

Proposition Service Logistics

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PROPOSITION

Proposition to OEMs

“ Dutch Service Logistics solutions enable your service organization to improve customer satisfaction by increased system availability and reliability and reduce operational costs through intelligent and optimized forecasting, planning and scheduling of the service chain (internal or external) and its associated resources such as people, networks, information and other tangible (or intangible) assets.”



Proposition to asset owners

“ Dutch Service Logistics solutions enable your organization to improve system availability and reliability and reduce operational costs through intelligent and optimized forecasting, planning and scheduling of the service chain and its associated resources such as people, networks, information and other tangible (or intangible) assets. “

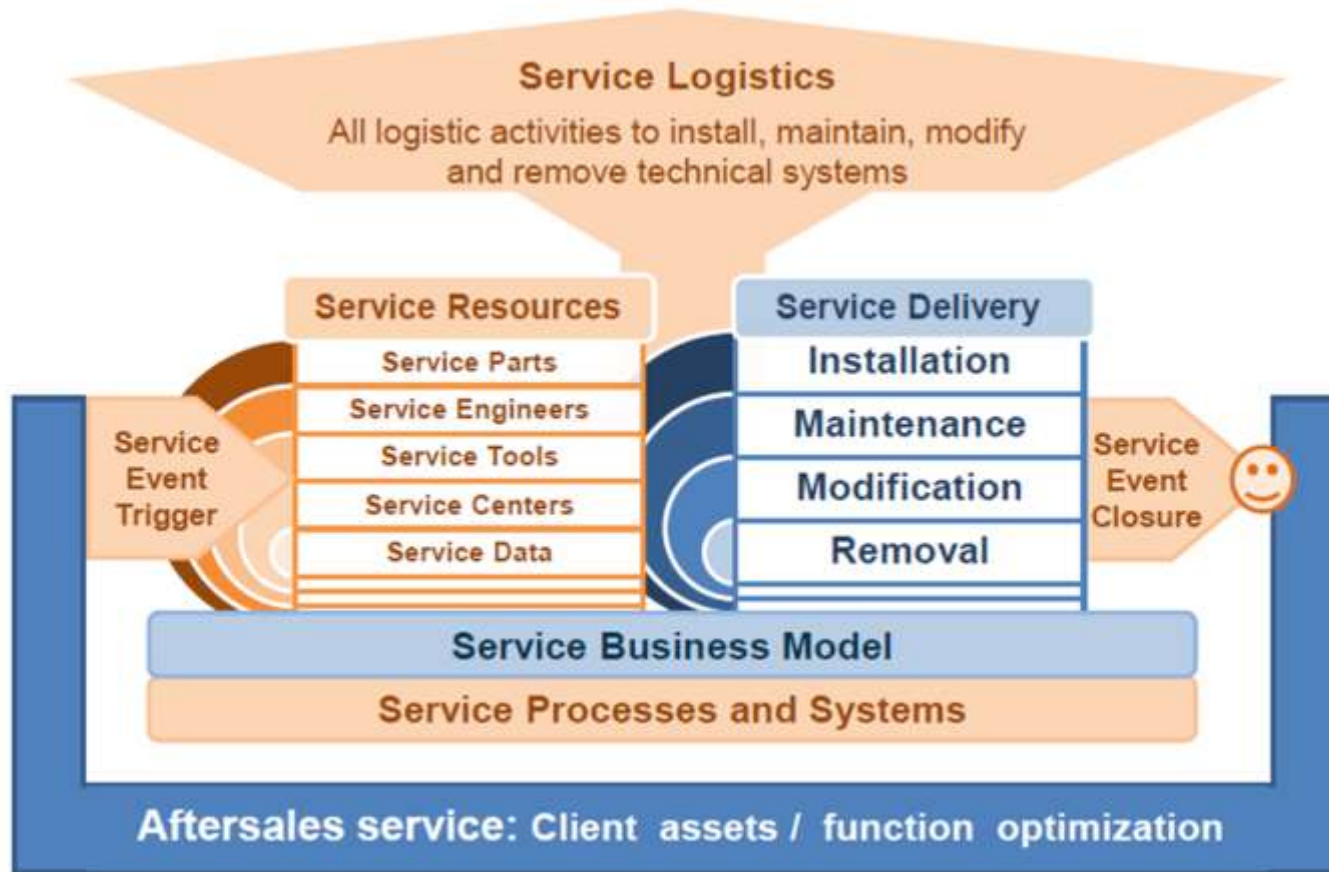


SERVICE LOGISTICS

Service Logistics

- Service logistics is the control of all after-sales services: from product delivery to the end of a product's life cycle.
- Service logistics regards all logistics activities needed to enable advanced capital goods to function optimally and uninterrupted during the total product life cycle – up until out-of-order/ dismantling or reuse.
