Acronym: COLUMBUS
Title: Monitoring, Managing and Transferring Marine and Maritime Knowledge for Sustainable Blue Growth
Grant agreement n° 652690

Deliverable 7.2

Collection of Knowledge Transfer Case Studies for Promotion of Marine Science Across Europe

02-2018

Lead parties for Deliverable: Nausicaá, Centre National de la mer
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Dissemination Level

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Acknowledgement
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I. EXECUTIVE SUMMARY

Significant Identification and Collection of EC funded Marine Research has been done in past projects and COLUMBUS intends to capitalise on this effort by harnessing the knowledge within projects and transferring it. Knowledge Transfer activities were carried out by the Competence Nodes led by Knowledge Transfer Fellows.

Knowledge Transfer is a two-way, iterative process, requiring engagement and networking. It is end-user focused and requires a deep understanding of the needs of the end-user in order to tailor-make an effective Knowledge Transfer plan to ensure transference and impact occurs.

Deliverable 7.2 demonstrates how Task 7.2 of WP7 provided communication support to Competence Nodes (hosted by Aquark, Aquatera, AquaTT, CETMAR, CMT, DTU Aqua, Project Management Jülich and Seascape Consultants) in carrying out Knowledge Transfer to all end-user groups targeted by COLUMBUS: industry, policy, science and wider society.

WP7 provided communication expertise and support to enable Knowledge Fellows and Competence Nodes Leaders to run their respective communication activities and produce their respective communication materials based upon their targeted users and to ensure a stimulating Knowledge Transfer process.

In summary, WP7 supported COLUMBUS Knowledge Transfer activity through:

1. The development of guidelines as well as promotional materials and actions to enable the Competence Node leaders and Knowledge Transfer Fellows to communicate efficiently on COLUMBUS once organizing their Knowledge Transfer activities,
2. The production of promotional materials and guidelines to enable the Competence Node leaders and Knowledge Transfer Fellows to host successful brokerage events,
3. Specific communication support and expertise provided for Knowledge Transfer activities through the development of technical briefs, and
4. The design and publication of 48 “public format” stories outlining the detailed Knowledge Transfer journey across the marine and maritime sectors (the COLUMBUS Competence Nodes)
II. INTRODUCTION

The COLUMBUS project (www.columbusproject.eu) intends to capitalise on the European Commission's significant investment in marine and maritime research by ensuring accessibility and uptake of research Knowledge Outputs by end-users: policy, industry, science and wider society. COLUMBUS has indeed ensured measurable value creation from research investments contributing to sustainable Blue Growth - within the timeframe of the project.

In this respect, this report presents the various and complementary communication support activities and tools that have been developed and implemented to help Competence Nodes to carry out Knowledge Transfer, as well as to ensure that all Knowledge Transfer activities have been efficiently aligned with the scheduled communications activities.

More precisely, this series of activities and tools have enabled all Competence Nodes to access communication expertise by targeting specific audiences through a selected portfolio of communication channels, materials and tools; the details of which are described in this report.
III. OVERALL OBJECTIVE

The overall objective of this deliverable is to present the Communication support that has been provided to COLUMBUS Competence Nodes to support their efforts in carrying out Knowledge Transfer. It details the support given to each Knowledge Transfer Fellow and associated Competence Node to achieve success in their Knowledge Transfer Plans and to develop a collection of stories of Knowledge Transfer activity to promote marine science across Europe.

IV. SPECIFIC OBJECTIVE(S)

As per the Grant Agreement (page 35):

"The focus of this task [has been] to provide support to each Knowledge Transfer Fellow and associated Competence Node when Knowledge Transfer plans are being developed in WP6. This task [has been] to provide input into the selection of communication channels, materials and tools depending on the Target User(s), and [worked] in conjunction with all competence Nodes to ensure coherence of all materials created and activities conducted.

This task [has been] also focusing on ensuring that the Knowledge Transfer activities were timely and planned in conjunction with communication activities.

Collecting information of Knowledge Transfer activities [have also fed] into other WP7 tasks, such as Task 7.3 ‘Brokerage events’ and Task 7.6, ‘Marine Research for a Blue Society’.”
V. SPECIFIC MEANS and ACTIVITIES

1. The “ABC” of COLUMBUS Communications Efforts

1. Overview

Run throughout and with a consortium of experts in the marine and maritime sectors, COLUMBUS WP7 has enabled each of the Competence Node Leader and Knowledge Transfer Fellow to have access to expertise and assistance in communication related activities.

This added value and expertise access, COLUMBUS has provided, has ensured that all Competence Node Leaders and Knowledge Transfer Fellows have used the most efficient means and tools to reach toward their respective targeted audiences for their Knowledge Transfer activities.

2. Process and Results

2.1 Visual identity and Branding

As detailed in the D7.1 “Dissemination and Exploitation Plan”, COLUMBUS partners have been provided a dedicated project’s visual identity with its own logo and branding.

This visual identity has been essential to build on COLUMBUS branding, an essential step for all Competence Node Leaders and Knowledge Transfer Fellows to communicate to their Knowledge Transfer’s targeted audiences under the COLUMBUS’ umbrella.

The respective logo usage rules, along with the branding requirements (e.g. EU emblem and hereunder text) have been shared with them, as this logo has been included in all project promotional material including the factsheet, website, etc.
2.2 Communications Channels: Online Strategy

Moreover, in order to ensure that all Competence Node Leaders and Knowledge Transfer Fellows could communicate efficiently toward their targeted audiences, and this to run successful Knowledge Transfer activities, the following communication channels have been secured and promoted for usage. With a communication strategy based upon an online activity’s coverage, the following tools and respective best practice guidelines have been secured:

- **COLUMBUS dedicated website**: [http://www.columbusproject.eu/](http://www.columbusproject.eu/)

  In accordance to the EU Project Websites Best Practice Guidelines, the website played multiple roles as a communication resource to promote the project, its objectives and partnership, as well as serving to update interested parties on progress, results and outcomes. COLUMBUS Competence Node Leaders and Knowledge Transfer Fellows used it as a backbone of their respective communications activities, in line with their Knowledge Transfer activities.

- **Social media usage**:

  In order to optimize the Competence Node Leaders and Knowledge Transfer Fellows to interact with their Knowledge Transfer’s targeted audiences, the consortium has been encouraged to use the social media mainstreams, with the creation of a dedicated LinkedIn group and a dedicated twitter account. To ensure the respective partners efficient usage of these tools, specific “best practices guide” have been developed and shared with them, covering the LinkedIn tool and the twitter one. They also have been made available on COLUMBUS dedicated basecamp.

