc providers with a fixed route, like liner servcies of container ships. In our case, we are looking for speciclated services providing transport servies according to the needs of the ordering party.
- Environmental emissions:
 - What is the purpose of this section?
 - How would you calculate any meaningful results out of that input?
 - Why isn't there a link to Task 5.3?
- The unit of the gross value is only in litre.

- Publishes logistics services by using the **upload multiple services**

Example of service #1:

- The same service features than in the previous one.
- Multiple service maximum measurement of 1 pice of goods: Width: 2,5m
Height: 2,7 Length: 4,0m, Weight: 4000kg
-

Feedback: We did not upload multiple logistic services.

1.5.2 SEARCH.

The user adopts the **buyer role**, searching for logistics services:

- The user searches for services, looking for:

- A groupage route to a B destination, in order to send Width: 1,8m Height: 1,35m Length: 2,8m every week during the next 2 years.
- The requirements you are looking for this service are:
 - Delivery time: maximum 1 week (counting since you send the order to the transport supplier). You expect to have prepared the goods every Tuesday or Wednesday (depending on manufacturing processes), and every week you will send the order to pick up the products one day before.
 - The picking and truck load operations will be always between 8:00h – 10:00h AM, because is the slot when your company will have 1 dock available for external logistics companies.
 - The customer's warehouse in destination B does not works after 16:00h. Then, the delivery has to be before this time.
 - The volume per pallet will be between 5 – 15 m³. It will depend on the specific orders you have to deliver every week.
- Identify if the results show the goal of your search.
- Use the filters to reduce the number of results:
 - Country: Sweden
 - Transport mode: groupage.
 - Delivery time: maximum 1 day
- Select the service you think fits better with your goal.
- Check if you can find all the service features you need.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
The search offers results according to the goal	N	1	N
The filters help you to focus your search	N	1	N
The information about the service transport is useful to evaluate it	N	1	N
Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!			
<ul style="list-style-type: none"> • There is no option to indicate the height of the good to be transported • There is no option to determine the preferred or required timframes of the day for pick-up and delivery times • There is no way to schedule a continuous transportation service, like one delivery per week 			

1.5.3 NEGOTIATE.

Request for information.

The user adopts the **buyer role**, making an **information request**:

- Q1.- You need a clarification about delivery time. You need a maximum of 1 days since you send the order to the logistics supplier. Does this fit with the company's operations?
- Q2.- You want to ask if the pallets need to have a label with the volume (m³) and weight (kg) in order to prepare the final bill.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to ask both questions?	Y	2	N
Were you able to share all the required information with the provider during the negotiation?	N	1	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- Once you have started the negotiation process, the communication is limited to request → response → and re-response. There is no way to extend the communication in this process, for instance if the provided information is insufficient.
- There seem to be only the note-fields open for communicating with the logistic provider. And it is not clear what information is new and what is already agreed on.
- It would be helpful if the service, that is agreed on, is separated and “summoned”.
- There is no designated place to state the height as well as contact persons at pickup and delivery.
- We should consider a benchmark of i.e. DHL and/or consider possible linkage via API.

The user adopts the **seller role**, answering an information request:

- Q1.- Yes you can manage
- Q2.- It is not necessary.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to ask both questions?	Y	2	N
Were you able to share all the required information with the provider during the negotiation information request?	Y	2	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- In the testing process we identified a bug: The logistic service provider rejected the request due to insufficient information. Afterwards, the ordering party receives the message that the order is completed including green background (in the dashboard). There is no message about the request rejection of the service provider. Once the ordering party (here PODCOM) accepts the quotation, there is no progress possible.
- **General remark:** The system is built to support the search and order of single business transactions. There are missing functionalities for B2B processes within a supply chain with continuous and repeating business processes, like logistic services or agreed prices for a certain period.

Negotiation

The user adopts the **buyer role**, making the first order:

- Quantity: 2 Packages (13,6m³, 1500kg).
- The supplier has to pick up the packages at the factory (the factory is not in the same location than the headquarters) the company has in:
- Factory
 - Name: Podcomp, Factory north
 - City: Öjebyn
 - Direction: Skylvägen 1
 - Postal code: 94333
- Headquarter
 - Name: Blatraden
 - Contact person: Niklas Häggbom
 - Tel: 070-5898131
 - City: Piteå
 - Direction: Hammarvägen 12
 - Postal code: 943 36
 - The expected delivery time is 1 week from today.
 - The products will be:

- 1 Package Floors, 314 Studion
- 1 Pod, 415 Sagoeken
- The picking and truck load operations will be always between 8:00h – 10:00h AM, because is the slot when your company will have 1 dock available for external logistics companies.
- The customer's warehouse in destination Sundsvall does not works after 16:00h. Then, the delivery has to be before 15:30.
- The destination direction is: Smålansvillan, Montörvägen 7, 85350 Sundsvall, Contactperson Sven-Erik Lindblom, Tel: 070-6066462, Reference: S12785

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Is it possible to write all the information about the order?	N	3	N
Were you able to share all the required information with the provider during the negotiation?	N	3	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- There is no system feedback about the minimum required information, especially with the background of the limited communication options in the negotiation process (see also comment in the information request process)
- When typing in values for Length and Width is it possible to type negative numbers ex -3. It should not be possible to type negative numbers.
- There's are no option to determine specific timeframes of the day for the pick up and the drop off – this can only be communicated in the note-fields.
- The name of the company/person/organisation is not part of the adress template.
- **Important general bug selling and buying goods (prior to transportation service):** If the seller would like to extend the warranty of its product for more than 24 month, the system doesn't allow that and blocks every further step. There is no advice when inserting the data indicating that warranties above 24 month are not supported. As a result, no one can complete the order process for that item.

The user adopts the **seller role**, receiving the first order negotiation:

- Calculate the right price which applies, taking into account the quantity the buyer wants to deliver.
- Modify the price.