- The main function of the service supply chain is to increase the system availability by delivering the maintenance resources within specified time constraints when a system has failed, or to prevent failing and specific maintenance resources are needed to repair it. In general, spare parts and service engineers are the most important resources.

Service Logistics

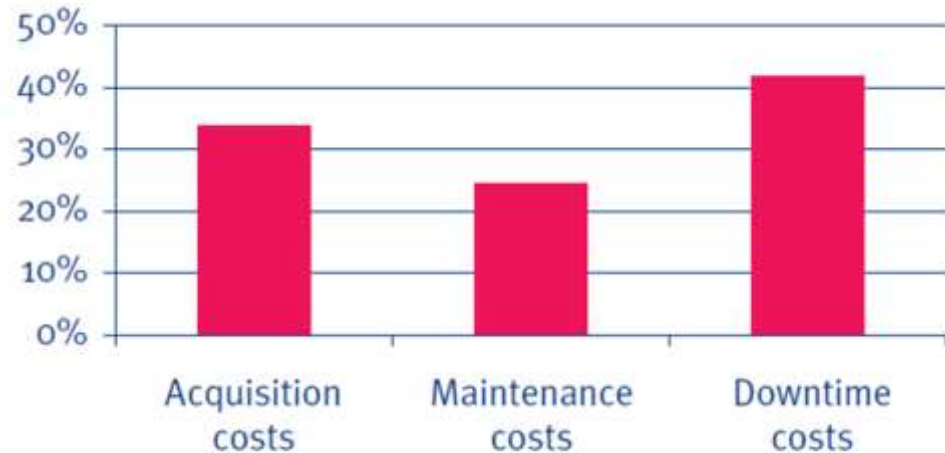


Source: Ben Graeve, 2013



Total Cost of Ownership engineer-to-order system

- The **acquisition costs** of a high tech system are high, but a considerable cost during the total product life cycle is derived from maintenance and downtime.
- **Maintenance costs** include spare parts, service engineers, infrastructure and management.
- **Downtime costs** include reduced output of a production process, as well as indirect costs such as loss of reputation or loss of future revenues.
- The **acquisition costs** account for only a fraction of the Total Cost of Ownership!
- Maintenance during the first 10-40 years of the operation phase of a system is of the same order as the purchase of a new system.

