



Practical Benefit of Data Quality

Th. Hecky

Opportunities of Machinery and Plant Engineering

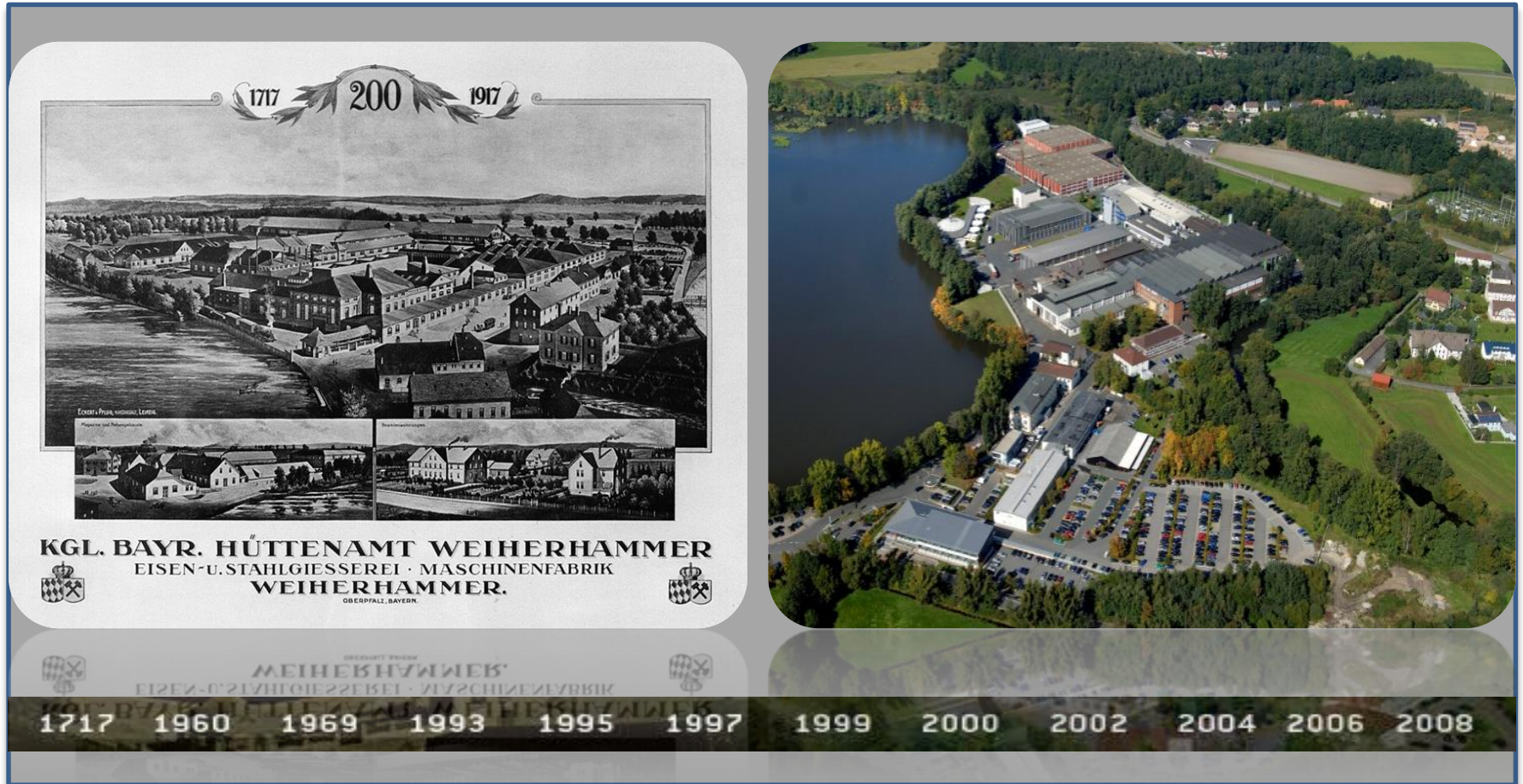
BHS CORRUGATED Maschinen- und Anlagenbau GmbH

