



# BLUE OCEAN ROBOTICS

- for humans

## Robot Venture Factory

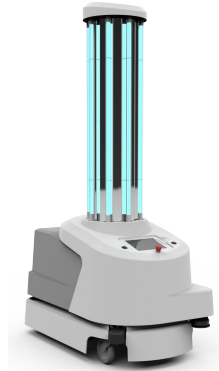
We **Create** and **Commercialize** Robots

# Blue Ocean Robotics

The Purpose of the Company - the "WHY"?



*"People use our robots to change the way they work  
to be more meaningful, rewarding and healthier.  
We improve quality-of-life and productivity.  
We make robots for humans"*



UVD Robots

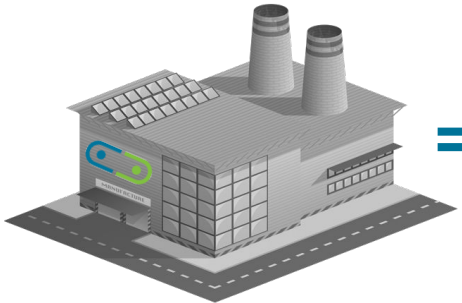


Multi Tower Robots

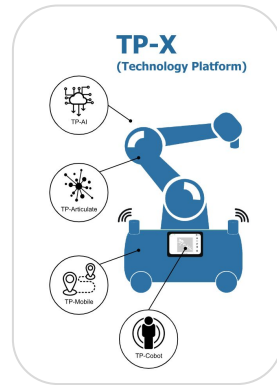


Telepresence Robots

## Robot Venture Factory (Blue Ocean Robotics - a New Category of Robot Company)



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**TP-X:**  
A toolbox with reusable technological components

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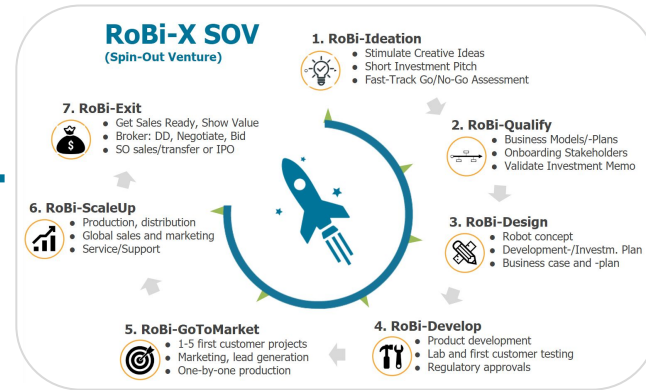


**Team:**  
A world-class team mastering the TP-X and RoBi-X

**Venture Capital:**  
Financing the development and commercialization

**Industrial stakeholders:**  
Partner companies with specific knowledge or technology

+



**RoBi-X:**  
A methodology to systematically traverse a life-cycle from idea, through development to commercialisation and exit

**The solution - a systematic approach to creating and commercialising robots enabling**

- increase in productivity,
- better working environments,
- improved quality or quality-of-life

# Competitive Advantage

## TP-X

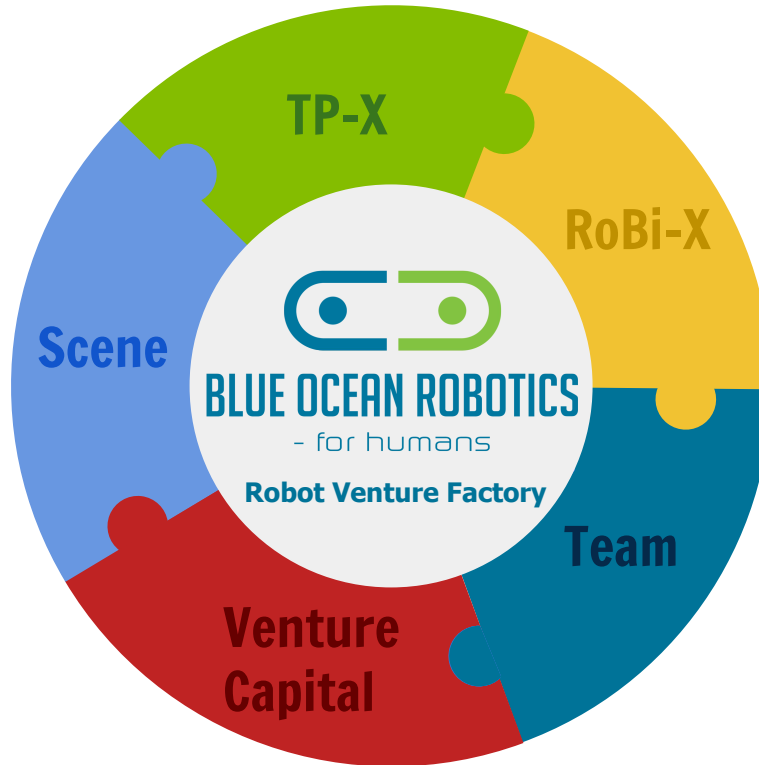
- Reuse of technologies across from one robot to another
- R&D from Danish and European funds is used to fuel technology base TP-X

