BRUKS Siwertell
BULK HANDLING & WOOD PROCESSING

Technical routes to improved OPEX

Bulk terminals Riga 2022

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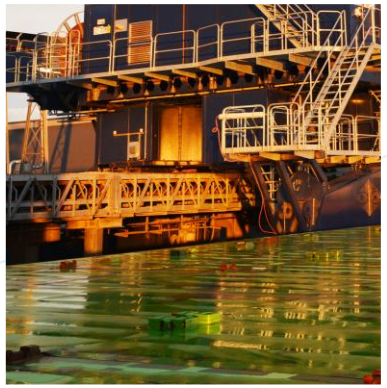
BRUKS Siwertell
BULK HANDLING & WOOD PROCESSING

ABOUT US

Our Company
World-leading supplier of technology for dry bulk handling and wood-processing.

Our Value
We offer the market's most environment-friendly solutions, totally-enclosed systems **minimize dust emissions** and **eliminate spillage**. High efficiency rates **minimize fuel consumption** demands.

Our purpose
We support our customers through a commitment to the lifetime care of products and solutions.



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ABOUT US

PORT TECHNOLOGY

WOOD TECHNOLOGY

FORESTRY TECHNOLOGY

BRUKS SIWERTELL GROUP

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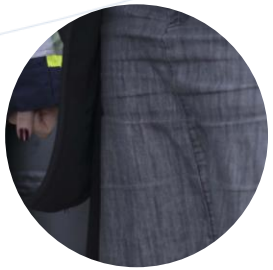
ABOUT US

Our People
About 350 employees spread over the world, with regional sales/service offices and a vast network of partners/representatives

Our Group
In total six holding companies with main offices in Sweden, Germany, United States and Lithuania.

Our Turnover
Approximately SEK 2 Billion



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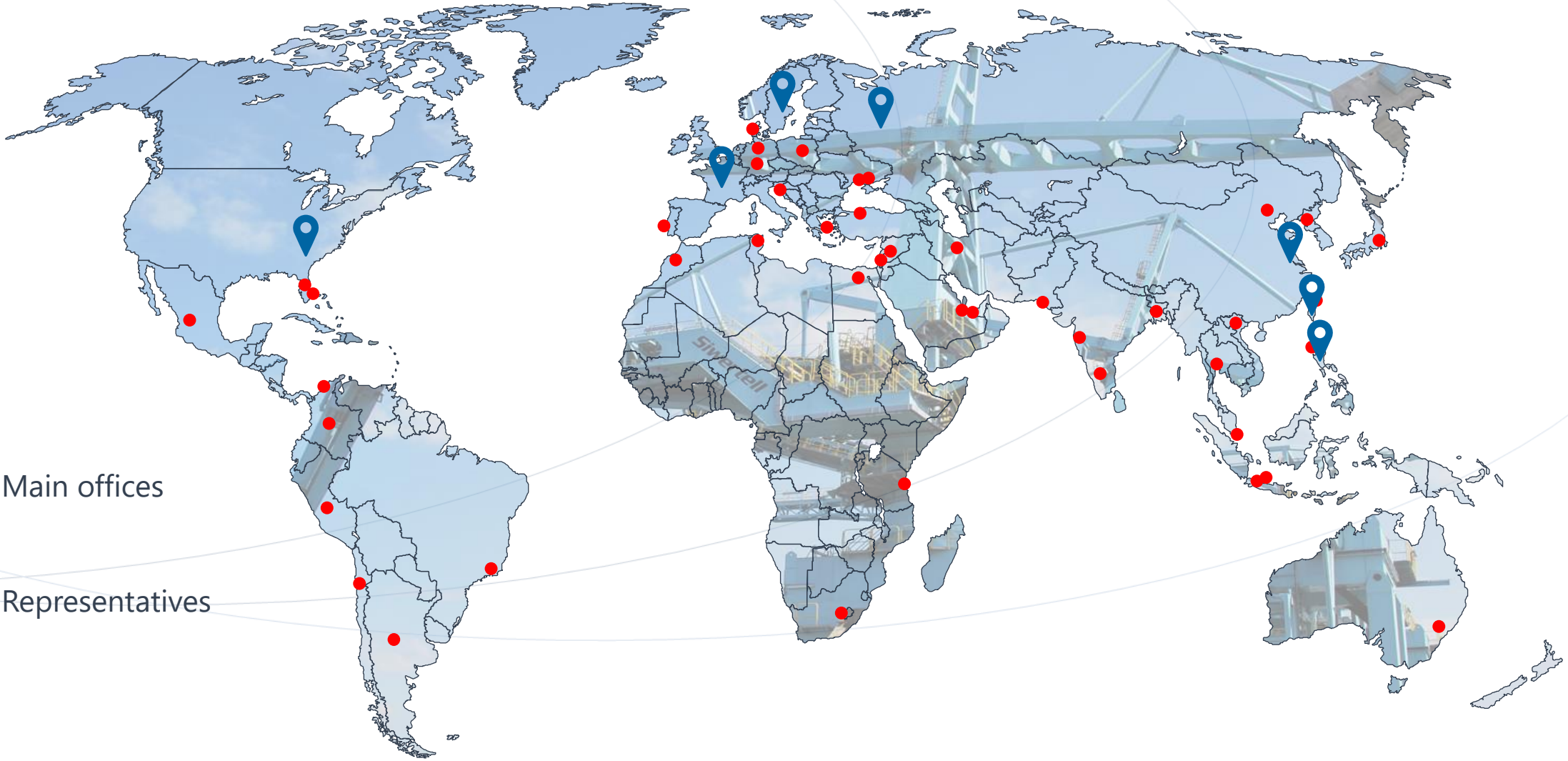
ABOUT US

Dry bulk handling: Where to find us and our contacts



Main offices

Representatives

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ABOUT US

Dry bulk handling: Footprint

Siwertell equipment operate
>300 sites worldwide

Installed base globally
>400 loaders/unloaders

Emphasis on life cycle
management

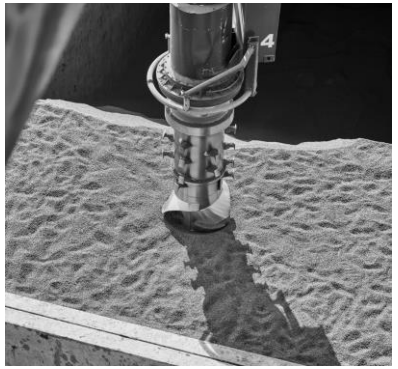
BULK HANDLING
UNLOADING

THE SIWERTELL STORY

History in brief

1970

Siwertell **screw-type conveyor technology** was developed by **two Swedish inventors**, Olle Siwersson and Gunnar Tell, who combined their surnames to give the brand its famous name.



