Arthur D Little

Travel & Transportation

Value added Logistics

Creating Value through Innovation
Excellence in Logistics

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Introduction

While innovation has always been judged as the growth engine of society, in the field of logistics its importance is still underestimated. However, a recent study by the European Logistics Association (ELA) and Arthur D. Little shows that innovation excellence in logistics does lead to significant improvement in performance. Both logistics service providers and their customers, the shippers, state that they can boost EBIT margins by up to 8.5% points. This article captures the essence of this study, links its results to real-world examples and outlines how executives can create value through innovation.

Objectives and setup of the study

Globalization and structural industry changes lead to more complex and increasingly interlinked supply chains. Service level requirements are increasing, new technologies are implemented, value chains are restructured and environmental issues like the carbon dioxide footprint are growing in importance. In the near future, instead of companies competing with companies, supply chains will be competing with supply chains.

Under these circumstances, executives worldwide realize that logistics has to center around the customer. A customer-centric approach to logistics requires world-class supply chain systems, practices and tools. In order to achieve and maintain a world-class level, innovation no longer is a luxury but a necessity. Innovation may relate to new services, processes or business models. It's important to define innovation from the customer's point of view. Innovation is useless unless the customer gains added value from it: for example, when a new function (or a new combination of existing functions) is provided and/or existing functions are provided at significantly lower cost.

Players in the logistics fields have been rather conservative innovators compared to companies in other industries.

This statement holds especially true for logistics service providers and less so for shippers, as these are accustomed to R&D and innovation activities in their core business.

In order to understand how excellence in logistics innovation can create value, the European Logistics Association (ELA) and Arthur D. Little, methodologically supported by Prof. Pfohl of Technical University Darmstadt in Germany, undertook the joint study "Innovation Excellence in Logistics – Value Creation by Innovation". We analyzed more than 100 logistics service providers and their customers, the shippers, in various industries across Europe. The study aims to identify top innovators in logistics and the added value they generate through excellence in innovation. The study is unique as it provides a pan-European perspective on innovation and logistics.

We first assessed the role and importance of innovation in logistics for both logistics service providers and shippers. Using Arthur D. Little's "Logistics Innovation Management Index" (see below), we then identified the top innovators among the participating companies. We subsequently analyzed the differences in innovation management practices between the top innovators and the average innovators. From that analysis, we derived the key success factors for achieving innovation excellence and the benefits that both logistics service providers and shippers can expect.

Arthur D. Little's Logistics Innovation Management Index

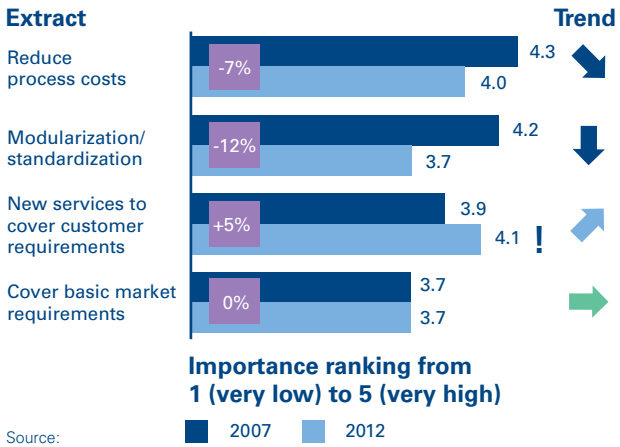
A measure that is based on a predefined set of qualitative and quantitative criteria. Top innovators rank high on this index and are characterized by an organization that has implemented and internalized an effective and efficient innovation-management system. The most important index criteria, as applied to logistics, are:

- Industry-specific logistics cost as percentage of total cost (for shippers).
- EBIT margin (for logistics service providers).
- Innovation ability / innovation power (share of turnover with services less than five years old).
- Clear organizational allocation of innovation activities and high management attention.
- Structured innovation process with defined measurements and control mechanisms.
- Innovations driven in close coordination with strategic planning an as a cross-functional process.
- Early and continuous involvement of external partners and customers.
- High degree of implementation of key innovation management success factors.

The role and importance of innovation in logistics

The study revealed that today the reduction of costs and the modularization of services are the most important objectives for innovation in logistics (see Figure 1). Modularization of logistics services refers to the breakdown of the logistics service chain into single activities and subsequent re-bundling into meaningful service modules. The aim is to reuse these service modules for multiple customers.

