



UNIVERSITY OF  
NORDLAND

# Assessing the Value Creation from Research

“How can we better support governance,  
education and industry”

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# Introduction Research in Society

- Authorities – ambition to spend 3 % of GNP on research
- Future economies: competence based
- Successful research
  - Based on political signals performed at institutions with solid strategies
  - Requires a multidisciplinary approach
  - Cutting edge
  - Competence value chain
- Academia – financed by tax payers money
- Society at large will demand more tangible value creation from their investments
- Higher education level in society and knowledge based industry – more interest for academia and the values provided
- Branding, transparency and communication

# Definition of Value Creation

*Benefits derived from research for the public and private sectors, the research community and society at large (a holistic view)*

- ✓ Differentiation between the **value potential** and **realised value** of value creation
- ✓ Knowledge output beyond scientific papers
- ✓ Knowledge of primary end user

# A Framework for Analysing Value Creation

- Framework comprising important aspects of the value creation from research:

Development of  
human capital

Business and  
commercial value

Effects on policy  
makers

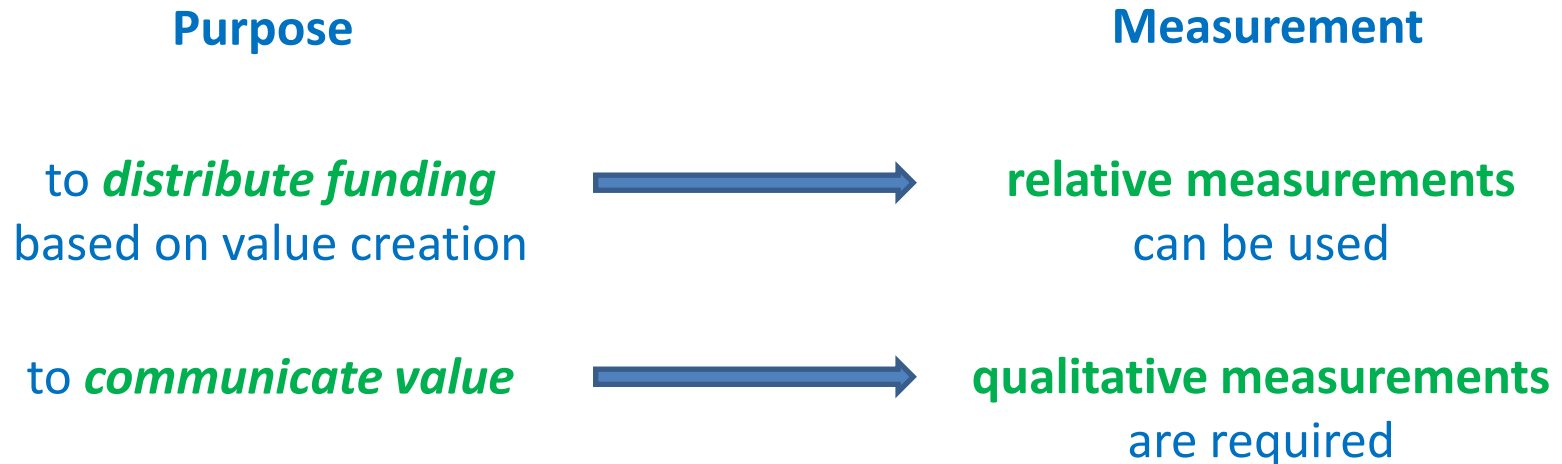
Public efficiency  
gains

Emergency planning  
benefits

Improved quality of  
life

# Measuring Value Creation

- The expanded definition used here makes absolute measurement only partially possible:





# Future Applicability of the Framework

- Project managers involved found the framework useful and appreciated wider perspective than 'money only'
- Improves the consciousness of researchers and their role in a wider context
- Useful tool in:
  - Communication
  - Strategic work

# Overview

# MarineIT

- ENV.2009.5.1.0.2 Knowledge transfer and uptake of EU-research results
- Partners:  
- A change of focus from the promotion of research projects per se to singling out “Knowledge Outputs” that targeted end-users can adopt and/or exploit.
- The clustering, analysis and validation of “knowledge output” potential



## Why MarineTT?



- There is a demand to show demonstrable impact from EC funded research
- EC is looking for improved systems and methodologies for knowledge capture and transfer
- MarineTT is a pilot designed to provide new methodologies, tools, insights and measurable impact

# Collection & Analysis

- **Total projects surveyed: 507 (323 FP6 + 184 FP7)**
- 187 projects gave good responses
- Through surveying and desktop research the MarineTT team identified 738 “Knowledge Outputs”
- All “knowledge outputs” **validated by project coordinators & external experts**


