**White Paper** 

AEB

# Five tips for IT-based collaboration with carriers and parcel services

Successfully integrating transport service providers in processes and system environments – even internationally



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### 1. Executive Summary

The idea of "digitization" is catching on. It began largely as a communications hype driving the economy in industrialized nations, but more and more companies now have handson experience with digital business models and the digitization of their current value chains. Digitization has not left logistics untouched, either. Companies are enticed by the advantages of synchronizing the supply chain beyond the boundaries of their own business. But for many companies, the first step is to connect the adjacent link in the supply chain to their own IT system. Typically, that means carriers or parcel services. The benefit is obvious here as well. Many businesses focus on automating shipping processes that were previously manual or semi-manual and achieving greater transparency and supply chain performance by establishing transportrelated key performance indicators (KPI). Other digitization

effects are also achievable. These gains are offset by the not insignificant IT costs of integrating transport partners, driven by the diversity of the carriers' IT environments and the frequency with which the interfaces to these systems change. And a shipper or consignor doesn't work with just one company. The cost can be reduced, however, by working with IT service providers that offer integration platforms. The IT service provider uses an interface to integrate the shipper with its platform, which in turn is linked to the IT systems of the carriers and parcel services. This white paper offers an overview of the advantages and disadvantages of various methods of IT-based collaboration with transport service providers and highlights the associated challenges and roadblocks. The focus of this paper is on five useful tips from the realm of "carrier integration."

## 2. Benefits of collaborating with service providers

Is transport logistics an easily interchangeable service – or is it a strategic success factor, part of a comprehensive product-related service portfolio? Opinions differ sharply on this issue, especially in the manufacturing sector. The transport strategy varies according to the answer given. If the transport service is perceived as more or less interchangeable, the focus is on optimizing the price of the transport. Those who subscribe to this view tend to swap transport partners frequently and focus on the spot market. Communication between shippers and the (interchangeable) transport partners is dominated by the traditional channels of phone (even fax, in some cases) and e-mail – with a growing role for freight exchanges and online bidding platforms as well.

But only a minority of shippers engage heavily in "carrier hopping" - choosing their carriers and parcel services based solely on the day rate or project price. The opposite strategy - close collaboration between shippers and transport service providers – is the subject of intense discussion in professional circles. There are good reasons for this: The cost-cutting potential of constantly renegotiating the price of transport services is considered to be largely tapped out. Anyone who still hopes to save transport logistics costs must look at the transport processes – and do so along the entire chain. That can only be done together with the service provider. Germany's Association for Materials Management, Purchasing, and Logistics (BME) responded in November 2015 by establishing the Collaboration Working Group, where shippers and carriers work together in search of common solutions to improve efficiency. The agenda includes such topics as reducing wait times, easing running time restrictions, early and fixed booking, and pricing efficiency. The Working Group has not yet released its results, but BME has high hopes for the digitization of transport management. Communication with the logistics partners must be automated and thereby harmonized. But cost is not the only reason that a collaboration between

shippers and their transport service providers seems beneficial. The higher the strategic value of transport for a manufacturer, the more likely it is that a long-term, sustainable approach to collaboration with service providers will prove successful. Industries that depend heavily on ensuring reliability or supply chain performance long ago established forms of close cooperation and networking between the industry and its transport partners. The automotive industry sets the benchmark on many fronts.

The German Logistics Association (BVL) has published a list outlining the main benefits of collaboration between shippers and logistics service providers:

#### · Lower complexity costs:

This refers to costs that arise from working with a large number of carriers and parcel services in various transport types and with different service agreements. The worst-case scenario is when a large number of transport partners is combined with decentralized transport management by the shipper. According to the BVL, complexity leads to redundancies, increased risks, higher levels of inventory, high administrative and managerial overhead, lack of transparency, and high transport costs – due to extra trips, for example.

#### · Lower transport and inventory costs:

Predictability and transparency can improve the utilization of means of transport while reducing safety stock along the supply chain.

#### Shared data yields better key performance indicators (KPIs):

Service providers and shippers can define shared KPIs based on jointly developed processes and the automated exchange of data to expose vulnerabilities in the transport process.

#### • Faster, secure supply chains: Interlinking:

processes replace unbridged gaps between the companies. This is true not only for physical processes such as the check-in of arriving trucks or loading and unloading. It is also particularly helpful for administrative processes. BVL recommends using IT platforms that integrate all the companies involved in the transport.

