

Toyota Logistics Services Norway AS



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BETTER WAY



Toyota Parts Center Norway (TPCNO)



Arne Larsen
Daglig leder



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Effektiv logistikk avgjørende for vår konkuransekraft

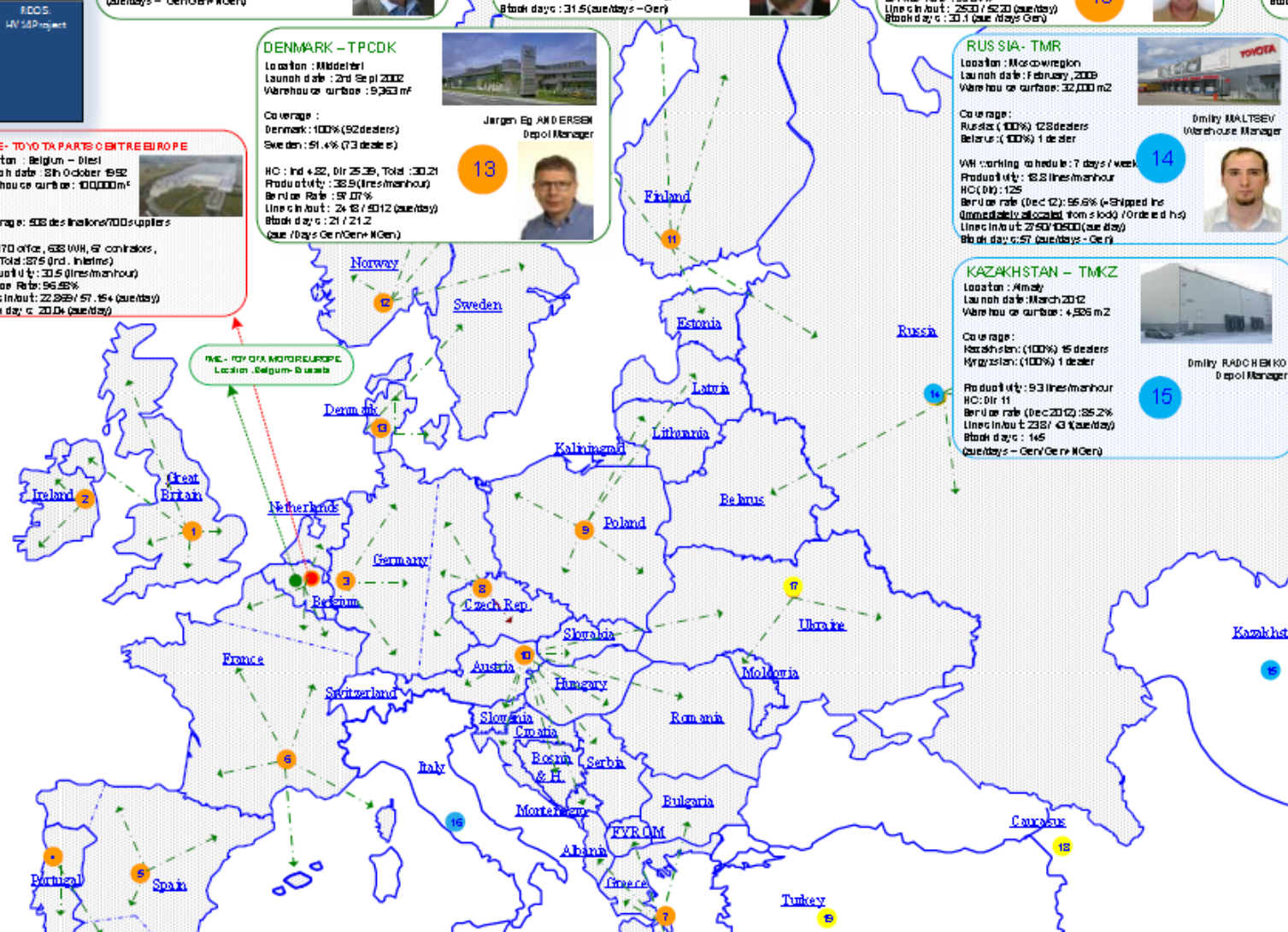




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PL21 Familien

Familien



ISRAEL - UML	
Location: Yvoire	
Launch date: b.c	
Warehouse surface: 7350m²	
Coverage:	
Israel: 100% (25 Togo is dealer)	
(1 Lexus dealer)	
	AES DR AMMO
Product: 13.2 lines/month	
WC: m4, Bir 15, Toilet 15	
Berlin rate 55%	
Lines in sub 7651103 (see day)	20
Block day: 34.5	
(see days - Gen/Gen - WC Gen)	

Toyota Part Center Europe (TPCE)



Størrelse:

- Lager = 100,000 m²
- Kontor/Adm 2.000 m²

Ansatte:

- Lager : 383
- Kontor/Adm: 193

Operasjoner:

- Kl. 05:50 – 22:00 (2 skift)

Beholdning:

- Lagerførte P/N +/-230.000
- Lagerdybde 20 arbeidsdager

Daglig volum:

- Inn 18,000 linjer
- Ut 45,000 linjer(inkl. 14,000 til forh.)

