

It's not all about Technology

Digital Ship - Bergen

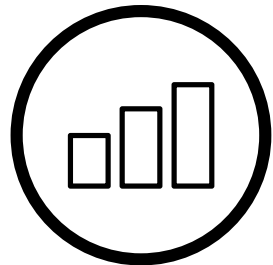
27th of November 2019



ODFJELL

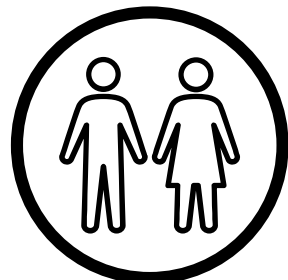
Our story

Odfjell SE is one of the market leaders in providing logistics for the global chemical industry and was established in 1914. The headquarter is in Bergen, Norway. Odfjell operate 77 sophisticated vessels per Q3 2019, renewal program can bring fleet to +100 vessels in 2020.



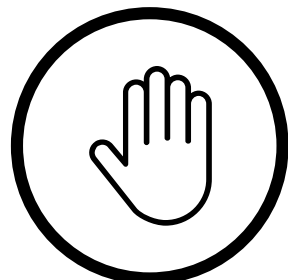
Odfjell Group financials (2018)

- Gross revenue USD 851 million
- EBITDA USD -31 million
- Operating result (EBIT) USD -131 million



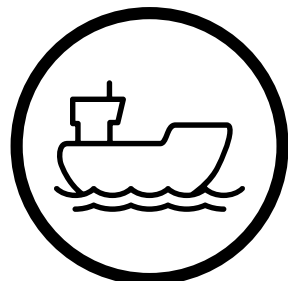
Employees and offices

- 2293 employees globally (1523 seafarers, 620 terminal employees, 383 on shore)
- 17 offices and six tank terminals



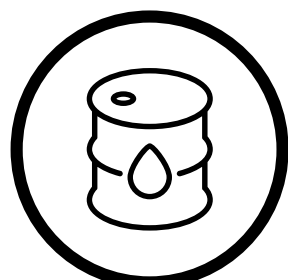
Safety

- Tankers LTIF 2018 0.40
- Terminals LTIF 2018 0.19



Odfjell Tankers

- Number of vessels 77 (DWT 2.6 million)
- Volume shipped 15.1 million tonns



Odfjell Terminals

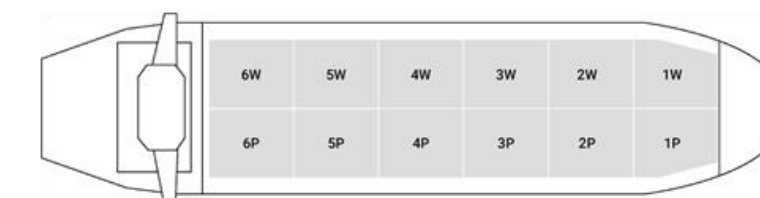
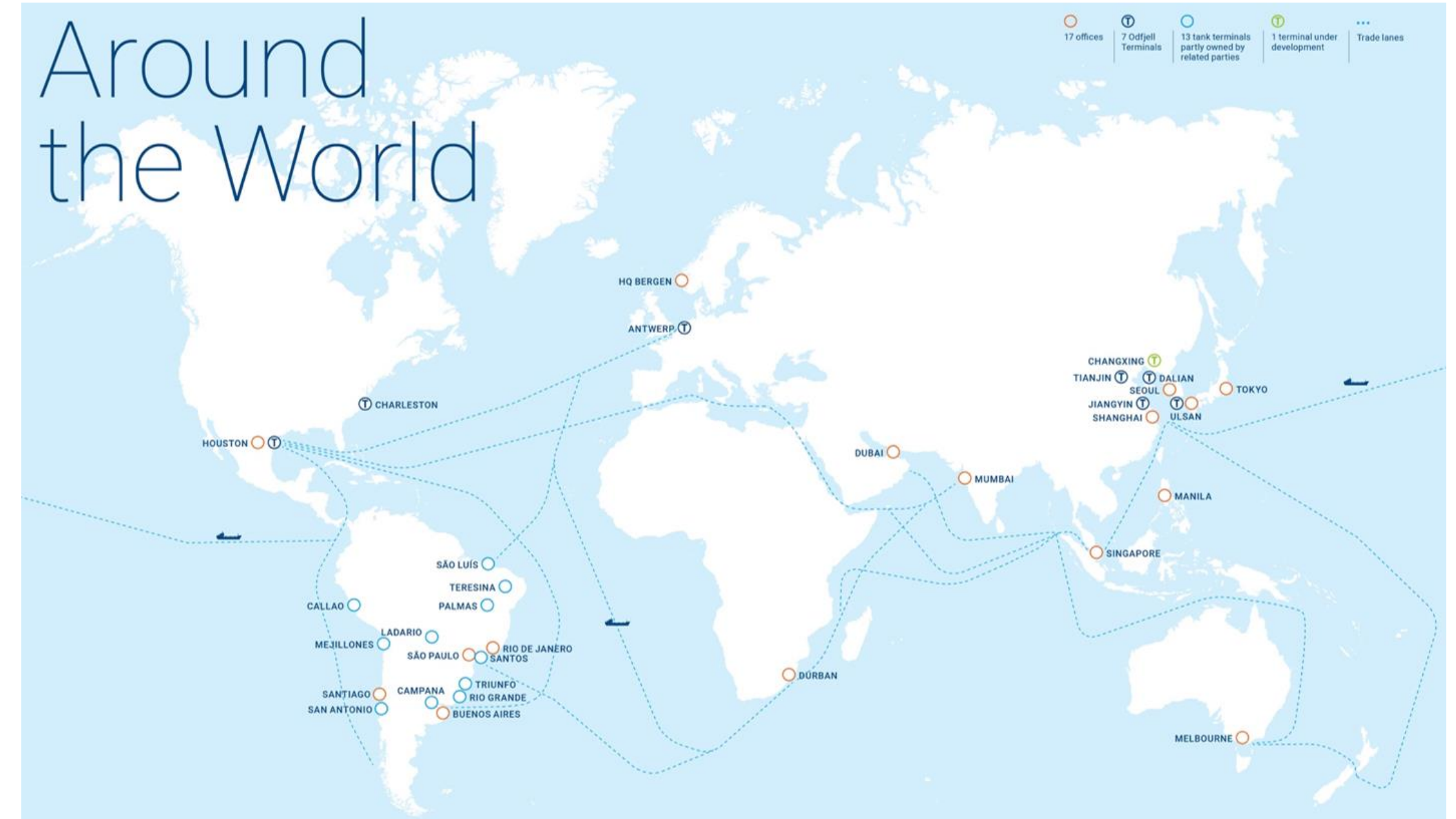
- Total tank capacity 1.51 million cubic meters
- Located in Asia, Europe and United States



Serving the global chemical market

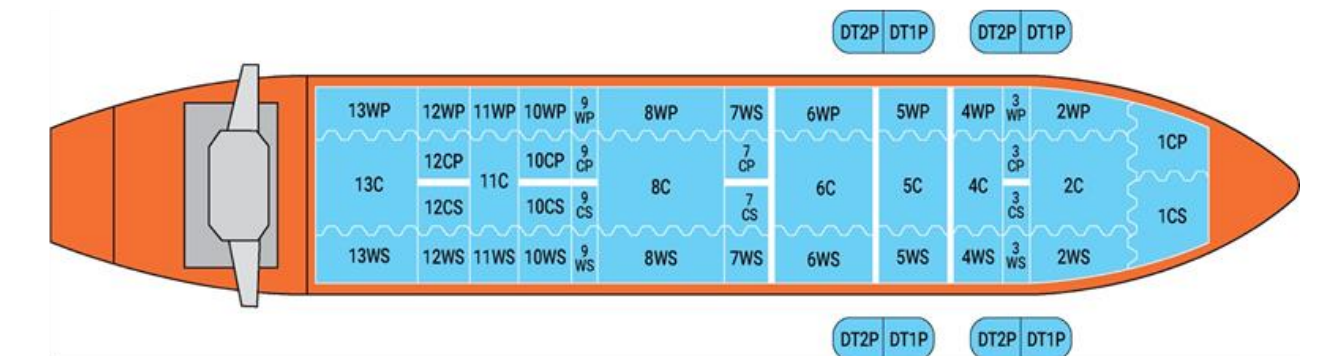
Our chemical tankers crisscross the oceans, forming a web of trade routes that fuel production in all industries, on all continents

Our terminals connect sea and land at strategic locations worldwide, providing safe storage as a step on the way to the customer



- Standardized and cost efficient
- Scale effect on basic equipment across similar ships
- Experienced crew with cost focus

Sophisticated Super Segregators



- Tailor-made and responsive
- Complex and flexible equipment
- Experienced crew with cost focus, comprehensive technical competencies and training

Our Digital Challenge

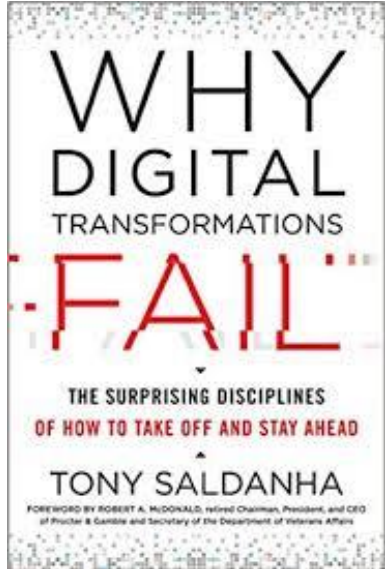
**Digitalization is a competitive survival game
– doing nothing is not an option**

- ✓ Technology opportunities arising with increasing speed
- ✓ We operate in a highly competitive industry
- ✓ Our industry has high operational complexity
- ✓ Our customers and competitors are becoming more digital



Disruption is here and it is massive

Half the companies in the Fortune 500 list will turn over in the next decade.