## Scene

- One of the robotic flagships in Odense and part of Odense Robotics, which is one of the fastest growing robotic hubs in Europe
- Denmark is politically, socially and businesswise a stable country where people and enterprises thrive

## Venture Capital

- Direct involvement and access to venture expertise and capital



## RoBi-X

- Well-proven RoBi-X methodology to incorporate industrial stakeholders from idea and all the way through to exit of the Spin-Out Venture (SOV) companies
- Reuse of business models, go to market strategies, financing models, distribution systems, suppliers, resellers, etc.

## Team

- World-Class robotic engineers
- Experienced industrial leaders in board and top management
- Onboarding world-class business and technology leaders from specific vertical markets

Blue Ocean Robotics is a **unique combination** of the 5 elements which makes it difficult to replicate as **all elements are required to succeed**.

# Challenges (cases: UVD Robots and Multi-Tower Robots)

## Glen's story



Glen was diagnosed with Leukemia. He was hospitalized and started chemotherapy, which naturally weakened his immune system. While hospitalized he got infections multiple times including MRSA. Doctors estimated that his survival chances were less than 10%. After 3.5 months he finally recovered.

“ **It is quite incredible that I survived, and certainly I treasure life at this stage** ”

- Glen, survived Leukemia and multiple hospital acquired infections

## Jim's story



On a family vacation, Jim had a stroke and suffered brain injury and weakness on one side of his body. He needed 2-3 people to do basic things. He was admitted at a rehabilitation center and had to be taught how to walk again. Jim was able to recover thanks to the right rehabilitation.

“ **Mobility is your freedom** ”

- Jim, survived a stroke

# The Problem & Solving the Problem

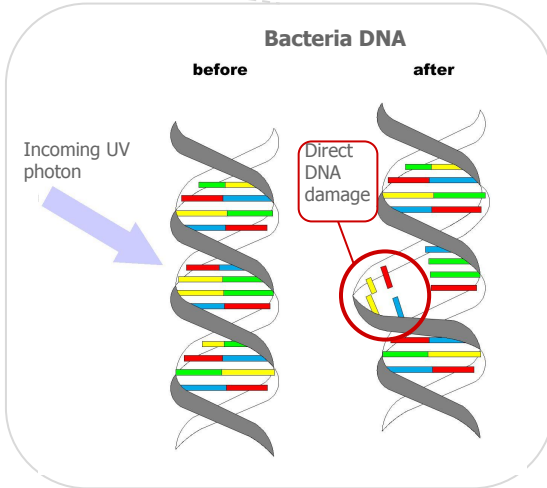
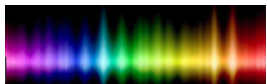
## Problem

Each day, one out of 25 patients in the U.S. contracts a **hospital-acquired infection** resulting in billions of wasted dollars and an eye-popping **90,000 deaths annually** - **Healthcare Finance, June 20, 2018**



Bacteria

UV-C technology has the ability to kill bacteria, germs, viruses, molds and yeasts, as it can destroy the DNA of the cells ultimately killing the cell. The **UV-C rays change the characteristics of the DNA** and eventually the cells die. UV frequency range of 200-300 nm is most effective in destroying bacteria, viruses, molds and yeasts, and UV-C falls in this range.



## Problem

Today, **patient lifts at hospitals are passive, unstable and require multiple nurses** (2-3 nurses) to complete them. They are passive in the sense that the patient is not an active part of the lift and thus may **prolong his/hers recovery time** - **Standard Domain Knowledge**

Before



Patient lifting



Patient Rehabilitation

After



Patient lifting and Patient Rehabilitation as one



By moving from passive patient lifts to **active and sensing patient lifts, rehabilitation** of the patient is started much sooner. When rehabilitation is started early, the patient is **more likely to recover faster** and function normally again. From a socio-economic perspective this solution to the lifting problem will have a substantial impact.

# The Solution

The UVD Robot is an autonomous robot for **disinfection** at primarily hospitals. It is used as part of the regular cleaning cycle, and aims at preventing and reducing the spread of infectious diseases, vira, bacteria, and other types of harmful organic microorganisms in the environment by breaking down their DNA-structure.