# Combined Knowledge Output Table

## Knowledge Outputs Table

## Aquaculture Theme

| PROJECT | FRAMEWORK | KNOWLEDGE ID NUMBER | SHORT TITLE  | KNOWLEDGE DESCRIPTION  | KNOWLEDGE TYPE | MARINE SECTORS TO POTENTIALLY BENEFIT | END USER & APPLICATION  | IP/ CONFIDENTIALITY | IN PUBLIC DOMAIN  | OUTPUT COMPLETE | KNOWLEDGE TRANSFER CARRIED OUT BY THE PROJECT (COORDINATORS RESPONSE) |
|---------|-----------|---------------------|--|--|----------------|---------------------------------------|---|---------------------|---|-----------------|---|
| AMBIO   | FP6       | 25509.1             | Publications on the results of the AMBIO project                         | A total of 70 peer reviewed scientific articles have been published detailing the different nanostructures investigated, and contribute to understanding structure/property/ performance characteristics for novel antifouling coatings. | Publication    | Aquaculture<br>Marine Transport       | <b>Industry</b><br>Aquaculture (anti fouling treatment of nets/cages/ equipment/ rigs), Marine Logistics Industry (anti-fouling treatment of ships/ ferries) & Energy Industry - anti-fouling of sea rigs/pipes/ monitoring equipment.<br><br><b>Scientific Community</b><br>anti-fouling treatment for different applications. | No                  | Yes<br><a href="http://www.ambio.bham.ac.uk/">www.ambio.bham.ac.uk/</a> | Yes             | Widely disseminated   |
| AMBIO   | FP6       | 25509.2             | Biocyl marine anti-fouling coating.                                      | New anti-fouling material - Condensation-cured silicone nanocomposites has been patented and is available for commercial use.  | Product        | Aquaculture<br>Marine Transport       | <b>Industry</b><br>Aquaculture (anti fouling treatment of nets/cages/ equipment/ rigs), Marine Logistics Industry (anti-fouling treatment of ships/ ferries) & Energy Industry - anti-fouling of sea rigs/pipes/ monitoring equipment.<br><br><b>Scientific Community</b><br>anti-fouling treatment for different applications. | No                  | Yes<br><a href="http://www.ambio.bham.ac.uk/">www.ambio.bham.ac.uk/</a> | Yes             | Widely disseminated   |
| AMBIO   | FP6       | 25509.3             | Silicon oxide-like anti-fouling coatings deposited by vapour deposition. | Coatings developed by TEER PLC, which can be deposited on optical windows had good field and end-user results for limiting algae and bacteria growth and are now commercially available.   | Product        | Oceanographic<br>Monitoring           | <b>Industry</b><br>Environmental Quality Industry - anti-fouling of oceanographic monitoring equipment.   | No                  | Yes<br><a href="http://www.ambio.bham.ac.uk/">www.ambio.bham.ac.uk/</a> | Yes             | Widely disseminated   |

# Knowledge Analysis Findings

- Dissemination  Tailor-made knowledge transfer
- Many RTD projects did little or no knowledge transfer of their RTD “knowledge outputs”
  - Reasons: Lack of funding / time / expertise
- There was a lack of understanding of the “stage of development” and readiness for positioning in value chain
  - For industry was it - de novo knowledge vs. Prototype vs. Market ready product/service
  - For policy – did the new knowledge require confirmation via further research or should it influence existing policy and bring about immediate changes?
- Many scientists wrongly identified the “primary” end-users of their knowledge, most generalised too much. “Aquaculture Industry” vs. a specific profile of businesses (e.g. Feed additive companies)

# Knowledge Analysis Recommendations

- Funding agencies should make it compulsory to identify all “knowledge outputs” at the end of projects (publishable knowledge but also grey knowledge)
- Transparency – it is possible and beneficial to share the existence of outputs without compromising the IP

# Knowledge Analysis Recommendations

- Consortia might benefit from guidelines on how to correctly identify the correct primary end users and potential applications for their outputs
- Scientists would benefit from more engagement with different stakeholders in different target value chains (industry actors, policy/decision makers) in order to understand needs and markets for their knowledge
- Careful consideration needs to be given to incentives to encourage effective Knowledge Transfer within Projects

# Turning Science into Successful Business (I)

- Cutting edge science
- International network – all members highly recognised within their niches
- Three important skills:
  - ✓ **Solid patent rights/black box**
  - ✓ **Communicate in a clear and convincing manner** – based on a commercial ground
  - ✓ Establish **professional network** of highly competent people at internationally well-recognised institutions

# Turning Science into Successful Business (II)

- Why a network

Confirm professional attitude and cutting edge competence



Building external trust as regards competitiveness



Sparring-partners: Discussion on commercial relevance and success

# Turning Science into Successful Business (III)

- Critical issues from the investors perspective:
  - ✦ Multidisciplinary – international support and commercial anchoring
  - ✦ Commercial curiosity and interest
  - ✦ Team spirit
  
  - ✦ Long-term investors – patient and challenging

# Conclusions

- Higher investments in academia – increased attention to value creation
- Successful academia
  - Attention to policies and strategies
  - Multidisciplinary approach
  - In-depth understanding of primary-end-user
- Knowledge output beyond number of students and scientific papers
- Successful business and national economies based on cutting-edge science