#### • Fast, professional response to changes:

"The exchange of information and knowledge accelerates the process of identifying the effects of changes and finding solutions," writes BVL.

#### · Access to innovative potential:

While many companies have been largely optimized internally, there is still room for innovative ideas in cross-company collaboration. A close, collaborative partnership makes it possible to evaluate new ideas thoroughly and implement them rigorously.

As advantageous as a collaboration strategy is, it also has its limits. The integration of processes or IT with a transport partner must not be allowed to develop into a serious obstacle to changing providers if this is deemed necessary because of price or quality issues or for any other reason.

Bottom line: Collaboration with transport service providers gives shippers a wide range of opportunities for optimization. The service providers benefit as well, of course: They are no longer commoditized as a mere price for transport and can cultivate a role as long-term partners collaborating in the optimization of processes. The key factors for successful collaboration are the desire for long-term, sustainable partnership and the capacity to harmonize physical and IT-based processes. For shippers, collaboration reaches its limits when dependencies on individual service providers become too great.

It's important to note here that collaboration seldom emerges fully formed. It grows out of an extended period of close partnership and expands into new areas. A good way to initiate a strategic collaboration is to pick the "low-hanging fruit" – by linking IT systems, for example.

# 3. Methods of IT-based collaboration with carriers and parcel services

Two factors are critical if a collaboration with transport partners is to succeed. The first is the will to collaborate. This is characterized by the readiness to work on a peer-to-peer basis with the service provider to optimize your shared process chain and make the necessary information available

The second factor is equally important: a powerful IT connection between the shipper and service provider. This is the basic prerequisite for efficient transport management. It is also the only way to generate the common data and KPIs needed to optimize the physical transport process.

The IT connection is anything but trivial. From the shippers' perspective, there are three basic options for connecting:

- Use the software systems of the transport service provider
- Integrate each individual parcel service and carrier into your own ERP system or WMS
- · Integrate through the platform of an IT service provider

Each of these options carries its own opportunities and challenges.

#### 3.1 Using IT solutions of transport service providers

It is not a new trend for carriers and parcel services to provide their customers' shipping departments with access to their system front ends. The package delivery industry in particular, with its industrialized work processes, already found it burdensome and expensive back in the 1990s to receive customer orders in analog form – typically fax – and developed solutions to address this. Some break bulk carriers with sophisticated IT environments followed suit. The functionalities differ by transport service provider, but the core features are as follows:

- The simplest scenario is for an employee at the shipper to use a terminal to enter the order and consignment data into the carrier's system. The shipper can also use an interface to transfer the data from its own system.
- The shipper can use a printer provided by the carrier to print out the necessary transport label and freight documents.
- The shipper can track the consignment in the carrier's system using the consignment number.

 In some cases, the carriers use the consignment data to generate small reports – on running times, for example.

The advantage of this option is that, aside from the task of connecting to a possible interface, the shipper does not need to make any investments in its own IT. But there are a series of disadvantages. Since almost no company works with just one transport service provider, the shipping department employees will have to work in various systems. In some cases, this may even require separate hardware – label printers, for example. If multiple transport partners are used, the reports generated from the various systems have less value for the company-wide analysis. They must first be consolidated or at least rendered comparable – a nearly impossible task given the various ways in which service providers define transport events.

Tip: When communicating about interfaces, the shipper should clarify early on whether the transport partner's interface is one-way or allows for an actual exchange of data. One-way interfaces cannot send the tracking numbers generated in the carrier system back to the managing ERP system. This means that the shipper must request the tracking numbers or access the carrier system in question.

Bottom line: The IT solutions offered by carriers and parcel services are not generally suitable for true IT integration. They are a good option for companies with a relatively small consignment volume that work together with one fixed carrier per consignment type and do not need a lot of information to control their transport logistics. Collaboration projects cannot normally be built on this foundation.



