

Company Introduction



Kotug Smit Towage













Digitalization



Tug Energy Efficiency - In Practice

<u>P</u>eople

- Awareness
- Appraisal
- Training ICT skills

Propulsion

- Design Tug
- Bollard pull tug
- Asset type

<u>P</u>lanning

- Lay berth and Route Tug
- Data information
- Dynamic





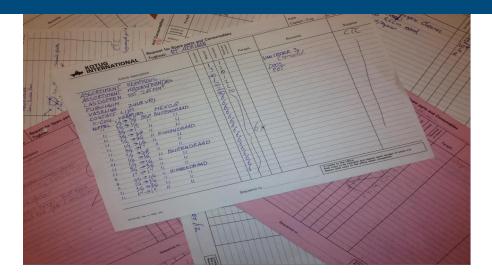




History

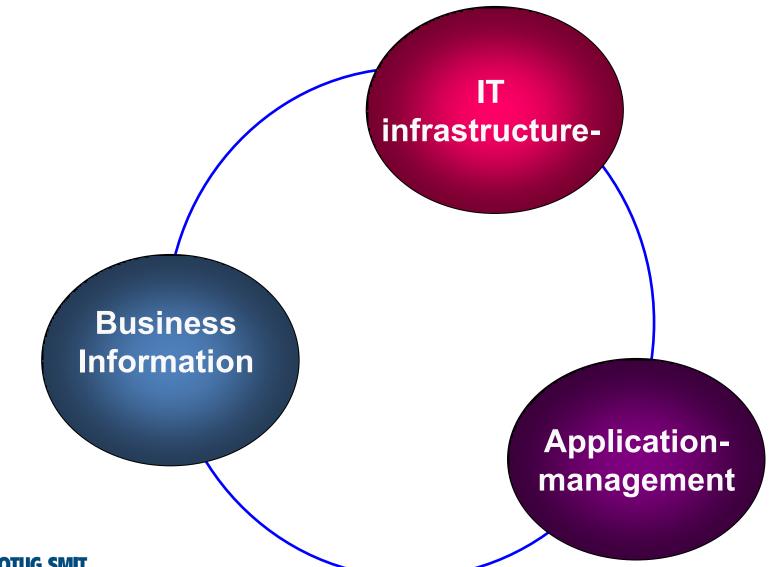






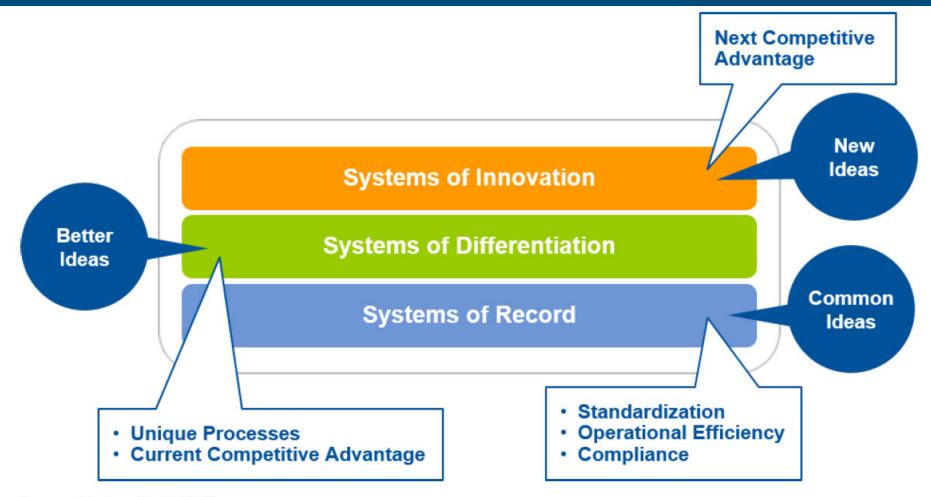


ICT Domains





Digitalization



Source: Gartner (April 2015)



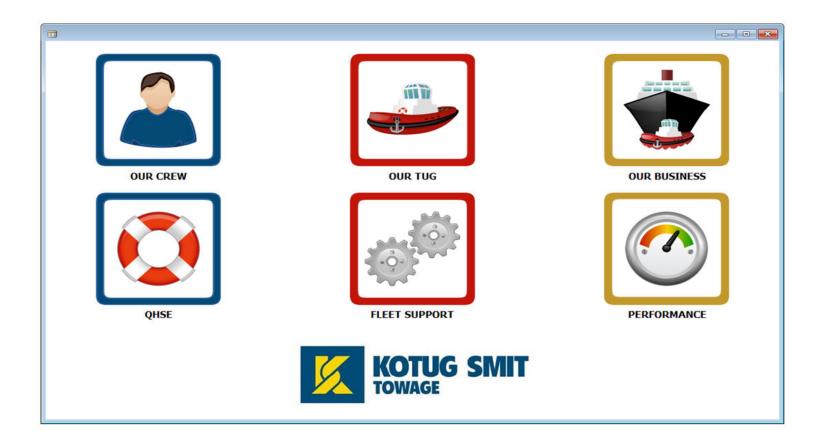
Microsoft Dynamics NAV / Logic Vision / Kotug Smit