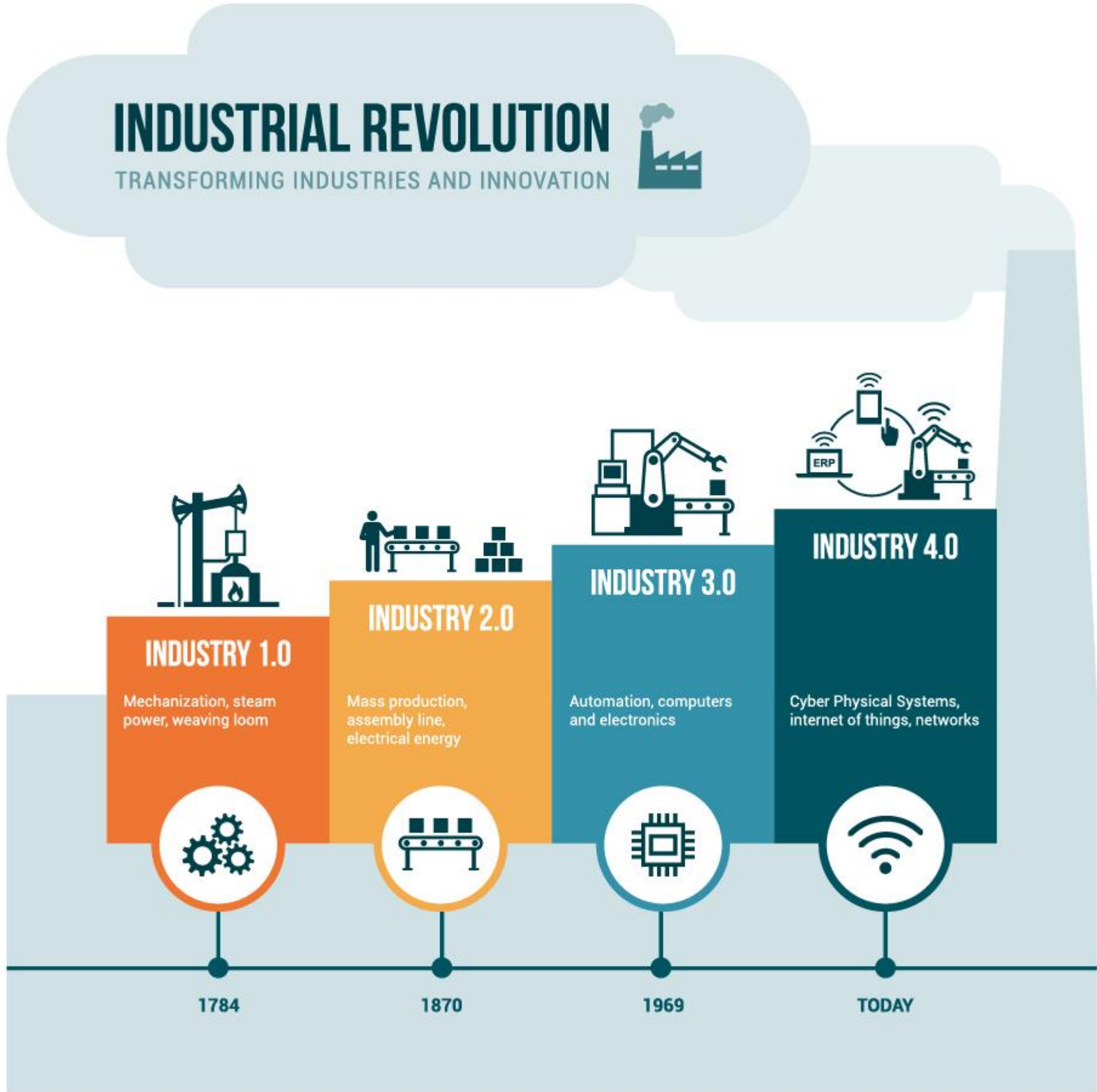


COMPANY LIFE SPAN

Average Life span for companies are down to twenty years from sixty years in 1950s.

TRANSFORMATION

Company either transform or die in industrial Revolutions. 70% percent of all digital transformation fail.



Gartner

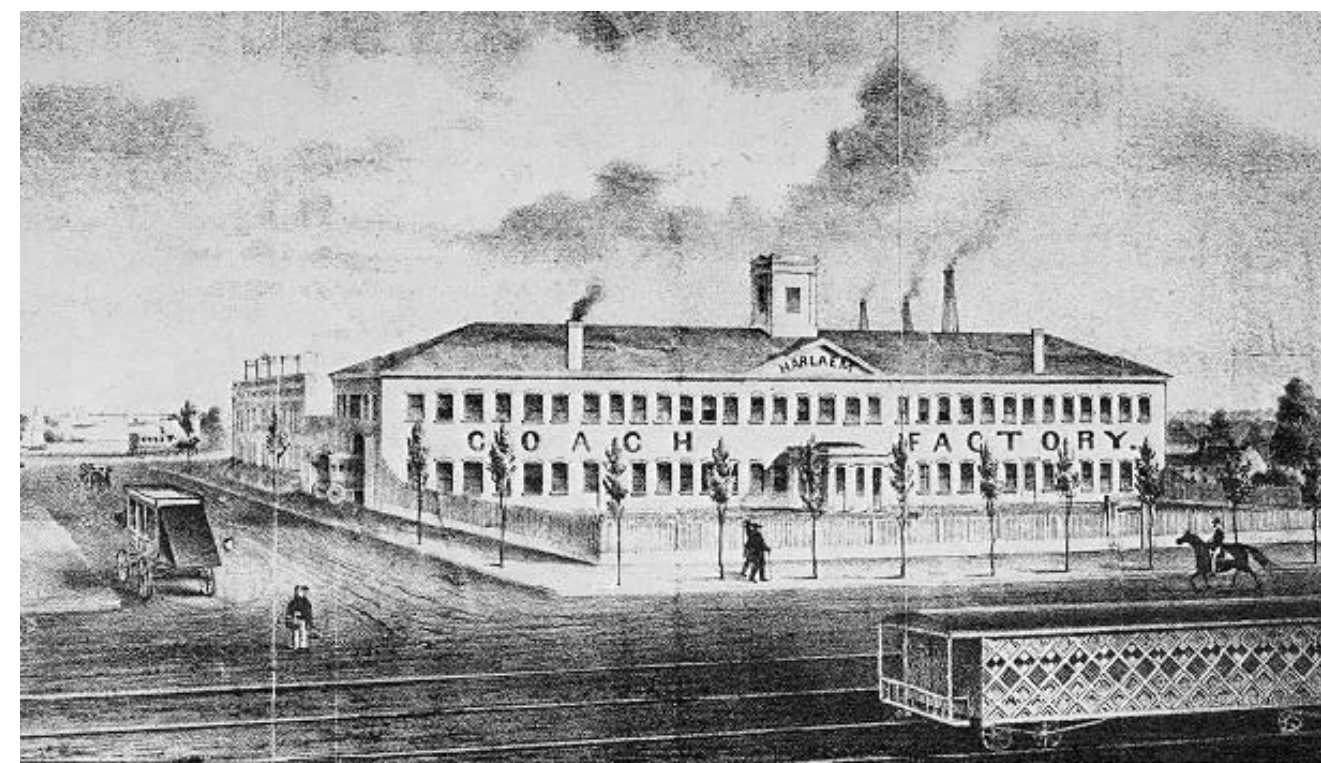
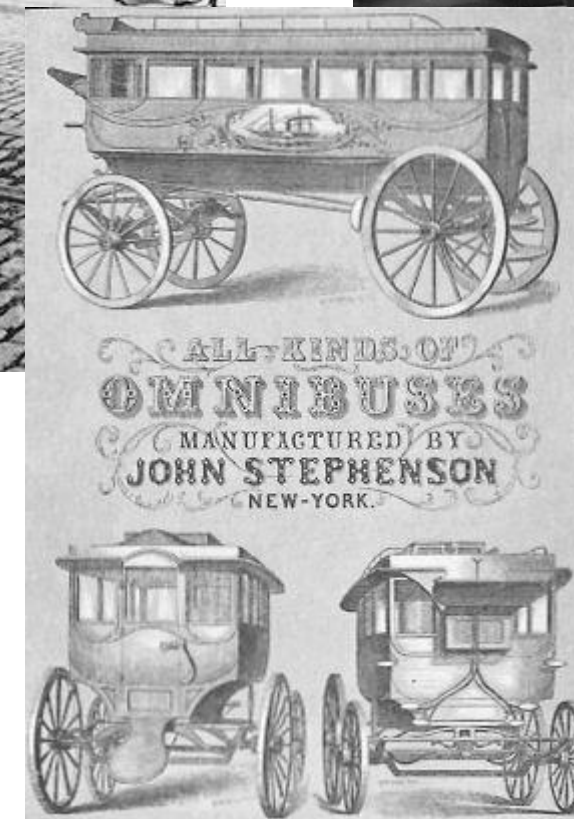
Every Industry will be Digitally Remastered.

Products become electrified and digitally re-vented.

We are used to disruption ... but not the speed of disruption.

