



Industry 4.0: Extension of machinery lifecycle, component re-use and servitization

Technologies and business transformation to take advantage of the rental market

Asier Agirregomezkorta, ULMA Servicios de Manutención S. Coop.

THE COMPANY





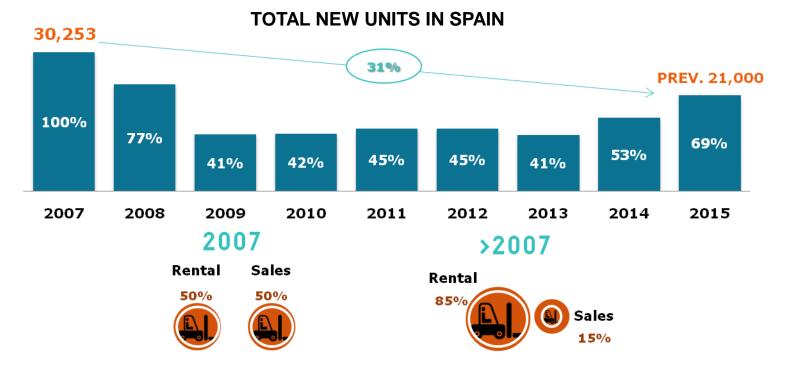
CURRENT BUSINESSES

- SALES (NEW, 2ND HAND)
- RENTAL
- SERVICE
- SPARE PARTS





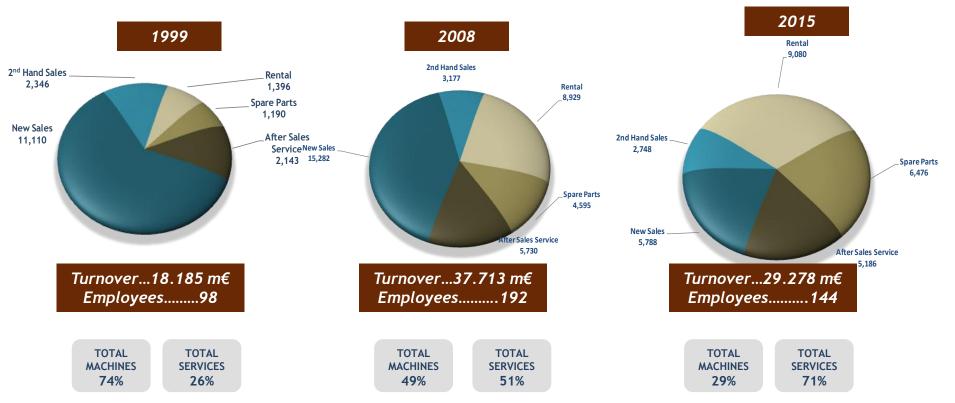




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THE SHIFT (BUSINESS EVOLUTION)

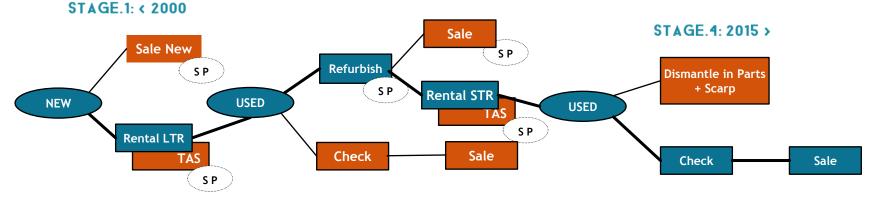




THE SHIFT (BUSINESS EVOLUTION) PRODUCT LIFECYCLE



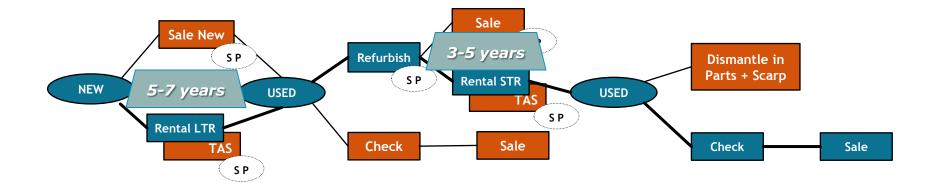
STAGE.3: 2007-2015



STAGE.2: 2000-2007

THE PRODUCT LIFECYCLE FOR ULMA





STRATEGY (RENTAL): INCREASE BUSINESS PROFITABILITY THROUGH THE EXTENSION OF THE PRODUCT LIFECYCLE AND THE REDUCTION OF THE COSTS IN THE OVERALL PROCESS (OPTIMIZE ASSETS)