Its success was based on the exceptional performance of a **unique counter-rotating inlet feeder with world wide patent**.

1974

Although initially aimed at the agricultural market, its wider potential was obvious and in **1974 the Siwertell ship unloader was born**.

2022

Offering full terminal solutions, loaders and mobile unloaders followed, all bearing the Siwertell hallmarks of efficiency and reliability.

BULK HANDLING - UNLOADING

Functionality and operation

BULK HANDLING - UNLOADING

Functionality and operation

BULK HANDLING - UNLOADING

Contribution to change and improvements

Before

After

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BULK HANDLING - UNLOADING

Summary

- High average capacity → short vessel turnaround time
- Low conveying velocity → minimal material degradation
- No material spillage
- Minimal dust emissions
- Low noise emissions
- Low energy consumption
- Easy operation
- Lightweight design → reduced civil cost for a new jetty

Improvement of key component lifetimes

R&D Program run 2021-2022

R&D Program: Improvement of key component lifetimes

Background

- Current state of the Agribulk market segment
  - Steady growth of the agribulk segment
  - Competitive market for bulk handling equipment
  - High expectations on equipment availability and endurance
  - Remote locations for operations → need for spare parts

- Bruks-Siwertells offers wide portfolio for seasonal harvests:
  - Screw type unloaders up to rated capacity 1800 T/H
  - Loaders up to rated capacity 3000 T/H

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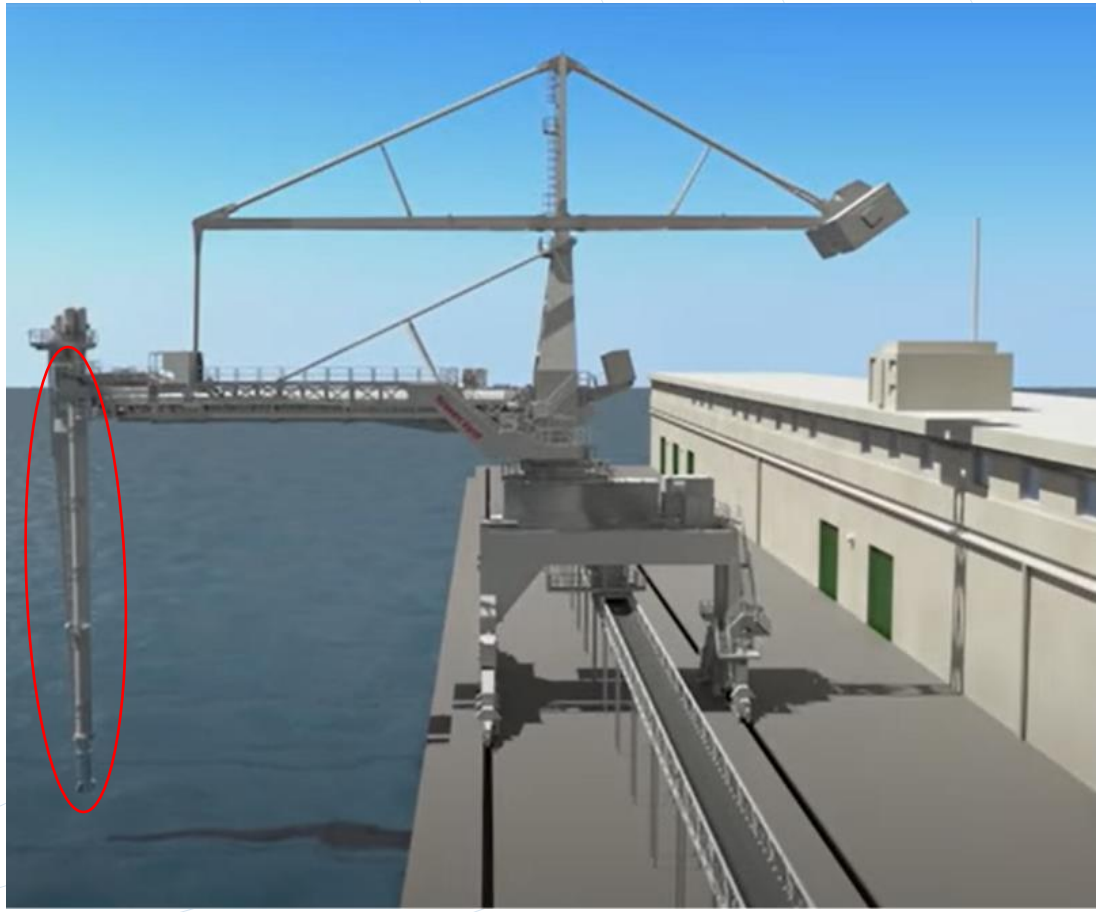
R&D Program: Improvement of key component lifetimes