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- Areal
11.000m²
- Lagerførte P/N
60.000
- Ansatte
48 (42 W/H + 6 kontor/adm.)
- Lagerdybde
20 kalenderdager

Leveringskjeden til Norge



TPCNO

— Inngående leveringer pr. uke

Containere



Transporttid: 9-11 dager
Antall: 13-15 stk pr uke

Truck / full semi



Transporttid: 2 dager
Antall: 2 stk pr uke

Fly



Transporttid: 1 dag
Antall: 4 stk pr uke



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TPCNO



Mottak



Sortering/innlegg



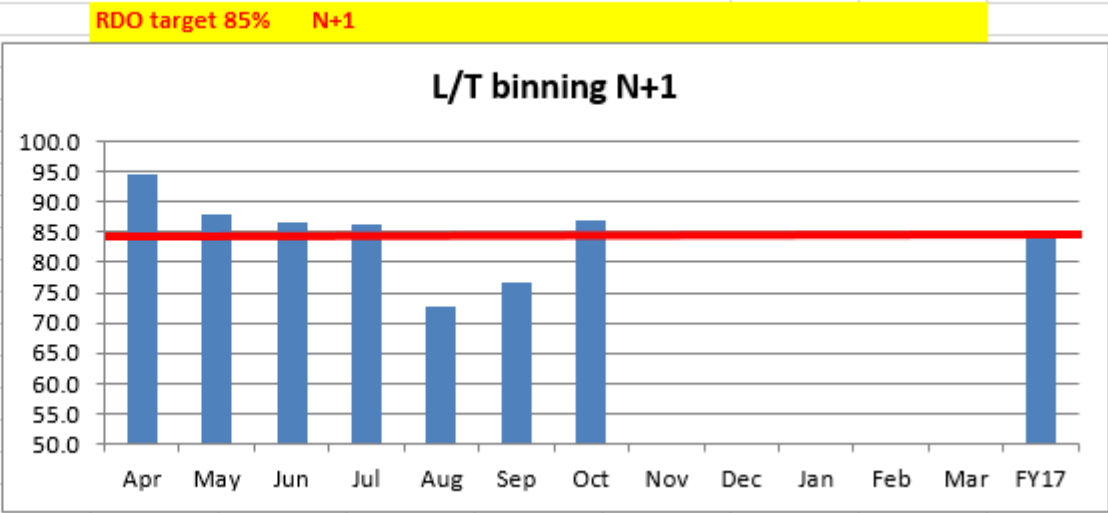
Forsendelse



Plukking

Intern behandlingstid
N+1 => 85%

Internal L/T binning			
	%		
	N	N+1	Res
Apr	68	27	94.6
May	59	29	87.8
Jun	52	35	86.7
Jul	58	28	86.2
Aug	42	31	72.7
Sep	40	36	76.7
Oct	54	33	87.0
Nov			
Dec			
Jan			
Feb			
Mar			
FY17	53	31	84.5



Servicenivå = 96,64%

Toyota logistikkflyt



Drammen, Norway
Toyota Parts Center Norway
60.000 lagerførte artikler
Leveringsgrad 96,64%



Diest, Belgium
Toyota Parts Center Europe
230.000 lagerførte artikler
Leveringsgrad 98,86%



Hasteordre
Sendes fly
Små og medium
= før kl.10:30
neste dag



Hasteordre
Sendes truck
Store + volum
= 2 dager
transportid



Lagerordre (etterfylling)
Sendes shortsea (båt/container) =
9-11 dager transportid

La oss starte da!