Please refer to this D7.6

2.3 COLUMBUS Catalogue

In addition to these, and to secure an optimal preparation and organization of Knowledge Transfer activities, the Competence Node Leaders and Knowledge Transfer Fellows have had access to the COLUMBUS catalogue. It is composed of selected available materials and tools by audience(s) – e.g. “Science to industry”, “Science to policy”, and “science to society”.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>CONTENT</th>
<th>PRECISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLUMBUS WEBSITE</td>
<td>General presentation of the Columbus project, its methodology for Knowledge Transfer and its partners. Latest News on the projects and upcoming events.</td>
<td>Reference platform / tool used by Competence Node Leaders and Knowledge Transfer Fellows to communicate on COLUMBUS and on their Knowledge Transfer activities.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>COLUMBUS TWITTER ACCOUNT &amp; COLUMBUS HASHTAG #COLUMBUS_EU</th>
<th>Used to communicate on Knowledge Transfer activities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLUMBUS BRANDING GUIDELINES</td>
<td>General guidelines on communication requirements and standards and use of COLUMBUS logo. Reference document for all communication tools and activities run by Competence Node Leaders and Knowledge Transfer Fellows.</td>
</tr>
<tr>
<td>COLUMBUS POWERPOINT TEMPLATE</td>
<td>Used for all presentations related to COLUMBUS. Same as hereabove.</td>
</tr>
<tr>
<td>COLUMBUS LOGO</td>
<td>Available in white, black and RGB and in different formats (on request). Used in all partners documents when related to COLUMBUS. Same as hereabove.</td>
</tr>
<tr>
<td>COLUMBUS FACTSHEET</td>
<td>General presentation of the project. Reference platform / tool used by Competence Node Leaders and Knowledge Transfer Fellows to communicate on COLUMBUS and on their Knowledge Transfer activities.</td>
</tr>
<tr>
<td>DISSEMINATION &amp; EXPLOITATION PLAN</td>
<td>Guidelines on communication activities and procedures in the COLUMBUS project. Reference document for all communication tools and activities run by Competence Node Leaders and Knowledge Transfer Fellows.</td>
</tr>
<tr>
<td>COLUMBUS COMMUNICATION STRATEGY</td>
<td>Details about communication objectives, messages and tools. It has been associated with an Excel file providing the complete list of tools to be developed. Same as hereabove.</td>
</tr>
<tr>
<td>COLUMBUS POSTER</td>
<td>Information on the COLUMBUS project and its Knowledge Transfer methodology. The lower left-hand quarter of the poster has been used to present a Knowledge output and its related Knowledge output process and the Knowledge Transfer's fellow related organisation.</td>
</tr>
<tr>
<td>COLUMBUS MEDIA KIT</td>
<td>Ready-to-use texts on COLUMBUS to facilitate the partners communication with non-scientists (e.g. journalists). Been updated regularly, this to ensure that Competence Node Leaders and Knowledge Transfer Fellows could refer to its content to promote their Knowledge Transfer activities and outcomes.</td>
</tr>
<tr>
<td>COLUMBUS TWITTER GOOD PRACTICES</td>
<td>Advice, good practices and tips to raise the profile of COLUMBUS online. Used by Competence Node Leaders and Knowledge Transfer Fellows to promote their Knowledge Transfer activities and reach out toward their targeted audience(s).</td>
</tr>
<tr>
<td>COLUMBUS LINKEDIN GOOD PRACTICES</td>
<td>Advice, and tips to raise the profile of COLUMBUS online. Same as hereabove.</td>
</tr>
<tr>
<td>COLUMBUS TECHNICAL BRIEF</td>
<td>Means of communicating the specific needs, challenges, gaps and Knowledge Outputs within each thematic node. Used by Competence Node Leaders and Knowledge Transfer Fellows to explain the product/technology being highlighted into the Knowledge Transfer activities.</td>
</tr>
</tbody>
</table>
The Competence Node Leaders and Knowledge Transfer Fellows were also invited to contact WP7 leader, Nausicaá for any specific communications tailored tools they needed to run successfully their Knowledge Transfer activities.

For instance, the Marine Governance and Management Competence Node wanted to have a dedicated leaflet to share with its targeted audiences: governance and management actors, scientists, policy-makers, and entrepreneurs (Figures 1 & 2). A four-page was thus designed and produced in high resolution in order to answer the question: “What is COLUMBUS”, “What is Knowledge Transfer”, and “What COLUMBUS can do for you”, along with an introduction to the Node’s “hot topics” (e.g. marine spatial planning and integrated coastal zone management).
What is COLUMBUS?

The COLUMBUS project intends to capitalize on the European Commission’s significant investment in marine and maritime research by ensuring accessibility and uptake of research knowledge. COLUMBUS will ensure measurable value creation from research investments contributing to sustainable Blue Growth within the timeframe of the project (March 2016 – February 2020) by carrying out Knowledge Transfer.

What is Knowledge Transfer?

The term refers to the overall process of moving knowledge between knowledge generators to the targeted potential users of knowledge. Knowledge Transfer consists of a range of activities which aim to capture, organise, assess and transmit knowledge skills and competences from those who generate them to those who will utilise them.

CONTACT US

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Dr. Mathilde Chauvelot
E-mail: mitche@tcd.ie
Fcannot be contacted as the email address is not provided. A phone number is also not provided.

FOLLOW US

COLUMBUS MARINE GOVERNANCE & MANAGEMENT NODE
www.columbusproject.eu

F

Figure 3: Marine Governance and Management Competence Node dedicated leaflet (front and back)

What can COLUMBUS do for you?

As a governance and management actor:
- Effectively support the implementation of marine and maritime legislation relating to Blue Growth and the Integrated Maritime Policy including the Maritime Strategic Framework, Directives and Marine Spatial Planning Directives by making relevant knowledge more accessible to policy makers.
- Participate in impact-generating knowledge transfer for enhanced marine governance and management.
- Get access to the widest working overview of recent knowledge produced by marine governance and management researchers within the EU.
- Be introduced to a research culture where on-the-ground impact is researched.

As a scientist:
- Be in touch with targeted potential users of your knowledge and team on their specific perspectives, requirements and preferences.
- Explore innovative applications of your knowledge in different sectors.
- Have the results of your project comply with a standard format, in accordance with EC requirements.

Figure 4: Marine Governance and Management Competence Node dedicated leaflet (insert)

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Moreover, this catalogue described hereabove has been accompanied by hints and guidelines to assist all Competence Node Leaders and Knowledge Transfer Fellows to use the most appropriate communication tool based upon:

- The message they want to share
- The audience,
- The place,
- The context, and
- The type of activity.