Purpose

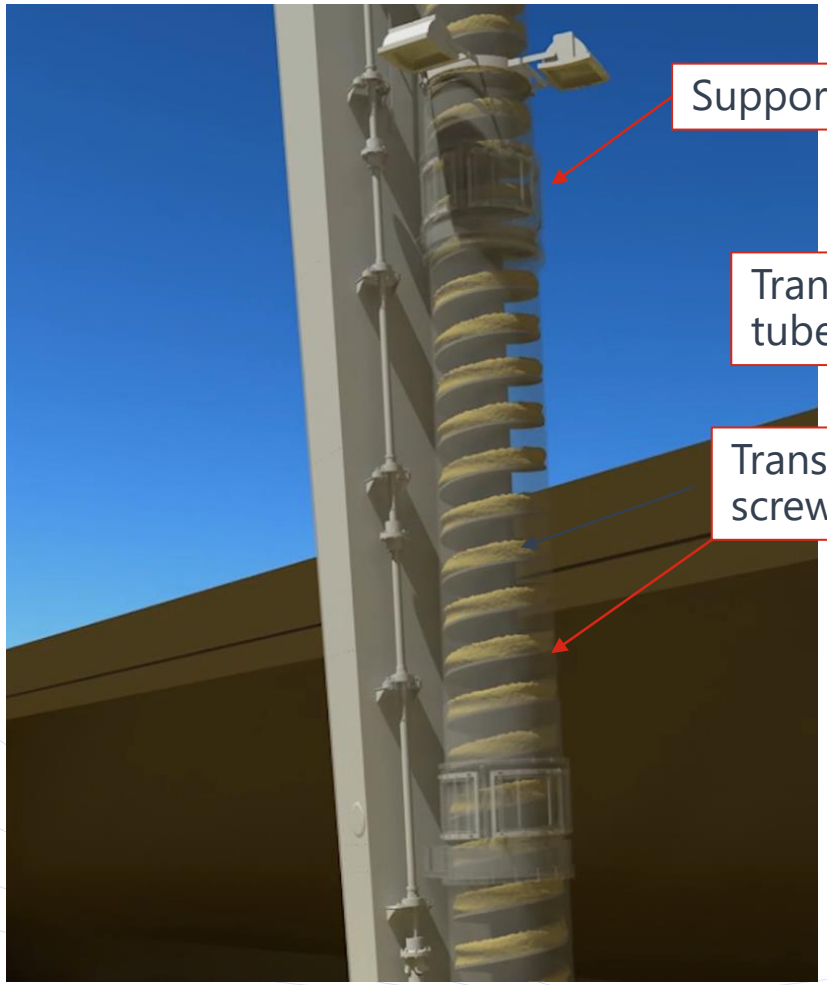
- Maintain market position
  - Maintain reputation as supplier of reliable and longlived equipment

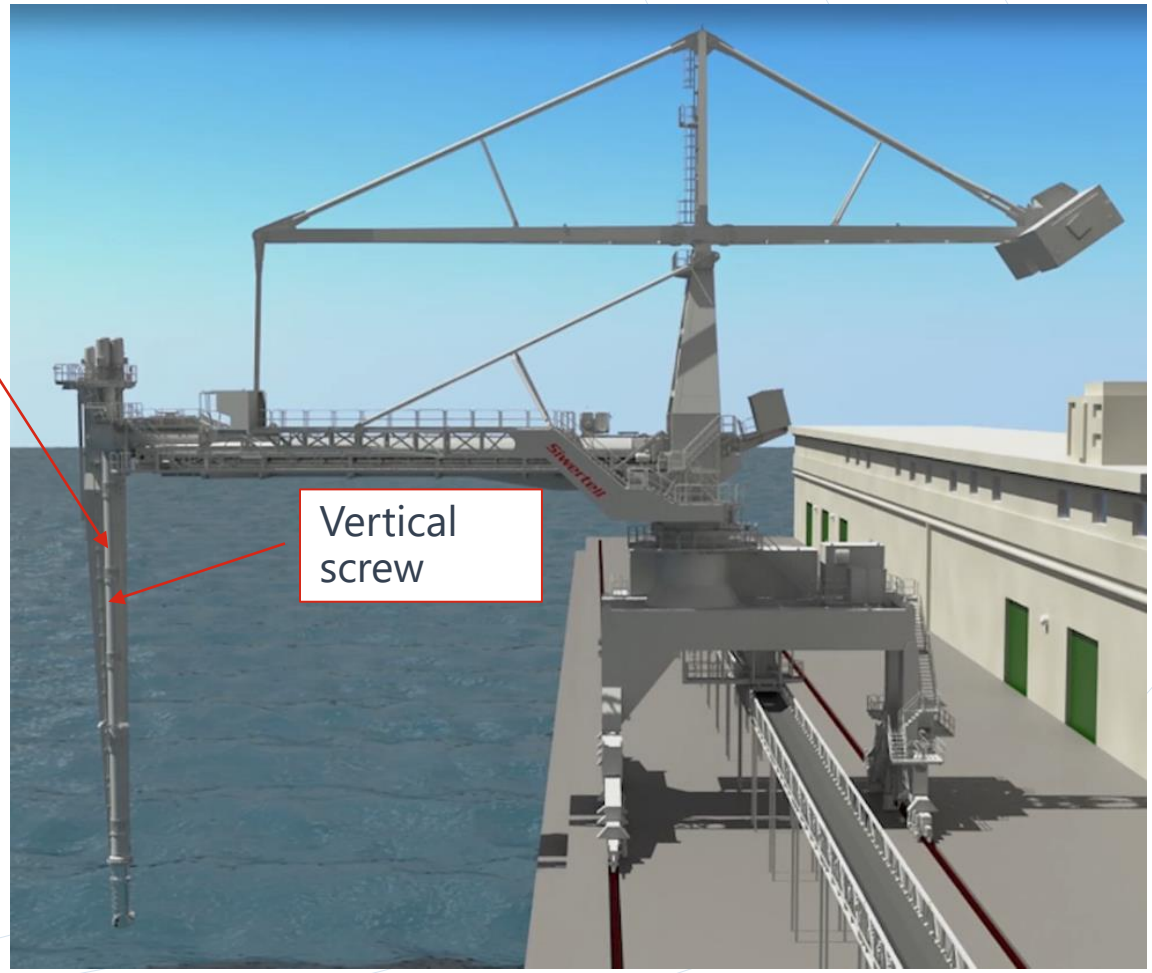
- Stretch component lifetimes while maintaining cost awareness
  - Increase of maintenence intervals
  - Decrease of supply lead times
  - Decrease need of spare parts

  - by reconsidering **choice of components, materials and the production methods** of **vertical transport screws components**.