Integrating individual carriers and parcel services

#### 3.2 Integrating individual carriers and parcel services

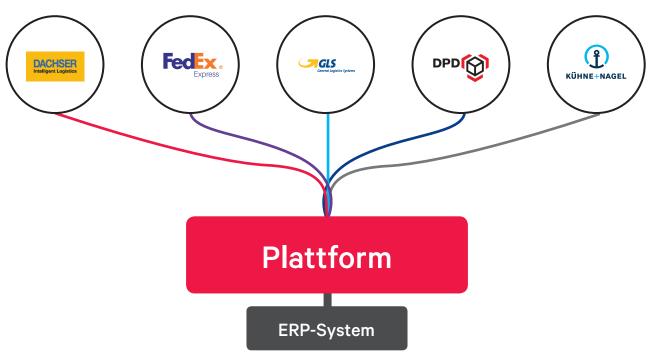
Companies that aspire to automation and consistency in their logistics processes cannot get around genuine system integration with their transport service providers. The good news: Both ERP and logistics systems typically offer shippers the option to link their transport service providers. That already works well today – if you work with only one service provider. It all looks so simple on paper: Program the interface, coordinate with the transport partner, then begin sharing data.

But in practice, one-by-one integration is much more complicated. One reason is that almost no major shipper works with just one service provider. Since the IT environment among the various service providers is anything but uniform, you need one interface per service provider – at a minimum.

Even major brand-name transport companies do not use just one system throughout Europe. The reason is often

that they acquired service providers in various countries and integrated them into their organizational processes – and efforts to harmonize the system environment could not always keep up. It is entirely possible that you would have to work with four or more interfaces in order to collaborate with a single service provider throughout Europe. And this one-time expense is not the end of it, either: Whenever the carriers or parcel services change data fields or other parameters, which is hardly a rare occurrence, you'll need to update your own systems as well. The task of switching service providers is also daunting.

Bottom line: The benefits of integrating carriers individually are the capacity for collaboration and the independence from third parties. How powerful the integration solution is depends on your own IT department and that of the service provider.



Integration via integration platforms

#### 3.3 Integrating through integration platforms

The relatively high IT costs for the individual integration of transport service providers has created a need for a new kind of service. IT service providers offer "one size fits all" integration of carriers as part of a software solution or integration platform. The shipper connects its ERP system to such a platform through an interface, for example. The platform in turn is connected through defined interfaces to the carrier systems. The IT service provider is responsible for configuring and maintaining the interfaces to these carriers and parcel services. The platforms are typically hosted by the service provider, not on premise at the shipper. That's why it pays to look carefully at the performance level offered by the service provider and what kind of data privacy and data security protections are in place. And naturally you need to clarify precisely which functionalities the IT service provider supports (transmission of order data, label and document printing, transmission of tracking data, reporting, automated freight billing).

Advantages: This method greatly unburdens your own IT department. It's also a lot less work to switch transport partners – at least if the new partner is already linked to the platform. Otherwise, the operators of such integration platforms will offer to link new transport service providers as a service.

Disadvantage: Some of the independence from outside parties that you have with one-by-one integration is lost. Performance problems at the IT service provider can impair the link to the transport partner.

Bottom line: The criteria used to choose between this option and individual integration are the total cost of ownership and the expertise of your own IT department when it comes to IT integration. The platform solution is clearly a good option if you use a wide range of service providers and systems.

#### 3.4 Integrating in the SAP® environment

Many of the points outlined above in the sections "Integrating individual carriers and parcel services" and "Integrating through integration platforms" apply to an SAP® environment as well. It's worth looking into this in more detail due to the special significance of SAP® systems among shippers. SAP® ERP and SAP® EWM both offer the option to connect to carriers and parcel services, but they don't provide the business logic for the transport service providers out of the box. That means that if you want to connect to individual service providers, you need to fully program functionalities such as label and document printing or track & trace in SAP®. And you need to maintain these functionalities and adapt them to changes. Since transport service providers frequently make changes to their label and document requirements, this leads to IT costs that should not be underestimated and will place high demands on your IT department. This is exacerbated if you need to integrate multiple carriers and parcel services or even multiple sites.

On the other hand, you have the benefits of individual integration: You have the entire business logic directly in the SAP® system, and you are not dependent on third parties in the operation or performance of your system or the implementation of changes. And thanks to the shared access to master data, it's also relatively easy to add additional functions.

An alternative to an individual integration is to connect through third-party software or a platform. Here it is important to distinguish between add-on solutions and full integration as a plug-in to the SAP® system. The latter offers a decisive advantage: Users work in their familiar SAP® environment, which ultimately boosts efficiency and limits the level of support required.