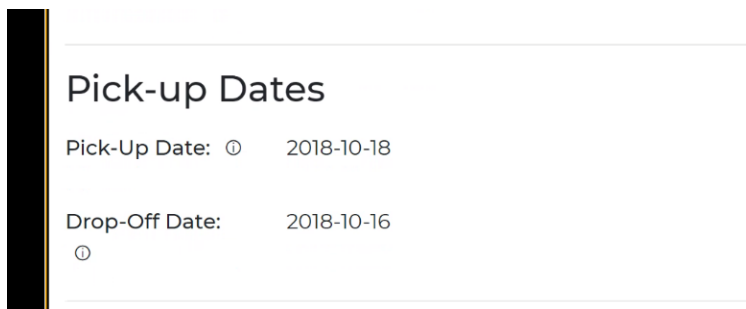
- You need to inform that to achieve the delivery time you need to do the pick up on Monday (not next Monday). So they have packaged the pallets in advance.
- Send the answer.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the new information?	Y	4	Y
Is it possible to write all the information about the order?			
Were you able to share all the required information with the provider during the negotiation?	N	-	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- There are no minimum information requirements for the ordering party to fill in. As a result, the ordering party could start the negotiation process with insufficient information and the communication opportunities within the negotiation process are limited (see also comment about the request information process).
- There are no option to determine specific timeframes of the day for the pick up and the drop off.
- The name of the company/person/organisation is not part of the address template.
- There is no option to negotiate the price in SEK
- **Important bug:** The system allows to choose the drop-off date prior to the pick up date (see also screenshot)



Pick-up Dates

Pick-Up Date: ① 2018-10-18

Drop-Off Date: 2018-10-16
①

The user adopts the **buyer role**:

- Read the answer.
- Accept the new conditions.

Feedback:

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the new information?	Y	2	N
Is it possible to write all the information about the order?	Y	3	N
Were you able to share all the required information with the provider during the negotiation?	N	-	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- General in negotiations: Highlight the changes made by a stakeholder to get a better overview
- There are limited ways to structure the dashboard. In the LINDBÄCKS use-case, PODCOMP has several orders from LINDBÄCKS at the same time. Without an identifier (like order number) it is hard to identify the right process in the dashboard.
- In the dashboard, there is also no indication of the booked logistic services to fulfill the order
- In addition, the logistic service buyer would like to print the transportation details in an overview format in order to forward the information to other departments
- Today, each item to be transported is getting a barcode as identifier (see picture below)



For our ratings, please see also our comments of the previous steps

1.5.4 Order preview.

The user adopts the **buyer role**:

- See the order preview information.
- Add some additional clauses about insurance conditions.
- Eliminate some clauses you consider do not fit with your company.
 - You need to load a pdf document with the delivery note, where you indicate the products you will deliver (1 Package Floors, 314 Studio
1 Pod, 415 Sagoeken)
- Accept and send the order.

Feedback: Is the "Transport execution plan" the order preview? We have been confused at this stage of the process about the naming of the available options. We were unsure, how to process in the process. See also our comments to this section.

We have made some comments which relate to this section without testing the order preview step by step.

Issues	Possible	Easy	Confident
	Y/N	1-5	Y-N
Can you read all the information about the order? (quantities, type of products, origin, destination, price, etc.)			
Is it possible to write new information about the order?			
Is it possible to delete new information about the order?			
Is it possible to share some documents? (for instance, a delivery note)			

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

If we understood correctly, the options like "Dispatch advice" or "Send receipt advice" are previews of the order with the opportunity to fill in additional information. This step was confusing:

- The logistics ordering party should fill in information like estimated delivery date in the "Dispatch advice" section. We think, the logistics service provider should do that (or it is based on a automatic process)
- There is also an option for the party who ordered and receives the good to give feedback and to indicate damages. There is also the option to insert the number of rejected items, which can be set to -1 (so negative values are allowed).

- The naming of all processes is confusing.
- If LINDBÄCKS claims a damaged bathroom floor, PODCOMP gets the information, but the associated process is still marked as completed with green background in the dashbord.

The user adopts the **seller role**:

- See the order preview information.
- OPTION A. Reject because one clause does not fit with your company.
- OPTION B: You agree.
- You want to share a pdf file with other transport routes you consider could be interesting for this new customer (marketing information)
- Accept it and continue.

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Can you read all the information about the order? (quantities, type of products, origin, destination, price, etc.)			
Is it possible to write new information about the order?			
Is it possible to delete new information about the order?			
Were you able to share all the required information with the provider during the negotiation? (for instance, a delivery note)			

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- General in negotiations: Highlight the changes made by other stakeholder to get a better overview
- If the stakeholders didn't agree in the foreseen negotiation steps (Request → response → response) there is no option to prolong the negotiation.
- If the contract need ot be adopted, the contract has to be rejected and the transport details have to be filled in again

Order confirmed.

The user adopts the **buyer role**:

- See the order confirmed information.

Issues	Possible Y/N	Easy 1-5	Confident Y-N
Do you have the same information as in the preview?			
Do you have information to control if the <u>pick-up</u> , and delivery activities are on time?	N	-	N

Please motivate your choices above, provide your reflections, and suggest additional ideas, thoughts or concerns, if any!

- There is no indication about the booked transport service in the NIMBLE dashboard.
- We did not manage to get the information if the logistic service order has been fulfilled.
- We also see the requirement that NIMBLE is able to send the information of a completed order to the payment system of the company.

1.5.5 UX-questions around Nimble

After having tested the NIMBLE platform, we would also like to you as informant to reflect upon some further issues the NIMBLE Platform *per se*.

Logistics services

1. What logistics processes would trigger your use of NIMBLE?
2. What logistics processes would you want to get support for in your supply chain?
3. What kind of logistics collaboration do you think could be performed in a collaboration platform? (Please give motivation)
4. Which logistics collaboration activities would be most beneficial to perform via a platform such as NIMBLE? (Please give motivation)

The transport from PODCOMP to LINDBÄCKS is executed by a local logistic company. The required interaction with the local logistic company in terms of information flow should be integrated into NIMBLE in way that saves time and avoid mistakes in the ordering process of the logistic service.

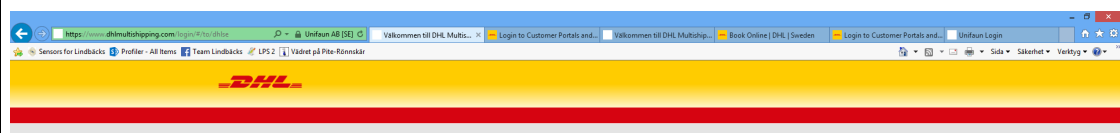


Today, PODCOMP works with DHL logistics to transport the bathroom units to LINDBÄCKS. DHL has a sophisticated online system to order a specialised transport service which serves PODCOMP's needs well.

As a result, a connection of the DHL online system to NIMBLE would be appreciated (there is no need to reinvent the service).

NIMBLE would transfer all relevant data automatically to the DHL portal which would thereby shorten and ease the order process. Moreover, DHL offers tracking information, confirmation of drop-off etc. which should be displayed in NIMBLE.

The same would apply to the system of other logistic service providers such as FEDEX, UPS, etc.



Välkommen till DHL Multishippings inloggning!

Vad är DHL Multishipping?
DHL Multishipping är DHL Freight Sveriges officiella T4-system. I detta system kan du som kund till DHL Freight boka och administrera dina transporter för samtliga produkter.