This to ensure that their Knowledge Transfer activities has been run successfully and this based upon their targeted audience(s).

2.4 **Highlights on Useful Tools:**

- Best Practice Guide on Story Telling

A “best practice guide” on story telling has also been prepared and shared with the Competence Node Leaders and Knowledge Transfer Fellows. Beyond writing stories on Knowledge Transfer activities, this guideline has enabled the Competence Node Leaders and Knowledge Transfer Fellows to develop needed pitches for their respective Knowledge Transfer related activities.

- Knowledge Transfer Methodology Movie

In order to present COLUMBUS methodology for Knowledge Transfer activities a dedicated movie has been produced.

Details are available in the D7.2’s Annex section.

- Focus on the COLUMBUS Presentation Movie

COLUMBUS Competence Node Leaders and Knowledge Transfer Fellows have showcased at most of their knowledge transfer activities, or share beforehand with their targeted audience(s), this general presentation movie produced to promote marine research towards a Blue Society, beyond advocating on the importance of marine research and its value creation for society, it positively illustrates the impact of research use in people’s daily lives.

In this respect, it has provided a great incentives as well for Competence Node Leaders and Knowledge Transfer Fellows to encourage their audience(s) to join their Knowledge Transfer activities.

Details are available in D7.6.

⇒ **In brief, all of these communications items have ensured that COLUMBUS Competence Node Leaders and Knowledge Transfer Fellows had the most efficient tools to run successfully their Knowledge Transfer activities.**
2. Brokerage Events

The production of promotional materials and guidelines have been run to enable the Competence Node leaders and Knowledge Transfer Fellows to host successful brokerage events.

They include:
- Leaflet
- Flyers: “Save the Date”, Agenda
- Posters
- Roll-ups
- Booth wall
- Prezi Presentation on COLUMBUS and Knowledge Transfer.
- Media Kit
- Brokerage Event Best Practice Guide

2.1 Leaflet

- The COLUMBUS General Presentation leaflet

COLUMBUS Competence Node leaders and Knowledge Transfer Fellows have used this leaflet at Knowledge Transfer activities by handing it out to their Knowledge Transfer participants.

This four-pages leaflet indeed introduces COLUMBUS: the project, methodology, and the consortium, and has been printed in high resolution.

![COLUMBUS Leaflet](image)

Figure 5: COLUMBUS Leaflet

2.2 Flyers

2.2.1 Save the Date(s)

COLUMBUS Competence Node leaders and Knowledge Transfer Fellows have handing out, distributed electronically, and shared on their respective online communication channels (website, social media...) various “save the dates” of events of interest in link with Knowledge Transfer activities.
2.2.2 Agendas/ Programmes

COLUMBUS Competence Node leaders and Knowledge Transfer Fellows have handing out, distributed electronically, and shared on their respective online communication channels (website, social media…) various events’ agenda in link with Knowledge Transfer activities.

Both the “save the date(s)” and “agenda/ programme(s) have been produced in high resolution for printing needs, and also uploaded on COLUMBUS dedicated website, and posted on its respective social media mainstreams. There are available in D7.2’s Annex.

2.3 Poster

A poster “Knowledge Transfer Impact on EU-funded Marine & Maritime Research” has been developed for a general presentation of the Columbus project that COLUMBUS Competence Node leaders and Knowledge Transfer Fellows could hand out to their Knowledge Transfer activities’ respective participants. It has been indeed printed in high resolution.

Figure 6: Knowledge Transfer Poster
2.4 Roll-ups

As indicated within the catalogue section hereabove, two different roll-ups have been produced, printed in high resolution, and used by some of the COLUMBUS Competence Node leaders and Knowledge Transfer Fellows at Knowledge Transfer activities. They are

COLUMBUS General Presentation

Aquaculture Dedicated Roll-Up

Figure 7: General Roll Up

This roll-up has been used to illustrate COLUMBUS at the Atlantos Brokerage event.

Figure 8: Aquaculture Roll Up

This roll-up has been specifically designed for the European Aquaculture Society annual conference (October 2017) to illustrate COLUMBUS’ aquaculture node on COLUMBUS booth where knowledge transfer related activities have been run.
2.5 **Booth wall**

COLUMBUS Competence Node leaders and Knowledge Transfer Fellows have taken advantage of this wall and booth designs - designed for the COLUMBUS dedicated 2017 European Maritime Day (EMD) booth- to indicate their participation to this unique event, where knowledge transfer activities (side-events) have been run. Its design has also been shared with COLUMBUS Competence Node leaders and Knowledge Transfer Fellows to enable them to use the graphics when needed.

2.6 **Prezi Presentation on COLUMBUS and Knowledge Transfer**

A prezi presentation has been developed, and produced into high resolution to present the Columbus project in an interactive way. It has been used during conferences and Transfer activities.

2.7 **Media Kit**

A dedicated COLUMBUS media kit has been produced and shared with the COLUMBUS Competence Node leaders and Knowledge Transfer Fellows to originally assist them into promoting COLUMBUS within their respective media stream. It has been used furthermore to promote knowledge transfer activities toward targeted audience(s) as well. This kit has been regularly updated and made available on basecamp. Its content is available in D7.2’s Annex.
2.8 Brokerage Events Good Practice Guide

In order to assist best COLUMBUS Competence Node leaders and Knowledge Transfer Fellows, and more particularly the ones in charge of organizing the brokerage events, a dedicated “Good Practice Guide” has been made available. Its content is available in D7.2’s Annex.

2.9 Specific Expertise and Communication Related Assistance Activities

2.9.1 General Procedure

Nausicaá offered to COLUMBUS Competence Node Leaders and Knowledge Transfer Fellows assistance with communication support in:
- Identifying the respective audiences, messages, and developing rough texts
- Designing template design with images
- Suggesting the most appropriate and efficient communication channels

In order to ensure that all COLUMBUS Competence Node Leaders and Knowledge Transfer Fellows’ communications needs could be met, a template was shared with them.

This template “communication tools order form” could be filled out by the COLUMBUS Competence Node Leaders and Knowledge Transfer Fellows and sent back to both AquaTT and Nausicaá, along with a description of the Knowledge Transfer process and Knowledge Outputs. Photos and references were also requested for such assistance.

Once received, the offer was reviewed by the applicant and the competence node leader:
1. The offer was then reviewed by AquaTT for validation
2. The tools were created
3. The tools were then delivered to the applicant with in copy AquaTT for final validation
4. Tools and actions were then carried

2.9.2 Brokerage Events’s Related Assistance

Nausicaá was in contact with all brokerage events organizers in order to offer its communication assistance when needed.