From the perspective of the IT department, this approach also stands out favorably compared to individual integration for its low implementation costs. Ideally, it's possible to connect the third-party software to your SAP® system without any necessary modifications using the SAP® standard technology for web services. This requires minimal intervention in your ERP system – true to the motto: "Never change a running system."

Compared to individual integration, you benefit from the advantages cited earlier in the section "Integrating through integration platforms": Changes, maintenance, and the connection of additional transport service providers are outsourced to the provider of the third-party software or platform. This takes the burden off your own IT department – and your precious SAP® experts remain available for other projects.

These considerations apply not only to SAP®, of course, but also to other ERP systems and diversified system environments.

# 4. Challenges of IT integration with transport service providers

#### 4.1 Coordination

Transport service providers like to advertise how flexible they are. But when it comes to their interfaces, this flexibility is typically narrowly defined – at least as far as parcel services and break bulk carriers are concerned. There is a good reason for this: Parcel services and break bulk carriers use industrialized processes to serve many customers simultaneously – which wouldn't be possible with a wild mish-mash of interfaces and systems.

Anyone hoping to integrate such transport partners must

agree with them in advance on data formats and interfaces. Only after the objectives and basic premises of the integration between the service provider and customer have been established does the transport partner have the certainty needed to plan its work.

Before the interface to the carrier can go live, it needs to be approved and accepted by the carrier's IT experts. When you use a platform solution, the IT service provider works with the transport service provider to take care of all that.



#### 4.2 Label

The transport label may seem like an unimportant detail to outsiders. But it's not: The label is the bridge between the physical consignment and the systems of the transport service provider, shipper, and recipient. The carriers and parcel services have strict rules for the layout and content of the labels, and the labels themselves are also very complex. Not only that, but the label requirements frequently change.

For shippers, it's important to know that a high volume of consignments creates a high standard of performance for label printing. If a packing station employees needs to wait several seconds for a label, that negatively impacts productivity. It's essential to talk about this issue with the IT service provider.

Special logics are used to determine the routing code. The routing code defines the path that the consignment takes through the transport service provider's network, so changes are not uncommon.

Last but not least: There is a wide range of different barcodes that are printed on labels. "One size fits all" is definitely not how it works in the world of transport labels.

#### 4.3 EDI format

EDI stands for electronic data interchange. The EDI format is the common language used to exchange messages between the IT systems of the shipper, transport partner, and recipient. Messages might include the transport order, the order confirmation, or consignment information. Working on the EDI formats, which are very complex, requires expertise. Example: An order placed with a parcel service requires not only the destination and number of packages but also information on the desired services and

additional services. For some service providers, the EDI format must show the difference between next-day delivery, next-day delivery by 10 a.m., and next-day delivery by 8 a.m. Any mistakes made with the integration at this point will have a direct effect on the performance with the customers. To ensure this doesn't happen, it's necessary to run extensive tests and ultimately obtain approval from the carrier. The EDI format also has many details that vary by transport service provider and country.

#### 4.4 Loading list format

The format of the loading list – or cargo manifest – must also satisfy specific requirements of the carriers and parcel services. These requirements vary depending on the logistical process. A shipment outside the EU might require a different loading list format. Freight and package services

ordered from the same service provider may also require different formats. Technical requirements – for customs clearance, for example – require further specific documents, such as the TNT Customs Copy.

#### 4.5 Hardware

The strict quality requirements for shipping labels of the carriers and parcel services also affect the hardware that is used. The labels contains complex elements such as graphics, inverse fields, and (2D) barcodes. Incorrect labels prevent timely delivery, and if the transport partner must correct the labels in the depot, additional costs can ensue. Not every printer is capable of printing label content with the necessary quality and precision, so you need to check your thermal printer beforehand to make sure it's up to the task.

The paper you use for printing labels has a critical impact on quality. The following paper types have proven effective in meeting the standards (especially barcode standards) of transport service providers: top-coated quality for direct thermal printing, and Fasson MC prime coat or Herma extra coat quality for thermal transfer printing.

Labels must be at least 4x6 inches in size. One more tip: Transport service providers specify the resolution that printed labels must have. Make sure the thermal printers

you select satisfy these requirements.