Vill du registrera ett konto i DHL Multishipping?
För att läsa mer om DHL Freight villkor klicka [här](#)

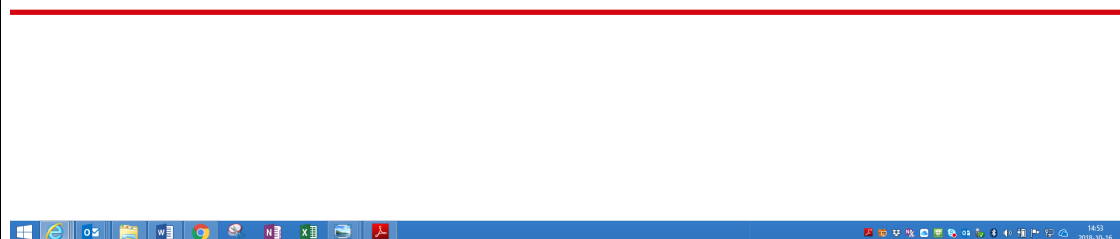
Ange dina kontouppgifter nedan

Användarnamn:

Förnamn-ID:

Lösenord:

[Glömt lösenord?](#)



Shipment information - Internet Explorer

<https://www.dhmultishipping.com/transport/complete.php?referer=/transport/history.php&assignment=109677641&type=30>

Sändningsinfo

Sändningsnr: 6277970262 Registreringsdatum: 2018-05-17 11:21
Användarnamn ref: Podcomp Önskad leveransdagspunkt:
Fraktbetalare: Användaren Bokningsdatum: 2018-05-17 11:21
Kundnr.: 160069

Partinfo

Avsändare:
Id: Podcomp
Name: Podcomp
Adress: Skivvägen 1
Postnummer: 94323
Ort: Östbyn
Land: Sverige
Kontaktperson: Nicklas Haggblom
mob: 070-6960421
E-post: nicklas.haggblom@podcomp.se
Referens: Podcomp
Kundnr.: 160069

Mottagare:
Id: Smålandsvillan Sunde
Name: Smålandsvillan
Adress: Montevägen 7
Postnummer: 85350
Ort: Sundsvall
Land: Sverige
Kontaktperson: Sven-Erik Lindblom
Tel: 070-6960402
Referens: Smålandsvillan

Identity of order, name of customer

Sender and receiver, name and phone number

Godstrader

Antal	Kollslag	Vikt (kg)	Volym (m3)	Flaknummer	Godsmärke	Varuslag	Kolli id
1	Ospectfloorat koll	1000.0	5.04		Kompositgolv	Komposit	37332398006661208
Sca 1		1000	5.04				

Leveransinfo

Upphämtningsplaneringar: Transportprodukt:
Upphämtningsdatum: 2018-05-22 DHL Sverige Inrikes - DHL Part
Upphämtning tidigast: 08:00
Upphämtning senast: 15:00

Pick up date and time frame for pick up.

Prisinformation

Totalt beräknat pris: 1228.72 SEK
Prisdelar:
Beräknat pris 891.00 SEK
Kapacitetstillägg 12.47 SEK
Drivmedelstillägg (DMT) 325.25 SEK
Totalt pris 1228.72 SEK
Kon-avstånd 400.00 KM
Taxerad Vikt 1412.00 KG
mona 307.18 SEK
Totalt pris (ink mona) 1535.90 SEK

Price information, distance (km)

Händelser

Shipment information - Internet Explorer

Identity of order, name of customer

Sender and receiver, name and phone number

Pick up date and time frame for pick up.

Price information, distance (km),

NIMBLE collaboration value:

1. What do you regard to be most valuable – rank these (please give motivation – why rank this way):
 1. Save time
 2. Save money
 3. Networking
 4. Idea generation
 5. Other (please suggest other values)

Please write your answers here
1 Improve the information flow in the supply chain
2 Save time and as a result reduce costs
3 Networking and Idea generation in the sense to find new business partners enabling new products/services

Areas of improvement:

1. Can you give an example of one of your logistics processes that is specifically problematic today and that could be improved? If so, in what ways?
2. For to strengthen your business, what other kinds of services would you like to see? (Value-added services).
3. In what type of relations?
4. How can collaboration be strengthening with NIMBLE? Why?

Please write your answers here
1 The time to order the logistics service is a relevant cost factor The timespan between the day of ordering the service and the actual pick-up date could be prolonged to allow a more flexible planning process.
2 Tracing and tracking and the integration of 3D-configurators would strengthen the business in the LINBÄCKS supply chain.
3 Re use of information, e.g. the possibility to use self-defined templates when ordering transportation

User's view on NIMBLE's idea:

1. What do you see as possible to negotiate for via a platform? Why/why not?
2. What would/could motivate you to start using the NIMBLE B2B-platform?
3. What would/could prevent you from using the NIMBLE platform?

Please write your answers here

1 If the negotiation part is more elaborated it could give added value to the service.

2 Improve the information flow and thereby reduce the costs of certain business process steps (like the ordering process of logistic services)

3 There is no additional functionality or time saving effect compared to the tools used today.

4 There is a great possibility to further elaborate the presentation of the agreed transportation service – this would bring the Nimble service to the same level as existing services.

2 Validation of Data Channels / Sharing in NIMBLE

2.1 Data Channels – Validation at Whirlpool 19/11/2018

2.1.1 Objective

The purpose of the data channel Validation workshop run in Whirlpool November 19th 2018 focused on

- [1] *Functionality test*: the validation of the business services (practical/technical aspects), that is, a validation focusing on the business services developed so far (internal Use Case users) related to the creation of a Datachannel linked to a
- [2] *Backoffice test*: the validation of the actual data transfer between a producer and a receiver along the channel created in the platform

2.1.2 Scope

Focus in the validation is as follows:

1. *Functionality test*: The basic business service functionalities i.e. to buy a Product requesting data monitoring and the produced evidence of a creation of a datachannel in the platform.
2. *Backoffice test*: Verify that a dataset of several record, provided by a data producer is actually transferred to the data reader with respect of consistency (i.e. all the data are transferred) and performances (i.e. data are transferred in a time perceived by the user as “reasonable”)