John Stephenson Car Company 1831 to 1919

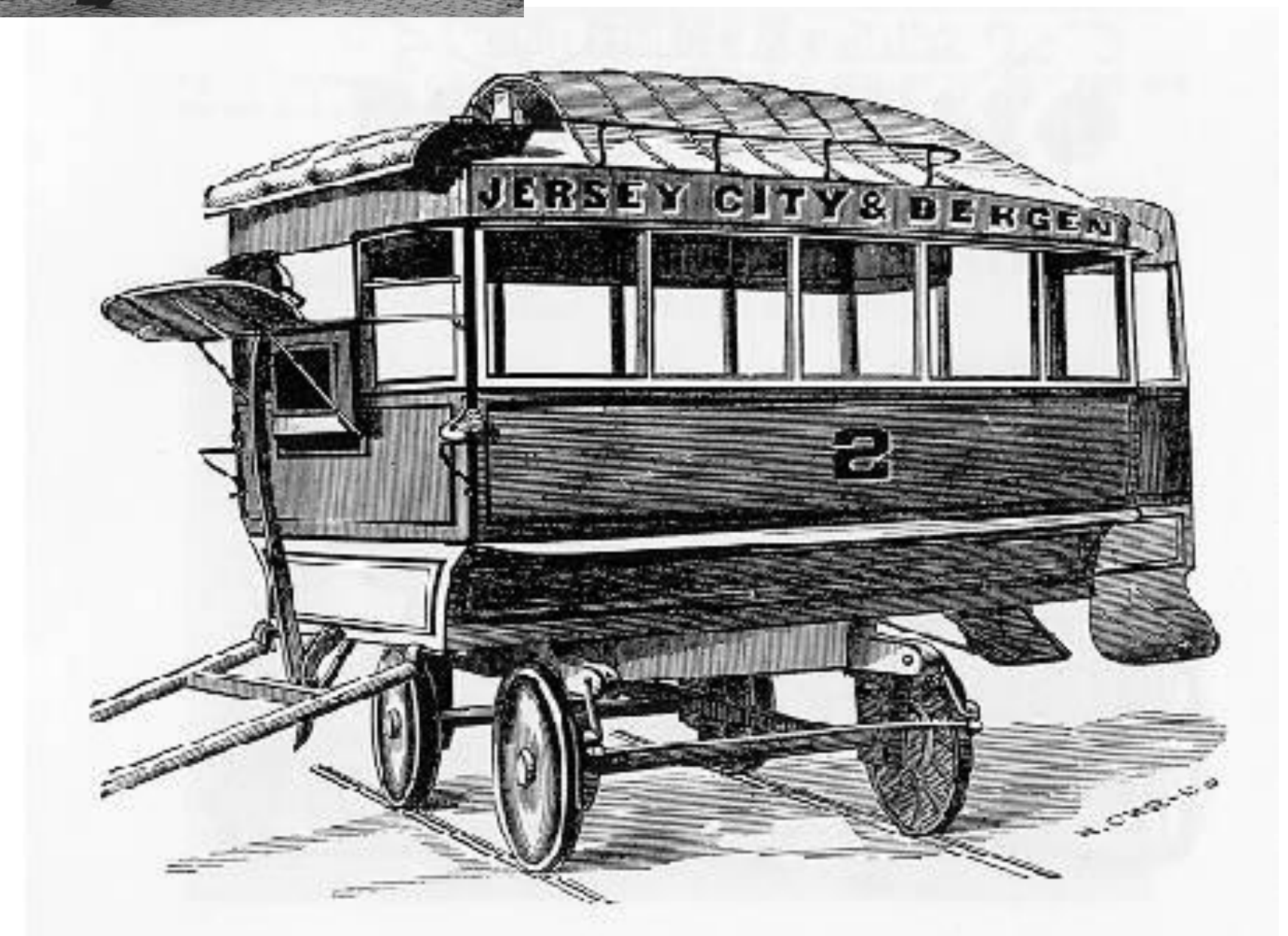
American manufacturer of carriages, horsecars, cable cars, and streetcars.



JOHN STEPHENSON,
Manufacturer of
 RAIL ROAD CARS, OMNIBUSES, POST COACHES
 and
CARRIAGES OF EVERY DESCRIPTION.
As this Establishment being located in the City of NEW YORK, work may be Shipped under the covered care of the Manufacturers at all seasons of the Year.
Bufford's Lida, 6th Avenue N. Y. C.

Patent Number	Date Issued	Status	Description
Unnumbered	Apr 1833	Issued	Passenger car
26,026	27 Dec 1859	Issued	Brake for reversible cars
32,681	7 Jul 1861	Issued	Improvement for opening railroad-car doors
61,481	22 Jan 1867	Issued	Flexible suspension for 4-wheeled streetcars
67,121	23 Feb 1869	Issued	Detachable wheel housings
147,190	3 Feb 1874	Issued	Device for Operating Street-Car Doors
159,996	12 May 1874	Issued	"Bob-tail" car with rear door operable from front
155,118	15 Sep 1874	Issued	Device for Operating Street-Car-Doors
161,685	30 Mar 1875	Issued	Removable car seats
161,570	30 Mar 1875	Issued	Longitudinal ribbing in streetcar body
296,480	8 Apr 1884	Issued	Car axle box and overload springing
376,470	28 Feb 1888	Issued	Tram Car Roof
376,471	28 Feb 1888	Issued	Tram Car Sash-Rail
376,473	28 Feb 1888	Issued	Tram Car Window
376,476	28 Feb 1888	Issued	Tram Car Dash-Cap
376,480	28 Feb 1888	Issued	Summer car with aisle
460,848	21 Apr 1891	Issued	Vestibule Street Car
691,608	14 Feb 1903	Issued	Sliding door for streetcars
693,611	18 Feb 1902	Assigned	
REG. 657	22 Sep 1874	Assigned	Reissue of 32,681 Division A
REG. 658	22 Sep 1874	Assigned	Reissue of 32,681 Division B
REG. 659	22 Sep 1874	Assigned	Reissue of 32,681 Division C
REG. 660	22 Sep 1874	Assigned	Reissue of 32,681 Division D
REG. 661	22 Sep 1874	Assigned	Reissue of 32,681 Division E
REG. 662	22 Sep 1874	Assigned	Reissue of 32,681 Division F
REG. 428	11 May 1875	Reissued	Reissue of 155,118
REG. 429	11 May 1875	Reissued	Reissue of 155,118

18 U.S. Patents issued to, or assigned to, John Stephenson



Stephenson's revolving horsecar could turn around without being turned around.

Studebaker 1852 to 1966

Originally American producer of wagons, buggies entered the automotive business in 1902 with electric vehicles and in 1904 with gasoline vehicles.



OLD **STUDEBAKER** PHAETON
Built by H. & C. **Studebaker** in 1857



Digital Optimization

nor

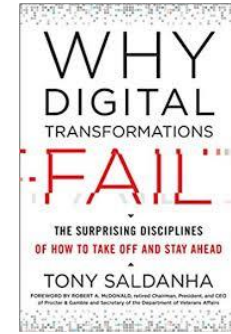
Digital Transformation

is enough

**Continuous Digital
Transformation is
needed for survival!**



What are the barriers?



There is a **Digital Literacy** challenges and it does not help that IT industry hype technologies.

Digital Disruption strategy (creating new business models for the overall business) is different from **IT strategy** (driving automation and productivity in daily operations).

There is an **overreliance** on CIOs and CDOs where you should turn every leader in the organization into a passionate digital leader.

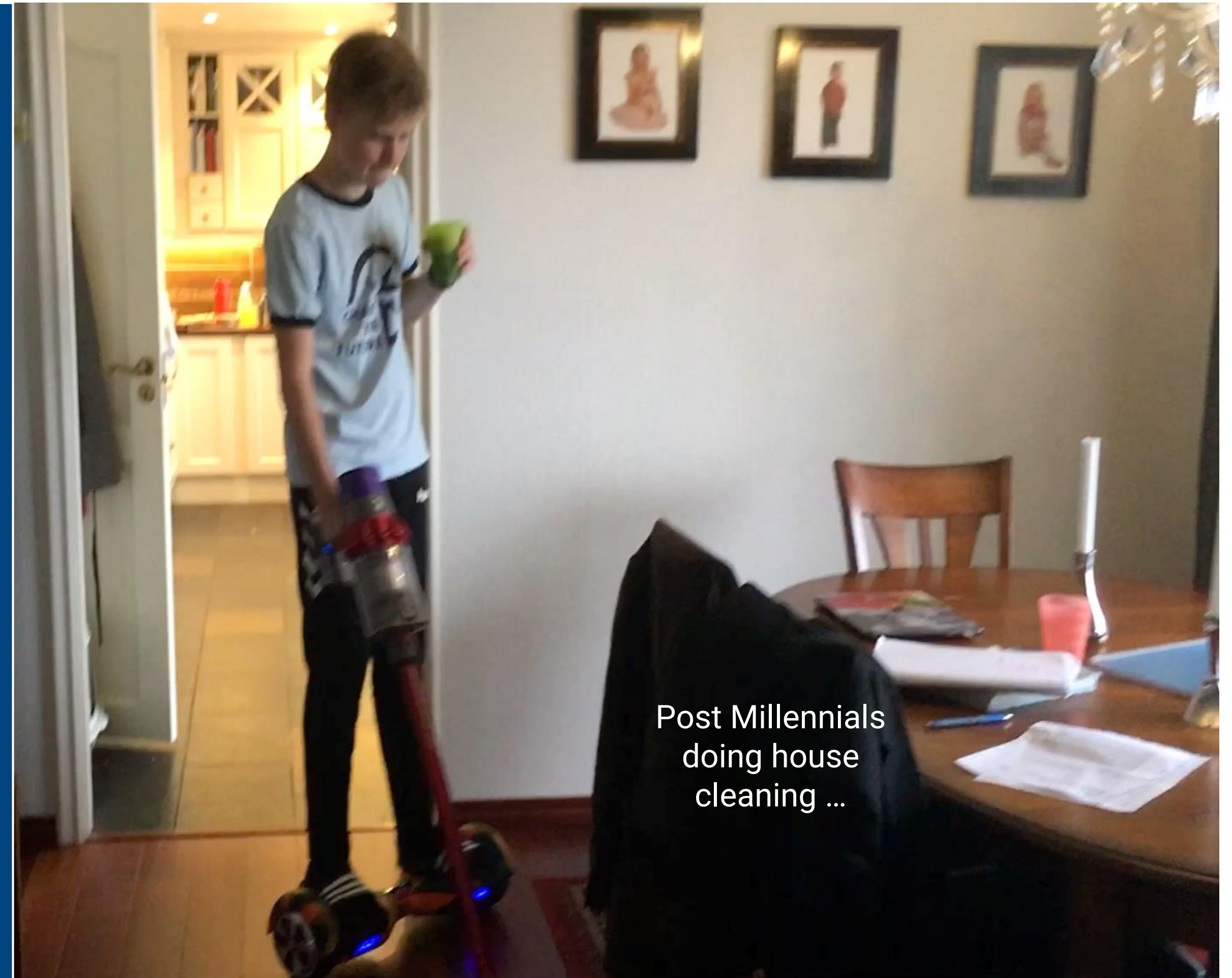
Gartner.

Digital Dexterity is in short supply. Digital Dexterity is ambition and ability to work digitally and build digital businesses.



Will Post Millennials have higher Digital Dexterity?