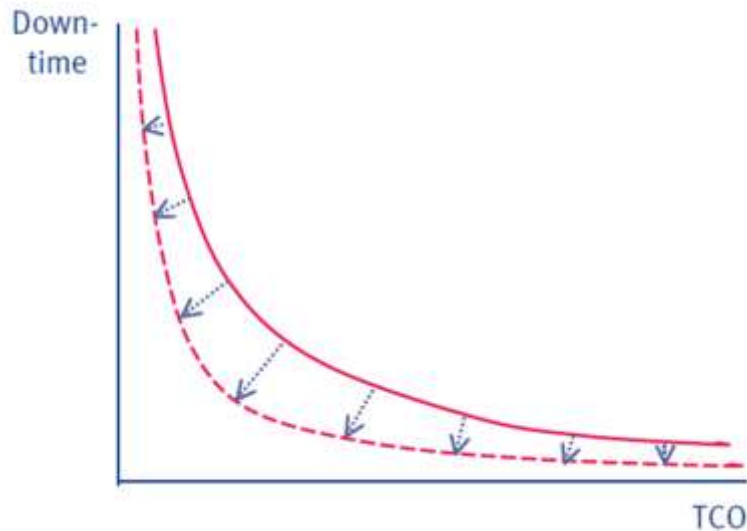


Division of Total Cost of Ownership for an engineer-to-order system (cf. Oner et al. [2007]).

Source: Van Houtum, 2008



Minimizing downtime and minimizing TCO



- Service logistics aims at **minimizing downtime and minimizing TCO**
- The key to service logistics is to have the right **spare parts** at the **right time for maintenance**. Complexity of the planning management of the resources: engineers and spare parts

Source: Van Houtum, 2008

Service logistics - Key B2B sectors



Aerospace & defense: maintenance, repair & overhaul delivery in a cost-effective way, is key in performance-based service contracts to customers.



Automotive: service and parts operation is key for the business model and brand reputation, for customer satisfaction and avoiding warranty costs and for sustaining profitable growth.



Advanced high-tech capital goods: move towards selling 'performance service offerings' instead of the product, guaranteeing performance level during the product's lifecycle and minimizing machine or vessel downtime.



Process and energy industries: integrated service supply of e.g. wind farms and process installations, minimizing downtime for preventive and corrective maintenance.



Healthcare and medical devices: requiring service level agreements with same-day service fulfillment, in need of fine-knit distribution and service networks enabling fast response.



Service logistics for aerospace & defense industry

The capital goods in the aerospace and defense industries typically have a very long lifecycle; they are used up to 25 years and asset owners demand total care programs. The initial acquisition costs of these assets are high; often the maintenance and repair costs are double the initial acquisition costs. Downtime has high financial implications for the asset owners and safety is a most critical factor. For excellent spare parts management, Parts Obsolescence Management with last-time-buy decisions & Demand Forecasting Techniques as well as Parts redesign engineering and supply with replace-or-repair decisions are required for optimized inventory management. As these aerospace and defense assets have to be in use continuously and often in remote locations under rough conditions, especially in defense when on missions, this poses particular challenges to the service logistics.



Service logistics for high-tech capital goods industry

Capital goods are machines or products that are used by manufacturers to produce their end products or that are used by service organizations to deliver their services. Examples include lithography systems, large-scale computers, and baggage handling systems. The users' primary processes depend heavily on the availability of these capital goods and they require very high levels of availability. There is a long-term trend with regard to these advanced capital goods in which buyers would rather purchase a function than a product, focusing on the Total Cost of Ownership (TCO).



Service logistics for process and energy industry

Many process industry companies experiment intensively with condition-based maintenance (CBM), but preventive maintenance is still the norm. Several characteristics of the process industries make maintenance/logistics planning particularly complex. Most companies operate a small number of (custom-made) complex assets, and obtain limited reliability/process/failure data, making it hard to plan maintenance and preparatory logistics activities. Multiple disciplines and contractors are involved in maintenance operations, and coordination is required to minimize down-time.