2.1.3 Validation Script

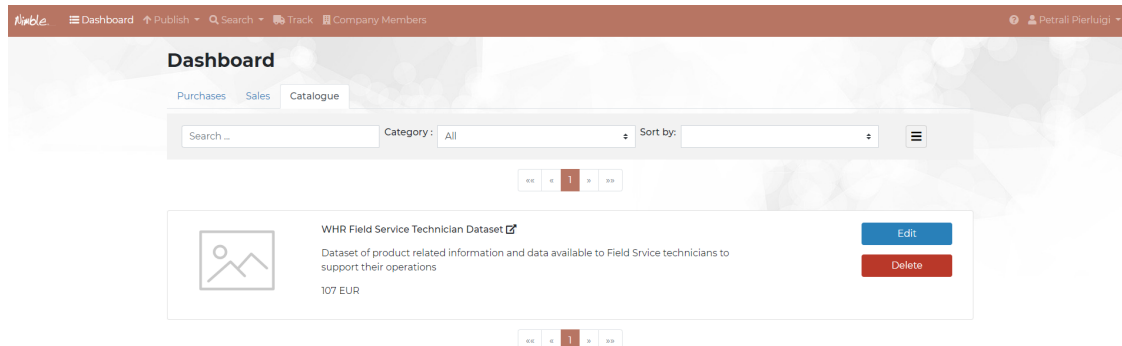
The business sequence to be validated is as follows:

1. WHR creates a catalog of DataStream available
2. FST buy the DataStream
3. WHR and FST define a contract
4. WHR enable Data-channel on the contract
5. NIMBLE platform create a Data channel
6. FST start using the Data channel
7. FST will provide a qualitative evaluation Data Quality and Latency
8. WHR Validation SA plays the role of the Seller; MDA Assistance (FST from now on) plays the role of the Buyer.

The validation workshop took place November 19, 2018 as a virtual meeting organized by Whirlpool on Google Hangout and was attended by Stefano Borgia, Holonix; Mari Runardotter and Diana Chroneer, LTU; Gigi Petrali, WHR. The meeting was recorded,

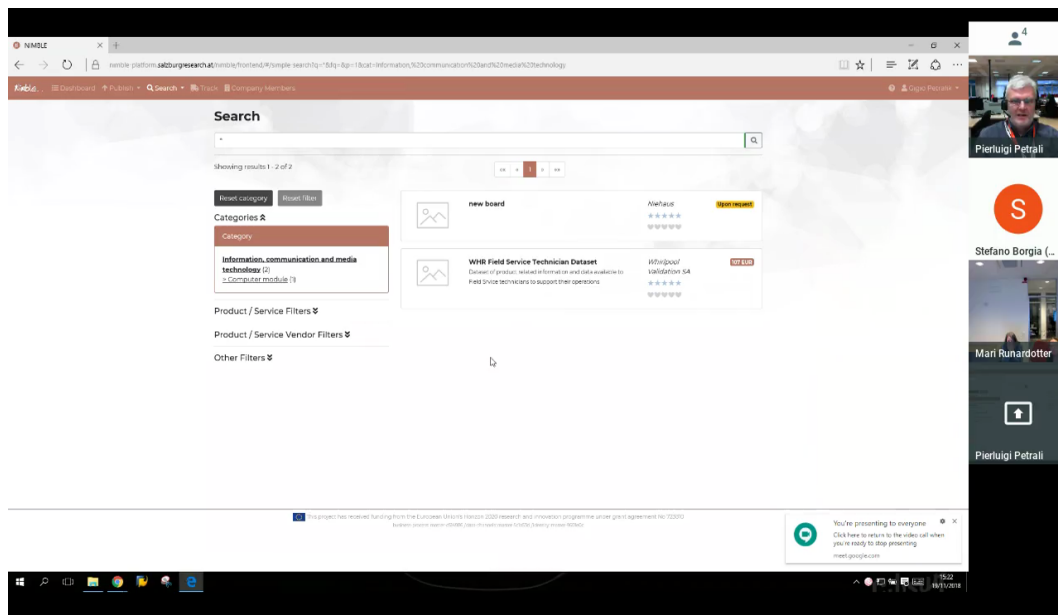
with the agreement of all the participants and will be made available for future reference. The validation followed the script presented before.

2.1.3.1 WHR creates a catalogue of available DataStreams



The Seller has publishes on the Catalogue a product consisting in a data-stream and placed under the category Information and Technology. When using the platform to sell only streams, the buyer can actually create a rich catalogue of different data-stream grouped by country, product family, etc. The possibility to create a Category related to *Data* should be taken into consideration.

2.1.3.2 FST buys the DataStream



The buyer selects a product from the catalogue. In order to buy it, a product must have a price >0 . In principle this could be a limitation, unless there are specific legal constraints a contract of value 0 should be admissible. Moreover, the platform should be informing the user the reason why an action cannot be performed. The limitation of

Value > 0 as a constraint was communicated verbally by platform developers after a call.

2.1.3.3 FST requires a Data-channel

The screenshot shows the NIMBLE platform interface during a negotiation. The 'Manufacturer's Terms' and 'Counter Offer' sections are visible. The 'Request data monitoring service' checkbox is checked, and the 'Total Price' is 107 EUR. The 'Delivery Address' section shows 'via Campo dei Fiori, 76' in 'Varese', 'Italy'.

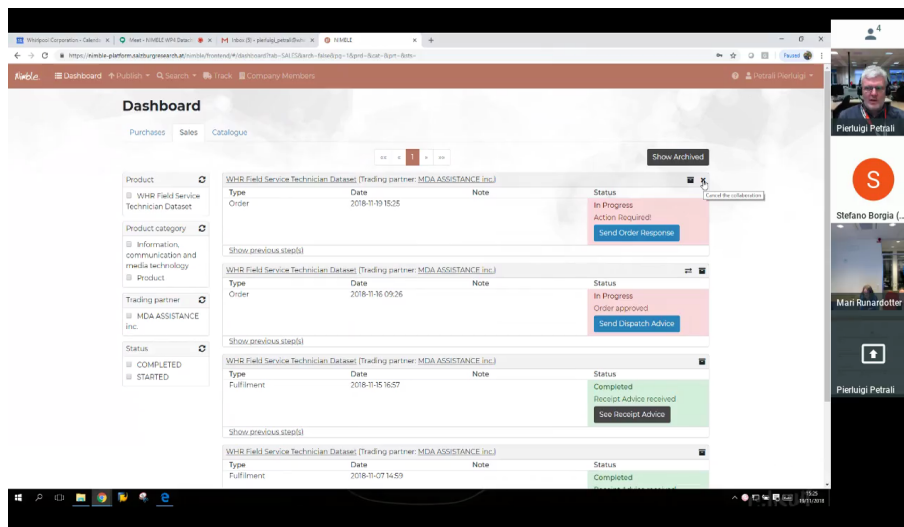
FST negotiate the product and enable the data monitoring function. This button is too small and it is hardly visible.