Agenda

- 1. Sector and company**
- 2. Classification of material master data**
- 3. Intelligent search and use**
- 4. Spare parts system with SAP connection**
- 5. From a spare parts system to a service portal**

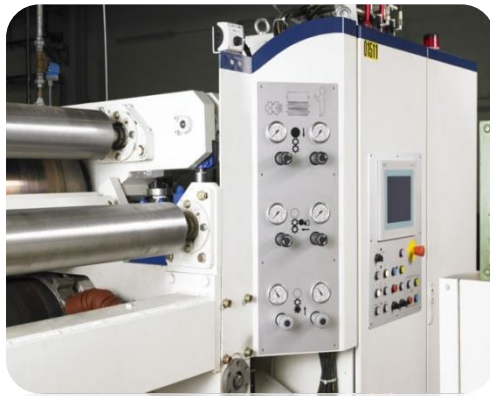


History of BHS Corrugated



BHS Facts and Figures

- Turnover of BHS group approx. 373 million €
- BHS customers having 6,000 plants
- BHS-relevant market – approx. 600 million € Capex p.a.
- 5 manufacturing sites world-wide
- 13 sales offices and 10 representations world-wide
- 3 business units (machines, service, corrugating rolls)

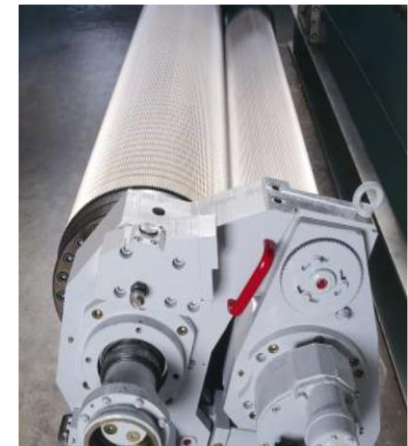
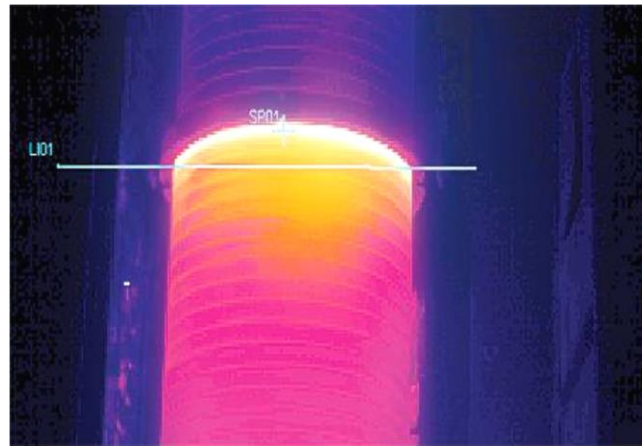
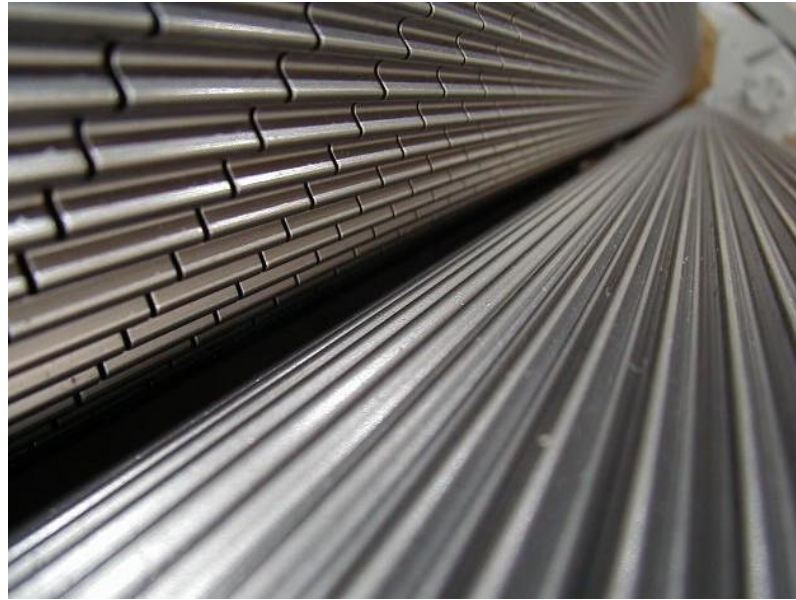