For instance, Nausicaá provided its assistance to ensure that materials – such as save-the-date flyers for the annual conferences, factsheets, the Industry DataGuide publication- reached the brokerage event’s organizer. Assistance was also provided on demand with the preparation of some powerpoint presentations,
and on designing and preparing the dedicated COLUMBUS booth for the European Aquaculture Society’s annual conference (October 2017).

The events were promoted on the COLUMBUS dedicated website, and respective social media mainstreams.

In this respect, a brokerage event dedicated newsletter was produced, in order to better identify and highlight the selected brokerage events run under COLUMBUS. The other newsletters produced and disseminated throughout COLUMBUS lifespan have also promoted the scheduled brokerage events, and shared its activities report. Please refer to D7.6 for the newsletters.

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1 COLUMBUS deliverable D7.3

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3. Specific Communication Support & Expertise for Knowledge Transfer Activities: Technical Briefs

3.1 Description

The technical brief is a tool provided to the Knowledge Transfer Fellows in order to support their Knowledge Transfer activities. It presents the Knowledge Output in a targeted manner. Together with a description of the Knowledge Output, it provides information of interest to the target or end user, such as the services offered (where relevant) or demonstrating how a Knowledge Output could be useful to or applied by the respective potential user.

This format has shown its great efficiency for broker-to-user and business-to-business meetings and brokerage events.

3.2 Guideline

In order to help Knowledge Transfer Fellows prepare the needed content for the one page tool, a dedicated Best Practice Guide has been prepared and shared with them: “the Knowledge output marketing: technical brief”.

It reminds them of the role of the technical brief and how it can facilitate their respective Knowledge Transfer activities, by highlighting the selected technology/innovation and its respective added-value for the end-user.

![Figure 1: Technical Brief Best Practice Guide](image-url)
3.3 Content

In this respect, one important rule that is being shared is to "keep it simple, avoid acronyms and technical vocabulary".

The shared guideline also provides a suggested structure for the Knowledge Transfer fellow to organize and make sure the respective information is inserted in this tool. It includes:

- **Headline Grabber**, used to catch the target user’s attention in a few words.
- **Introduction & Background**, providing a background to the covered technology/innovation as the reason(s) the targeted user could take advantage of this Knowledge output presented as a new product, Knowledge or functionality.
- **Target User / Potential end-user need**, highlighting the issue/challenge being solved for the targeted user or potential end-users, as well as the need(s) it fulfills.
- **Short Description**, providing a description of the Knowledge, functionality or product, responding to the questions “What does your product enable/do?” “What are its features?” “What is unique about it?”
- **Target Segment & Business Model**, by identifying the targeted audience and how it will create an interest or a profit (or in case of a non-profit model, “how does it create value or customer satisfaction?”)
- **Implementation**, explaining in a concise way what does it take to implement the solution or product, e.g. high-level summary of activities, resources required, time lines, etc.
- **Call to Action**, encouraging the reader to take the expected action such as picking up the phone to call you, going to the dedicated website for more information, encouraging them to do something and make it worth their while.
- **Logos & Disclaimers**, recalling the usage of the COLUMBUS logo and the EU flagship in all your communications.

3.4 Some Concrete Examples

Out of the eight marine and maritime sectors covered by the COLUMBUS Competence Nodes, five took the opportunity to have a technical brief developed to illustrate a Knowledge Output to be presented to end-users at specific meetings.

3.4.1 Aquaculture

The Knowledge Transfer fellow, Aquark, contacted Nausicaá (WP7 leader) to get three specific technical briefs to use during business-to-business meetings. They were:
Unlocking the Potential of Multitrophic Mariculture: Abalone Culture Along with Fish Sea Cage Culture

Columbus will organise a workshop on Abalone farming and integrated Multitrophic Marine Aquaculture in order to find ways to establish a pilot abalone multitrophic farm in Europe.

The global aquaculture production of abalone species has increased by over 75% in the last decade. In 2020, world abalone production reached 36,397,116 kg, valued at around 4.53 billion €, of which only 6,668,013 kg originated from the fisheries sector, meaning that approximately 88% of the total abalone production was from aquaculture (FAO, 2020).

SUDEVAB Project (ID: 222156 / FP7-SME-2007-1 / 2008-2010) brought together the main producing SMEs and leading RTD Providers from the abalone aquaculture sector in Europe, with the objective of developing sustainable abalone aquaculture in Europe. SUDEVAB focused on the development of the kon- seaweed-abalone integrated system. The seaweed nutritional value was similar to other macroalgae used as feed for abalone and being able to match the protein and lipid requirements of abalone, hence promoting good growth and survival.

These studies clearly demonstrated that the macroalgae produced in the biofertilising system were enriched in dietary protein and lipids and that their nutritional composition was meeting the protein, lipid and carbohydrate requirements of abalone resulting in satisfying growth and survival of _H. tuberculatus_ coccons.

The data resulting from the sea trials performed demonstrated the suitability of the enriched mixed macroalgae diet produced in the integrated culture system, together with the offshore mariculture system. Both factors were found to have a significant effect on the successful grow-out of _H. tuberculatus_ coccons found to possibly reach the coastal/commercial size of 45–65 mm in only 28–24 months in the tested conditions.

**Vegetable based formulated feed:**

The studies, performed in order to test abalone acceptance of vegetable based formulated feed indicated that feeding _H. tuberculatus_ coccons with seaweed based diets resulted in high survival and good dietary protein utilization. The effect of various macroalgae and their quality, related to culture conditions, were demonstrated to affect growth, soft body to shell ratio, feed conversion ratio and consequently dietary protein utilization.

**Figure 12: Abalonet Technical Brief**
**FISH TEXTURE EVALUATION TOOL (FTET): Non-Destructive Textural Assessment of Fish Freshness**

FTET is a prototype device that measures the mechanical properties (elasticity and firmness) of the muscle in farmed fish as an indication of freshness and quality and is able to inform on the day of harvest and potentially give indicators of the impact of diet on the fish quality.

*Existing rapid non-destructive methods* for assessing fish post mortem life are based on:

a. Potentiometric measurement of dielectric properties of fish and

b. Various sensors measuring chemical products during post-mortem storage. The disadvantages of these methods include low sensitivity for earlier post-mortem stages; i.e., measuring spoilage instead of degree of freshness.

**FTET Advantages:**

- The tool innovates in its ability in determining freshness reduction at initial stages, before bacterial spoilage occurs, unlike alternative methods.
- Initial results were validated by organoleptic evaluation executed on the considered fish samples, and showed that the scheme achieves odh detection and assessment of freshness reductions.