2.1.3.4 WHR confirms Data-channel on the contract

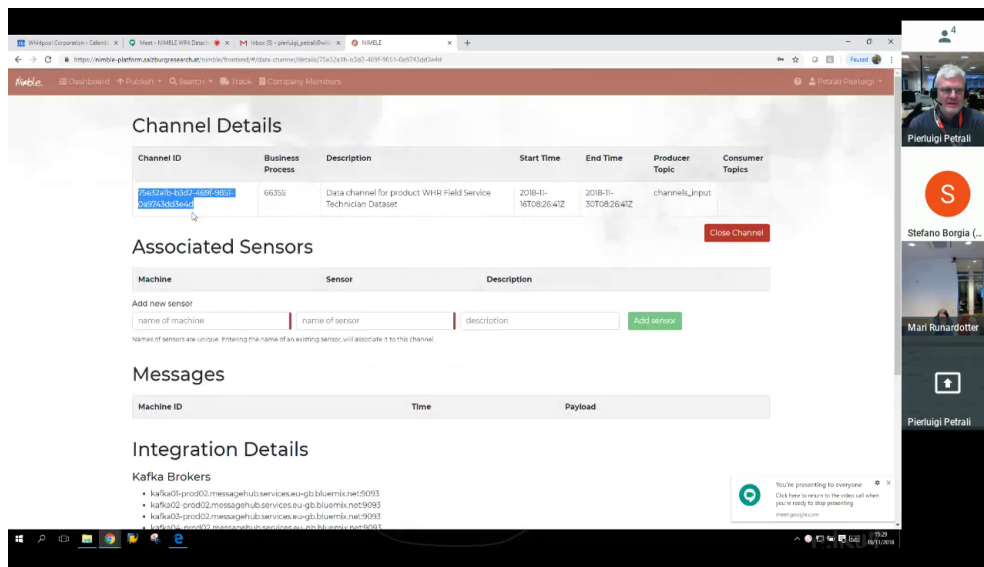
The screenshot shows the NIMBLE platform interface during the 'Accept Offer' stage. The 'Delivery Address' section shows 'via Campo dei Fiori, 76' in 'Varese', 'Italy'. The 'Accept Offer' button is highlighted.

The buyer accepts the order and confirms the data monitoring service.

2.1.3.5 NIMBLE platform creates a Data channel



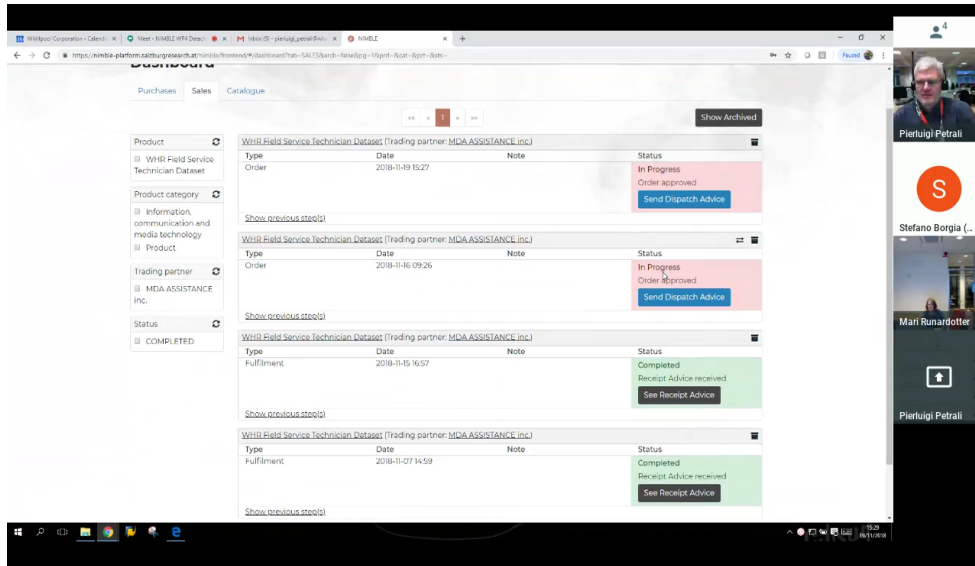
In the specific test run on Monday afternoon this function did not work properly. As a comparison, the same procedure tried 16.11.2018 was actually working and the data channel icon was present on the order.



The stage of the order was not influencing this aspect: even brought to the same level of process (order approved) the icon was not present.

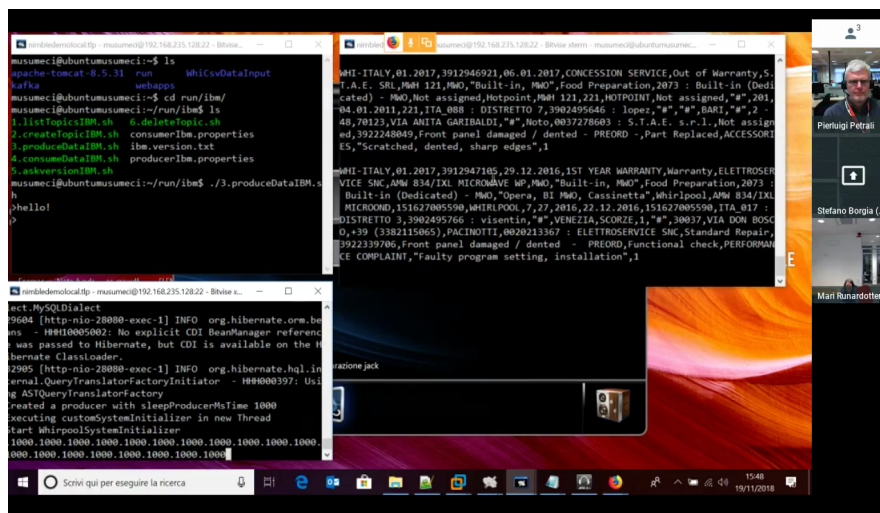
The process of data channel generation over the product is scarcely manageable: there is no way to get back and verify which part of it was faulty (if any).

As a general feedback one severe issue has been highlighted: the absence of a unique code to identify an order. Moreover there is not the possibility to examine the previous stages of the process (e.g. to verify details such as dates, options etc.)