**10 min.**     **99.99%**  
disinfection time     of bacteria killed

**Dimensions:** L93cm, W66cm, H171cm

**Operating time:** UV-module: 2-2.5 hours  
(equal to 9-10 rooms). Mobile platform: up  
to 8 hours.

**Battery charging time:** 3 hours

**Speed:** up to 5.4 km/h

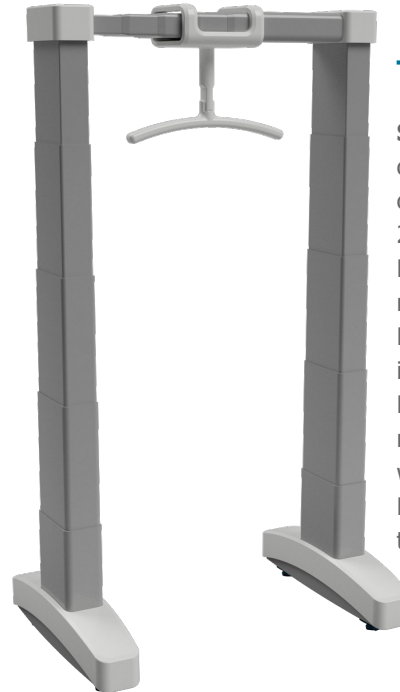
**Weight:** 140 kg.

**UV-Wavelength:** 254nm (UV-C light)



**UVD**  
**ROBOTS**  
INFECTION PREVENTION

The Multi Tower Robot is a mobile, flexible and modular **patient-lifting** robot intended to be used primarily at hospitals. Besides patient transfer, the robot also offers a capacity for **rehabilitation**, as a start in two critical areas of successful rehabilitation: (1) sit-to-stand training, and (2) gait training (walking).



## The Multi Tower Robot offers

**Stability:** Safe lifts with reduced need of caregiver assistance. Replacing mobile lifters, ceiling hoists and sit-to-stand assists. Can lift 250 kg.

**Mobility:** not limited by ceiling tracks and mobile in rooms and between rooms

**Rehabilitation:** allows a higher degree of user involvement and early activation/rehabilitation.

**Fleet management:** targeting autonomous navigation allowing to order robot presence when/where needed

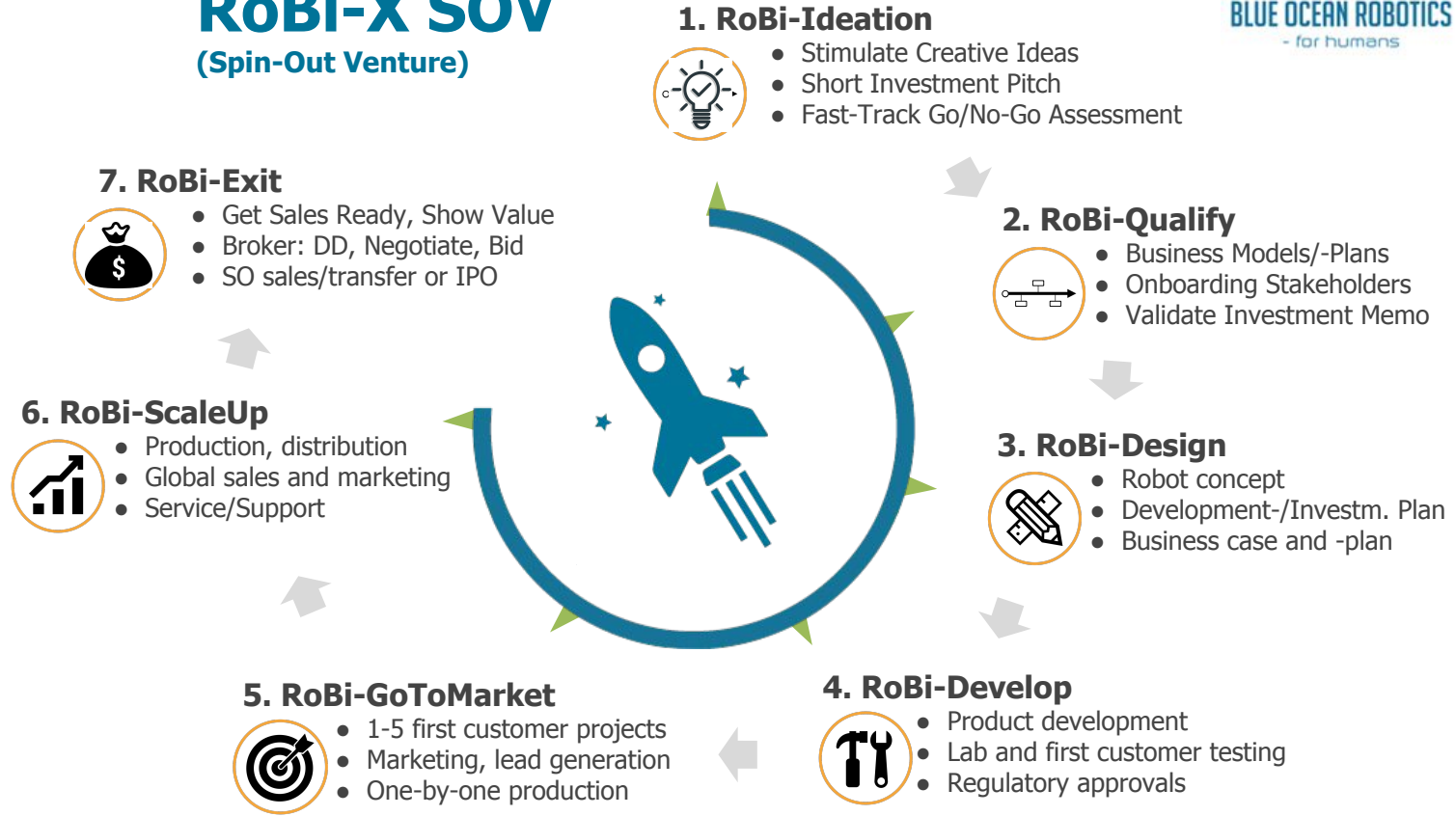
**Diagnose and forecast for recovery:** targeting AI, logging and data processing