BHS Facts and Figures

- 3 corrugator start-ups per month
- 3 corrugating roll sets per day
- 30 service interventions on site per day
- 150 telephone helplines per day
- 300 spare parts deliveries per day

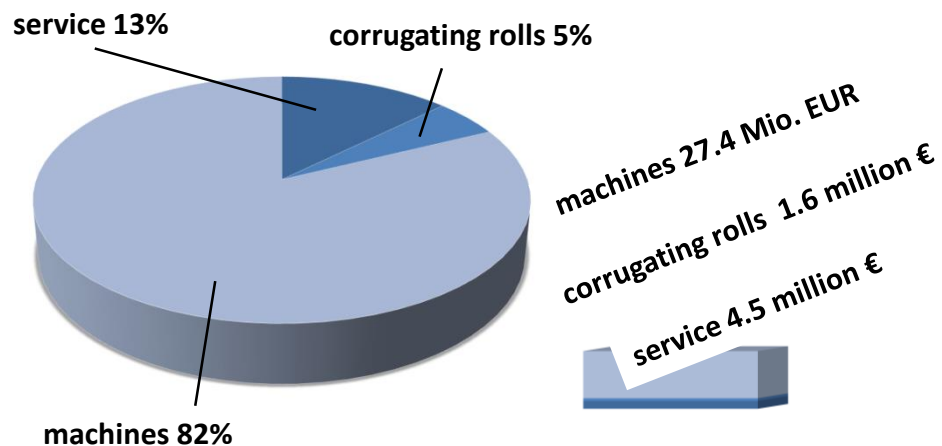


Corrugating Rolls