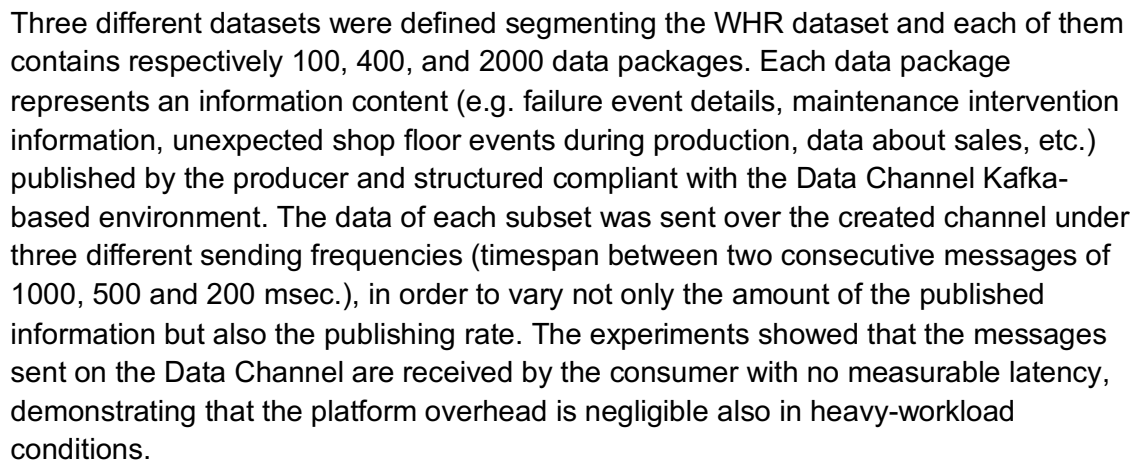


At this point, the team decided to not retry the process from the beginning. The fact that a data-channel can be created has been considered the minimum requirement to step to data channel usage. However we recommend the platform development team to examine what happened and to make the procedure more robust and more user friendly.

2.1.3.6 FST start using the Data channel



The diagram illustrates the background functionality of the data-channel: the dataset provided by WHR was used to feed the channel opened between data producer and data consumer.



The first reflection is that the service is still too shaky, since it did not function during the test session, although it had been working before. The reasons for the failure must be sorted out.

Moreover, it should not be possible to miss some required steps or actions – the platform should highlight or ask the user to act on that which is required for the process to continue.

The Platform should also, when appropriate, ask the user for confirmation, e.g. “Are you sure you want to send this request?” When the user has clicked “Yes” the platform should leave a message: “Your request has been sent.” Currently, there is lack of feedback to the users from the NIMBLE Platform. E.g. as Buyer, you do not know neither whether your request has been sent or not, nor if the Seller has been reached.

The user should be confident and directly see what happens and should never have to look for this. In this case, the data channel should be clearly visible, understandable and impossible to miss. As is now, the icon indicating that a channel has been created is too small, and could easily be missed.

2.1.5 Summing up our reflections

1. For the Seller: possibility to create a Category related to *Data*
2. Lack of feedback to the users – are things happening or not? And if no, what is the reason for this? The platform should guide the users.
3. Tracing backwards should also be possible, i.e. the history of the process – too see what has been taken care of by NIMBLE, and what has not. When not, what are the reasons for this? This the user should informed about.
4. Possibility to examine the previous stages of the process (e.g. to verify details such as dates, options etc.) should be available.
5. The user interface needs to be more elaborated. Not least since icons are too small and easily missed. Icons should also be impossible to misunderstand.
6. A unique code to identify an order should be generated by NIMBLE.

2.2 Data Channel Track and Trace (T&T) management

This is the Piacenza Scenario for Services for Operational Supply Chain Management - track and trace (T&T) data management

2.2.1 INTRODUCTION

One of the feature of the Nimble platform is the track and trace production data management. The platform is able to give the advancement status of an order, according to the real time data provided by the supplier, thanks to the use of IoT technology.

There are four actors in this process:

- A. Supplier,
- B. Nimble,
- C. Customer and
- D. the data Channel.

Here follows a brief description of the data exchange.

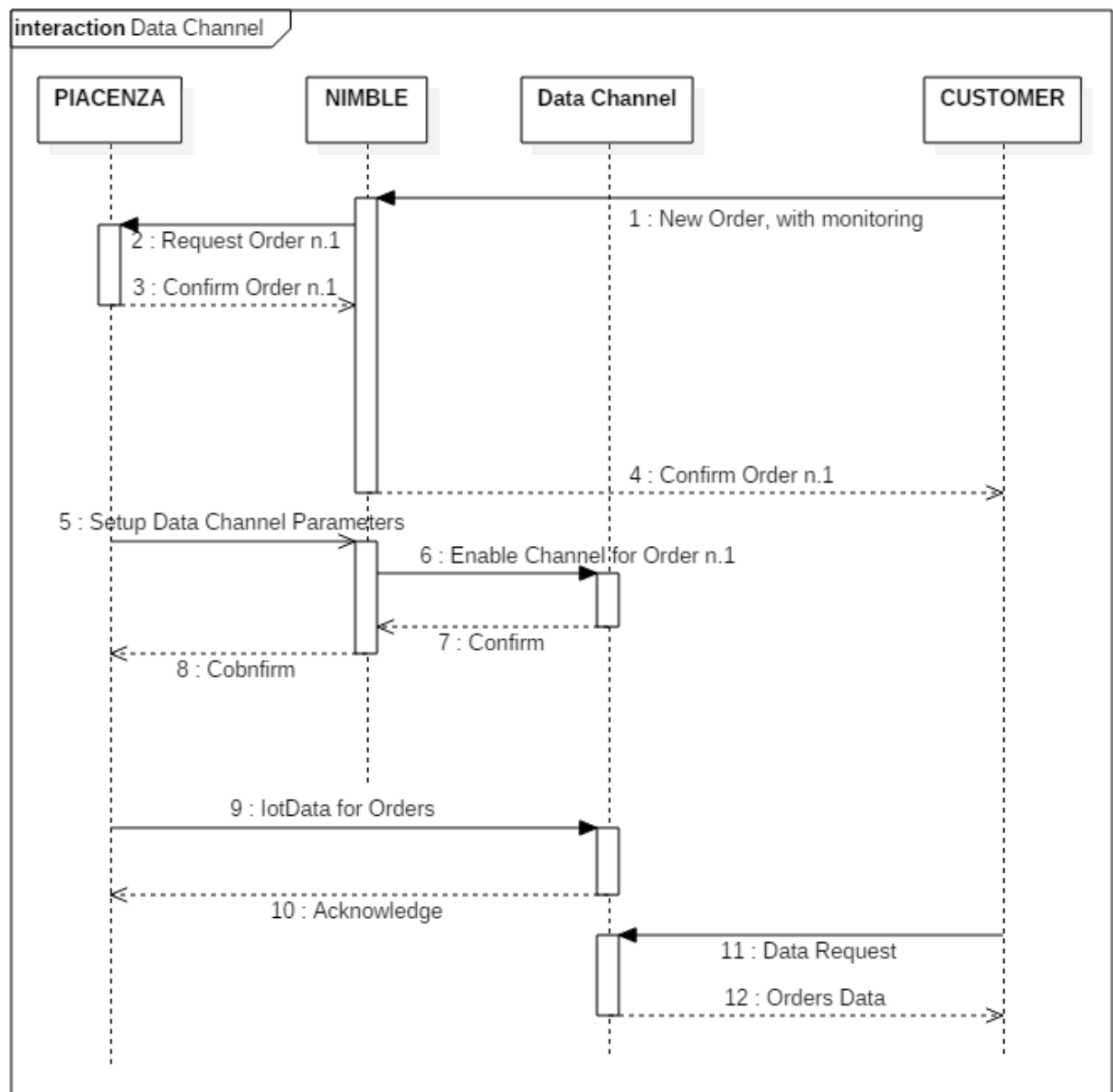


Figure 4 – Diagram of interaction with Data Channel service

Once the customer has placed their order on the platform and the supplier confirmed it enabling data monitoring, Nimble enables the configuration panel for the sensors setup. The seller could fill all parameters for data monitoring, so the channel will be enabled for both partners.