**FTET (FISH TEXTURE EVALUATION TOOL) will:**

- Improve consumer confidence on the quality and freshness of the fish they purchase.
- Create market segments of superior (super fresh) fish that could be awarded a premium price.
- Enable us to select the best fish to be used as sushi and sashimi.

**Potential users** are fish producers, fish traders, fish mongers, supermarket fish purchasers, national and international authorities on fish trade audits, consumer when buying fresh fish over the fish counter anywhere in the world.

**Impartial, algorithm-generated** precise freshness evaluation versus empirical evaluation will empower informed consumers and traders to allocate best price for the best quality fish.

**We expect** this technology to be widely adopted also within the aquaculture industry since the fish farmers will be able to evaluate fish quality between batches of fish and based on the different feeding regimes of cultured fish to target specific high and market segments.

**We aim to sell** the field-validated technology to an instrument manufacturer with interest on food processing in order to potentially expand it to other food categories through algorithm adaptations.

Find more on FTET from the Columbus website: www.columbusproject.eu

Dr. KATJA GROGASS
Senior Researcher in Fish Quality
Institute of Marine Biology, Biotechnology, and Aquaculture

Dr. DEMETRIS DIMOGLIOPOULOS
Associate professor
Department of Automation Engineering

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**Figure 13: FTET Technical Brief**
- W42 VLP Vaccine- “Combatting VNN-VER in European Sea Bass- a Novel VLP VACCINE Technology is now ready to field testing”

These three technical briefs have were used at the annual conference of the European Aquaculture Society, and more particularly for “business-to-business” meetings on COLUMBUS dedicated booth.
3.4.2 Marine Environment and Futures

The Knowledge Transfer Fellow, Jülich, also contacted Nausicaa to develop three technical briefs of respectively three Knowledge Outputs that they planned to highlight during specific meetings. They were:

- **CHITOSAN** - “Innovative solutions for the packaging industry derived from chitosan-based material”

![CHITOSAN Technical Brief](image_url)

Figure 15: CHITOSAN Technical Brief
Jellyfish Outbreaks in the Regional Seas – Burden or Chance?

There has been considerable speculation and discussion about whether jellyfish are locally or globally increasing around the world as well as the possible causes and patterns of increasing jellyfish populations. Unfortunately, because few long-term data sets exist, clear conclusions are elusive. However, analysis does suggest that jellyfish population sizes may vary inter-annually and fluctuate in approximately 22 to 20 year cycles, probably due to climate and planetary-scale forcing. There is limited evidence to suggest that human-caused deterioration of the coastal environment may have contributed to increasing jellyfish outbreaks.

Regardless of global trends, in several coastal ecosystems, jellyfish cause major issues to human activities and ecosystem services that cannot be ignored. Future research goals should address better management of jellyfish impacts by:

- Filling gaps in biological knowledge.
- Developing ecosystem-based operational and modelling approaches.
- Understanding ecological and socio-economic consequences, and
- Providing recommendations and guideline for surveillance and mitigation countermeasures.

The VECTORS project seek to develop integrated, multidisciplinary research-based understanding of changes taking place in our marine environment, the mechanisms for them and the ecological impacts expected from them. VECTORS will examine how these changes may affect the range of goods and services provided by the oceans, the ensuing socio-economic impacts and some of the measures that could be developed to reduce or adapt to these changes.

Key findings regarding jellyfish:

- Jellyfish include a multitude of both stinging and non-stinging gelatinous animals.
- Jellyfish populations naturally vary inter-annually and fluctuate in approximately 22- to 20-year cycles due to climate.
- The VECTORS Drivers of Change, including over-fishing, aquaculture, climate change, habitat modification, and introductions of alien species, suggest that human-caused coastal deterioration may have benefitted jellyfish and led to their increasing populations.
- The main problems jellyfish cause for humans include stinging, reduction of fish catches, aquaculture finish mortality, and clogging water intakes of power and desalination plants.
- These problems bear economic costs to the tourism, fisheries, aquaculture, energy, and freshwater production industries.
- Jellyfish also provide benefits (shelter and food) for some commercial fish, food for sea turtles and humans, products for medicine and health, and social services through tourism and education.
- These benefits provide novel economic opportunities for the tourism, fisheries, medicine, health industries.


Please contact Project Management Jülich (PTJ) at: f.neuendorf@fz-juelich.de
Marine Degradation of Bio-Based Materials: the Need for a Standardization Process

The materials biodegradation is still difficult to predict in the marine environment. The ability to biodegrade can vary a lot. It depends on the materials properties and on the marine ecosystem's (local) environmental conditions. Bio-based polymers are not biodegradable per se and degradability needs to be assessed for each product. A solid proof and testing scheme for bio-plastics’ degradability in the marine environment does not exist so far.

Open-Bio (Opening bio-based markets via standards, labelling and procurement) was a research project funded by the European Commission within FP7. The goal was to investigate how bio-based products can be integrated into the market, using standardisation, labelling and procurement. One part of the project dealt with research on the biodegradation behaviour of bio-based polymers in natural environments: soil, freshwater and the marine environment. A three-scale approach was applied in Open-Bio: Laboratory tests, field tests and mesocosm tests. In preparation of a standardization process some aspects still need further development and investigation. The effect of fouling organisms on the biodegradation process especially in marine settings is not sufficiently understood. Also, fundamentally different ecological settings were not considered in Open-Bio, but may play an important role in the overall assessment of plastic in the seas. This is also true for other habitats like the deep-sea floor, which accounts for half of the Earth’s surface.

The Open-Bio group concludes that biodegradable plastics are not a solution to littering. Littering must be opposed by means of prevention, waste management that includes separate collection and organic recycling of biodegradable plastics, public awareness, etc. On the other hand, plastics that are shown to be truly biodegradable in the marine environment could be profitably used in those applications where dispersion in the sea is certain or highly probable (e.g. fishing gear, fish farming gear, beach gear, paint, etc.).