- Grew up with technology and was born connected
- Participated in team sports and are very team oriented
- Leverage tech savviness and intuition
- Are the Best-Educated Generation Yet
- Approach their superiors as equals
- Well educated parents



Post Millennials
doing house
cleaning ...

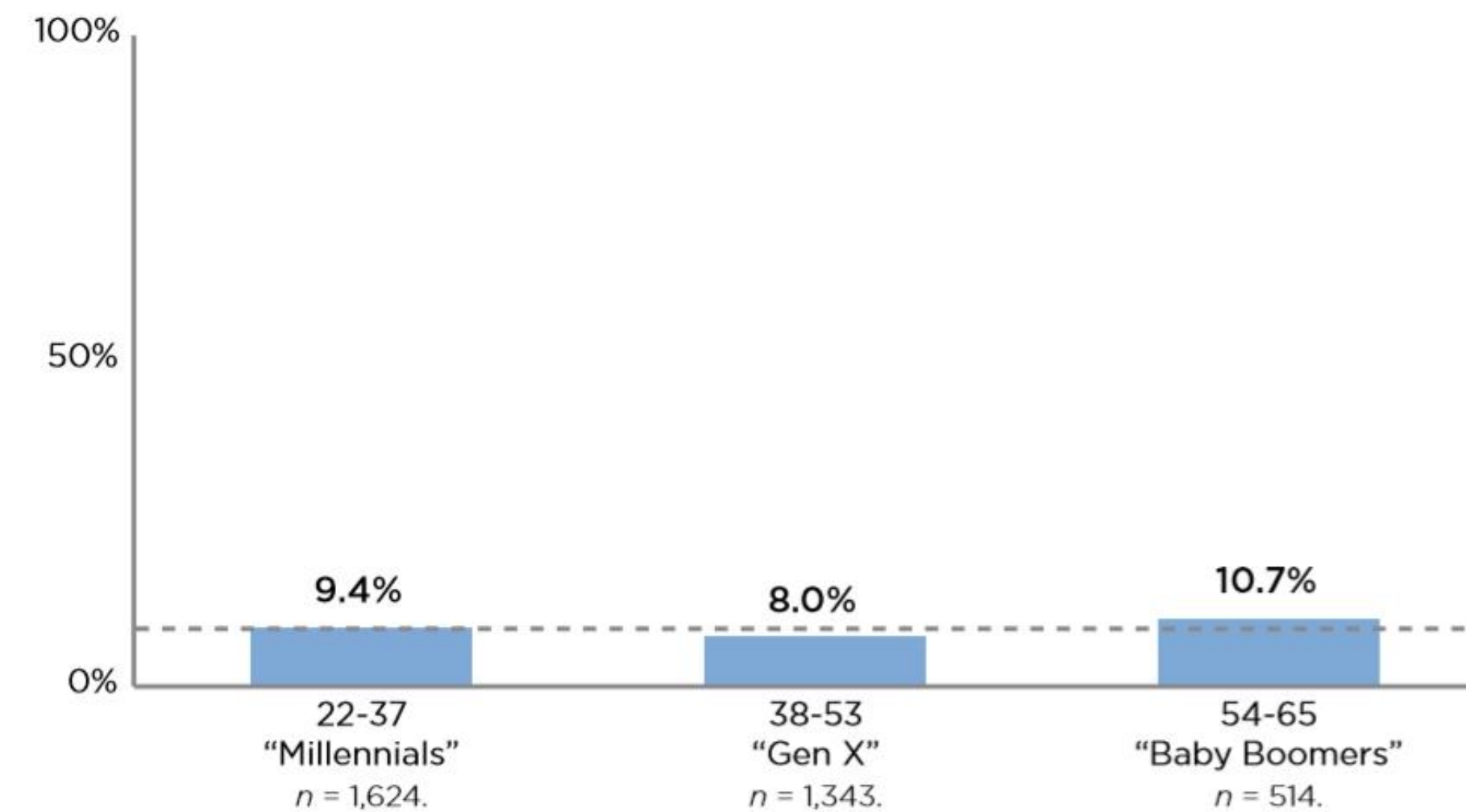
What Doesn't Matter ...

- Age
- Years in the workforce
- Location
- Graduate degree (other than an MBA)

Gartner

MILLENNIALS DON'T HOLD THE KEY TO DEXTERITY

Prevalence of High Digital Dexterity
Percentage Across Generations



n = 3,481 employees from all industries and functions.
Source: CEB 2018 Digital Dexterity Survey.

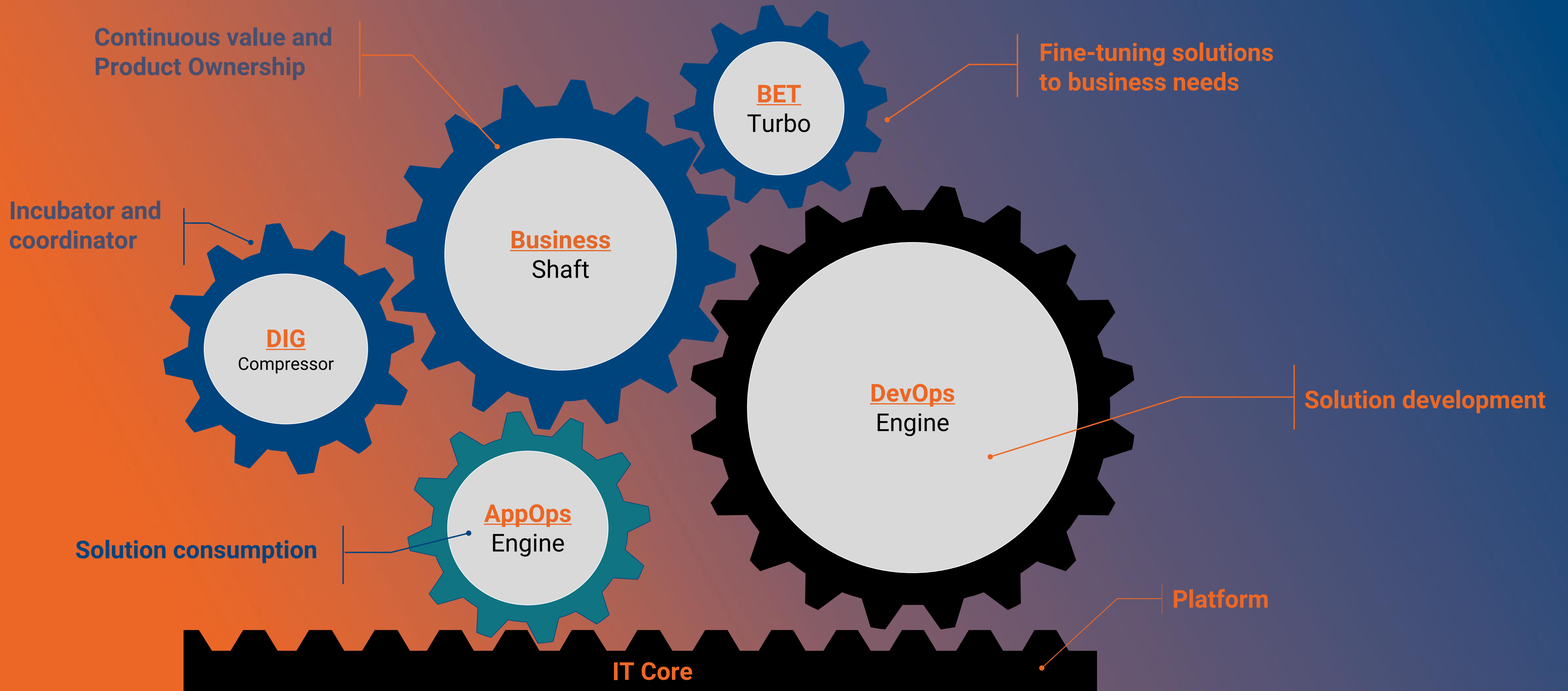
Digital Dexterity

Ambition to Work Digitally	Ambition to Build Digital Businesses
Ability to Work Digitally	Ability to Build Digital Businesses

Employees develop digital dexterity through **autonomy** to experiment with digital technologies and through easy access to strategic and technical digital **business** expertise inside and outside of IT