**Multi Tower**  
Better Life Robots

# RoBi-X SOV

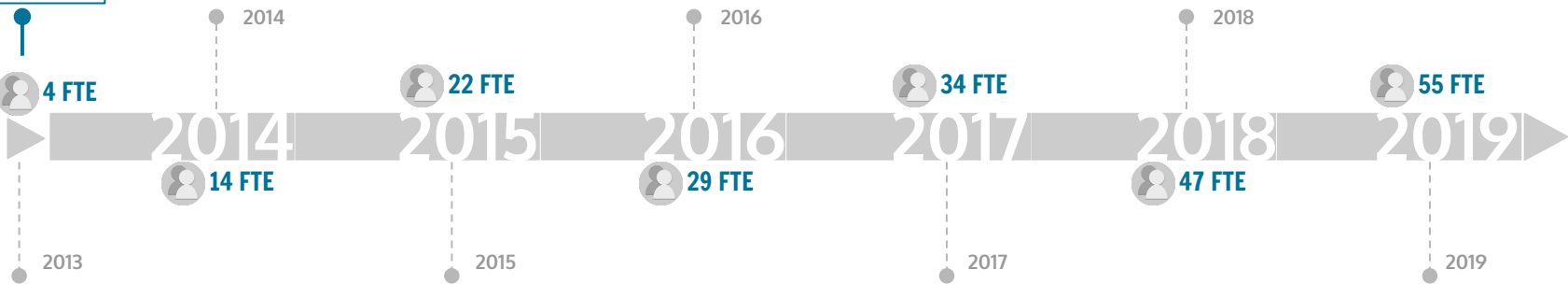
(Spin-Out Venture)





# History (experimentation with multiple initiatives)

Blue Ocean Robotics  
established



## Focus: Development

- Started developing robots
- Became part of R&D projects
- Started working on first steps defining the RoBi-X model
- Added multiple 3rd party robots in the portfolio
- Experimented with how to implement robots (7-step model)

## Focus: Sales and Internationalisation

- Increased focus on Blue Ocean Robotics Joint Ventures and Sales Partners abroad
- Increased focus on 3rd Party robot sales
- Strengthened our financial situation with onboarding investors

## Focus: Change

- We realised that the Large Global Partner strategy is a heavy and slow process which is difficult to scale up.
- Nordic Eye joined, and we realised that with the new capital we could realise our vision of identifying a few cases and going all the way with them
- By the end of the year, we started working on a new strategy - Robot Venture Factory

## Focus: Getting Started

- Got first consultancy tasks
- Got first 3-party robots in portfolio
- Got more people onboard
- Ended the year with a positive cashflow

## Focus: Consolidation

- Became part of multiple projects with EU and Innovationsfonden (WallMoBot, ReconCell, BabyRobot, etc.)
- Started working with the UVD Robot together with Sygehuspartnerskabet
- Started working with Multi Tower Robot together with Køge Hospital
- Refined our RoBi-Design model
- Started working with establishing Sales Partners and Blue Ocean Robotics Joint Ventures abroad

## Focus: Large Global Partners

- Focused on onboarding large global partners. We experimented with partnerships with large partners with access to markets. The vision was to create a royalty-based business
- We start working on Technology Platforms (TP-X)

## Focus: Robot Venture Factory

- We established a new strategy - Robot Venture Factory with focus on service robots. The new strategy enables us to bring robots from idea, to design and development, and all the way to exit in a systematic way.

# Thank you for your attention



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