## 5. Making international simpler: integrating carriers and parcel services internationally

It's the dream of many logistics and IT directors: Work with one transport service provider per consignment type Europewide to avoid the trouble of dealing with multiple processes and systems when managing shipments. But this dream rarely comes true. Not only because carriers and parcel services offer varying levels of performance in the various regions and the "one" affordable transporter for all of Europe does not exist. It's also because the idea of "one carrier – one system" rarely occurs.

Quite the opposite: Most transport service providers, with few exceptions, have a uniform brand presence but work with a diversity of IT systems. Only a few express services (integrators) have a single IT system for all of Europe. There are many reasons for the diversity of systems that otherwise prevails. In the break bulk cargo market, it is not uncommon to use partners to cover areas outside one's own core region, and these partners often work with different IT systems.

In addition, quite a few providers in the break bulk cargo and parcel services market have positioned themselves internationally by acquiring domestic providers and integrating them into their own network. Facing rapid growth and complex IT integration projects, buyers often let the acquired companies keep their domestic IT system. Last but not least: Diversity can be found not only in the IT systems of logistics service providers but also in their service portfolios. Transport products that are commonplace in Germany are not offered in Italy, for example, since there is no demand from the shippers in that country. This means that shippers who wish to connect a package parcel service Europe-wide must deal with five or more integration projects if their own IT is harmonized internationally. This can be especially costly if the IT department is centralized and must coordinate with the transport partner's various contact persons in Europe. Connecting through the platform of an IT service provider has clear benefits for international integration in particular. The language problem is not such a headache. If the IT service provider's system is integrated directly into the company's ERP system through a plug-in solution (see section 3.4), the employees can work in their own system environment and language.

# 6. Checklist: Can you benefit from integrating your transport service providers?

Like all IT projects, the IT integration of your transport service providers must undergo a cost/benefit analysis. The following checklist gives you an initial overview of whether an integration offers a potential benefit for your company. The more often you answer yes, the more carefully you should consider integrating.

Can you benefit from integrating your transport service provide	ers?	
01. Do you have a high volume of consignments for parcel services?	Yes	O No
02. Do you have a high volume of break bulk cargo consignments?	Yes	O No
03. Is transport a factor that plays at least an important role for your company from a cost perspective or based on the quality standards of your customers?	Yes	O No
O4. In your view, do transports account for an unjustifiable manual workload in your shipping and/or administration department?	Yes	O No
05. Do you prefer more long-term collaborations (at least one year) with your key carriers and parcel services?	Yes	O No
O6. Do you bundle your consignment volume with a manageable number of strategic transport partners?	Yes	O No
07. Do you – or would you like to – take advantage of your carriers' tracking data?	Yes	O No
08. Do your agreements with transport service providers include performance-based bonus/penalty clauses?	Yes	O No
O9. Do you purchase a significant amount of transports with guaranteed delivery times (next day by 8 a.m., etc.)?	Yes	O No
10. Do you – or would you like to – take advantage of transport-related indicators?	Yes	O No
11. Do your transport partners handle special or additional services for you?	Yes	O No
12. Are returns processes a factor in your business?	Yes	O No
13. Would the automation of freight billing produce noticeable process cost benefits for you?	Yes	O No
14. Is your transport volume distributed across multiple shipping points?	Yes	O No
15. Do you ship break bulk cargo or packages internationally?	Yes	O No

### 7. Five tips for IT-based collaboration

#### 7.1 Don't underestimate the setup costs

One critical factor in the success of IT-based collaboration is a structured definition and coordination phase. Which data do you wish to exchange with the transport partner? What are the carrier's requirements for labels, electronic transport orders, and loading lists? All this must be coordinated in detail with the various service providers. There is no one-size-fits-all standard. As mentioned in the previous sections, the IT environment is often diversified even within a single transport organization. This means you may have to coordinate with multiple offices, even within individual carriers and parcel services. Before a connection can go live, you need an approval from the transport service provider. Multiple offices may also have to sign off on this approval as well.

When the connection goes through the platform of an IT service provider, coordinating becomes noticeably simpler. The ideal scenario is if the transport service provider is already linked to the platform. Then, you "only" need to define, program, and fine-tune your own interface to the platform. This is not the case if the carrier also needs to be connected to the platform for the first time. The IT service provider will take care of a significant portion of the work in this scenario as well, but shippers are nonetheless advised to take an active role in this coordination process and not leave it to the service provider alone. First of all, this pre-empts time-consuming misunderstandings. Moreover, carriers and parcel services treat an integration project with greater priority if their direct customer is also involved in the process.