Components in focus





Improvement of component lifetimes

Business case I: Unloading Soya beans

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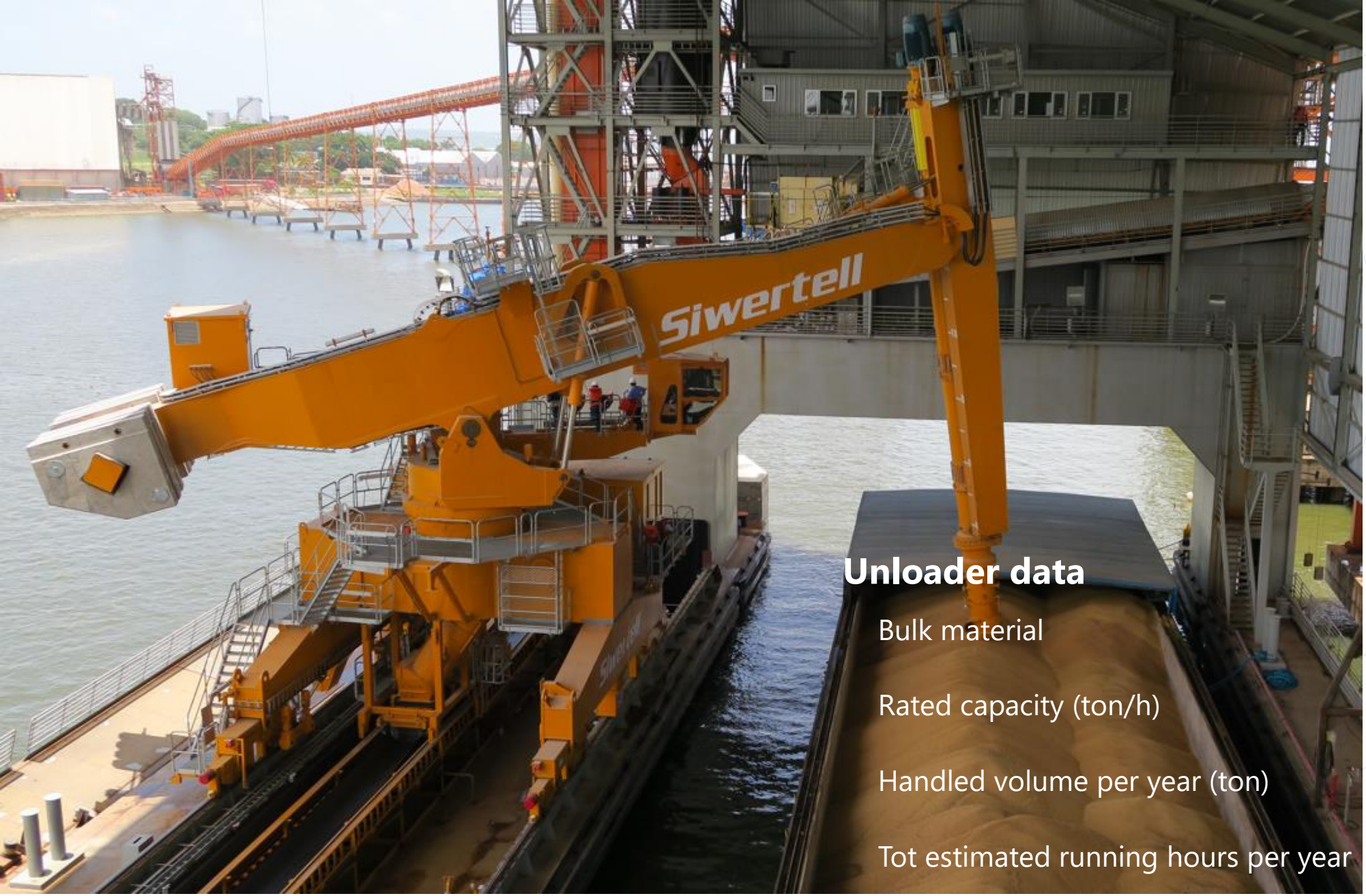
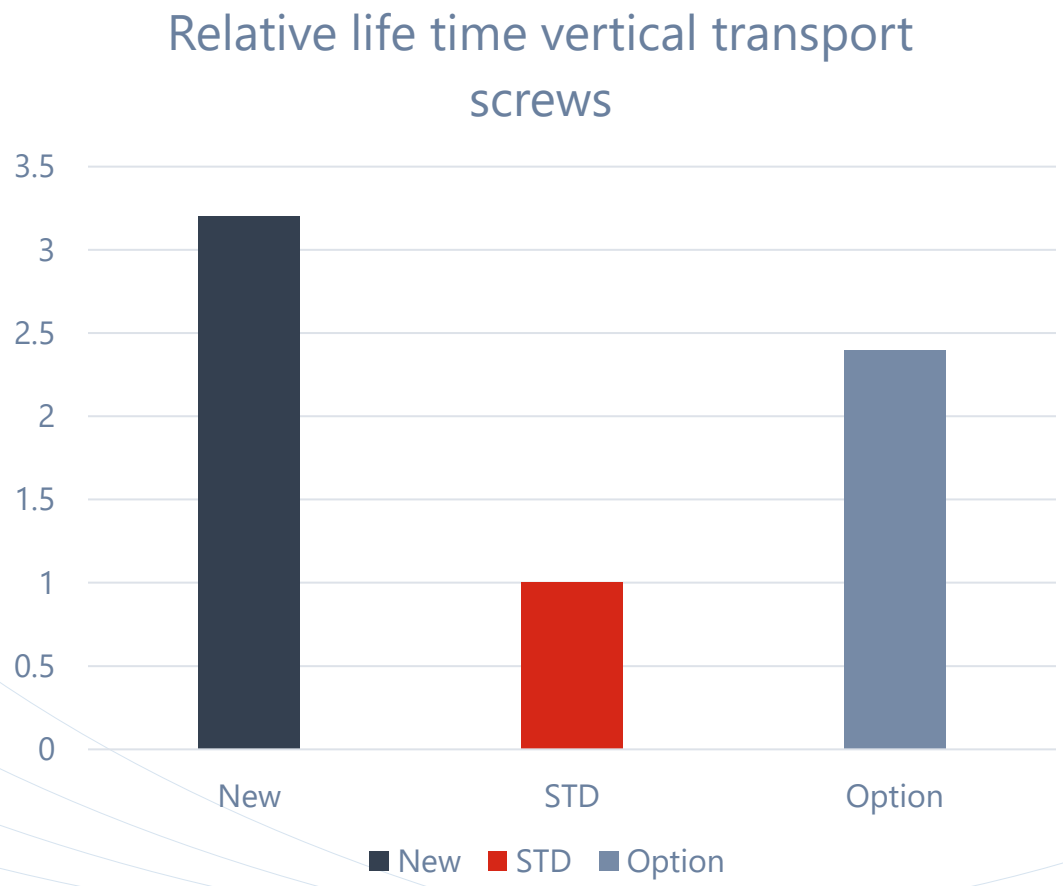
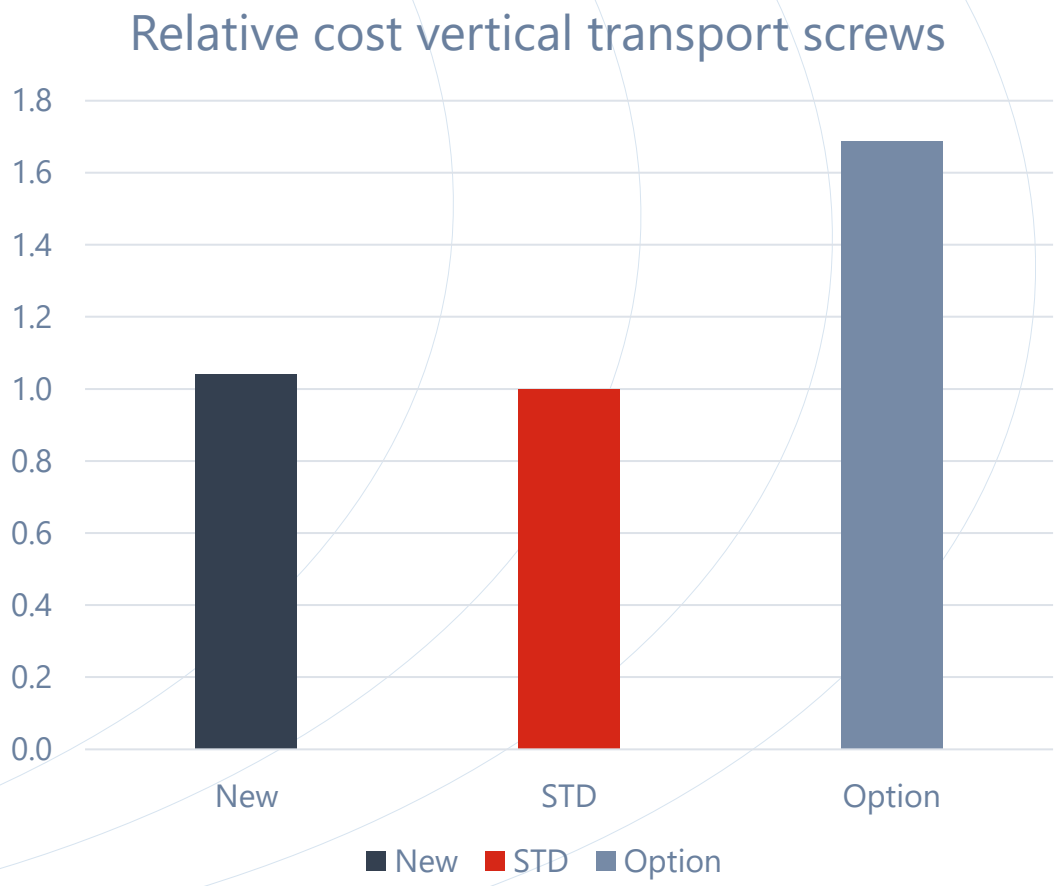