DEVELOPING THE NEW "STR" BUSINES



VALUE PROPOSITION

- ACCESS AND USE OF THE FORKLIFT FROM 1 DAY TO 2 YEARS,
- COMPETITIVE PRICES, QUICK RESPONSE (PROXIMITY), WIDE NUMBER OF FORKLIFTS IN PERFECT CONDITIONS FOR PEAKS OR SEASONAL DEMAND
- INCLUDES: FULL SERVICE, USAGE MONITORING AND INSURANCE



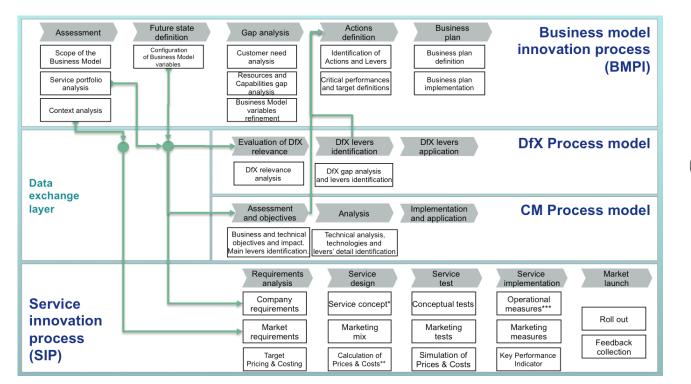
DEVELOPING THE NEW STR BUSINESS: T-REX EUROPEAN PROJECT



NOVATIVE STRATEGIES FOR RENOVATIO

AND REPAIR IN MANUFACTURING SYSTEMS

Università degli Studi di Brescia







Integrated process Models for BM definition

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EXAMPLE 1: FORKLIFT TRUCKS REFURBISMENT PROCESS











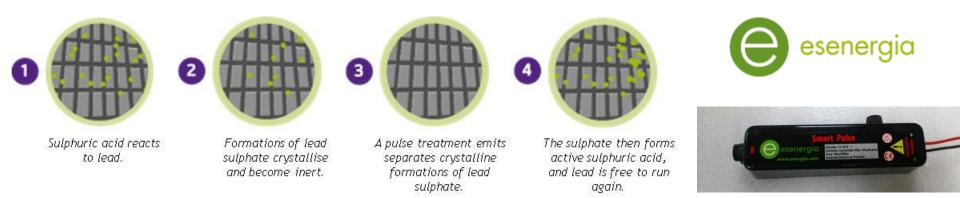
EXAMPLE 1: FORKLIFT TRUCKS REFURBISMENT PROCESS





EXAMPLE 2: BATTERY REGENERATION + INFORMATION

Energy accumulators start to sulphatate, since the very moment of their manufacture, and the process speeds up with every load. Sulphates become glass formations, and cover battery cells, thus reducing the capacity of the battery and even making it useless. The regeneration technology separates those glass formations from lead, and make the battery recover almost all of its previous capacity.

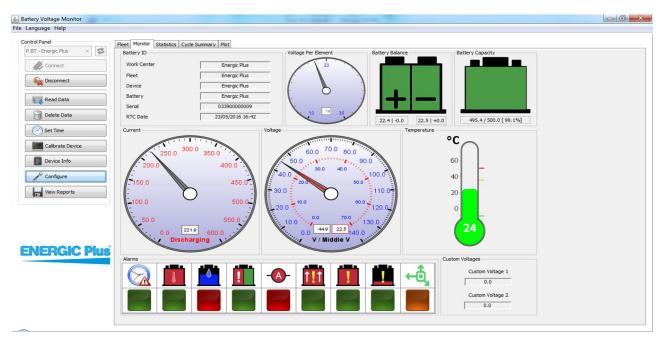




EXAMPLE 2: BATTERY REGENERATION + INFORMATION



85% OF THE FORKLIFTS ARE ELECTRIC





EXAMPLE 3: STANDARIZATION AND CUSTOMIZATION



FOUNDRY PREPARATION

EXHAUST PARTICLES CLEANING SYSTEM

BOTTON PROTECTION

COIL TYPE RADIATOR (SERPENTINE)

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STRATEGY DEVELOPMENT (SERVICE)