If you are interested to receive more details about OPEN-BIO, the COLUMBUS project can put you into contact with the respective project coordinators. Please contact Project Management Jülich (PTJ at: c.knueger@fz-juelich.de)

Figure 17: Open-Bio Technical Brief
3.4.3 Marine Transport and Logistics

The Knowledge Transfer Fellow, CMT, also contacted Nausicaá to get a dedicated brief for the FAUSST approach that has been used for a business-to-business meeting:

- **FAUSST-** “An innovative approach to join fibre reinforced materials and steel”
3.4.4 Marine Governance and Management

The Knowledge Transfer Fellow, CETMAR, contacted Nausicaâ to get a dedicated brief for AquaNis to use during a Knowledge Transfer event:

- **AquaNis** – “Provides data of aquatic non-indigenous and cryptogenic species in European waters”
3.4.5 Marine Physical Resources

Aquatera, this Competence Node’s Knowledge Transfer Fellow, contacted Nausicaá for the production of three technical briefs. They were:

- **FloVAWT** – “Leverages your effort in developing Floating Vertical Axis Wind Turbines – VAWTs”
Lakhsmi – “Sensors for measuring large-scale hydrodynamics”

Lakhsmi is an ongoing H2020 project and has developed a new technology that cost-effectively measures hydrodynamic variables at high resolution and on large scales. This technology can be used for example for environmental monitoring in cabled ocean observatories, marine renewable energy and port/harbour security. Small scale field tests have been successfully realised and the consortium is currently focusing on the large scale testing.

Lakhsmi improves the quality of benthic marine observations and reduces uncertainty of modelling ocean physics at a tolerable cost.

As part of the technology, a smart sensor cable measures currents, differential pressure and temperature near the ocean floor. It enables visualisation of hydrodynamic parameters and the tracking of moving objects with high spatial and temporal resolution of the surrounding water through simple, inexpensive and very low power optical transduction.

Some of the sensor’s operational capacities are:
- Oceanographic measurement including parameters such as flow, temperature, differential pressure of the ocean floor and detailed knowledge of hydrodynamics in the near-bottom layer
- Detection of moving objects in the water, including vessels

Lakhsmi provides a low cost solution for ocean monitoring. It represents an innovative sub-sea technology for management and sustainable marine resources and contributes to the high potential Blue Growth sectors.

The technology will be useful for various marine

and maritime sectors: physical oceanography, marine renewables and offshore wind, coastal and maritime tourism, environmental monitoring, marine transport and logistics, maritime security, river hydrodynamics and hydraulics and many more.

Lakhsmi applications are useful for:
- Predicting transport of various substances (nutrients, oxygen, suspended matter, etc.)
- Monitoring and modelling of tidal currents, surface waves, tsunamis, gravity/ boundary currents, mesoscale processes, etc.
- Exploitation of waves and tidal energy
- Detection and alerts of natural (e.g. tsunamis, tides, wind-driven waves and currents) and anthropogenic (e.g. spreading of polluted water) hazards
- Understanding water current dynamics which could support offshore dumping activities, impacts form climate change, etc.
- Tracking moving objects, surface and under surface vessels monitoring, and
- Understanding river dynamics, e.g. for river hydrokinetic technologies.

Illustration of the sensor system

If you are interested to receive more details about Lakhsmi, the COLUMBUS project can put you into contact with Lakhsmi’s project coordinator.

Please contact Aqua Terra at: Natalia.Rojas@aquaterra.co.uk

More information about the project on https://www.lakhsmi.eu/

Figure 21: Lakhsmi Technical
- **Mermaid** - “Secures your marine operations for offshore wind turbine (OWT) jacket foundation installations”

![Figure 22: Mermaid Technical](image)

All these technical briefs have been shared with the consortium on the COLUMBUS dedicated WP7’s Basecamp page.
4. “Public format” stories of Knowledge Transfer

4.1 Presentation

After three years of Knowledge Transfer related activities, implementing the COLUMBUS methodology, 48 “public format” stories of Knowledge Transfer (http://www.columbusproject.eu/CCV6_FINAL.pdf) have been selected to illustrate the detailed journey taken by COLUMBUS to carry out Knowledge Transfer across European marine and maritime sectors.

They cover the eight COLUMBUS Competence Nodes: Aquaculture, Fisheries, Marine Biological Resources, Marine Environment and Futures, Marine Governance and Management, Marine Monitoring and Observation, Marine Physical Resources and Maritime Transport and Logistics.

4.2 Content

Aiming to outline the detailed Knowledge Transfer journey across the marine and maritime sectors (e.g. respectively the COLUMBUS nodes), each “public format” case study has been built upon the following structure on a four-page format.

- Title of the Knowledge Output
- Overall impact of COLUMBUS
- Testimonial from the knowledge owner, target user or end user
- The journey itself is represented throughout several steps with:
  - Step 1: Collection – Describing both the knowledge need and Knowledge Output
  - Step 2: Analysis – Developing a Knowledge Transfer process with a description of the Knowledge Output Pathway
  - Step 3: Analysis – Profiling target user with a description of Knowledge Transfer activity and target user
  - Step 4: Transfer – Describing the Knowledge Transfer activity
  - Step 5: Transfer – Measuring the impact of the Knowledge Transfer activity, with an outline of any next steps to be taken
- The project identification information, including:
  - Project name, funding scheme, value and timeline,
  - Competent Node
  - Credits (photos and texts)
  - Contact details

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2 A ninth Competence Node was closed at mid-term review, “Marine Tourism”
4.3 Selected 48 “Public Format” stories of Knowledge Transfer

Regrouped into a booklet, the stories of Knowledge Transfer really showcase the promotion of marine and maritime research toward a Blue Society, with the following stories provided by each of the eight Competence Nodes:

**Aquaculture**
- Improving fish texture evaluation using non-destructive assessment of fish flesh freshness,
- FishShape mobile app to identify malformations in commercial fish species in European aquaculture,
- Creating sustainable abalone aquaculture across Europe,
- Novel veterinary treatment to reduce bacterial caused mortalities in larval aquaculture,
- Improving fish nutrition through novel fish feed premixes,
- Mitigating negative dietary side effects of changing to plant-based feed for sea bream, and
- Convenient vaccination of small fish against harmful diseases.

**Fisheries**
- Influencing Danish law to accept integrated multi-trophic aquaculture schemes,
- Improving inspections of underwater structures using laser imaging systems,
- State-of-the-art innovations in energy for offshore aquaculture,
- Optimisation of fishing gear selectivity using underwater imaging, and
- Underwater camera for improving the assessment of the small lobster nephrops.
Marine Biological Resources
- Highlighting the importance of access and benefit-sharing of marine biological resources,
- Exploring the use of seaweed-derived biopolymers in biomedical technology,
- Low-cost marine microbial sampling kit for the next generation,
- Novel low-cost respirometer for measuring coral health,
- Mitigating microplastic pollution with waste water treatment technology,
- Harmful algal bloom (HAB) forecast and warning system, and
- Using human diagnostics technology to screen for chemicals in the environment.

Marine Environment and Futures
- Engaging regional policy makers in marine litter prevention,
- Educational material on the impact of plastic littering in marine environments,
- New exhibition on the environmental impacts of plastic waste (more information also available in the exhibit section), and
- Innovative solutions for the packaging industry using material made from crustaceans.