Case I: Unloading Soya beans

Unloader data	
Bulk material	Soya bean
Rated capacity (ton/h)	1500
Handled volume per year (ton)	3 000 000
Tot estimated running hours per year	3 077

Case I: Comparison lifetime versus cost of vertical transport screws





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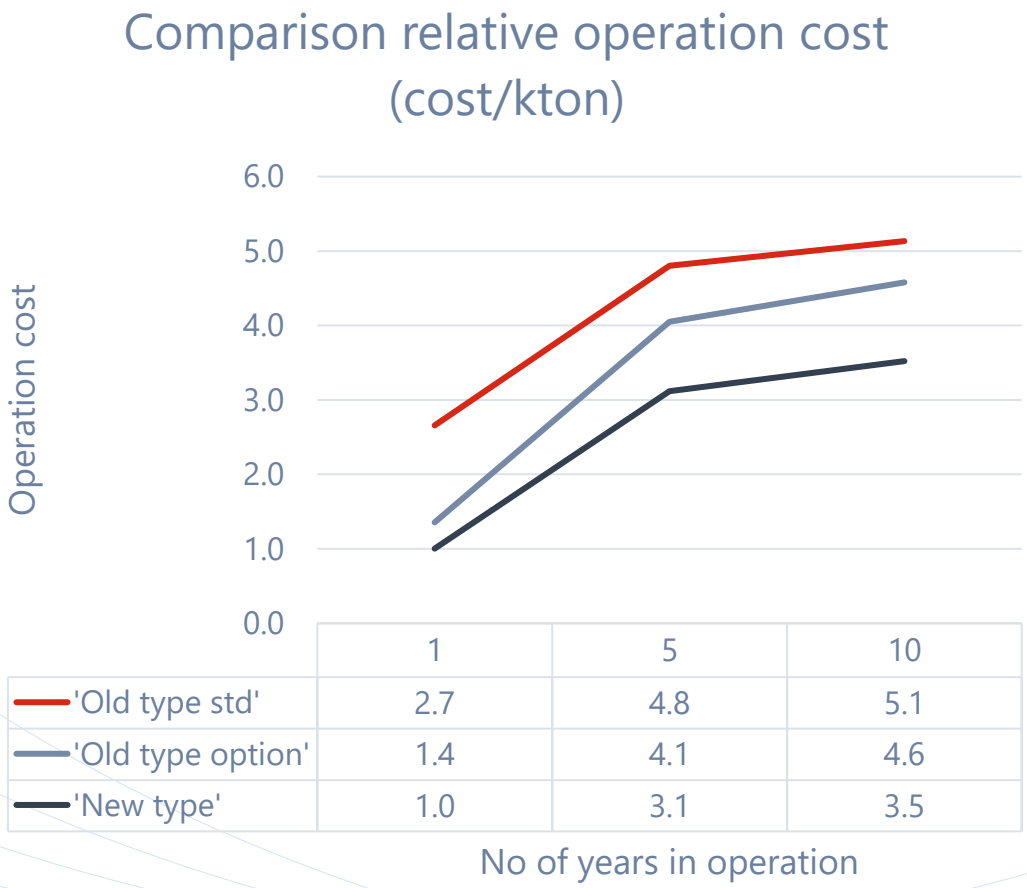
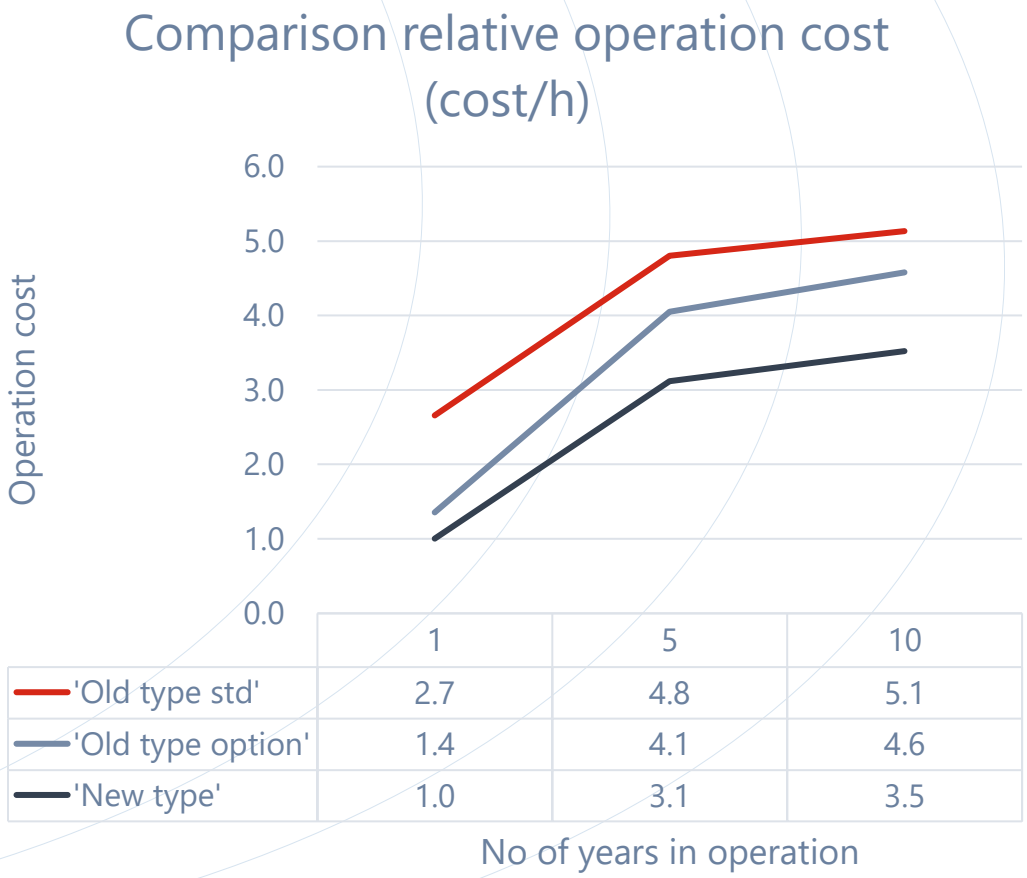
Case I: Comparison relative operation costs





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Improvement of component lifetimes

Business case II: Unloading Grain products

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Case II: Unloading Grain products

Unloader data

	Grain	Rape seed	Soya beans
Bulk material			
Rated capacity (ton/h)	1200	1050	1000
Handled volume per year	2 120 000 in total		
Distribution	40	30	30
Estimated running hours per year	1 206	1 033	1 085
Tot estimated running hours per year	3 324		