EXAMPLE 4: SAT ON-LINE AND CENTRALIZED AFTER SALES SERVICE MANAGEMENT

SAT ON-LINE

Servicemen GPS localization

Servicemen work planning IT Tool





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STRATEGY DEVELOPMENT (ORGANIZATION)

EXAMPLE 5: RENTAL BUSINESS MANAGEMENT + DAILY REPORTS





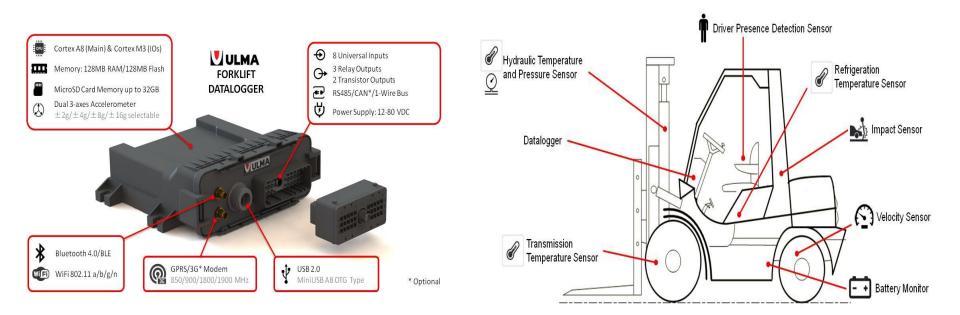
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STRATEGY DEVELOPMENT (ICT)

EXAMPLE 6: ULMA FLEET MANAGER





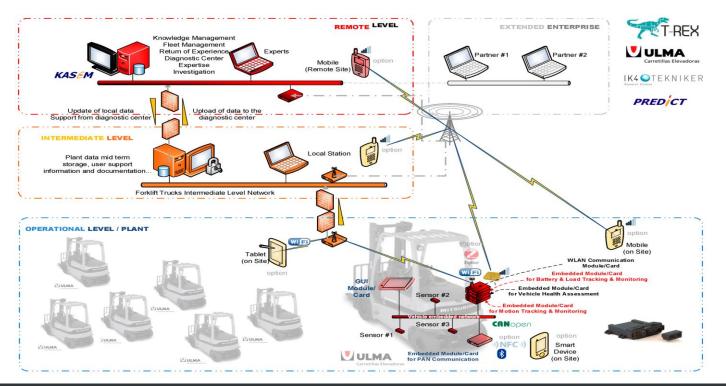
STRATEGY DEVELOPMENT (ICT)



EXAMPLE 6: ULMA FLEET MANAGER



KEY EXPLOTABLE RESULT - G3



STRATEGY DEVELOPMENT (ICT)



EXAMPLE 6: ULMA FLEET MANAGER





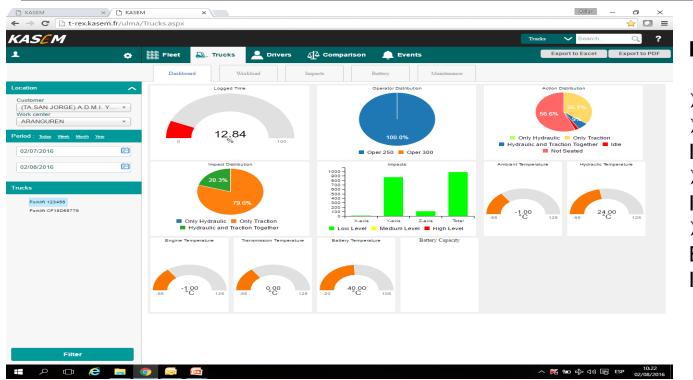






STRATEGY DEVELOPMENT (ICT)

EXAMPLE 6: ULMA FLEET MANAGER



BENEFITS:

COST REDUCTIONS
PRODUCTIVITY
INCREASE
SAFETY
IMPROVEMENT
LESS
ENVIRONMENTAL
IMPACT







FUTURE CHALLENGES

- LAUNCH TO THE MARKET THE NEW STR BUSINESS
- EXPLOIT ULMA FLEET MANAGER AND ESENERGIA PULSE (CBM + PREDICTIVE TECHNIQUES)
- DEVELOP TCO ASSESSMENT TOOL
- ▶ TEST "PAY PER USE" INNOVATIVE RENTAL SOLUTION







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THANK YOU