Figure 1: Innovation objectives



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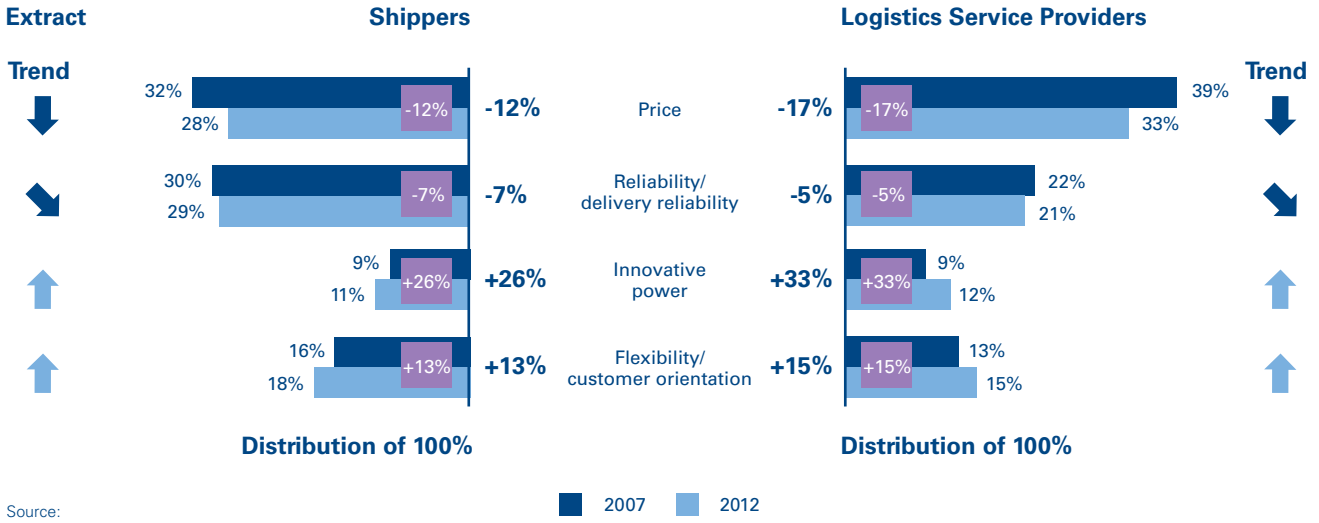
However, the importance of these two objectives will decline significantly in the future as cost-oriented innovations are replaced by customer-centric innovations. The most important innovation objective is likely to be creating new services to cover existing customer requirements and stimulate new ones.

This shift in objectives has an impact on the buying criteria for logistics services. Price and reliability will become prerequisites for contracting standard logistics services. Shippers are the prime drivers of this trend. They realize that innovation ability will become an increasingly important deal clincher.

Unlike shippers, logistics service providers still believe that price is the most important factor. However, they realize that innovation ability and customer orientation will gain importance in the future. Innovative solutions increasingly justify higher prices, whereas prices alone will be difficult to differentiate (see Figure 2).

Nevertheless, price and reliability remain important. One shipper who participated in the study said: "I expect my service providers to approach me with innovative ideas; on the other hand, many of them still have more fundamental issues related to price and reliability in Eastern Europe and Asia."

Figure 2: Criteria for tendering process for shippersand logistics service providers



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Differences in innovation management practices in logistics

Innovations in logistics can reach the market by four distinct approaches. In Figure 3, two logistics practices are overlaid on Arthur D. Little's general innovation process model. The four approaches are applied to the use of standard service modules (Practice A) and/or the development of customer-specific solutions (Practice B).

Approach 1 – Full standardization, no customization

The first method of bringing a logistics innovation to market is to rely exclusively on standard service modules. The shipper or logistics service provider develops a novel module and rolls it out across its markets without tailoring the solution to specific customer requirements. In other words, the company applies Practice A (standard service modules) only.

A vivid example of this tactic is the approach of European retail giant Metro (a shipper) to set the standards for all of its suppliers and roll them out throughout the entire supply chain, all the way to sources in China. Metro's RFID solution and system is a standard of that kind. The award-winning "Supply the Sky" concept from Kuehne + Nagel (a logistics service provider) is a similar example.