2.2.2 TESTBED SETUP

We simulate an order from the “Vision Dress” customer:

Channel ID	Business Process	Description	Start Time	End Time	Producer Topic	Consumer Topics
1b67f1b8-cd5e-4a41-b7f2-87852681c7c0	1336449	Data channel for product 1869_52_2	2018-11-16T09:19:36Z	2018-11-30T09:19:36Z	channels_input	

Figure 5 – Sample order for a Data Channel Monitoring Service

Enabling the monitoring we could make a selection and a mapping of the 14 most crucial steps in the workflow of 25 that are involved in the production monitoring, so we assigned to each machine a sensor ID.

Associated Sensors

Machine	Sensor	Description	
MC43	S001		Remove
MC36	S002		Remove
MC38	S003		Remove
MC32	S004		Remove
MC44	S005		Remove
MC40	S006		Remove
MC50	S007		Remove
MC53	S008		Remove
MC52	S009		Remove
MC63	S010		Remove
MC103	S011		Remove
MC30	S012		Remove
MC54	S013		Remove
MC60	S014		Remove

Figure 6 – Device and Sensor List for Data Channels

Applied the configuration we define a record format of the data to send to our customer for the payload message.

DATE - PRODUCTION_ORDER_KEY - MACHINE_ID

Here an example of the data record.

```
{
  "header":
  {
    "channelId": "1b67f1b8-cd5e-4a41-b7f2-87852681c7c0",
    "producerCompanyId": "1356",
    "machineId": "MC40",
    "time": 1542814869378
  },
  "payload": "2018-10-02 00:00:00.0-405982-40"
}
```

Figure 7 – Message Format for Data Channel Record

KPI

The KPI that should be monitored for the validation in this first round are:

1. Quantity of messages sent => Number of Message accepted / Number of Message sent;
2. Quantity of messages delivered => Number of Message retrieved / Number of Message sent;

2.2.3 TEST RESULTS

For validation purposes DOM aims to test the data exchange of the scenario at three different speeds.

- 1 record every 5 seconds
- 1 record every second
- 1 record every 200 milliseconds

The amount of data is about 3 months of internal production about 1000 records, below the results.

	RECORDS SENT	RECORDS CONSUMED	TIMING	KPI 1	KPI 2
every 5 seconds	896	896	1h 15m 32s	100%	100%
every second	896	896	16m 6s	100%	100%
every 200 milliseconds	896	896	3m 39s	100%	100%

3 Summary of the Validation Workshops

We validated the logistics, data sharing and tracking and tracing facilities of NIMBLE, with workshops mainly covering releases from R1 through to R4. There were more validation rounds dealing with the logistics and fewer dealing with data sharing and data channels.

Logistics is a very mature field in terms of software support, and therefore, users both on the service providers' side and on the consumers' side have high expectations that are difficult to fulfill. Nonetheless, reasonable progress was made over the first 4 releases and more is to come in releases 5 to 8 planned for 2018/2019.

By contrast, data sharing facilities are a relatively new field exploiting networked IoT devices. Here, the issue lies more with the poor integration of shop-floor machine sensors with corporate ICT networks. Hence, our validation has not gone beyond proof of concept stage and even there, it still requires more support from NIMBLE, e.g. by providing infrastructure to be used by local systems in order to connect contract IDs with product and manufacturing item IDs, both needed to track and trace the production process of an order and to associate production process data with end consumers' products.