Leveringskjeden til Norge



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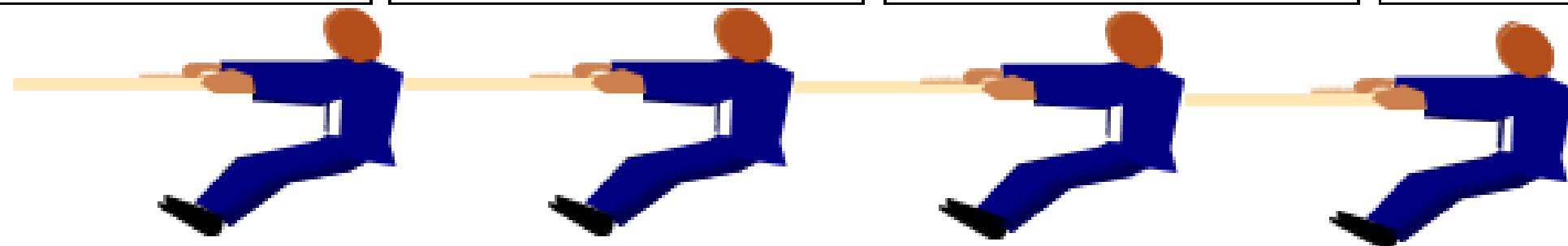
P
U
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L

TPCE

TPCNO

Forhandler

Kunde



Kundemottak



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Alternative transporter TPCE=>TPCNO



9-11 dager



2 dager



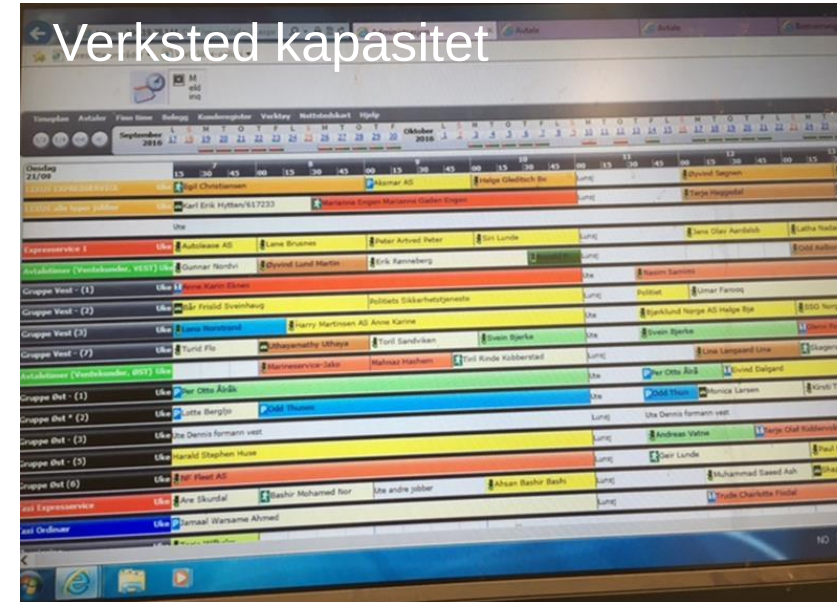
1 dag



Leveringskjeden i Norge



Kundemottak

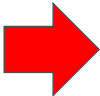


Allokering + plukk



S	Time	Allocat.	Description
-	13:09	4SW2-2D01160929	ALLOC SW2 SEVED
-	13:10	4SW2-1D01160929	ALLOC SW2 SESEG
-	13:11	HSW2-1D01160929	ALLOC SW2 DRA
-	13:12	4SW3-1D01160929	ALLOC SW3 DRA
-	13:13	4NOA11A01160929	NORGE 11A PREPICK
-	13:14	4NOA11B01160929	NORGE 11B PREPICK
-	13:15	4NS11AB01160929	NOR-11AB STORE VARER
-	13:35	4NO-VR201160929	NORWAY ALL ALLOC VR
-	14:27	4NOB11A01160929	NORGE 11A PREPICK
-	14:28	4NOB11B01160929	NORGE 11B PREPICK
-	14:29	4NO11AB01160929	NOR-11AB STORE VARER
-	14:30	4NO-VR301160929	NORWAY ALL ALLOC VR
-	14:40	4NOR-0801160929	NORGE 08
-	15:09	4NOR09A01160929	NORGE 09-A
-	15:10	4NOR09B01160929	NORGE 09-B
-	15:11	4NSV9AB01160929	NOR-09AB STORE VARER
-	15:55	4NOR10A01160929	NORGE 10-A