Marine Governance and Management
- Innovative tools combined to support quality environmental impact assessments in marine environments,
- Achieving good environmental status in maritime ports,
- European research’s contribution to the achievement of good environmental status and a stronger blue economy in Europe,
- Specialised database to assess the status of non-indigenous species in European seas,
- Furthering the integration and harmonisation of existing information systems on marine non-indigenous species,
- Clustered Knowledge on marine litter used to fulfill EU policy needs,
- Incorporating Knowledge management and Transfer methodologies in a publicly funded project to maximise its uptake and impact,
- Discards data sharing: An outcome from dialogue between discards-focused projects and the European Fisheries Control Agency,
- Enhancing stakeholders’ perception of the landing obligation in European fisheries, and
- Using performance data of selective fishing gears to reduce shing discards.

Marine Monitoring and Observation
- Best practice in use and sharing of marine observations and data by industry,
- New innovative marine data applications by building on existing resources and services,
- Advancing state-of-the-art technology in sensing marine pollutants, and
- Using marine tourism to increase access to European marine biodiversity data.
Marine Physical Resources
- Reference turbine overcomes bottleneck in offshore wind development,
- Sensors for measuring large scale hydrodynamics,
- State-of-the-art mutually supporting systems for offshore aquaculture,
- New environmentally-friendly biofouling and corrosion prevention coating for marine renewables,
- New model propels the development of coating vertical axis wind turbines,
- Multimedia e-learning tool promoting education of aquatic renewable energy technologies, and
- Developing a consistent and proportionate approach to Environmental Impact Assessment of marine renewable energy in the UK

Maritime Transport and Logistics
- Environmentally-friendly anti-fouling paint for marine observation devices,
- Novel solution for composite-steel joints,
- Application of new innovative composite materials for river cruise ships, and
- Self-healing coatings as corrosion protection in maritime shipping.

4.4 Release and Dissemination

Deliverable 6.5 contains all of the case studies (some of which are confidential). Further public case studies may be released up to 30 April 2018 and made available on the COLUMBUS website.

A draft version of the 48 stories of Knowledge Transfer was launched at the 3rd COLUMBUS International Knowledge Transfer Blue Society Conference on 24 January 2018. This version is available on the COLUMBUS website. Feature

To optimize their visibility, COLUMBUS set up a dedicated Communications Working Group (cf. D7.6) to develop feature articles on individual stories of Knowledge Transfer in the final weeks of the project. Known as “Twitter cards, these promotional articles are being circulated on LinkedIn and on twitter.

Figure 24: one of the posted twitter card

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3 http://www.columbusproject.eu/project-results

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VI. CONCLUSION

COLUMBUS Competence Node teams, including Competence Node Leaders and Knowledge Transfer Fellows, have received communication support and expertise throughout the COLUMBUS lifespan in order to successfully run their respective Knowledge Transfer activities, as this report has highlighted.

Moreover, the “collection of knowledge transfer case studies for promotion of marine science across europe” - as per the grant agreement- has been to provide input into the selection of communication channels, materials and tools depending on the Target User(s), and [worked] in conjunction with all competence Nodes to ensure coherence of all materials created and activities conducted.

This task has been also focusing on ensuring that the Knowledge Transfer activities were timely and planned in conjunction with communication activities. Collecting information of Knowledge Transfer activities [have also fed] into other WP7 tasks, such as Task 7.3 ‘Brokerage events’ and Task 7.6, 'Marine Research for a blue society’.

This expertise and support has been demonstrated by the development of a series of tailor-made tools and best practice guidelines to ensure that Competence Node Leaders and Knowledge Transfer Fellows could communicate efficiently toward their respective Knowledge Transfer targeted audience(s).

In addition to these, they have benefitted from the development of technical briefs to present Knowledge Outputs at meetings and events, supporting Knowledge Transfer activity, and guidance on how to best manage events, specifically the COLUMBUS ‘Brokerage Events.

Finally, the Knowledge Transfer journey has recently been published through a booklet of 48 “public format” stories. They are available from the COLUMBUS website (http://www.columbusproject.eu/CCV6_FINAL.pdf) . They were featured in articles promoted in the remaining weeks of the COLUMBUS project, on its dedicated mainstreams social media.

With the end of COLUMBUS, these “public format” stories are a great illustration and a tangible evidence of how following a robust methodology to carry out Knowledge Transfer increases its success, including the identification of appropriate communication supports.
VII. ANNEXES

ANNEX 1. Communicating on COLUMBUS Good Practice (2 pages)

Annex 2. LinkedIn COLUMBUS Group Good Practice (1 page)
Annex 3. Twitter Good Practice (2 pages)

Twitter GOOD PRACTICES

Various hashtags on Twitter can be related to COLUMBUS. First of all, there are the 3 main hashtags already used on the COLUMBUS account:

- #COLUMBUS
- #COLUMBUS_AH
- #COLUMBUS_FS

Other hashtags can be used for a specific topic:

- #hash1 (e.g., specific projects or research results)
- #hash2 (e.g., specific events or conferences)

Tag important because they greatly increase the visibility of your tweet. You can also add the tag COLUMBUS (e.g., @COLUMBUS) to your tweet to be included on the COLUMBUS page.

Don’t forget to include links to the project website in your tweet, e.g., @COLUMBUS website.

Be careful if you want to start your tweet with a hashtag, any followers of both the account that starts the tweet and the hashtag will see it.

The tip is to tweet your content in a way that is easy to read and understand.

When should I tweet?

- Between 8am and 10am is the best time to tweet. Don’t hesitate to tweet the same thing twice.

Annex 4. COLUMBUS Film Promotion and Screening Good Practice (2 pages)

COLUMBUS film promotion and screening GOOD PRACTICES

COLUMBUS film objectives:

- Promote marine science and innovation for Blue Growth in Europe
- Support your message on Knowledge Transfer when interacting with your audience
- Drive traffic to the COLUMBUS website from Twitter and LinkedIn to increase the visibility of COLUMBUS results

Contribute to the online campaign: The movie will be more visible if more people know about it.

- To increase COLUMBUS visibility, you can add COLUMBUS films to your own YouTube channel by creating a playlist.

This playlist should include your favourite popular videos related to marine science but also other more popular videos (e.g., id. 123 videos) related to Blue Growth and Marine sciences issues.

Introduce the film within 10 minutes of the end of each film by piecing the viewers from being elevated to a video on a different channel.