#### 7.2 Maximize efficiency gains

In many cases, moving to electronic order transmission and printing the necessary labels and freight documents is already an ample benefit of an IT-based collaboration. But the potential efficiency gains may be much greater, depending on the industry of the shipper/consignor and the type of consignment. In B2C online commerce, for example, it is possible to simplify the returns processes. Or you can accelerate the billing of shipments by having the transport partner's electronic confirmation of successful delivery automatically generate an invoice. System integration can also be used to automate the calculation of freight charges or freight credits.

If you use an integration platform, you'll also have a professional IT service provider taking care of the maintenance, hosting, and data security. Using a single interface also streamlines your own IT environment.

#### 7.3 Monitor the quality of the data

IT-based collaboration can only succeed if the transmitted data is of good quality. More than a few integration projects have stumbled over this issue. If, for example, the carriers and parcel services receive erroneous data on the consignment volume and weights, even well-programmed interfaces can't help. On the other end, shippers need to be able to rely on the accuracy of the tracking information they receive from their transport partners.

Unfortunately, this cannot always be guaranteed. In the parcel services industry, outbound shipments are confirmed by a scan and electronic signature using a handheld device. This information is then sometimes transmitted directly to the central system of the parcel service through real-time tracking. This goes far to ensure accurate consignment data. In other transport types, the recipients confirm the inbound delivery by hand – along with any remarks on damage, missing quantities, or the like – on the freight document printouts. The driver takes the delivery confirmations to the depot, where they are then entered manually. These varying disjointed channels of information result in a relatively high error rate – and a similarly poor quality of data. Reports and KPIs in particular should be treated with skepticism.

#### 7.4 Stay flexible

As described at the outset, collaboration with transport partners can tap into tremendous potential. But that shouldn't lead you to completely ignore the market: You should change transport service providers whenever transport prices, quality issues, or changing needs require it. This should be kept in mind with an IT integration as well. If you forego changing because it would entail an overly complex or expensive IT project, then something has gone wrong. That's why there should be a reasonable relationship between the cost of an IT integration project and the benefit achievable within the contract term. The easier and more standardized the carrier integration is, the better

Another red line is when the transport service providers want to stipulate pickup requirements that are difficult to reconcile with the shipping processes. These are isolated incidents – but they happen.

Integration done properly should always tap into the benefits of collaboration without restricting flexibility. You should also seek flexibility in the total cost of ownership. High startup costs for expensive programming are always a bad idea here. Billing models with IT service providers

based at least in part on the transaction volume are advantageous.

#### 7.5 Be aware of international variances

As mentioned earlier, most parcel services and carriers – with few exceptions – do not have a uniform, Europe-wide IT system. Many service providers even have a service portfolio that varies by country. Services that are standard

in one country are not even offered in other countries. If you want the option to engage in cross-border transactions, for example, you need to discuss this with your service provider early on and begin coordinating the interfaces, labels, etc. – with the foreign subsidiary, if necessary. If you work with an IT service provider, it is essential you ensure that the provider's solution can accommodate this.

### 8. What is a white paper?

AEB defines a white paper as a document providing qualified, unbiased information on a particular topic. White papers may deal with laws and regulations, standards, technologies, solutions, or processes –

analyzed and explained by our experts. A white paper reflects current understanding at the time it is written – subsequent changes in the underlying circumstances cannot be ruled out.

## 9. About AEB: Expertise for SCM, customs, and IT

AEB is a global enterprise with over 400 employees and 5,000 customers. AEB helps businesses standardize and automate supply chain processes with the ASSIST4 integrated software suite and through consulting and other professional services. AEB solutions integrate global trade and logistics processes, embedding customs clearance, export controls, and preference management in solutions that manage the global supply chain.

The result is a faster, smoother, more efficient flow of goods. ASSIST4 also brings greater transparency to the

supply chain and makes it possible to monitor and control shipments all the way to their final destination.

AEB is headquartered in Stuttgart, with offices in Hamburg, Düsseldorf, Munich, and Soest and development centers in Mainz and Lübeck.

AEB has international offices in the United Kingdom (Leamington Spa), Singapore, Switzerland (Zurich), Austria (Salzburg), Sweden (Malmö), the Netherlands (Rotterdam), the Czech Republic (Prague), France (Paris), and the United States.

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