Substrain 3989 APL Co. (Germany) - Customer Ledger Entries Customer Posting No. Document Document Document Date Due Date Open Com Description C Substrain 3989 1 03-09-15 Invoice 991500030 08-09-15 22-09-15 Image: Application of the strain	Posting Date 03-09-15 03-09-15 03-09-15 03-09-15	5 08-09-13 5 08-09-13	Date Type Document No. 4		1500030 8700 Customer 3989 1500030 8000 Customer 3989 1500030 1400 Customer 3989		Business Unit 1-HARBOUR TOWAG 1-HARBOUR TOWAG 1-HARBOUR TOWAG 1-HARBOUR TOWAG	e HBG E HBG	Bunker surcharge Escorting from H	Sale Sale	000	Vess 079 ZP B 079 ZP B	el BULLDOG BULLDOG BULLDOG	Amount 9, 110 EA 9, 110 EA 9, 110 EA 9, 110 EA	Debit Amount 9, 110 EN 9 110 EN	1 110 EV	∬ s				
▲ 3989 ★ 03-09-15 Invoice 991500030 08-09-15 22-09-15 ▲ APL CHANGI-03-09-15 ▲ 3989 23-09-15 Payment 181 23-09-15 23-09-15 ▲ 029-032 1								Posting	Docum	ent Document	t Do	ocument					n De:	scription			5
	<				•	39										_			1-03-09-15	;	^
																					~



- Operational Efficiency
- Compliance

Tug Vision





- Unique Processes
 Current Competitive Advantage

Tug Vision <--> Port Systems

ile Ed	it View	v Tools Wine	dow Help			Kotug Hamburg	- Microsoft Dynamics NAV Classic -	[Port A	Authority	Forecastj						- 1	-		
	X	à 🔒 🏼 🕯	≥ ×.	<i>P</i> 🗊	🚱 🗃 🚺 📢														
Incoming Hide Line Type Jobs Port					KOTUG 🗹	Hide Line 🗹	02-02-16 - 04-02-16 ✔	0	utgoi	ng / Shiftir	ng	KOTUG 🗹		Hide Line ✔		02-02-16 - 04-02-			
fide ine Ty	pe Jobs F	Port	Туре	ETA Date	Ship Name	Gross Tonnage Destination	Agent	ł	Hide Line Type	Jobs Port	Type	ETD Da	te Ship Name	Gross Tonnage	Departure	Agent			
1	1	HAMBURG	Expected	03-09-1	5 GRANDE FRANCIA	56,738 OSWALD	DELTA ^	+>	0	HAMBURG	In Port	02-02-1	5 GRUMANT	15,868	HANSAPORT 2	JUNGE & CO			
1	1	HAMBURG	Expected	03-09-1	5 LANTAU ARROW	14,290 EURO	CHINA SHIP.		0	HAMBURG	In Port	02-02-1	6 PAGE AKIA	7,519	ATH 9-10	SEAGO LINE			
		HAMBURG	Expected	03-09-1	5 HANSA LIMBURG	18,327 CTA ALLG.	HAPAG-LLOYD		0	HAMBURG	In Port	02-02-1	6 GRANDE GABON	47,658	OSW 7-8	GRIMALDI			
1	1	HAMBURG	Expected	03-09-1	5 COS FAIR	26,829 HRB-2 MIDGARD 2	RSH SHIPPING AGENCY		0	HAMBURG	In Port	03-02-1	5 PACIFIC CALM	23,269	KALIKAI	KALI-TRANSPOR	RT		
1		HAMBURG	On River	03-09-1	5 MSC SPLENDIDA	137,936 STEINWERDER 1	PPS		0	HAMBURG	In Port	03-02-1	5 EVER LIVING	100,254	CTT 4	EVERGREEN			
1	1	HAMBURG	Expected	03-09-1	5 MR ARCTURUS	30,042 OILTK BLUME	VOPAK												
	1	HAMBURG	Expected	03-09-1	5 APL CHANGI	151,963 RIVER	DELTA												
1	1	HAMBURG	Expected	03-09-1	5 BLUE STAR	7,256 DOW BUTZFL.	NEPTUN STADE												
1	1	HAMBURG	Expected	03-09-1	5 APL CHANGI	151,963 CTA 4	DELTA												
1		HAMBURG	Expected	03-09-1	5 LARISSA	9,962 ATHA 10	DELTA												
		HAMBURG	On River	03-09-1	5 MSC REGULUS	141,635 EUROGATE 2-3	MSC GERMANY												
1	i i	HAMBURG	On River	03-09-1	5 DUTCH FAITH	3,419	H. C. MEYER												
1		HAMBURG	On River	03-09-1	5 HYUNDAI TOGETHER	141,770 CTA 2	HYUNDAI												
							~												
						-													
				o	. 9631981 2		E1					O No	9385879 GRUMANT		From Berth HAN		-		
				ame		Agent DELTA	CX					ngth		0 M	Orders	11-			
						Orders	GL					dth		2 M	01005				
		NEW		Tonnage			ST			NEW		oss Tonnage.							
	SH	IP INFO		ht			T1			SHIP INFO		aught		9 M					
	CRE	ATE JOB		veight Tonnag hrusters Powe			нн			CREATE JOB		adweight Tonni w Thrusters Poi		8 IN					





