



SMART BLUE REGIONS PROJECT CONFERENCE

The role of regions in fostering blue growth

Capabilities Required in Future Cruise Ship Building Ecosystem

Karri Mikkonen, Future Technologies & Maritime Hub
Turku Science Park Oy

Berlin, 22.01.2019

#SmartBlueRegions2019



TURKU BUSINESS REGION



CLEAN



HEALTH



EXPERIENCE



MARITIME



TECH



TURKU SCIENCE PARK Oy Ltd



SCP
SMART CHEMISTRY
PARK



Potkuri

YRITYSNEUVONTA



SparkUp

STARTUP COMMUNITY



BIP

BLUE INDUSTRY
PARK



WFFC

WEST FINLAND
FILM COMMISSION



TFT
TURKU FUTURE
TECHNOLOGIES

Turku Business Region
gathers together the Turku
region businesses,
universities, organizations
and municipalities

The co-ordination of
the business and
innovation services in
the region is the
responsibility of the
regional development
company Turku
Science Park Ltd.



Tech & Maritime – services

TFT – Turku Future Technologies

- Matching firm's strategic challenges to University know-how

BIP – Blue Industry Park

- Industry area around Turku shipyard

Maritime Accelerator

- An innovation platform for Maritime corporations and growth companies of all fields

MDSS - Maritime Digital Supply Space

- Platform for digital business transactions between you and your business partners

AIF – Allied ICT Finland

- ICT based business development projects by largest Nordic ICT network of universities, digital innovation hubs, company ecosystems

EEN – European Enterprise Network

- Expertise, contacts and events to connect you with international partners to grow your business

Maritime Cluster in SW Finland

- +3Billion annual revenue
- Meyer Turku Oy, Rauma Marine Constructions
- Cruise, Ferry, War, Special ships
- +50% of Finnish Maritime 2019

Capabilities in future cruise ship and special ship manufacturing

- In general, especially cruise ships are like small towns, with a complete and independent infrastructure in tight space
- They are build from modules, and assembled in ship yard – project management is key for increasing revenue
- It is a significant market fact that only one cruise ship ever made in Finland has been terminated – Song of Norway. Globally only ten cruise ships terminated

Some specific capabilities required from future ship builders

- Material engineering: future professionals need in depth understanding of differences between acid steel, stainless steel and black iron, and all variations - Understanding cathodic pair functioning in salty water (Zinc – Iron)
- Sounds simple but its not

Some specific capabilities required from future ship builders

- Ship construction engineering – ship strength calculation, steel lifecycle definitions, special strong steels, stability calculations and control
- Composite material are coming but are still 3-10 times more expensive than steel
- Composites also need special attachments, and their non-capability to conduct electricity (static) is bad feature in a ship

Some specific capabilities required from future ship builders

- Understanding effects of sea water environment elsewhere
- Protecting electric devices, organizing maintenance activities
- In salt water environment the fine mechanical devices work without maintenance approximately 3 years, with maintenance 5-6 years
- Heavy devices work when well maintained all lifecycle +40 years

Some specific capabilities required from future ship builders

- All professionals from all fields entering ship building should understand basic ship terminology: port, starboard, mooring, LSA, cabin, bulkhead, etc...
- Understanding regulations world: water proof regulations and those in specific areas, fire security areas, general security regulations e.g. SRTP-, escape route- and stability regulations, Flag-authorities, Classification companies, IMO-, USCG- ja USPH-regulations

Some specific capabilities required from future ship builders

- Last but not least: the specification levels of cruise ship operators are very high
- Its is crucial to understand that swimming pool is not a hole filled with water, but high standard facility with self cleaning capability with luxury salt-water resistant electric materials

Some management capabilities required from future ship builders

- Production management excellence
- Ecosystem management, digital supply chain
- Local ecosystem support Public-Universities-Business



SMART BLUE REGIONS PROJECT CONFERENCE

The role of regions in fostering blue growth

Thank You

Karri Mikkonen, Turku Science Park Oy

Berlin, 22.01.2019

#SmartBlueRegions2019