D=Delete C=Change X=Copy P=Print WA



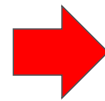
Sorting-packing

- lasting

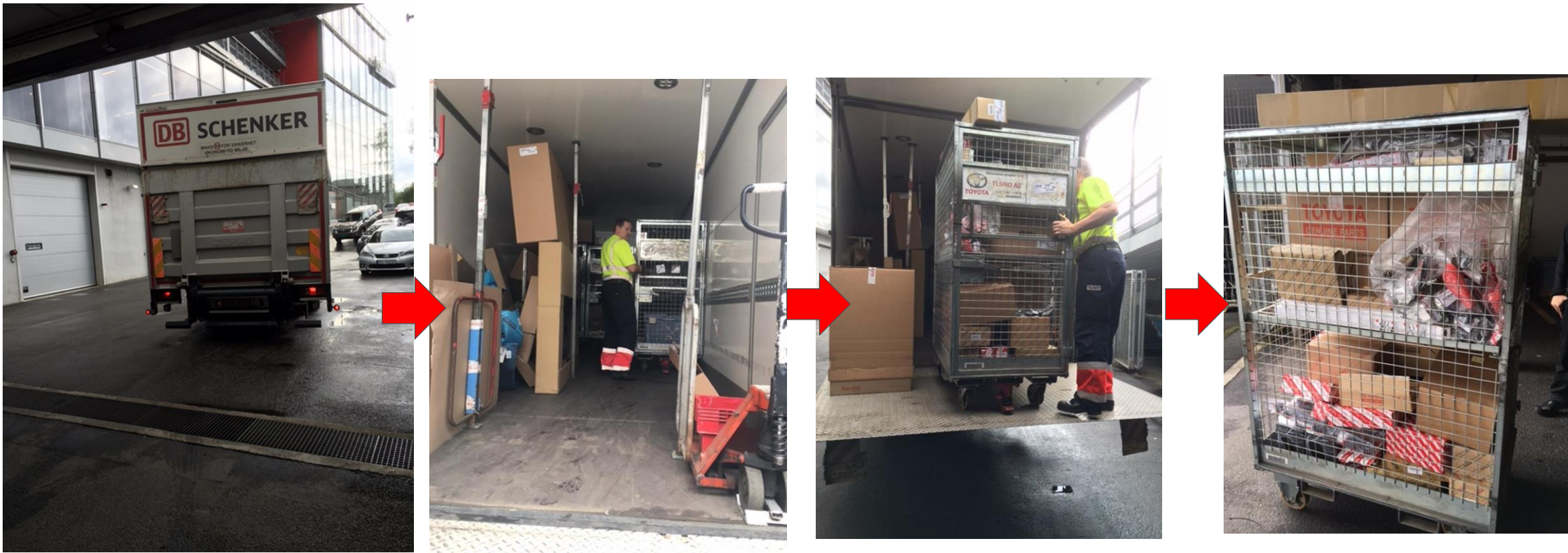


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Varelevering



Hæ, mangler du noe?,
ring Arne i Drammen



Deler til Express produksjon



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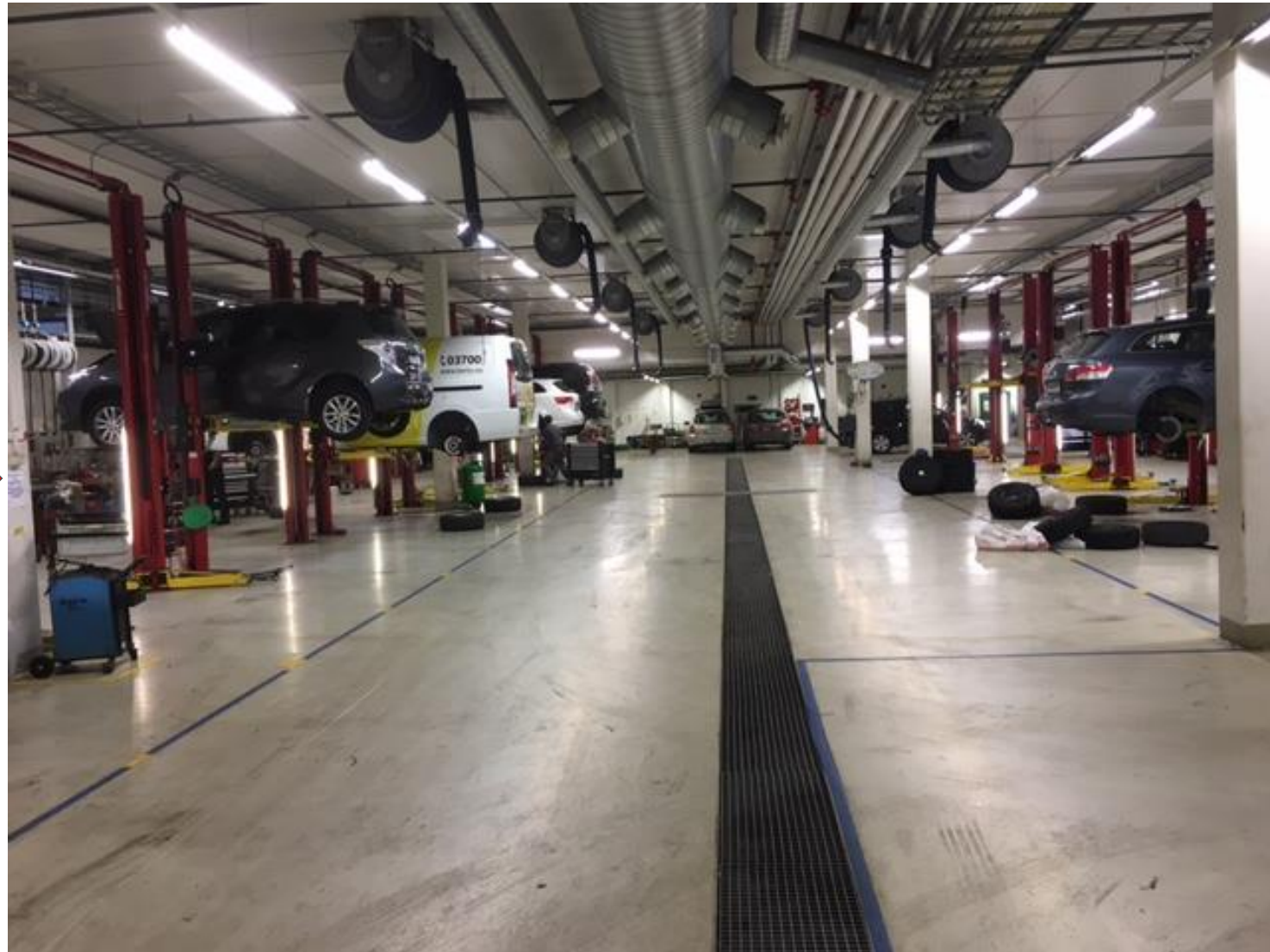
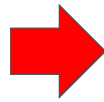
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Deler til mekanisk dagsproduksjon