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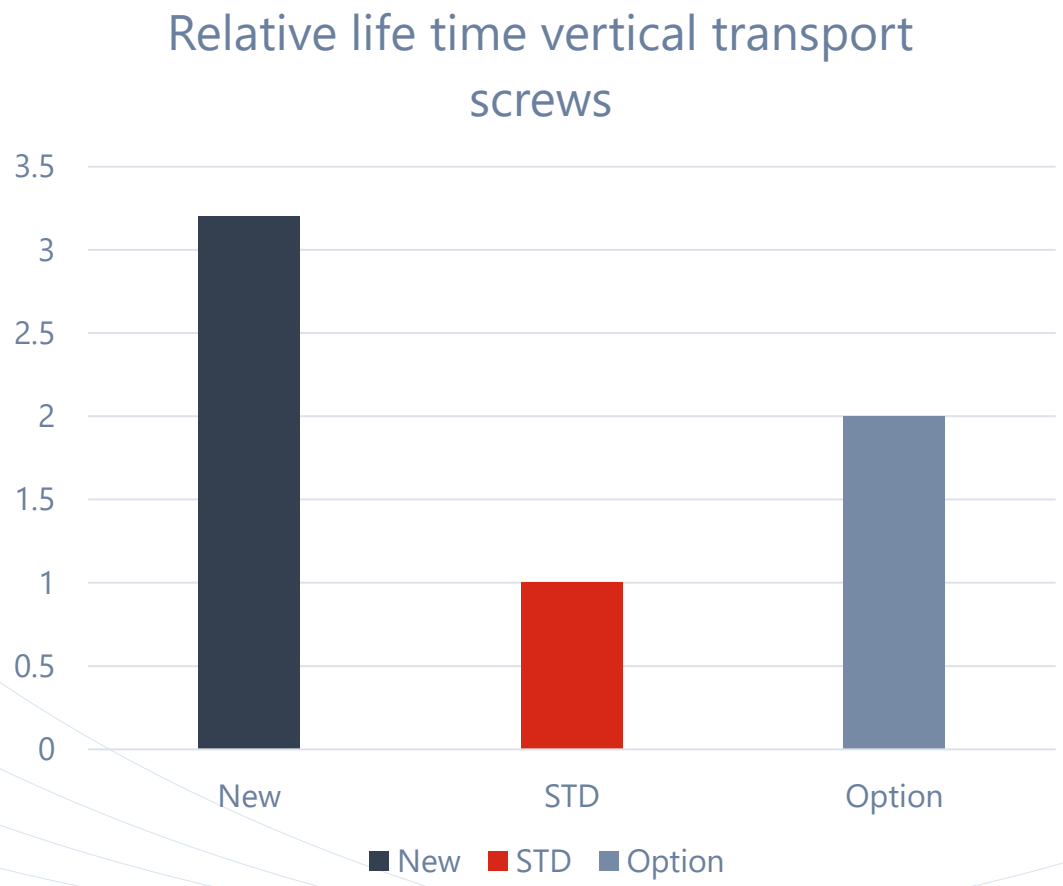
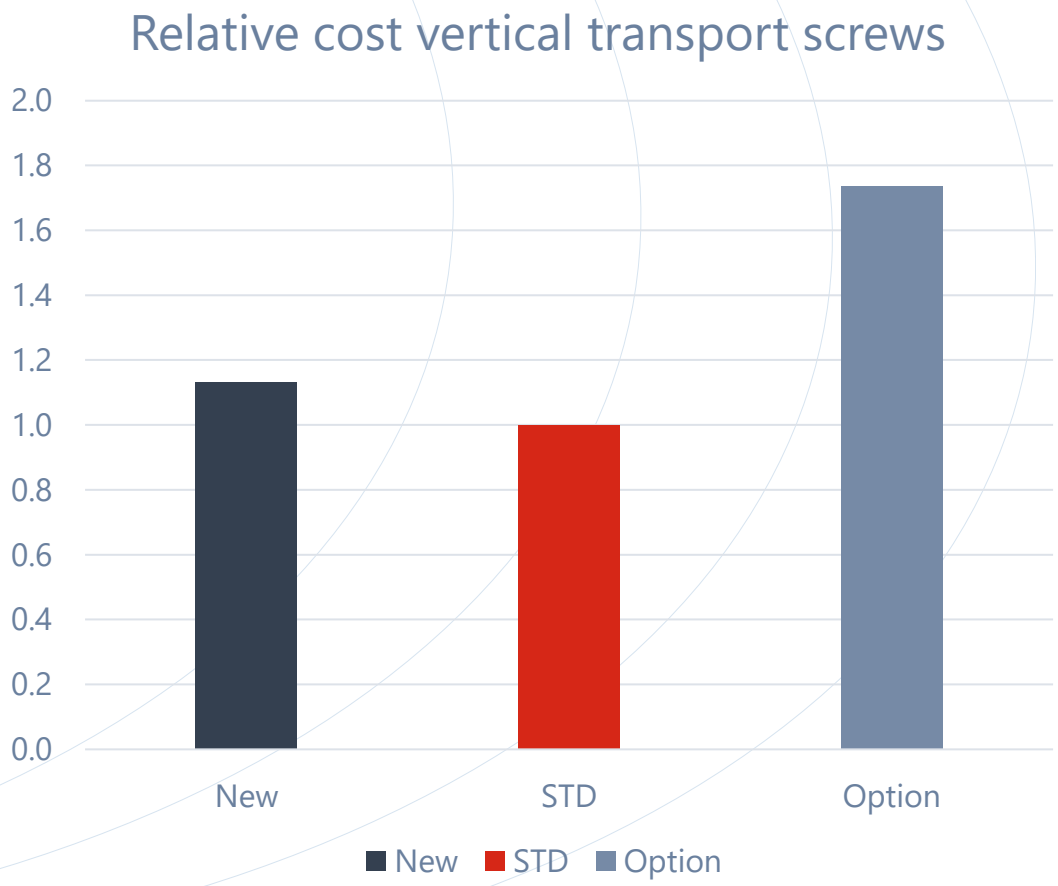
Case II: Comparison lifetime versus cost of vertical transport screws