Service logistics for marine industry

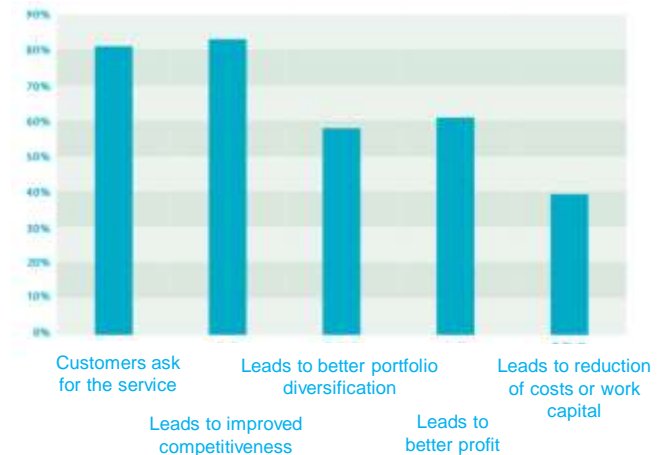
In the maritime sector, service logistics support and maintenance of systems constitute a significant fraction of the exploitation costs. This is on the one hand due to the complexity and high capital value of the assets used in this sector, and on the other hand due to the highly variable and mostly severe operating conditions encountered by ships and their subsystems. Moreover, since these assets are often operated at remote locations around the world, unplanned maintenance requires significant logistic effort and hence is very costly. This reveals that an important reason for the high costs for service logistics in the maritime sector is the uncertainty in demand.



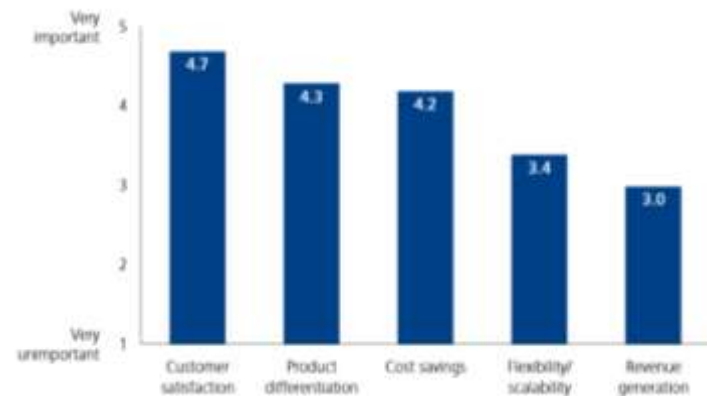
WHY INVEST IN BETTER AFTER SALES SERVICES?

Drivers for service logistics

- **Customer satisfaction** ranks highest among the objectives of after sales services, as companies are realizing that after sales hold an important lever to shape customer experience and awareness.
- **Cost savings** remain high on the agenda, especially in high tech industries.
- **Revenue generation** is receiving less attention worldwide, although in the Netherlands this has been recognized early, increasing the competitiveness of companies. It is expected that this is of increasing importance as a driver in the future, moving companies to servitization.