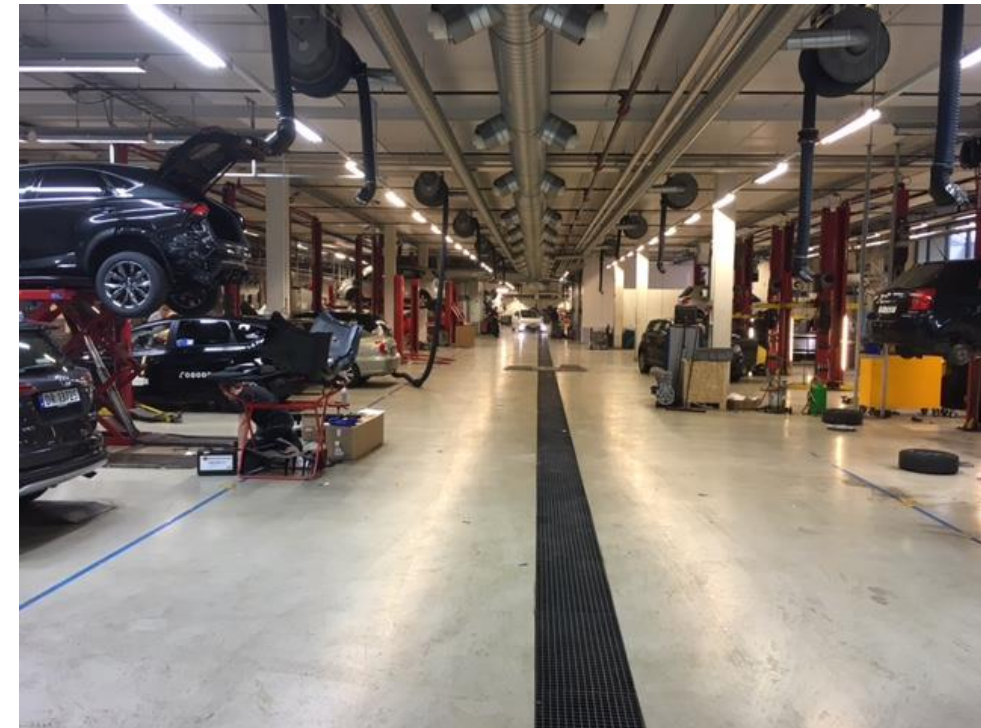
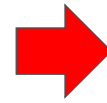