3.1 Logistics functionality

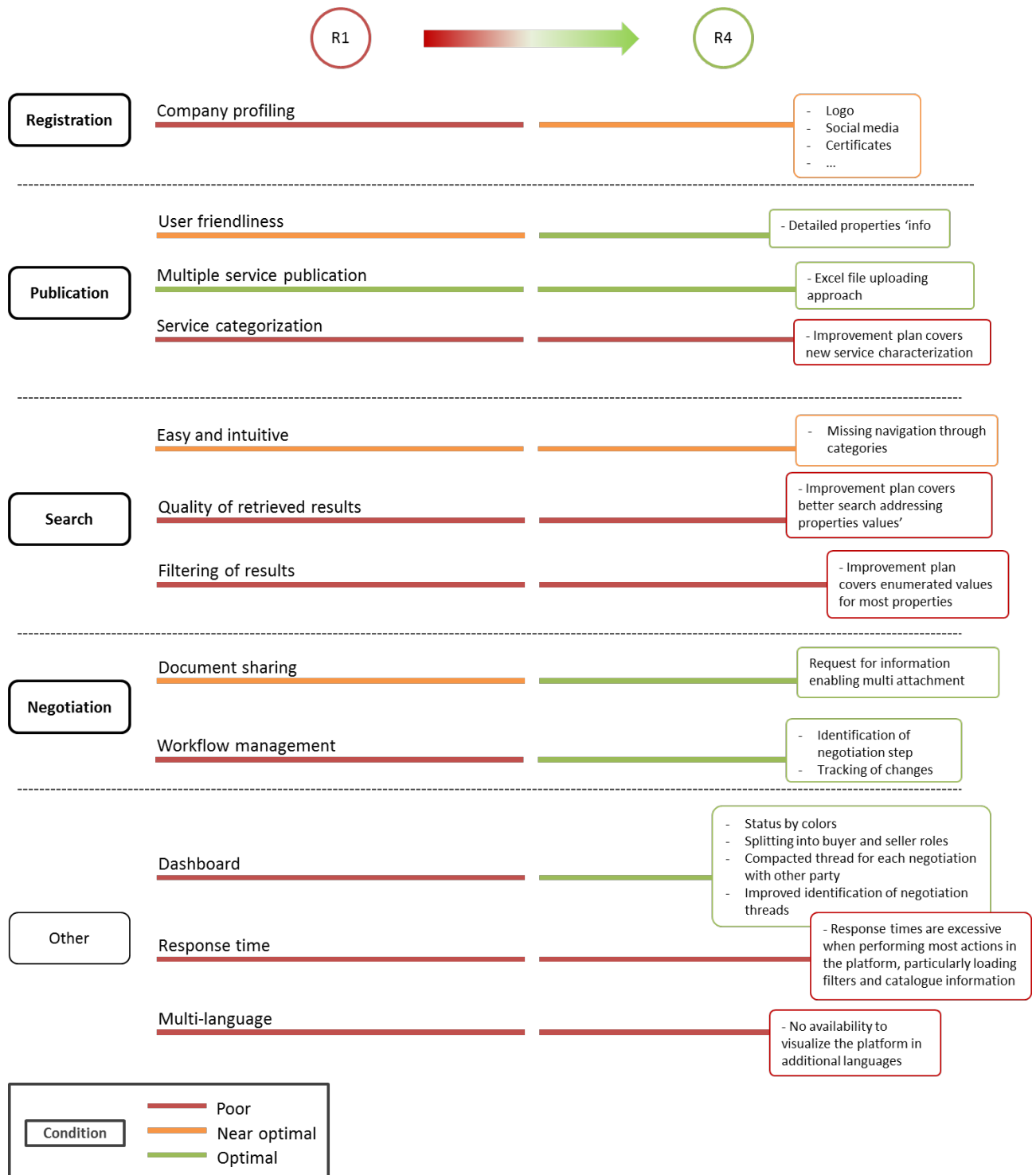


Figure 8 – Evolution of the status of critical issues from NIMBLE R1 to R4

The figure above shows how some critical issues detected at the validation workshops of logistics have evolved. The red and green lines represent a poor and optimal condition respectively according to the opinion of most users, while the orange line represents that the issue should be further improved to meet the expectations of the users. These aspects are organized in the four main processes to keep the structure adopted in the rest of sections. It should be remarked that the picture does not include all the relevant aspects but a significant collection of them.

On the one hand, as can be seen from figure, some aspects are currently being addressed as a kind of an improvement plan to cover not only the whole functionality of the platform but also particular needs regarding logistics in NIMBLE. Such is the case of the publication of logistics services (or service categorization), which actually becomes cumbersome for most users. To ease the publication of these services, particular mock-ups are being developed to propose an implementation that may provide a friendly and compact mechanism for companies to publish its logistics services. This important requirement emerged from the need of logistics companies of being able of publishing global logistics services in an agile and easy form, and a similar approach to publish general services - not necessarily related to logistics - is being also evaluated. Furthermore, the new approach would greatly improve the quality of the results retrieved from current searches, avoiding ambiguity in many properties' by providing predefined collections of values.

On the other hand, very relevant improvements have been achieved from NIMBLE R1 to R4, such as an improved user interface, a friendlier navigation and, in particular, the upgrades of the negotiation process. This functionality, as well as the latest updates in the dashboard design, has led to a clearer structure of the interaction processes between companies, by grouping the negotiations in compact threads, identifying them properly, tracking the changes performed during the process and, in short, easing the management of the negotiation with other parties in NIMBLE. Furthermore, the negotiation of logistics became clearer after changes, so aspects like the origin and destination of goods, as well as the management of units have been addressed in a more successful manner due to the NIMBLE updates.

3.2 Data Channels Functionality

The data channel functionality is described in D3.5 and serves as a secure data sharing facility between buyer and supplier companies that wish to have very tight integration of B2B processes, be they in production, logistics or quality assurance.

Serious validation is dependent not only on the NIMBLE services that are available, but also on a meaningful data sharing infrastructure provided by e.g. the manufacturer whose production a buyer would like to monitor. The validation has shown that at present, significant effort has to be invested in making such data available to the NIMBLE data channels. Paired with the well-known scepticism on the part of manufacturers when it comes to any data sharing, the data channels are at present under-utilised and under-appreciated. We conclude that we need to invest further work,

into also providing local infrastructure that makes it easier to connect to NIMBLE, as there is at present little incentive for manufacturers to even try the facility.

4 Conclusion

In a further development (waiting for better specifications required by the platform), Nimble will be able to give manage information instead forwarding them, based on each item of the order, which is more precise and realistic. So, Nimble services will be able to acquire, filter, compare and manage the order data of the supplier in such a way to guarantee a well formed output, ready to go in the acquisition system of the customer

4.1 Lessons Learned for the Evolution of the Platform

Here we outline some lesson learned for future development and validation of the NIMBLE platform.

In general, the individual users base their expectation of NIMBLE core functions on using existing well-known platforms as Amazon and Ali Baba. This makes it important to handle and meet the expectations in the future releases diminishing the expectation gaps in order to make the users committed. It also points to use current platforms as benchmark for further development of functions for UX.

As the functions on the NIMBLE platform will be developed and be more advanced, different releases call for continuous validation, re-thinking and redesigning in accordance of an agile approach. A further lesson learned is to do continuous validation work of the NIMBLE business services, by investigating user experience in accordance to following themes, broken down into different principles in accordance to ISO 9241:

- Learnability: how easily can a new user learn to navigate the interface?
- Flexibility: how many ways can a user interact with the system?
- Robustness: how well are we supporting users when they face errors?
- Efficiency: how quickly can users perform tasks?
- Errors: how many errors do users make, and how quickly can they recover from errors?
- Satisfaction: do users enjoy using the interface, and are they pleased with the results?
- Clear understanding: how well can users understand what they are seeing?

- Operability: how much control does the user have within the interface?
- Attractiveness: how visually appealing is the interface?
- Usability compliance: does the interface adhere to standards?

Also, when the NIMBLE platform reach a level of becoming an attractive B2B-platform, external users SMEs will be involved and interviewed about future possibilities of NIMBLE concerning collaboration and enhanced value throughout the value chain.

Below are the themes that should be reported upon.

- Context: Where are the users? What are the conditions under which they work?
- User's view on NIMBLE's idea: What are their incentives to use the platform? What future situation do they want to reach? "What's in it for me?"
- Business services (current): What are their views of NIMBLE's current business services?
- Business services (wish list): What type of functionality are they expecting from the NIMBLE B2B platform? Which functions are desirable and which are less important?
- NIMBLE collaboration value: What will the value be using a B2B-platform like NIMBLE?
- Areas of improvement: Problem formulation? How can a B2B-platform support information exchange and collaboration in the supply chain?

We can also conclude that the governance and ownership of the NIMBLE platform are important for attracting future users and would assure sustainability of the platform. A lesson learned is to continue the work with investigating who will own a NIMBLE platform and how that platform should be governed. Therefore, a process for this work should be outlined.

4.2 Use of the Validation Results

All validation results were analysed and translated into issues managed in the project's JIRA issue management system. There, they are being prioritized and assigned to future releases. The releases are organised in development sprints that have durations between one and four weeks.

In a parallel activity, the development issues are also checked with the original consolidated requirements from D4.5 in order to achieve full traceability of issues and requirements. A final set of requirements and their implementation status is planned for the end of the project.