See the following link for ideas:
https://www.youtube.com/playlist

Make sure that all the videos are valid:

- Post the film on the media section of your organization’s website
- Refer to the COLUMBUS film and rewatch the COLUMBUS Film Twitter Player Card on your Twitter account

When to screen the COLUMBUS film:

- AS AN INTRODUCTION DURING THE BROKERAGE EVENTS
- YOU CAN USE THE FILM TO INTRODUCE/CONCLUDE YOUR PRESENTATION IN CONFERENCES
- For your interventions, make sure that:
  - The venue is equipped for sound
  - You have downloaded the film from Basecamp or your computer (it will always fail)
- THE FILM CAN BE PLAYED IN A CONTINUOUS LOOP ON YOUR BOOTH DURING INTERNATIONAL EXHIBITIONS AND TRADE FAIR

This brings more people’s attention to your booth than a standard information poster.

The film is still meaningful even when the soundtrack is muted.

- THE FILM CAN BE PLAYED IN YOUR FACILITIES DURING OPEN DOORS DAYS

2017 COLUMBUS film screening schedule:

- DVD of COLUMBUS films will be promoted and screened during major events throughout 2017. The list is not exhaustive. You can actively contribute to this plan by screening the film in the events where you are invited.
- May: European Maritime Day Workshop held by Navacena and WWF on ‘’Engage or not to engage?’’ collaboration engagement
- June: World Ocean Days
- Navacena kick-off and partners heklets
- September: COLUMBUS Annual Conference

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i. Objective
In order to present COLUMBUS methodology for knowledge transfer a dedicated movie has been produced.

ii. Organisation
- AquaTT developed a video for Fellows to communicate the Knowledge Transfer methodology with its script writing, storyboard design, and launch,
- Eurocean and Nausicaa both provided inputs for its development

iii. Storyboard
Title: The COLUMBUS Project - An Introduction to Knowledge Transfer for Blue Growth
In the past, research findings have not always achieved the 'real world' impact that they might have done, due to the system by which research is carried out.

Problems that need to be addressed are typically identified by a group of experts, whose aims put just a call to the research community to propose projects that respond to the identified challenges or needs.

Scienctists, often collaborating across organisations and countries, respond with proposals on how the challenges are tackled or can be addressed through research. The aim is to formulate a hypothesis and develop a methodology to verify and the researchers generate new data. The data is then presented to reviewers in the form of a peer-reviewed journal article. Its wide dissemination on the internet makes it possible for it to be read by thousands of people, but the process can take years.

COLUMBUS wants to change this... and approach science communication in a scientific way.

And here’s how … COLUMBUS has mapped out a process of transferring knowledge to create measurable impact, called the COLUMBUS Knowledge Transfer methodology.

We have nine full-time Knowledge Transfer Fellows working on this.

All done using a standardised methodology.

But gathering knowledge and making it publicly available doesn’t mean it will get used. Collection is only the start!

So next, we analyse the potential applications of each Knowledge Output generated by a project using a team of experts with a wide range of backgrounds and experience.

Their job is to determine how each Knowledge Output might be applied to answering a particular question or solving specific problems and to find a best-case scenario or “Eventual Impact” for each one.

Unforeseen external impact when John capsize...
This involves developing a Knowledge Output Pathway for each Knowledge Output, identifying the best route to transfer the knowledge from actor-to-actor. At each step, we consider how each actor might wish to receive and apply the knowledge, so as to maximize the chances of success.

We also outline a number of impact indicators to track our activities.

We then perform the Knowledge Transfer activities, and consider these successful if the knowledge has been taken-up and applied by the Target User. Step-by-step this process is repeated over the course of the COLUMBUS project.

Many sessions are made with COLUMBUS teams to discuss the Knowledge Transfer activities and ensure the knowledge is effectively communicated.

COLUMBUS will continue to perform knowledge transfer for a minimum of 2 years. What happens when the project finishes?

To ensure that the knowledge and experiences are generated and documented, we are documenting our insights and experiences, planning Knowledge Transfer guidelines into a national funding agency, and developing recommendations for the Commission.

To ensure that the knowledge and experiences are generated and documented, we are documenting our insights and experiences, planning Knowledge Transfer guidelines into a national funding agency, and developing recommendations for the Commission.

Join COLUMBUS on our adventure, exploit knowledge and make an impact.
Annex 6. Brokerage Events Good Practice (2 pages)

Annex 7. Save the Dates

2nd Annual Conference - on November 7, 2017 (Brussels, BELGIUM)
Blue Society Award Announcement

COLUMBUS Celebration at the European Parliament with a Dedicated Event—February 22, 2018 (Brussels, BELGIUM)

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2. A New Methodology of Knowledge Transfer, Generating Impact

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This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.
Specific Vocabulary

In order for the methodology to be recognizable and easily applicable by potential future users, COLUMBUS has created a very specific vocabulary to employ during Knowledge Transfer activities.

- Knowledge Transfer Fellows
- Knowledge Output
- Competence Nodes
- End Users

Knowledge Transfer (KT):

Knowledge Transfer is the concrete link between results of research projects on marine/maritime subjects and their application by companies, decision makers, citizens, etc.

Knowledge Transfer Fellow (KTF):

The Knowledge Transfer Fellow's role is the research of results of scientific projects financed by European programmes corresponding to the needs identified previously in the project. There are eight full-time Knowledge Transfer Fellows, one for each Competence Node.

Competence Node (CN):

A Competence Node is a sector of activity attributed to each Knowledge Transfer Fellow. The CNs are: marine physical resources, fisheries, monitoring and observation, marine environment and futures, maritime transport and logistics, marine biological resources, aquaculture and marine governance and management. For each node, the Knowledge Transfer Fellows identify Knowledge Outputs of European-funded projects which are worth being transferred to end-users.

Knowledge Output (KO):

A Knowledge Output is a unit of knowledge that can be transferred. It can be a part of the result of a project, a specific methodology, or some knowledge needing development research to be industrialized. Once these Knowledge Outputs are identified, KTFs look for target and end users toward which the knowledge will be transferred.

Target and End-users:

Target users are those who receive the transferred knowledge. For one Knowledge Output, KTFs identify "a chain" of various target users. Along this chain, a Knowledge Transfer will be needed for each link between a target user and the following target user. The last part of the chain is the end-user. It's by accomplishing the last step towards the end-user that COLUMBUS adds value to the European projects as the well-identified end-user will generate impact.

Impact:

The impact of the results of research projects in marine and maritime sectors is one very important aspect of the COLUMBUS project. With the COLUMBUS methodology and thanks to the one-to-one transfer, the impact is easily measurable.

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Annex 9. Storytelling Good Practice (2 pages)

Annex 10. Brokerage Events Good Practice (2 pages)