Source: Roadmap Service Logistics, Innovatie Zuid (NL), 2013

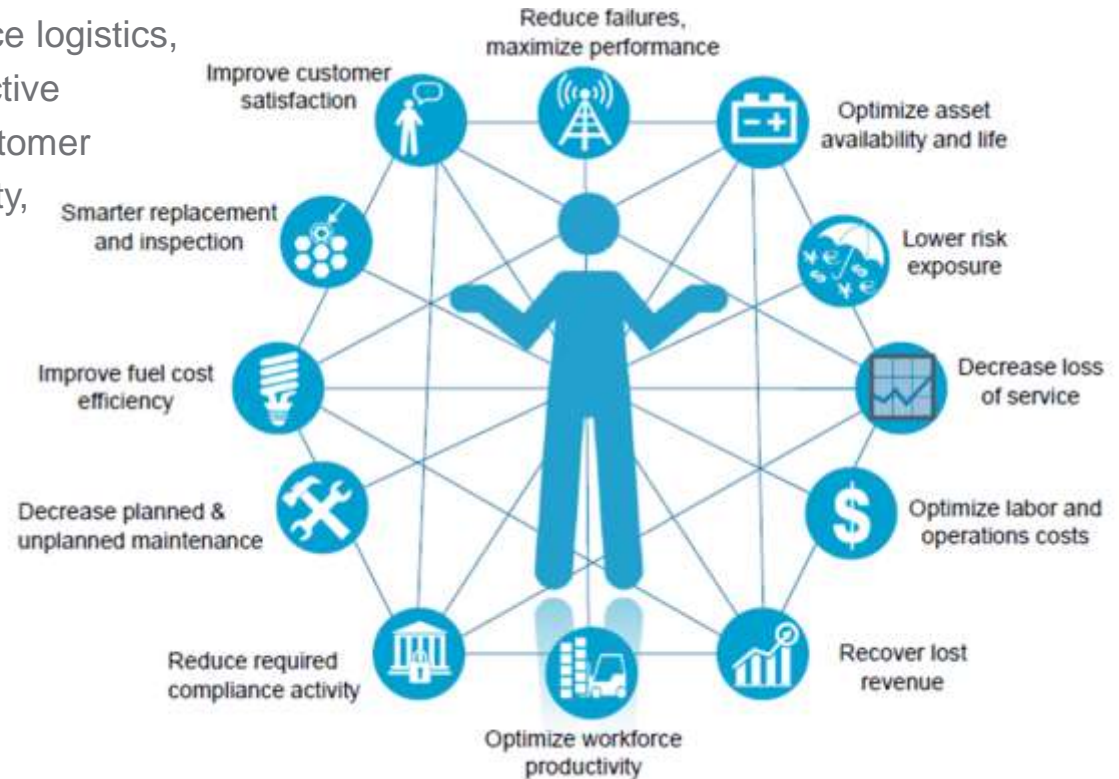


Source: Deloitte, From Necessity to Strategic Driver, Market Trends and Challenges in After Sales & reversed Logistics, 2013



Drivers for service logistics

- Drivers for professional service logistics, and especially towards predictive maintenance, range from customer satisfaction to asset availability, productivity and compliance.



Source: Wannas Rosius, IBM, Predictive Maintenance
3 Nov2014 Eindhoven

Arguments for extending the service business

Marketing benefits

- Augmenting the product offering
- Intensity of customer relationship
- Lock-in effect for customers
- Long-term customer relationship (strategic partnerships)

Strategic benefits

- Differentiation opportunities
- Comparison of offerings is more complex
- Collaborative innovation between customer and supplier
- Service as entry barrier for competitors
- Service competencies more difficult to imitate

Financial benefits

- Higher margins (product -1% to 3%; services 5-20%)
- Stable source of revenue
- High installed base
- Size of the service market (service market 2 to 10x bigger than product market)

Source: Prof Heiko Gebauer, University of StGallen, Switzerland, 2013)



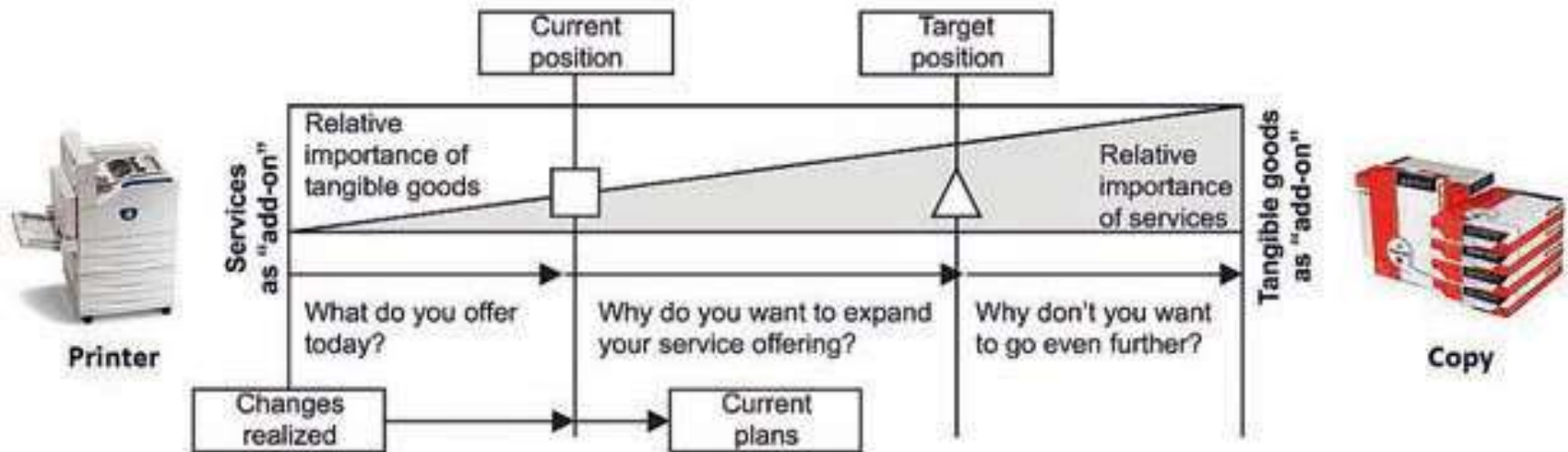
Servitization: from goods centered to customer centered solutions