Digitalization in Odfjell

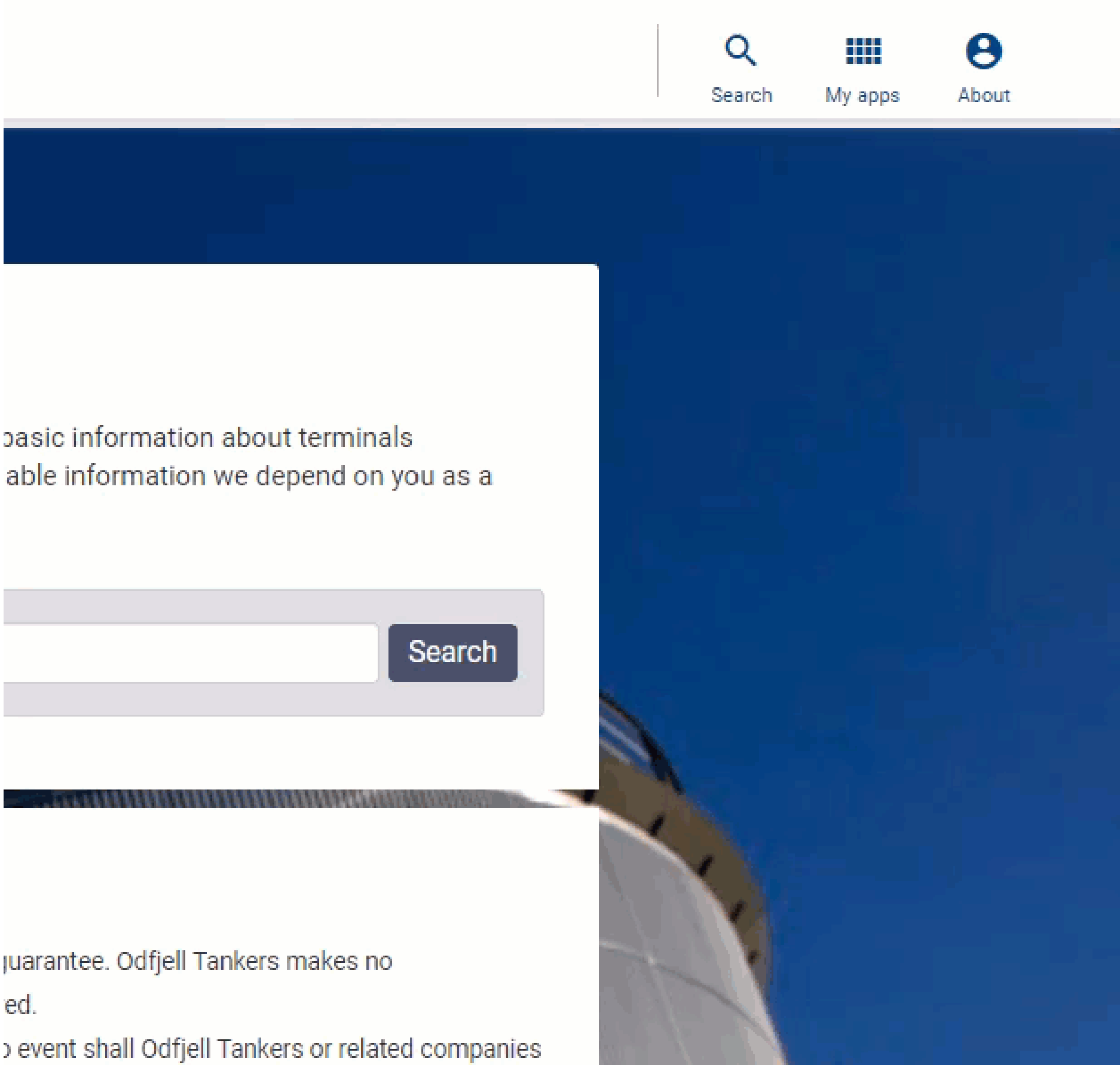


Digitalization in Odfjell

Odfjell have a permanent DEVOPS team

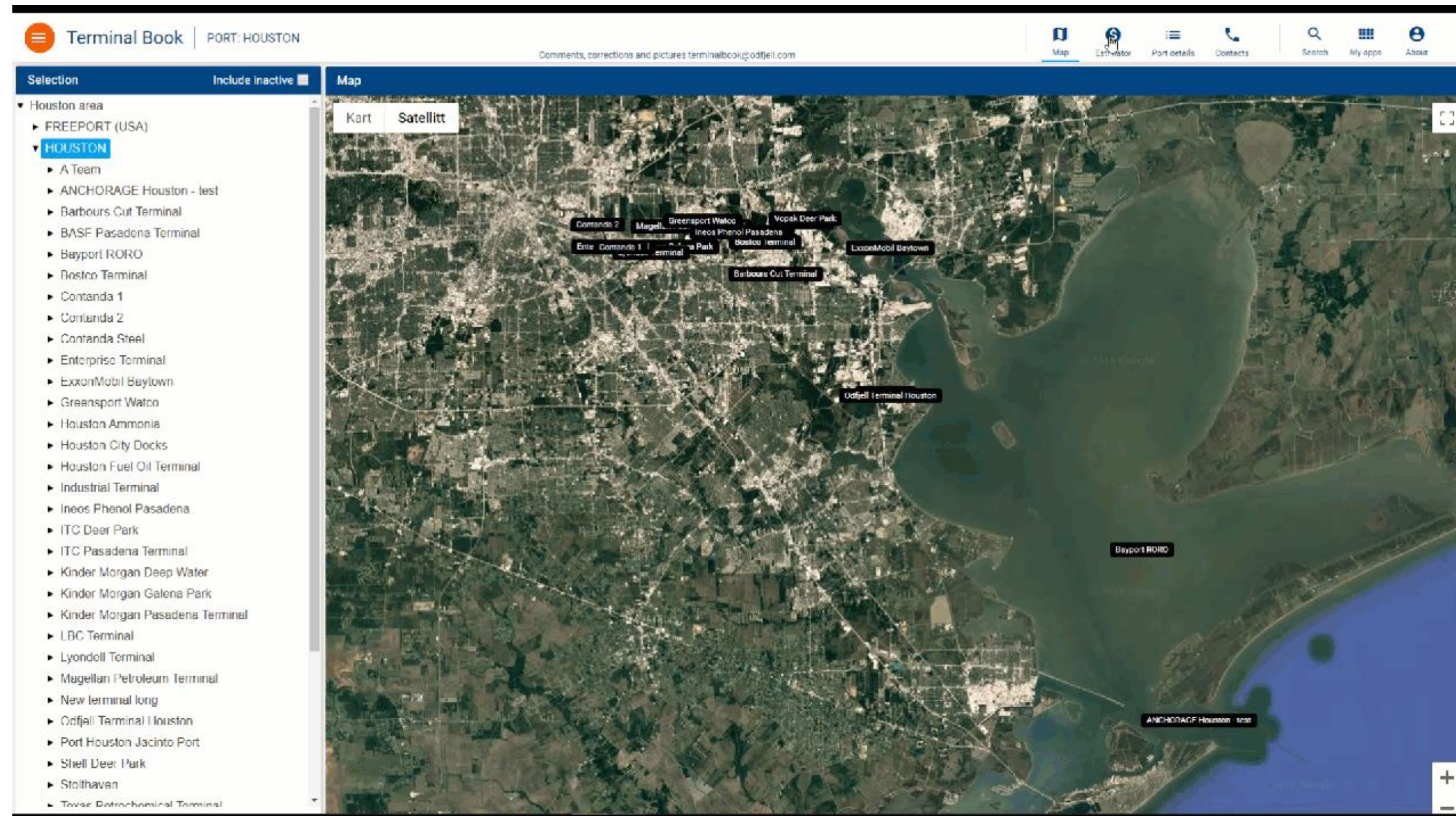


Bergen November 2019
Odfjell DEVOPS team working



Terminal Book

Services Constraints, commercial and operational statistics and Port Cost Predictions



The **Terminal Book** is a tool used to map all relevant terminals and their **Services and Constraints**, commercial and operational **statistics** and **Port Cost Predictions**

Port Collaboration

Current and planned port activities

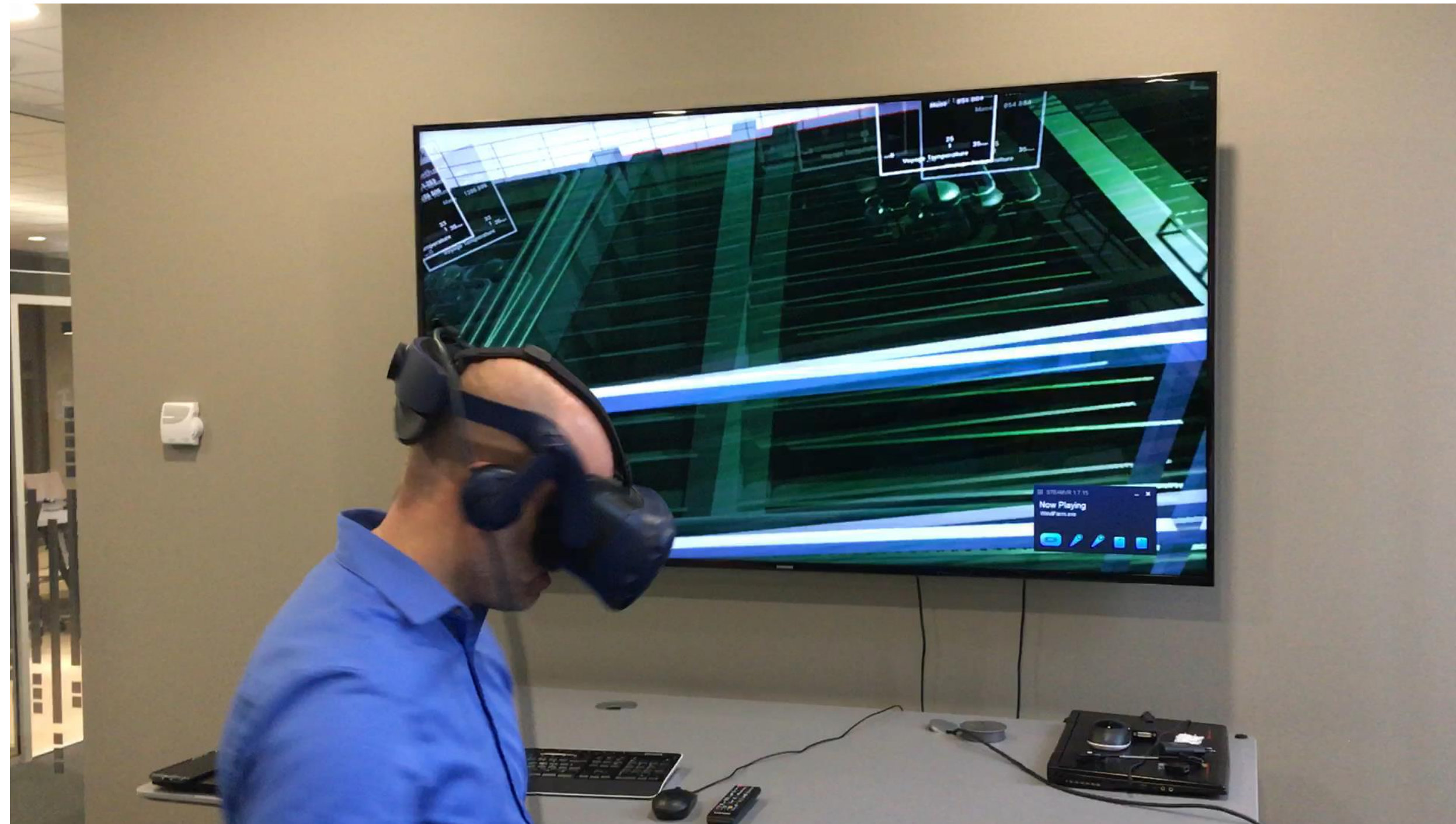
The screenshot displays the 'Bow Trajectory' application interface. At the top, it shows the vessel name 'Bow Trajectory' and its location 'HOUSTON - 27.09.19 - TEXAS CITY - 08.10.19'. Below this, there are three columns for 'Master' (Sakari Veseljaervi), 'Operator' (Tan Vignarson), and 'Agent' (Odfjell USA (Houston) Inc.). A table on the left lists 'Scheduled berth rotation' with columns for 'L/U #', 'Cargo', 'Charterer', and 'MT'. The main area features a satellite map of a port facility with numerous white storage tanks. A blue line on the map indicates the vessel's current position and planned path.