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Deler til nybil klargjøring



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Kundelevering



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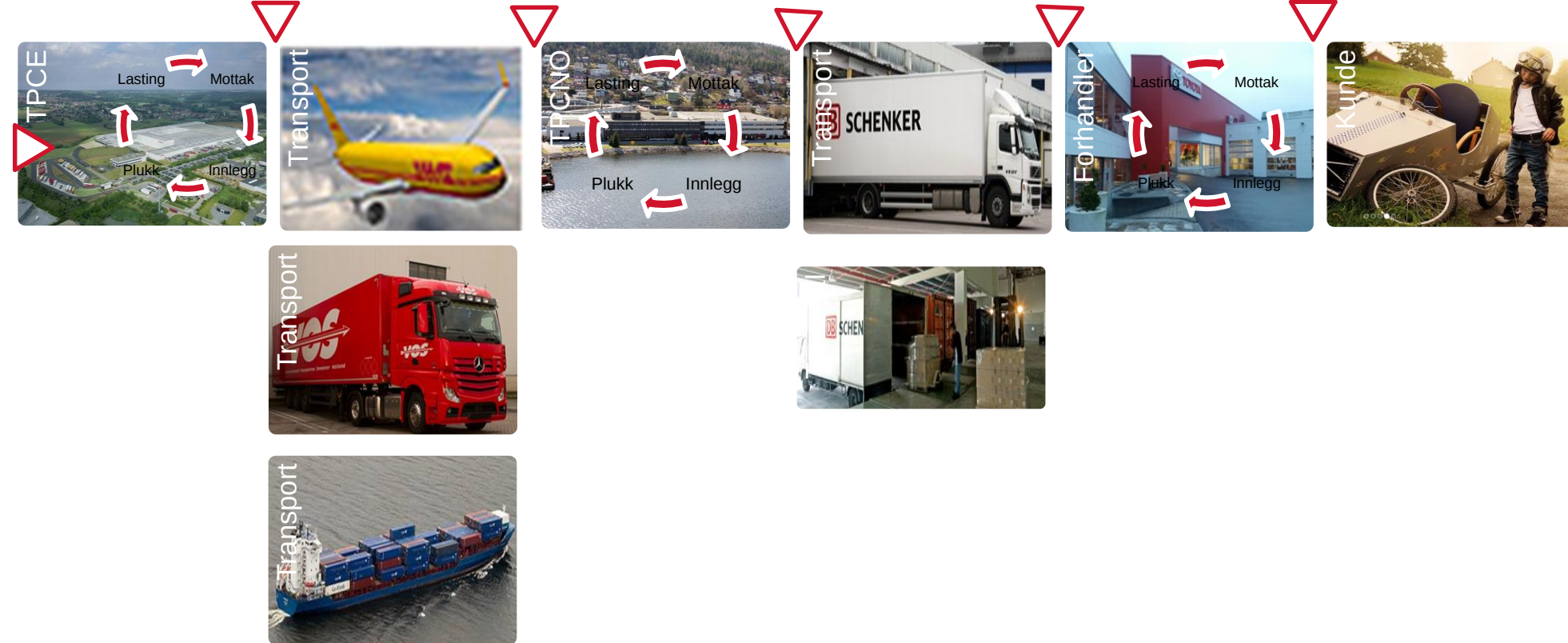
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Leveringskjeden



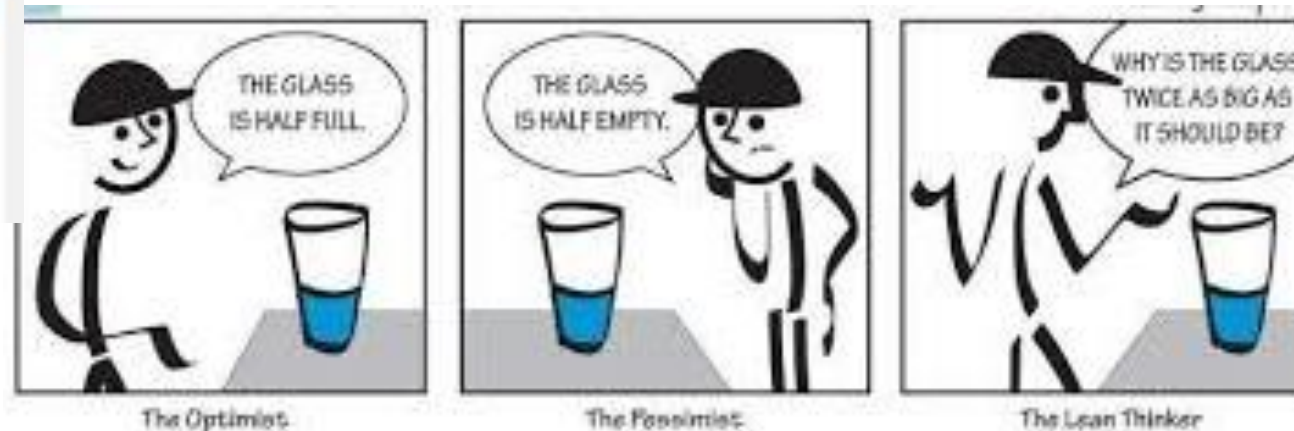
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Build a Lean Culture