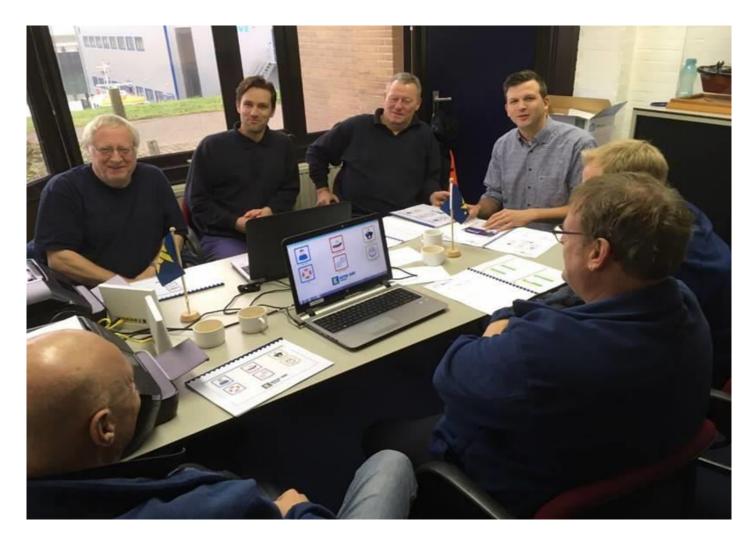
Tug Vision - Planning Board

												Smit Towa													+	• -	0
Kotug Smit Towage Rotterdam BV		12-1-1 22:00	12-1-1 23:00		13-1-1 1:00	13-1-1 2:00	13-1-1 3:00	13-1-1 4:00	13-1-1 5:00	13-1-1 6:00	13-1-1 7:00	13-1-1 8:00	13-1-1 9:00	13-1-1 10:00				13-1-1 14:00			13-1-1 17:00		13-1-1 19:00			13-1-1 22:00	13-1 23:
K OFFSHORE																											
RT ADRIAAN																		REST HOU	RS - 8 hrs								
EUROPOORT																											
SD REBEL -24H-	MANNED - 2	.4 hrs	DAL KAF	IOO - Bui D	<mark>AL K</mark> AROC		AL	FA <mark>ITALIA - \</mark>	/opak Agen	ce				CA	ROLINE RUS	£											
SD SEAL -24H-	NYK DENE	B - Nippon Y	use	TRUE DF	R <mark>EAM -</mark> Trans	s	LOTT <mark>A - Ve</mark>	tom Agencie	BV																		
FAIRPLAY 21 -24H-		THALASSA	ELPIDA - Ev	er TRUE DF	EAM - Tran:	S	C LOTTA - Ve	rtom Agenci	es BV	S	AM <mark>SKIP CO</mark>	SAM			A												
SMIT EBRO -24H-		ZALIV AD	ANTAGE AF	ROW - Vop	ak A THALA	THALASSA	ELPIDA - Ev	ergreen Neth	erlands BV	-				1													
FAIRPLAY 24	RS - THAL	ASSA ELPID	A - Ev	RUE DREAM	- Trans-Saa	r B S	C L <mark>OTTA - Ve</mark>	rtom Agenci		SEVE	CEMI	L BAYULGEN	- CldN	REST HOU	IRS - 10 hrs												
SMIT CHEETAH	ALDERDIJK		ADVAN	TAGE ARRO	W - THALT	THALASS/	ELPIDA - Ev	ergreen Neth	erlands BV					REST HOU	IRS - 10 hrs												
SMIT ELBE			ANAM	IGEL M C	AP SAN MALI	E	R. INDIA - Cr	<mark>os</mark> s Oo									STENA HO	LLANDICA			REST HOU	RS - 10 hrs					
SMIT SCHELDE			DAL KAR	00 - Burg	DAL KA S	TIH		TRANS CAP	RF									[ONGA SAP		MINERV	ZOE - Vopa	REST HO)URS - 7.7	hrs		
SMIT SEINE			ANAN	IGEL M	AP SAN MAI	E E.R. IND	A - Cross A	LFA ITALIA -	Vopak Age	ncies B										MINER	/A Z		REST H)URS - 7.7	hrs		
SMIT HUDSON		ZALIV BA		REST HOU	RS - 10 hrs															5TI	NA BRITANI	VICA - Stena					
SMIT PANTHER	F	CONTRACTOR OF STREET, STRE	LPIDA - Eve	BEST HOU	RS - 10 hrs													6	IILOS - <mark>Sted</mark>	er Group							