L/U #	Cargo	Charterer	MT
L #2019071	Propylene Oxide#12224	LYONDELL CHEM COMP HOUSTON	2038.53
L #20190712	DIETHYLENE GLYCOL	Oxyde Chemicals Inc.	1000
L #20190713	MEG#11306	Oxyde Chemicals Inc.	2000

Port Collaboration is a cloud-based app that gives all Odfjell employees overview of vessel's current and planned port activities on their mobile device

Connected VR-Rooms from multiple locations

Experimented with VR room since 2018



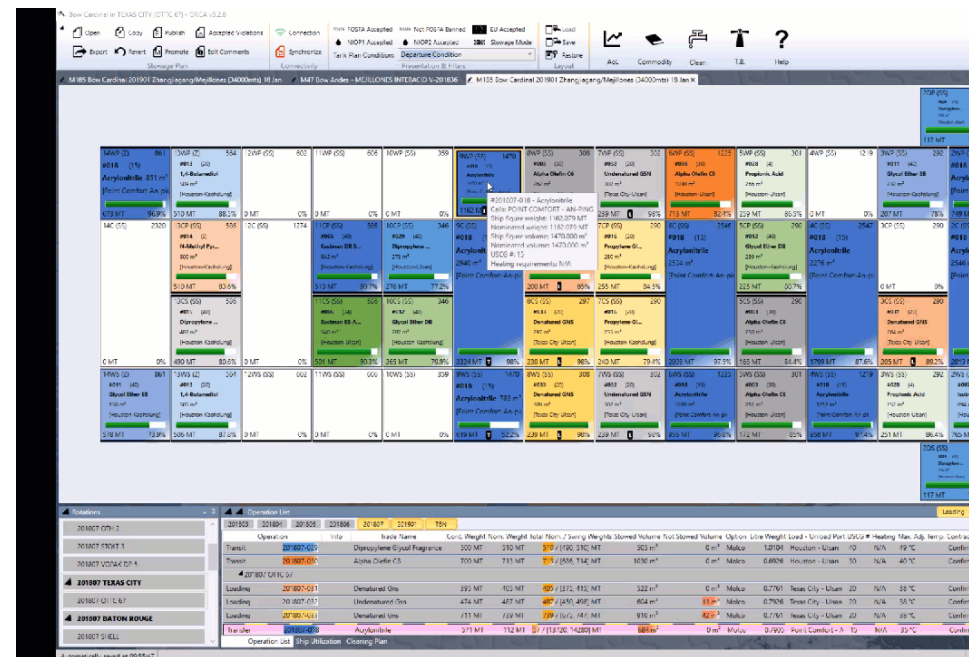
Voice and Avatars interaction
from three different offices

VR models for two vessels

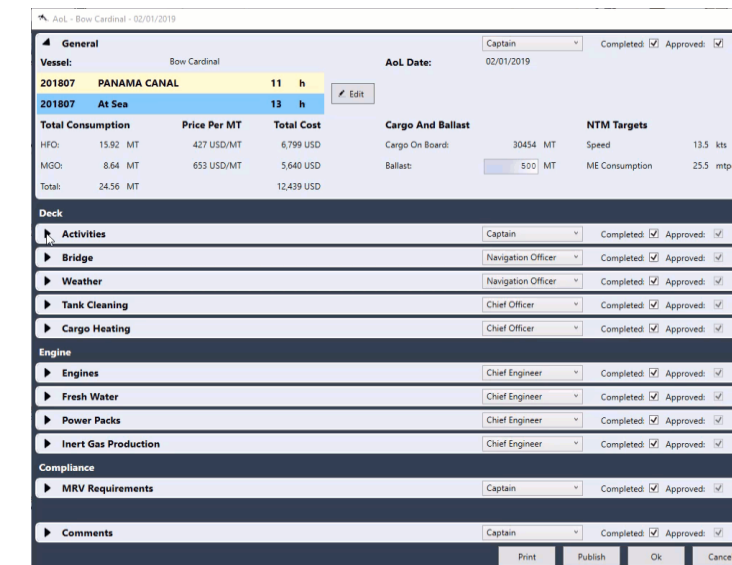
VR engine changed from UNITY to
UNREAL

More Digital Optimization

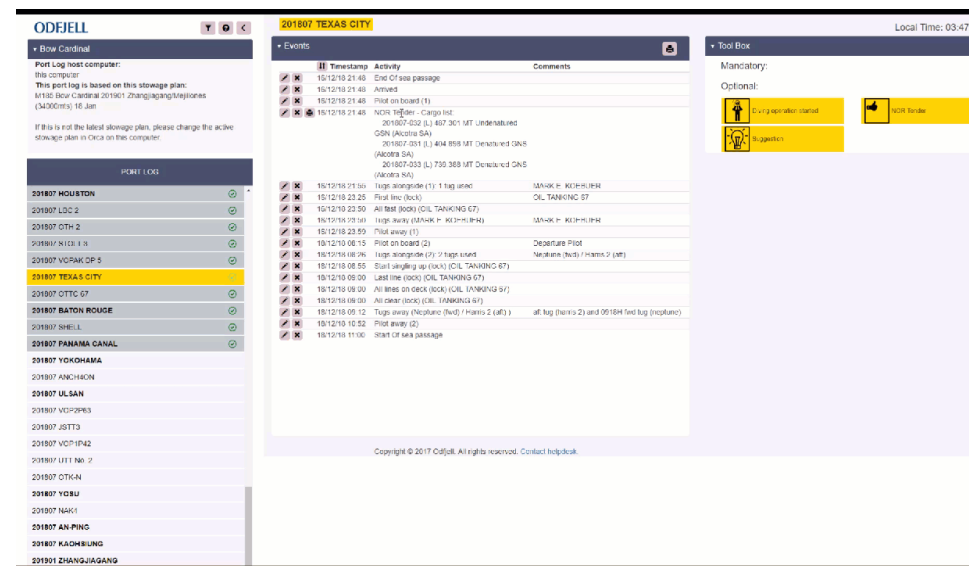
Odfjell have a portfolio of about 20+ internally made digital solutions



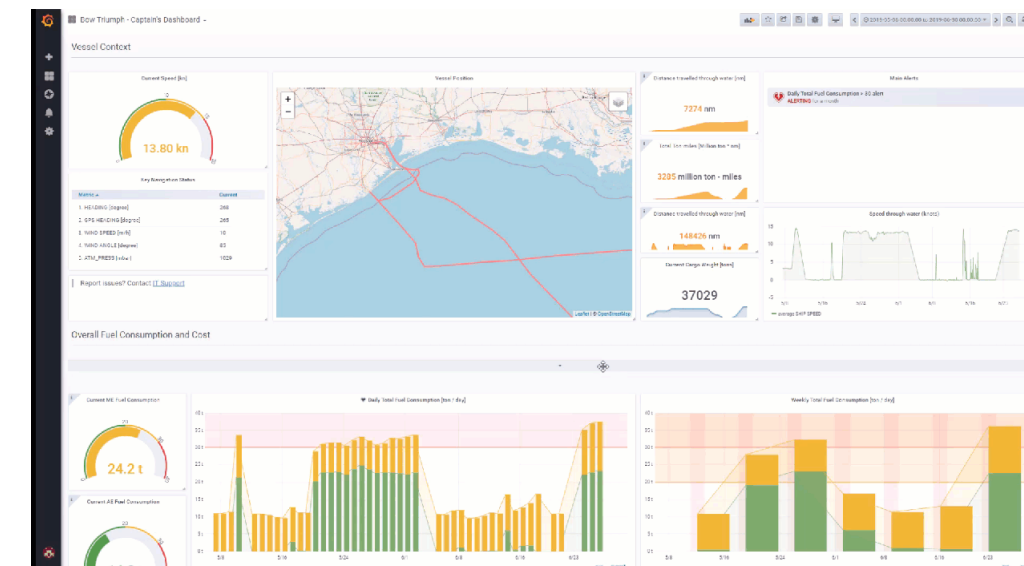
ORCA is a Stowage application that ensures safe stowage and high utilization of tanks on our vessels.



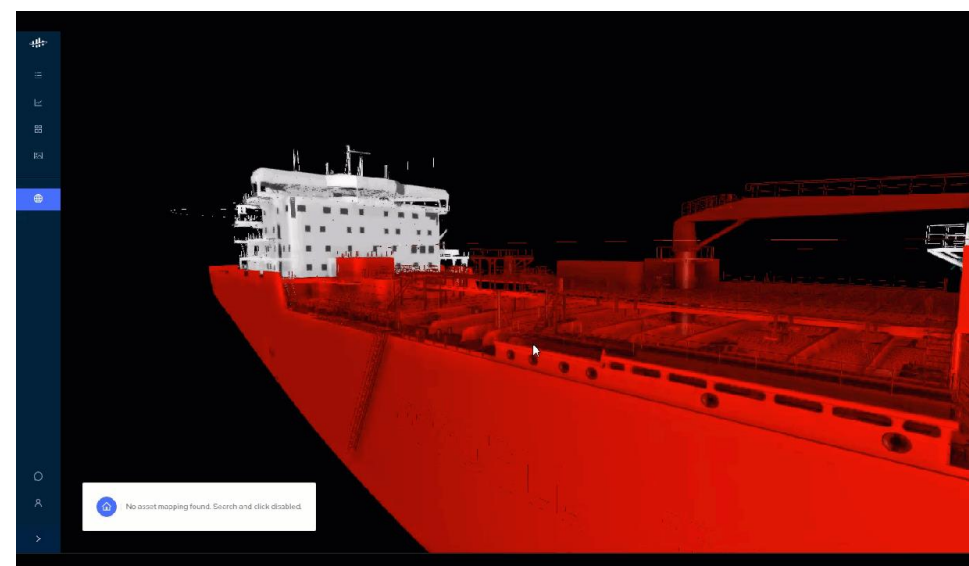
AoL Abstract of Daily Log is a reporting tool with UX optimized for the Ship Management Team's daily reporting



