

Spare Parts Management:

Scientific research or hands-on improvements?





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Brief personal introduction

















Senior Consultant at Gordian Logistic Experts BV (2007-2019)



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Characteristics

- Service logistics
- Spare Parts Management
- Result driven; no reports
- Innovative
- Hard & soft approach
- 25 men employed;2 partners
- Many Young Professionals
- Department in South-Africa









Solutions

Innovation





















1. Trends & developments





Enables preventive replacements of parts before they fail, and to CODP shifts upstream in the supply chain. Status: able to detect when a part fails a few hours up to at most a few days in advance.



Enables to print spare parts on demand.

The number of third party service providers increases. Status: restricted to single components



Enables to continuously share updates on spare parts demand and supply, and to (proactively) intervene if needed. Status: focus was on transportation and physical distribution. Service control towers are currently being evaluated.



Enables focus on Total Cost of Ownership and aligned interests of OEMs and asset users. Market driven, both successes as well as failures*.

Status: OEMs offer service contracts and more and more take over service activities from users.

^{*} Thales, Océ, ASML, Philips, Infraspeed, Prorail, ECT, Toltunnel Terneuzen

2. Spare parts characteristics and strategies depend on installed base size



Small installed base

Small service network

B₂B

High-mission critical

High price

Complex systems

Large installed base

Large service network

B₂C

Non-mission critical

Low price

Standardized systems

Focus on spare parts!













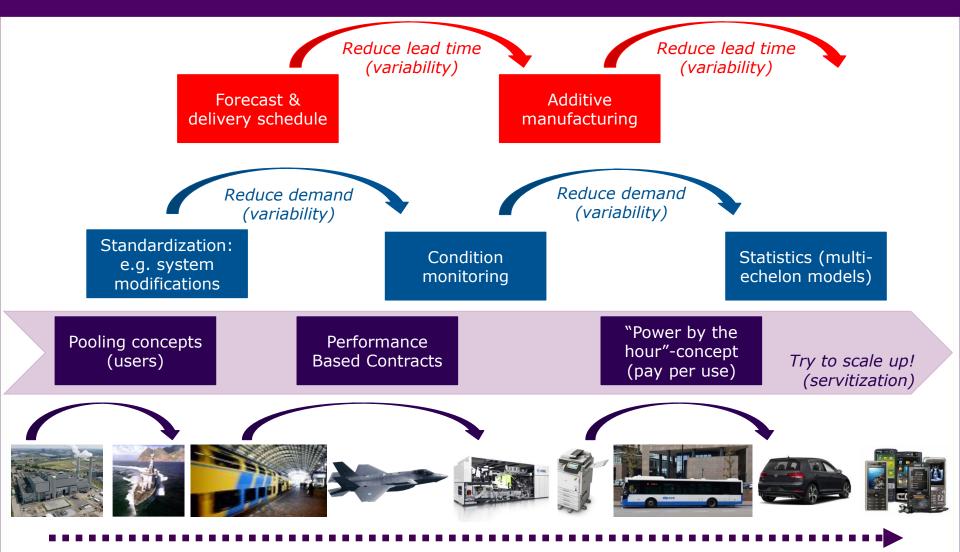






3. Spare parts management strategies





3. Spare parts management strategies





Unit price

lead times (e.g. forecast & delivery schedules)Synchronize operations,

Reduce variation in supply

- Synchronize operations, maintenance and spares planning
- Reduce demand through system modifications
- Try to scale up: pooling with other users or stock items upstream in the supply chain and use realtime condition monitoring information
- Rationalize decision making in 'decision tree'

- Automated process based on statistics, managed by exception
- Alternative: vendor managed inventories
- Standardization: reduce
 high number of 'duplicate'
 items (for OEMs: minimize
 configuration changes)
- Additive manufacturing: print non-critical parts on demand and reduce obsolescence issues

High

Low

Demand frequency

4. Research agenda *Bachelor projects*



Implementation of forecast & delivery schedules Reduce variation in supply • Try to scale up: pooling lead times (e.g. forecast & with other users or stock delivery schedules) items upstream in the Proactive planning Rationalized decision Synchronize operations, supply chain and use real of maintenance tree for critical slowtime condition monitorin maintenance and spares and spares & non-movers information planning Reduce demand through Rationalize decision Unit price system modifications making in 'decision tree' Standardization Standardization: reduce project high number of 'duplicate' Automated process based items (for OEMs: minimize on statistics, managed by configuration changes) exception Additive manufacturing: Alternative: vendor print non-critical parts on Configuration managed inventories demand and reduce management Implementation of obsolescence issues VMI-concept High Low **Demand frequency**

4. Research agenda *Master or innovation projects*



Performance Based Contracts (pricing, Control tower inventory management technology **Synchronization** operations, Multi-echelon maintenance and • Try to scale up: pooling · Reduce variation in supply stocking decisions spares planning with other users or stock lead times (e.g. forecast & delivery schedules) items upstream in the Synchronize operations, supply chain and use realtime condition monitoring maintenance and spares Inventory models information planning with Advance demand Reduce demand through Rationalize decision Information Unit price system modifications making in 'decision tree' Standardization: reduce high number of 'duplicate' Automated process based items (for OEMs: minimize Management by on statistics, managed by configuration changes) exception exception decision rules Additive manufacturing: Alternative: vendor print non-critical parts on Break-even/ managed inventories demand and reduce investment analysis 3D-printing obsolescence issues High Low **Demand frequency**

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Gordian Logistic Experts | uw service supply chain verbeteraar | deskundig & doelgericht | aantoonbare expertise in de servicelogistiek & spare parts planning