SD STINGRAY	HANN ESSB	REST	HOURS - 8	hrs								1						STEFAN	SIBUM N	ICA - Nir						REST HOU	RS - 8
RT EVOLUTION	NYK DENE	3 - Nippon Y	usen H GF	ETE	CAP	E	R. INDIA - Cro	s Ocear		REST HOU	RS - 8 hrs							MILC)S - Stede <mark>r G</mark>	roup BV							
KOTTERDAM																											
FEXELBANK -24H-		DISCOV	ERY B		(SWE	DISH REEFE	1		В	OW FA <mark>GUS</mark>	Euro Nor		C	INGA JA	M	A	EL								
▶ UNION 11 -24-						CL ANTW	RP - LBH Net	н			tan		PTI H <mark>U</mark>	ANG HE -	MID FAI		HAMB BC	W SEA - Euro	Nordic Log	SAPPHIF	Æ						
UNION 7	BOMAR	MARS - Euro	Nordic L			CL ANTW	ERP - LBH	-			[BOW F <mark>AGUS</mark>	• Euro Nordi	REST HOU	IRS - 10 hrs												
THAMESBANK	BC	MAR MARS	- Euro N	REST HOU	RS - 10 hrs								NOR	SEREN	MID FAL		НАМЕ		0 KIRI - S5 I	lorth	NORDSER	ENA - Seatra					
ZP CHALONE		REST HOU	RS - 8 hrs							FINNM	AST F		F	PTI HUAN	GI	NGA JA	MADHA	BOW SE	A - Euro No	SAF PH	RE					REST HOU	RS - 8
SD JACOBA		DISCO	VERY BA				SWE	DISH REEFE	R - Sei	REST HOU	RS - 8 hrs																
BUIZERD													1	COBAL													
TYFOON																			JC	KIRI							
MULLER-1	<																										5



Unique Processes
 Current Competitive Advantage

People make the Difference





Implementation Digitalization - Future (1)

Advice Planning Tool

- Tool currently being developed
- Common Dispatch: Experience Based Planning
 Idea : To add prediction via AIS/Big Data/Algorithms

Goals:

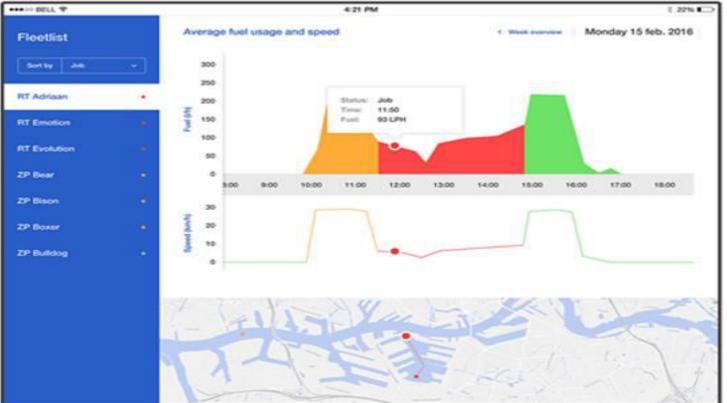
- Better future ETA and ETD
- Constant update planning vs actuals
- Historic Forecast # of tugs
- Fuel saving due to efficient planning (layberth, routing, eco speed)



Implementation Digitalization - Future (2)

Dashboard currently being developed

Fuel consumption, data analysis, tug optimization





Next Competitive Advantage

Systems of Innovation

What's Next ??