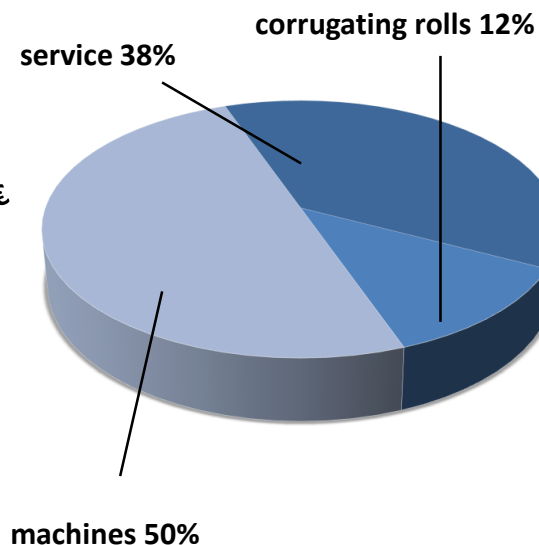
BHS Turnover

1993

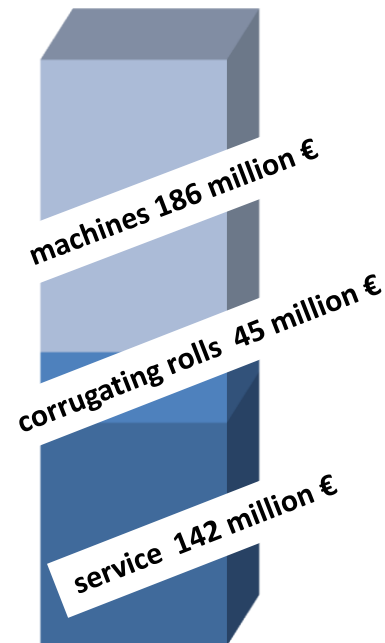


33.5 million €

2015

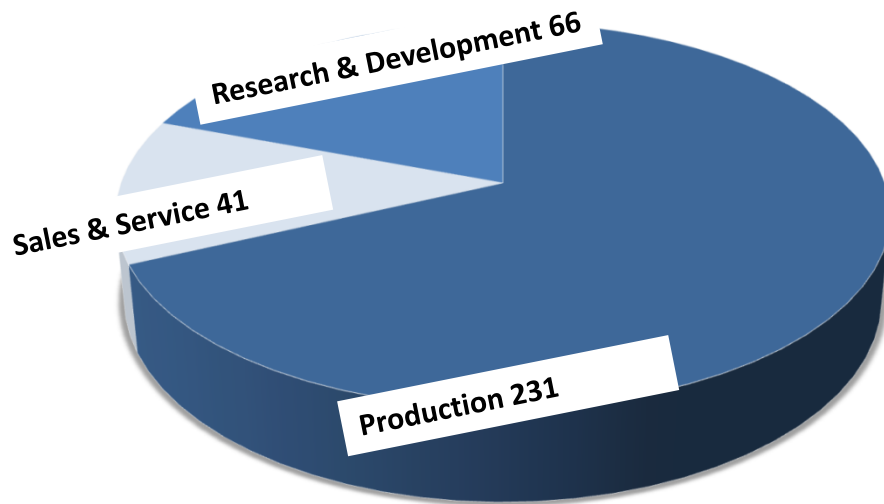


373 million €



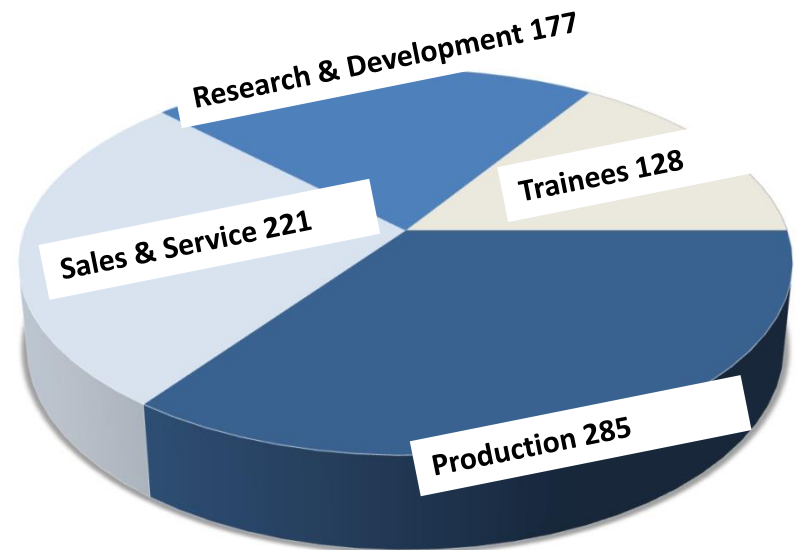
BHS Staff Weiherhammer / Germany

1993



338 employees