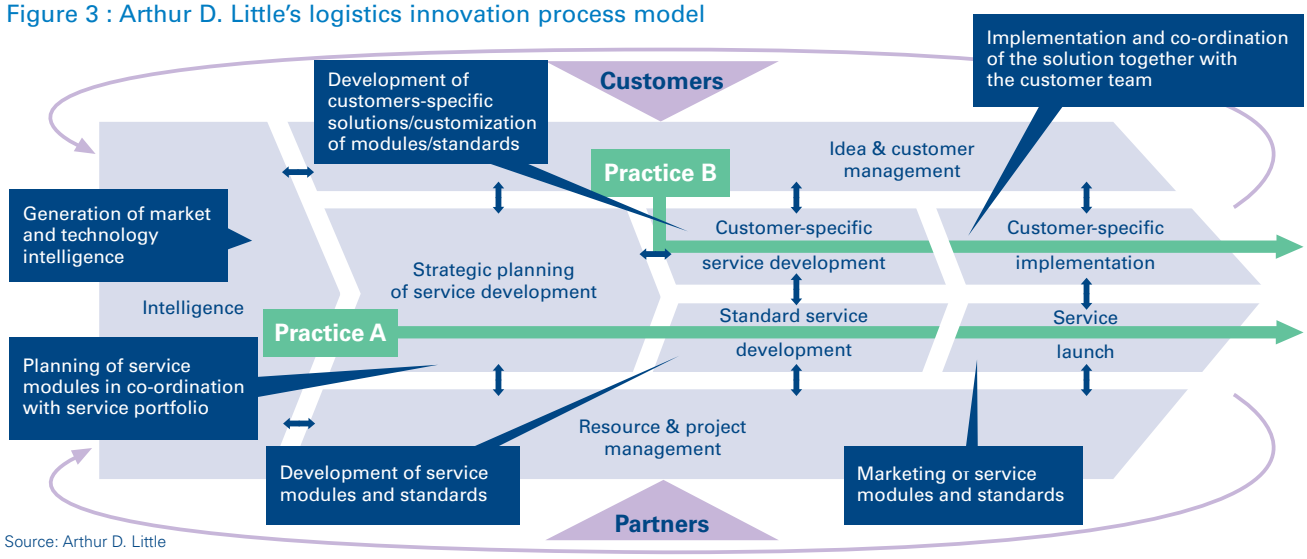
The innovative integrated solution covers supply chain competencies across the aircraft life cycle from production (warehousing, preassembly, etc.), supplier management (fulfillment, order management, etc.), and spare parts management (purchase order traceability, door-to-door service, etc.) to specialized services (incident management, engine movements, etc.). The solution led to a dedicated 24/7 aerospace network operation, which is located at 49 gateways across the globe.

Approach 2 – Full customization, no standardization

The second way of bringing a logistics innovation to market is to develop only customized solutions that are optimal for the specific situation at hand, without relying on standard building blocks. In this situation the company applies Practice B only.

A logistics service provider to the automotive industry developed a proprietary tracking and tracing system exclusively for one of its customers, a premium car manufacturer. The company was not allowed to make this innovative system available to other customers, which consequently makes it an example of a 100% customer-specific solution.

Figure 3 : Arthur D. Little's logistics innovation process model



Source: Arthur D. Little

Photo, left: Cargo Airplane Hold

Approach 3 – First standardization, then customization

The third way of bringing a logistics innovation to market is to apply Practice A first, followed by Practice B. The company first defines service modules and standards without a customer project. This could be called "greenfield" innovation. Then, in response to a particular commercial opportunity, the company adjusts the modules and standards to the customer-specific requirements.

An example of this tactic is the medium-sized logistics service provider who implemented a "solution-push" logistics system. It developed state-of-the-art logistics processes, stored them centrally and enhanced them as needed. The company's local representative can access these modules easily and modify them to individual customer needs. A feedback loop ensures continuous improvement of these centrally stored process standards. An example of a standard module is an RFID solution for tackling misdirected bins on the conveyer system. Through active marketing, the service provider secured customer interested in this innovative system. It eventually was offered and tailored to various customers.

Approach 4 – First customization, then standardization

The final method of bringing a logistics innovation to market is to reverse the sequence: apply Practice B first, followed by Practice A. The company first defines and implements a customer-specific solution, and then derives generic modules and standards from it. These modules are then marketed to other customers. This could be called "brownfield" innovation, as it usually has a lower degree of novelty than the "greenfield" innovation.

The parcel and express specialist trans-o-flex, a logistics service provider, operates a distribution network that focuses on life sciences and consumer electronics customers. For one of its customers it developed the seamless temperature-controlled delivery system "thermoaktiv". After modularization and standardization, the system was rolled out to the entire trans-o-flex network and successfully offered to other customers.