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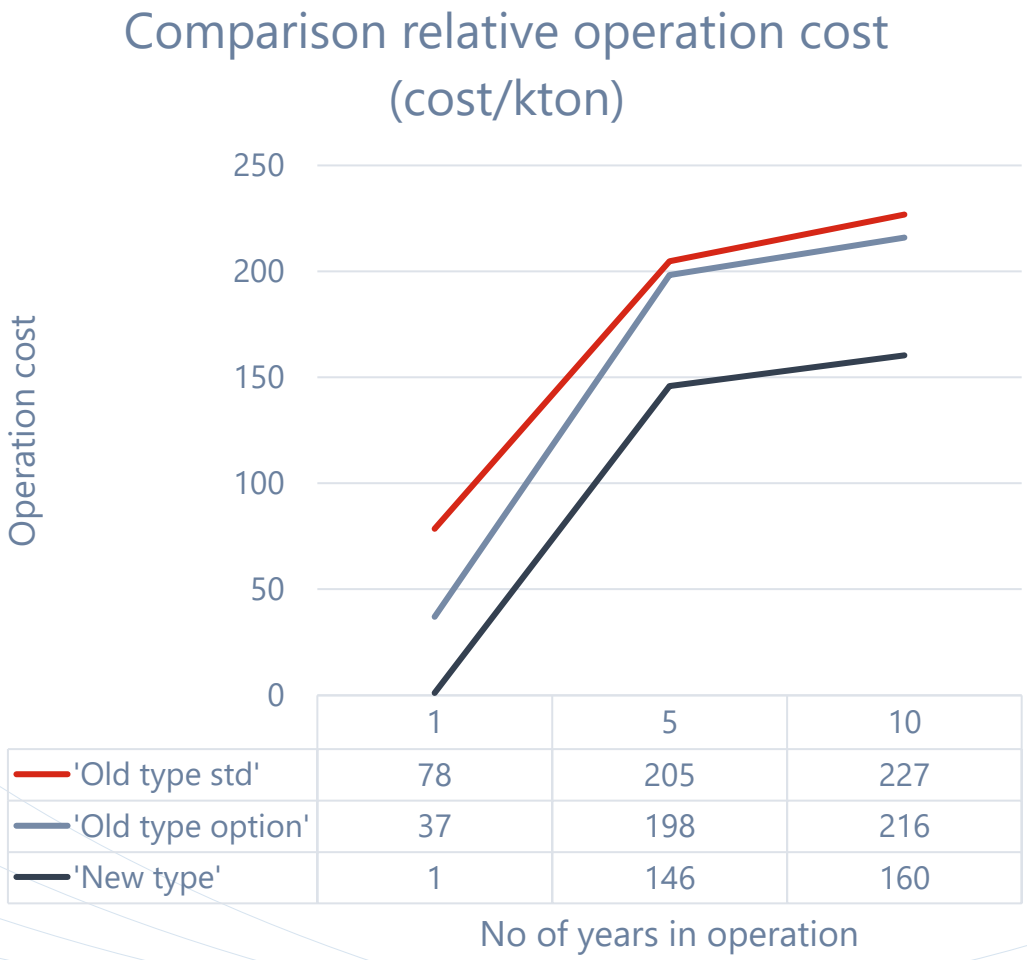
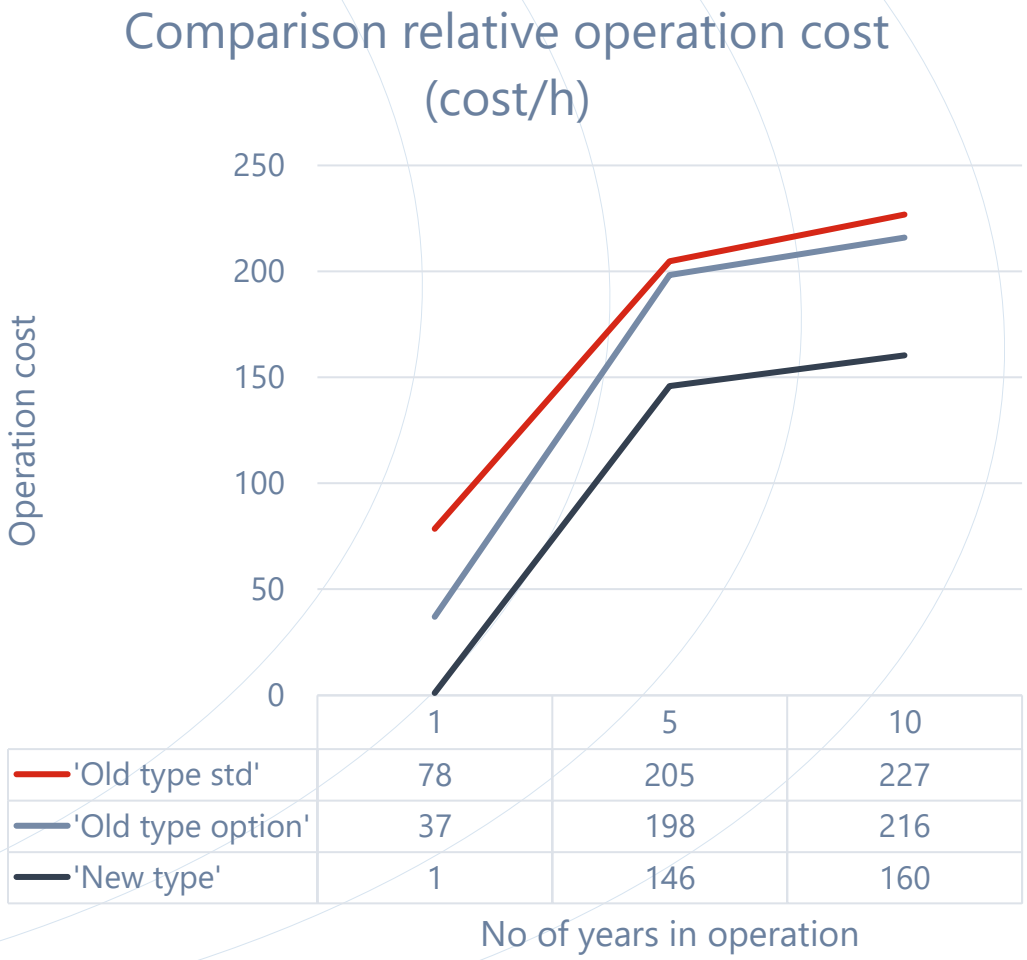
Case II: Comparison relative operation costs





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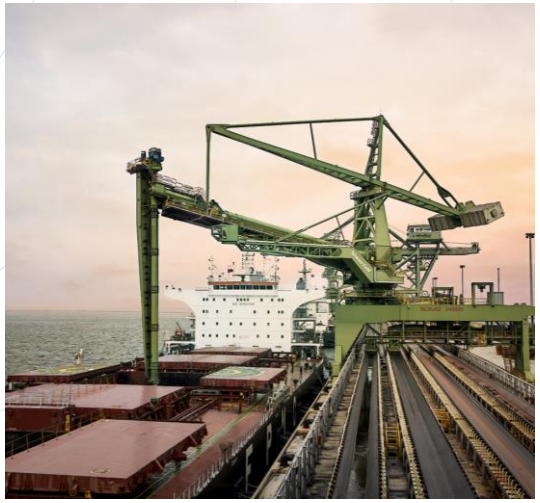
Summary

Key points

- Up to 3 times longer lifetime of vertical screws can be reached at the price of only 5 % to 10 % higher costs.
- Improvement of lifetimes of vertical screws contributes to ca 30 % lower total operation cost per kton or hour over 5 to 10 years.
- Positive results applicable on all transport screws from vertical to horizontal to gantry screws.
- Positive results also applicable on transport screws for other materials of demanding nature than agribullk.
- Positive findings implemented as a best practice in the future product development projects.



THANK YOU FOR YOUR ATTENTION