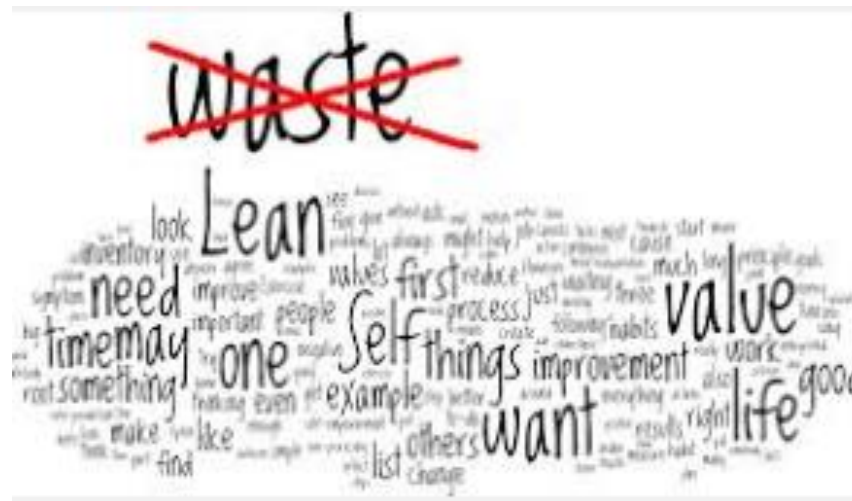
- Establish Lean Systems**
- Train Frontline Teams**
- Get Results**
- Develop Lean Leaders**





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Hvordan jobber Toyota med LEAN ?





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LEAN skapes gjennom;

- **bedriftens kultur**
- **myndiggjøring av ansatte**
- **ansattes endringsvilje**
- **forenkling av arbeidsprosesser og flyt.**



Origin of TPS



Sakichi Toyoda

Developed Type-G Toyoda Automatic Loom that automatically stopped when thread broke.



Kiichiro Toyoda

Kiichiro introduced JIT into the vehicle body production line at TMC (Koromo Plant).



Eiji Toyoda

He urged to increase workers' productivity to compete with European and US car producers.



Taichi Ohno

Supported by Eiji Toyoda, he helped to establish the TPS, and built the foundation for the Toyota spirit of "making things".



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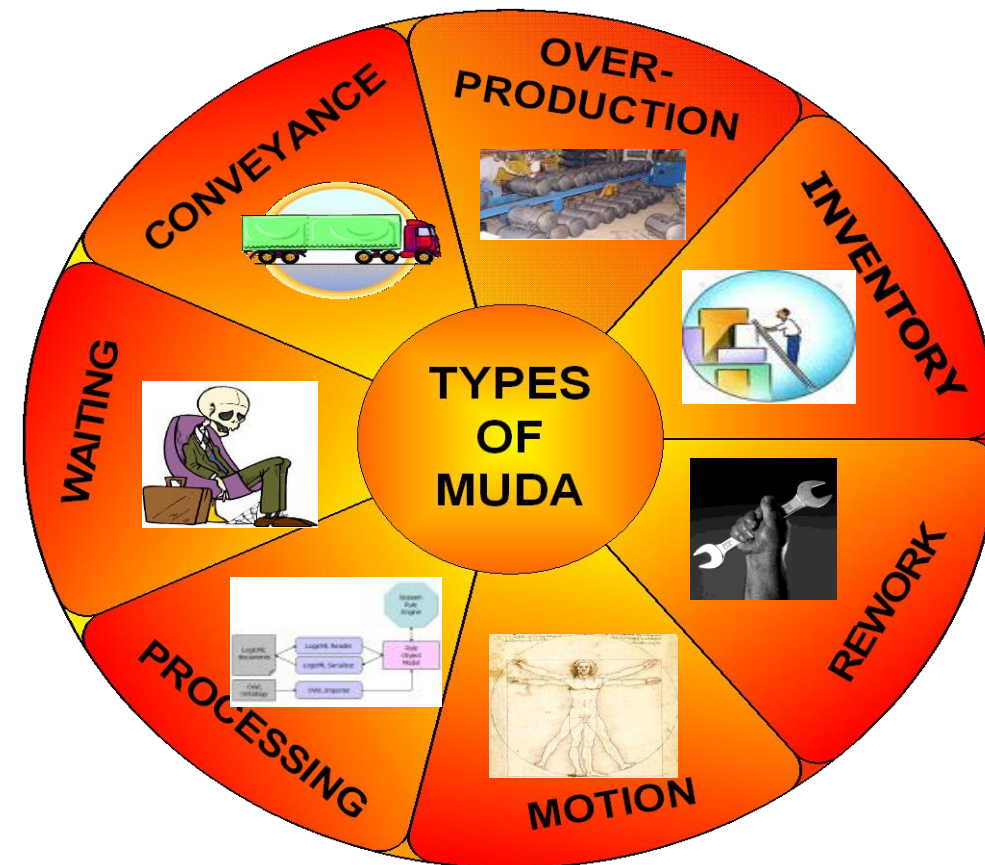
Elimination of muda