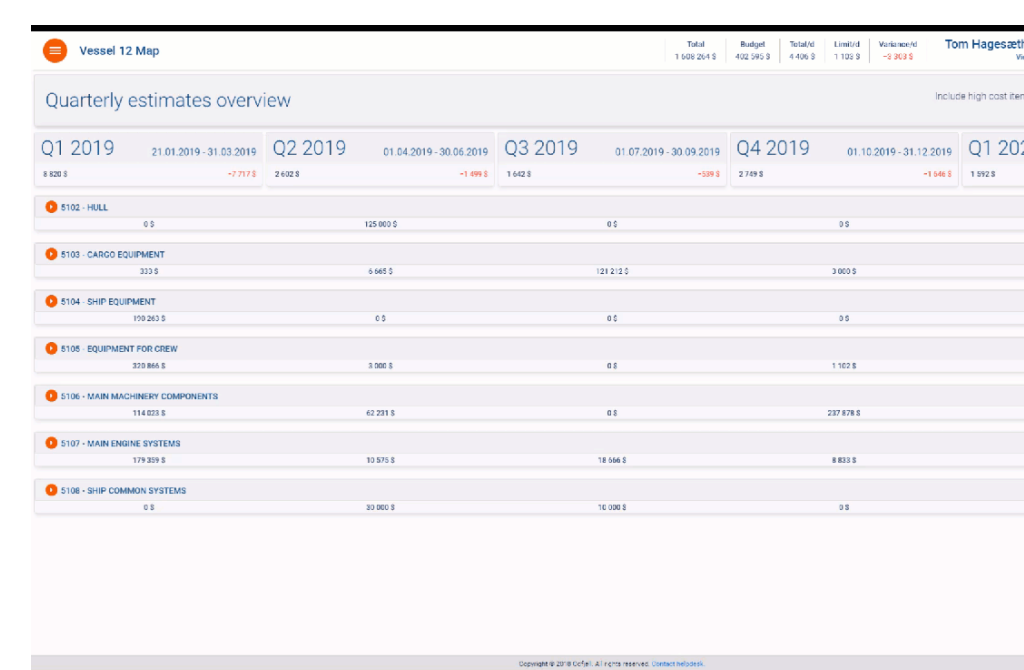
Port Log is a Port Activity application to assist crew in reporting of activities in ports.



Advanced Vessel Monitoring is Real time sensor monitoring using Grafana



Cognite is used to contextualize sensor data and 3D models in a Asset-Hierarchy



12 map is a cloud based twelve months rolling wave budget planning tool for captains and superintendents

Lesson Learned



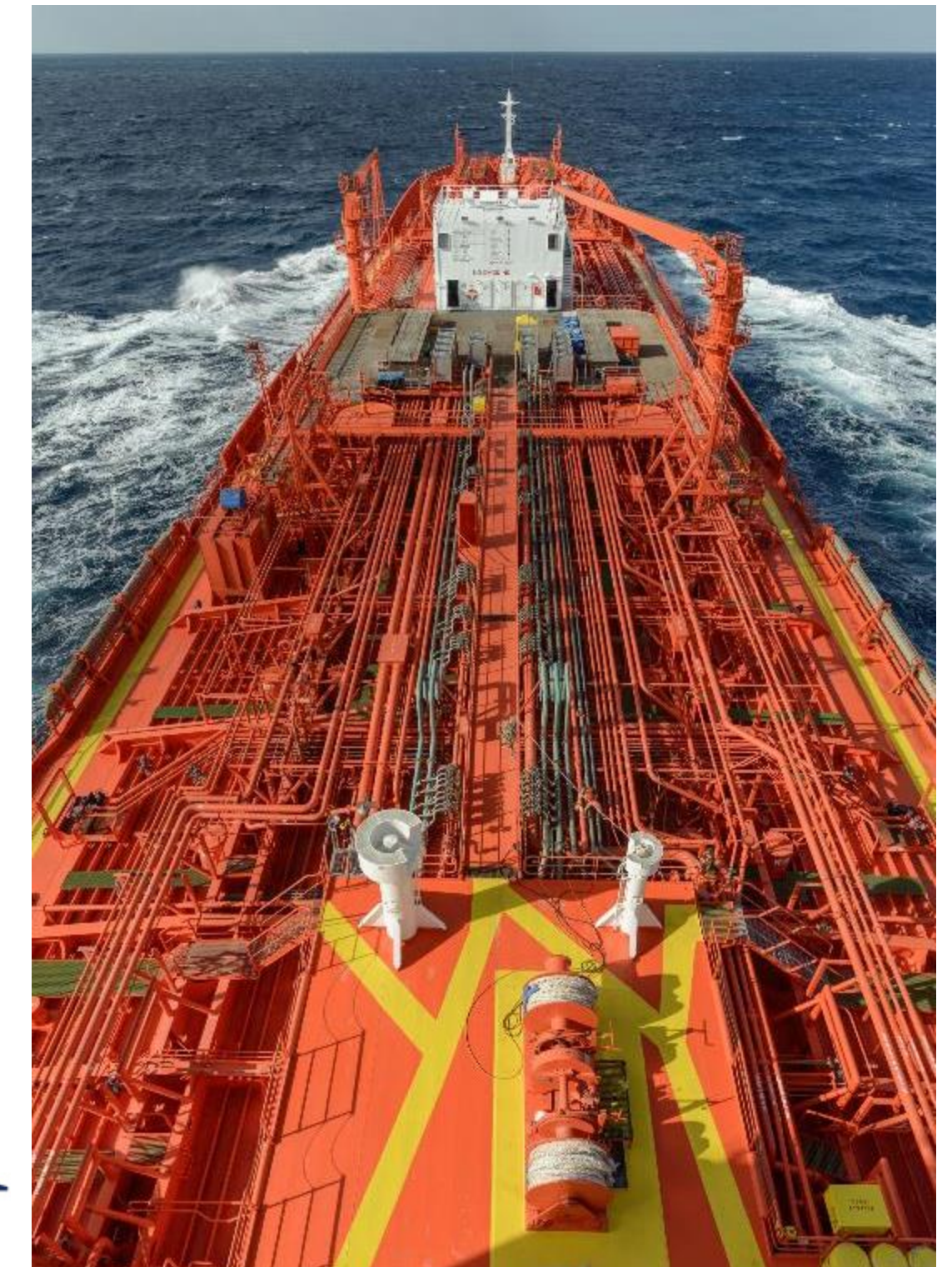
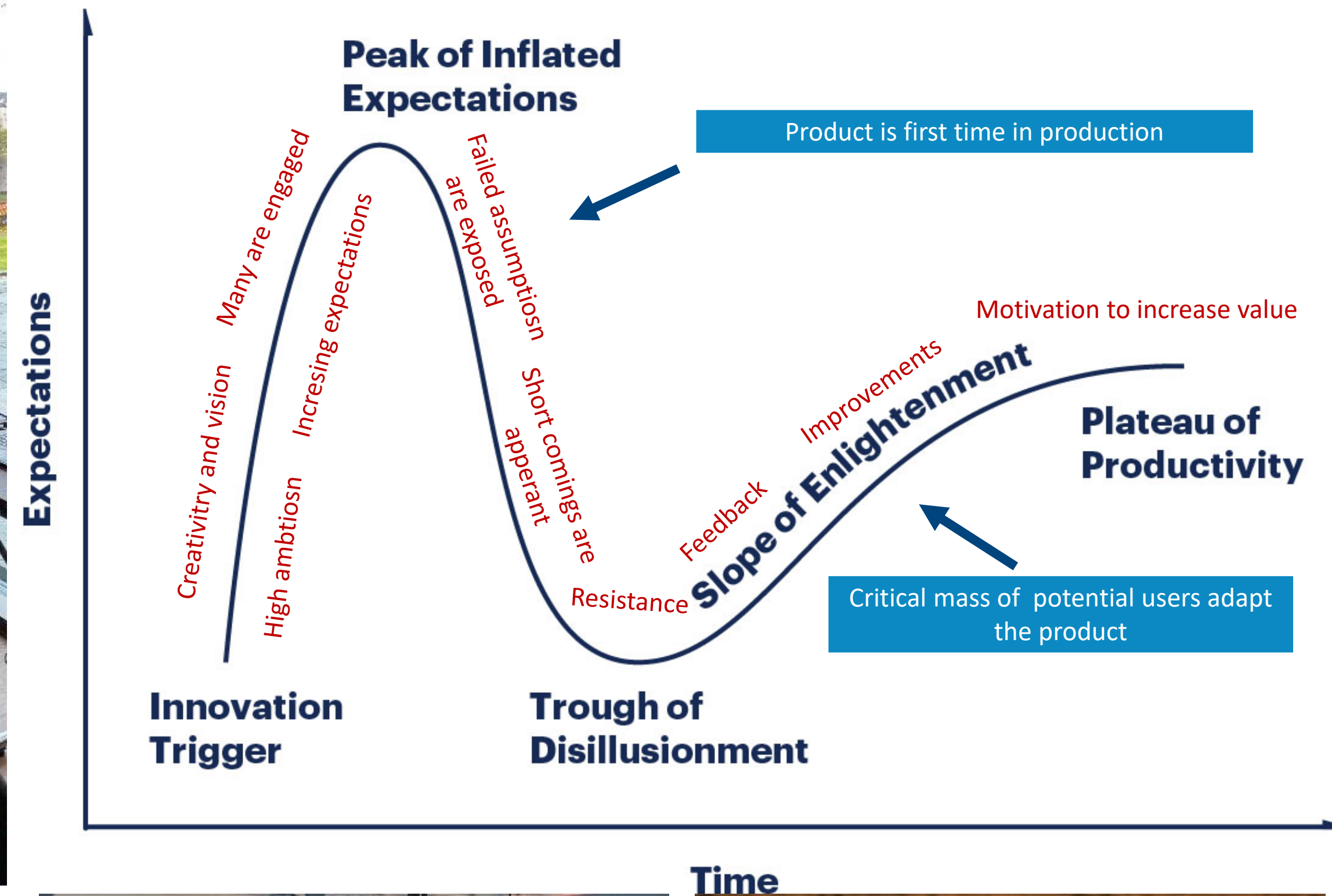
You can **not** outsource nor delegate digitalization or digital transformation. You should aim to turn every leader in the organization into a passionate digital leader that own the choices of how they will digitalize their part

Bergen October 2019
Product Owner Kristoffer Ramstad explaining use of ORCA Abstract of daily Log (AoL) in our October officers conference.