Source: Filippo Visintin, Aalto University, 2012



The process of creating value by adding services to products

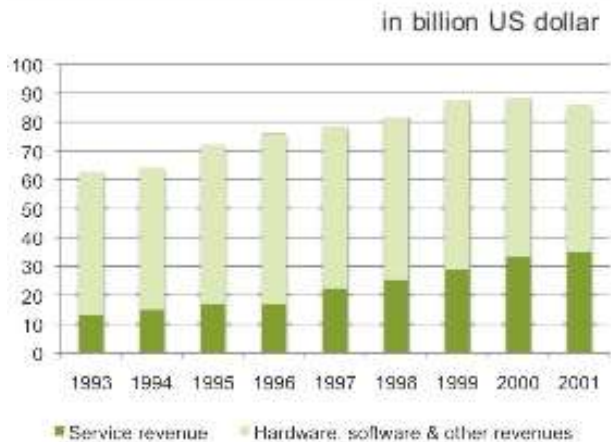


Source: Oliva & Kallenberg, 2003



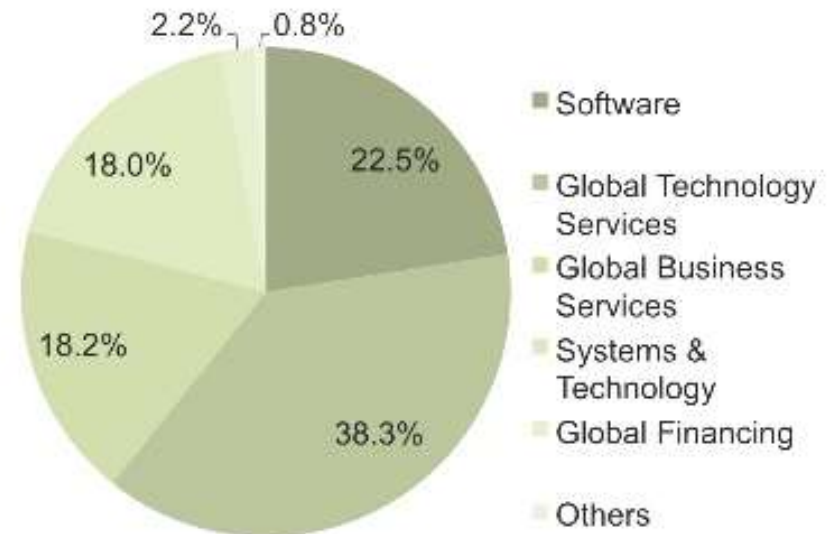
Servitization is a profit center: IBM example

Revenues



In 2001, Global Services (40.7%), Hardware (38.9%), Software (15.1%), Global financing (4.0%), Enterprise Investments/Other

Revenue structure in 2010



Servitization is catching up