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- **Kaizen** = “*Continuous Improvement through the Elimination of Waste/Muda*”
- **Muda** = “*Any activity which does not add any value*”
 - “Work is a series of processes where any process or part of a process which does not add any value, is to be considered as waste/muda”
- **Categories of muda (T.Ohno):**
 - Muda of *overproduction*
 - Muda of *inventory*
 - Muda of *rework*
 - Muda of *motion*
 - Muda of *processing*
 - Muda of *waiting*
 - Muda of *conveyance*



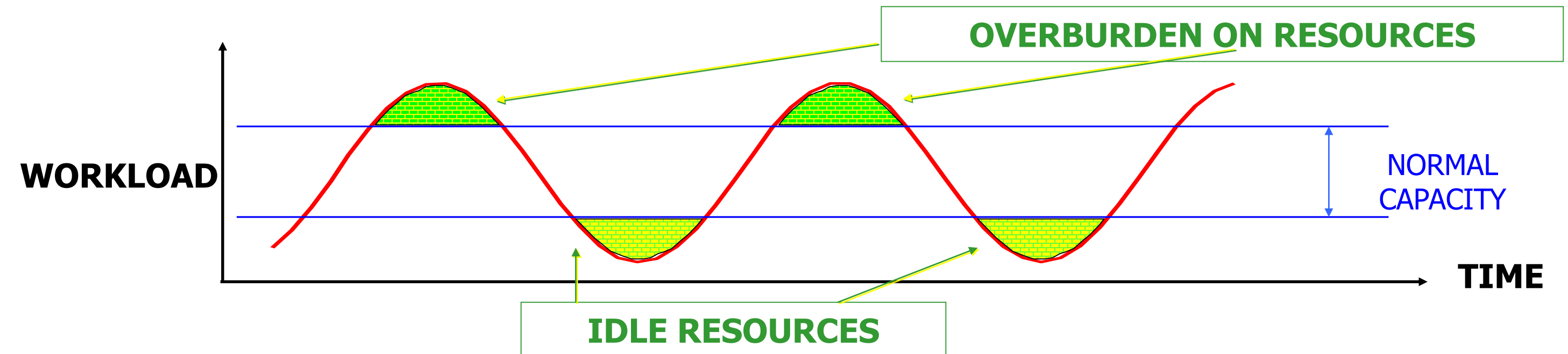


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Muda / Muri / Mura (3MU's)

- **Muda: waste**
- **Muri: overburden or strenuous work**
 - People: safety & quality suffers
 - Machinery: risk of breakdowns and defects
- **Mura: irregularity or unevenness**

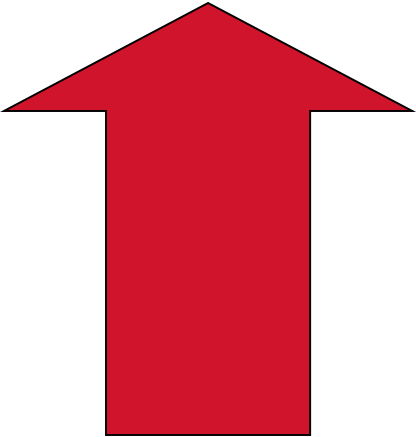


Før situasjon



Ankomst TPCNO (Drammen)

Dag	Man	Tir	Ons	Tor	Fre
Biler	5	0	2	3	2



Avganger fra TPCE (Europalageret)

Dag	Man	Tir	Ons	Tor	Fre
Biler	2	3	2	3	2

Sjø (Shortsea)



Ukentlig feeder Rotterdam – Drammen

Containere tilgjengelige fra mandag kl. 07:00



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Nå situasjon



Ankomst TPCNO (Drammen)

Dag	Man	Tir	Ons	Tor	Fre
Cont	(1)2	3	3	2	2



Avganger fra TPCE (Europalageret)

Dag	Man	Tir	Ons	Tor	Fre
Cont	2	3	3	2	2 (1)

Spørsmål/kommentarer ?



Takk for oppmerksomheten