Figure 4 shows the prevalence of these four innovation approaches among the study participants. The approaches of shippers and service providers appear to be fundamentally different but at the same time complementary.

Figure 4: Prevalence of innovation approaches

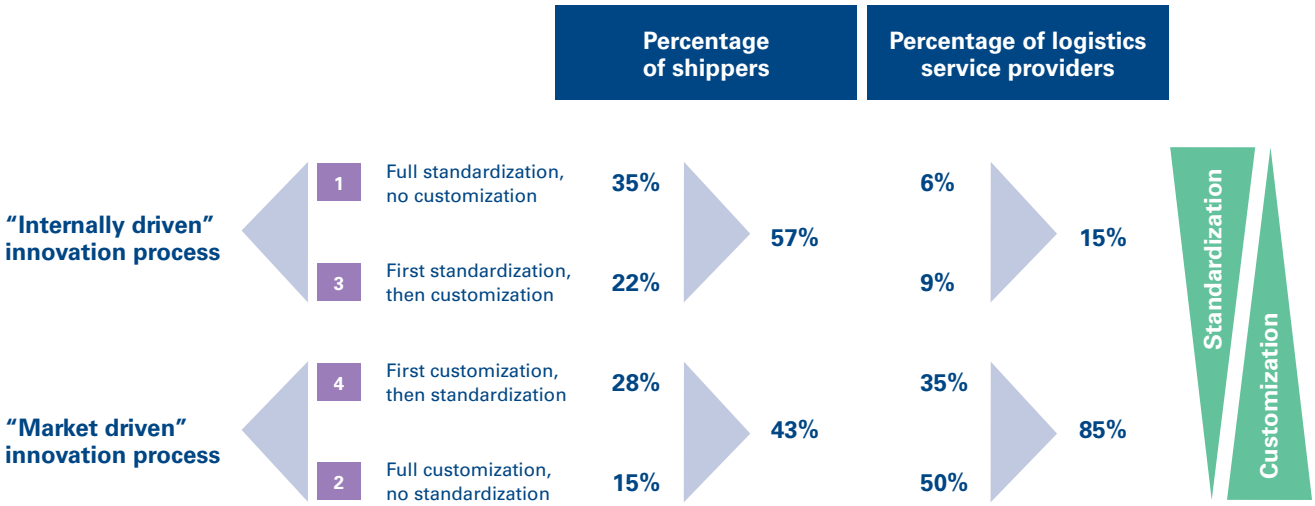


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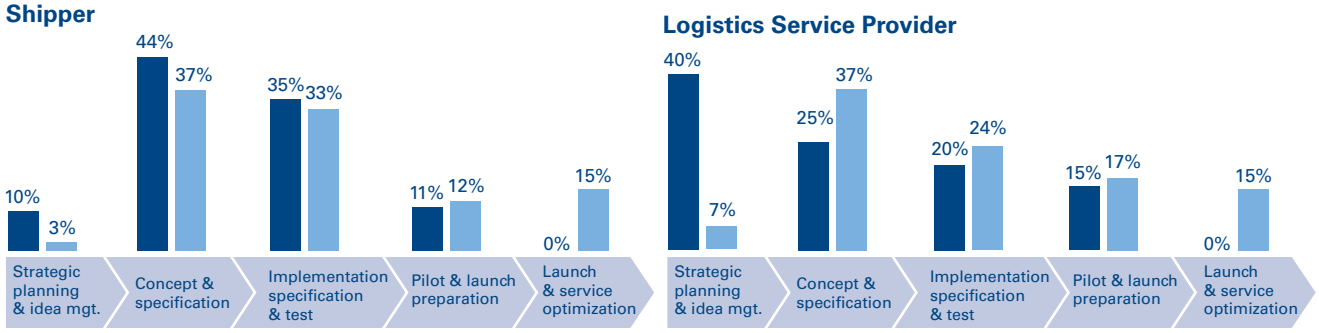
Figure 5: Start of involvement of the logistics service provider in the process of the shipper and vice versa



Source:

Shippers primarily follow Approaches 1 and 3: they rely a lot on modules and standards (Approach 1), which they may or may not customize afterwards (Approach 3). Their approach to innovation is internally driven, for example, based on a strategic service development plan. Top innovators amongst shippers follow a structured service development process, involving the strategic planning function and aimed at the development of standard solutions. They define the areas for innovation by practicing an upstream strategic planning process (known as the "push principle"), and develop customer-specific solutions based on, for instance, particular factory and country demands. Best-practice concepts are developed without upfront customization. The launch of a new service is coordinated centrally and rolled out throughout the company.