Digital Product Owner Engagement Curve

Lesson Learned

The Product owners initiates the creation and owns the continuous business outcomes of the digital products



Anchor Ownership
 Explain role and anchor product ownership throughout the business line

Resilience
 Give Product Owner massive support with first go-live

Add value
 Continued to adapt product based on product owner feedback

Terminate
 Products with continued low user adoption should be terminated or re-evented

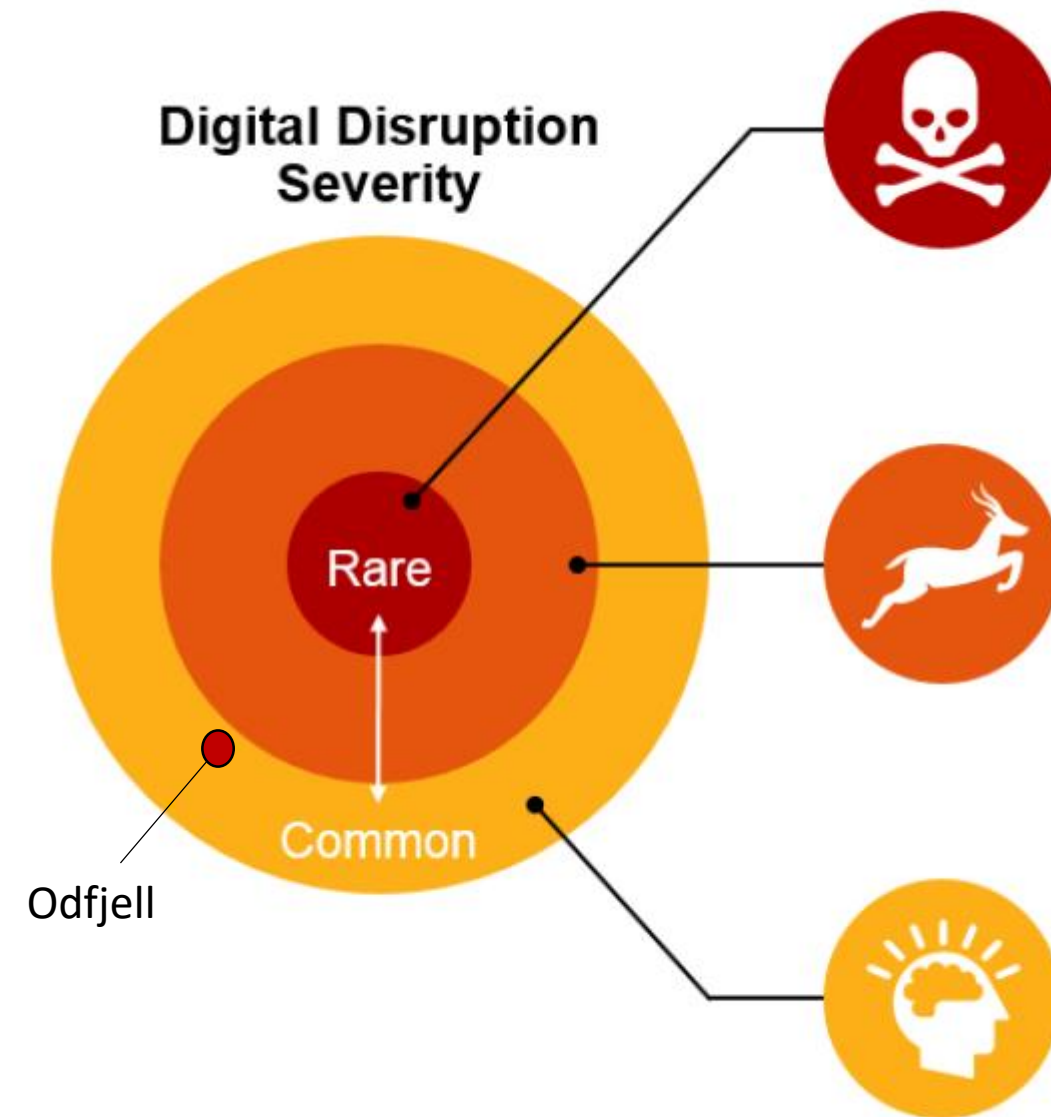
Is Product Owner Engagement and Digitalization Capabilities enough to fuel transformation?



Bergen November 2019
The Odfjell Digital Innovation group (DIG)

Mind the Hype ...

Many research and consulting firms exaggerate digital disruption to elevate the importance of their narratives and to gain attention.



1. Digital substitution - Situations in which digital replaces physical products or services

Destroy Industries

2. Digital Darwinism - the application of digital to create new business models and value propositions that do not resemble those of traditional competitors

The weak perish

3. Digital assimilation - The application of digital to make incremental improvements to value propositions, products and services, and business models

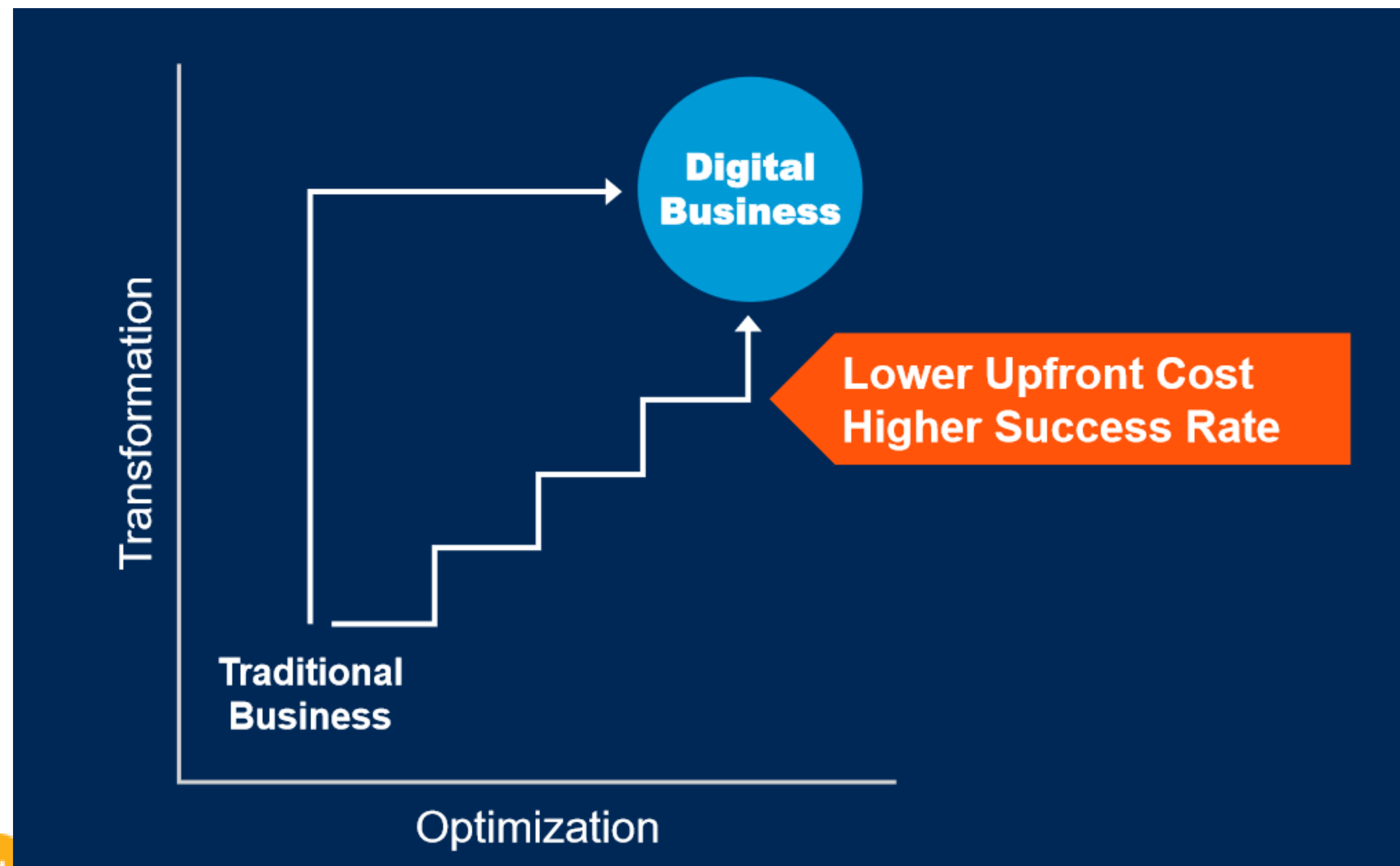
Competition Intensifies

Gartner

Apostles of digital doom prescribe transformation to digital business as a survival imperative. Measure competitive **intensity** to determine the correct strategic response.

Taking small steps to optimize and transform is OK

Small Steps Involve Lower Costs and Risks



Gartner

Drive Radical Efficiency

Augment the Core

Move Into an Adjacent Space



- Optimize existing revenue through digitalization
- Convert internal capabilities to products and services and look for an adjacent space
- Experiment to Transform to new revenue in small steps
- Connect Customers to your digital eco system



It's not all about Technology

In a digitalized world collaboration means exchange of data and ideas to use them in them in new and innovative ways



We have mutual interest in preserving a living and viable shipping cluster

1. **Continuous Digital Transformation** is needed for survival
2. **Digital dexterity** is developed through autonomy and mixing of Business and IT acumen
3. You **cannot outsource** nor delegate digital transformation
4. **Product Owners** much be continuously and massively supported
5. Taking **small steps** to optimize and transform is OK in Digital Assimilation condition

Thank you.

Torbjørn Lussand, VP Corporate IT
torbjorn.lussand@odfjell.com
Mobile +47 97044459

Tom Hagesæther, Manager Digital Products
tom.hagesaether@odfjell.com
Mobile +47 91193409



ODFJELL