Logistics service providers, on the other hand, primarily follow Approaches 2 and 4: they focus on customized solutions (Approach 2) from which they may or may not derive standards and modules afterwards (Approach 4). Their approach to innovation is almost exclusively market driven, triggered, for example, by their customers (the shippers) and a concrete customer requirement or problem. "One-size-fits-all" modules and standards are not relevant for service providers. Unfortunately, they often develop one-off, customer-specific solutions without tapping into any further commercialization potential (Approach 2). They would benefit from reusing customer-specific solutions for incremental innovations.

Top innovators amongst service providers go even further: they increasingly create modules and standards for subsequent mass customization. This iterative process enables them to achieve both a high level of customer orientation and cost efficiencies from modularization and standardization.

The mutual involvement in the innovation process is a crucial success factor. Top innovators amongst shippers involve logistics service providers in their innovation process at an early stage, and top innovators amongst logistics service providers are involved even earlier (see Figure 5).

Top innovators among shippers involve their suppliers when looking for innovation ideas, and therefore make use of their suppliers' innovation competencies. Using this innovation network, they generate their own ideas and subsequently benefit from a first-mover advantage. Average innovators orient themselves to the market, following a "me-too" strategy: a tactic known as incremental innovation.

Top innovators amongst logistics service providers are more customer-oriented than average innovators: they are better at picking up and implementing ideas from their shippers. Impulses for innovation should be driven externally for logistics service providers; internal impulses are rarely successful.

All top innovators increasingly measure the success of their innovation projects, create more transparency and control their options. They increasingly measure the added value of their logistics, whereas average innovators focus on costs.

Insights for the executive

In order to create value through innovation in logistics, both shippers and logistics service providers should do the following:

- Implement a structured process for selecting innovation initiatives (a tactic called "idea management") and strategic planning in order to optimize resource allocation.
- Bundle the responsibility for innovation-related activities into a department or line function that drives the activities as one cross-functional process. The process should ensure alignment of innovation projects with strategic objectives and report to board level.
- Modularize and standardize service offerings in order to generate cost efficiencies.
- Implement structured and continuous market intelligence activities in order to identify new customer needs and technology trends (market / technology intelligence).
- Involve external partners as early as the concept-development phase.
- Implement a balanced system of indicators consisting of both cost- and customer-oriented measures.

In addition, shippers should consider the following:

- Implement a stringent project-management approach for all innovation activities in the logistics domain.
- Develop and communicate a clear strategy that is aligned with the overall company objectives for the logistics area.
- Ensure early and continuous involvement of all affected company departments, customers and qualified service providers.

Logistics service providers should consider the following:

- Develop and implement a concept for market launch and roll-out of new services.
- Develop and institutionalize a continuous learning loop and a supporting knowledge management.
- Establish tools and methods to support innovation activities within logistics throughout the innovation process.

Further improvement areas depend on the specific company environment and the maturity of its current innovation management practices. To reflect upon specific improvement needs, the logistics innovation process model shown in Figure 3 can be used as a reference model. Executives have to make sure that all dimensions are sufficiently addressed. As one study participant puts it: "We have enough good ideas but badly lack resource and project-management capabilities. I finally want to see how the rubber meets the road. This year I have proclaimed to be the year of service planning and implementation."

The study participants expect significant bottom-line improvement from implementing the above recommendations and optimizing innovation management. Shippers estimate that they can increase EBIT margins by 4.4% points, whereas top innovators amongst the logistics service providers believe they can boost theirs by an average of 8.5% points. Average innovators amongst logistics service providers consider the potential to be much lower, although still significant, with a 2.7%-point increase in their EBIT margins. All shippers and logistics service providers expect a reduction of logistics costs by between 7% and 14%. All participants expect a significant improvement for performance-related indicators such as turnover, delivery reliability and delivery time. This significant improvement potential makes it worthwhile to strive for innovation excellence in logistics.

The full ELA / Arthur D. Little study is available at www.adl.com

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RFID tages are now the industry standard

The forerunner of the modern RFID tag was demonstrated by Mario Cardullo to the New York Port Authorities in 1971. RFID tags are now the standard as the data carrying and automatic identification technology used throughtout the industry.

Arthur D. Little

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