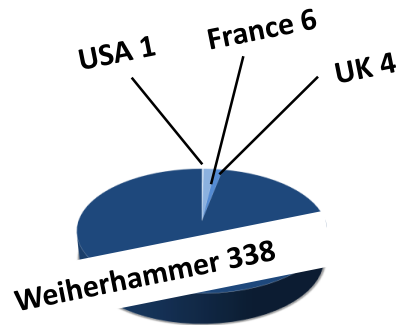
2016



898 employees

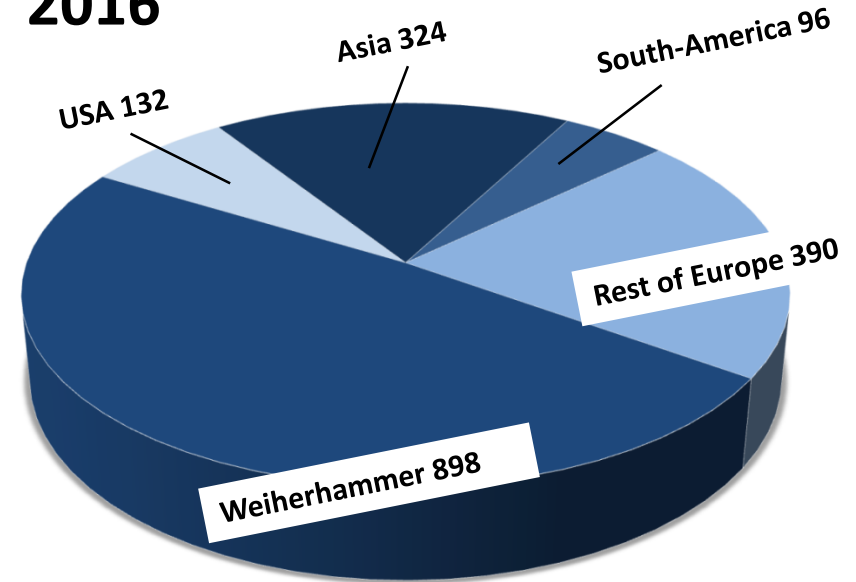
BHS Staff Worldwide

1993



At total 349

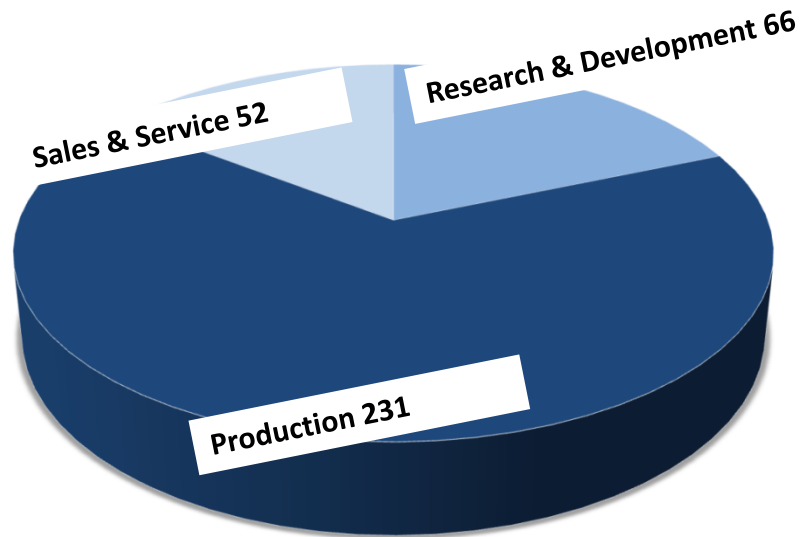
2016



At total 1,840

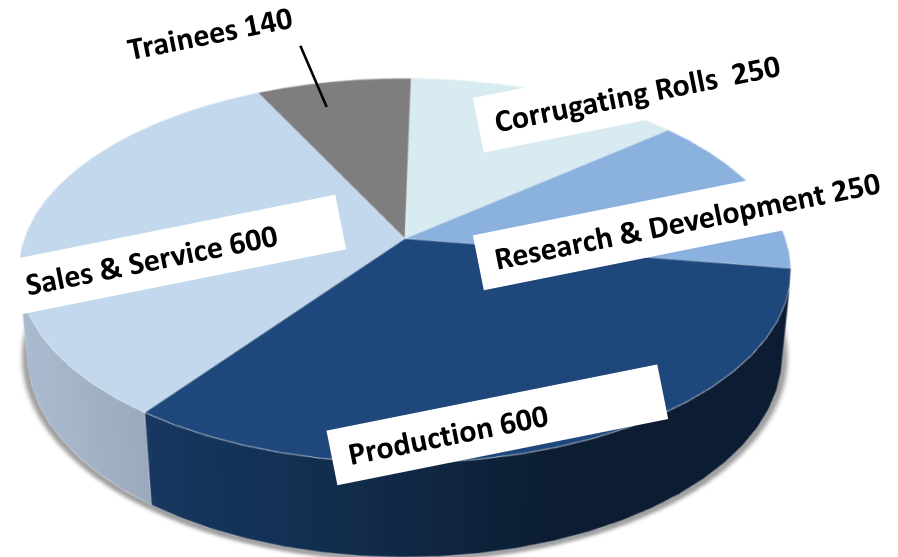
BHS Staff Worldwide in Sectors

1993



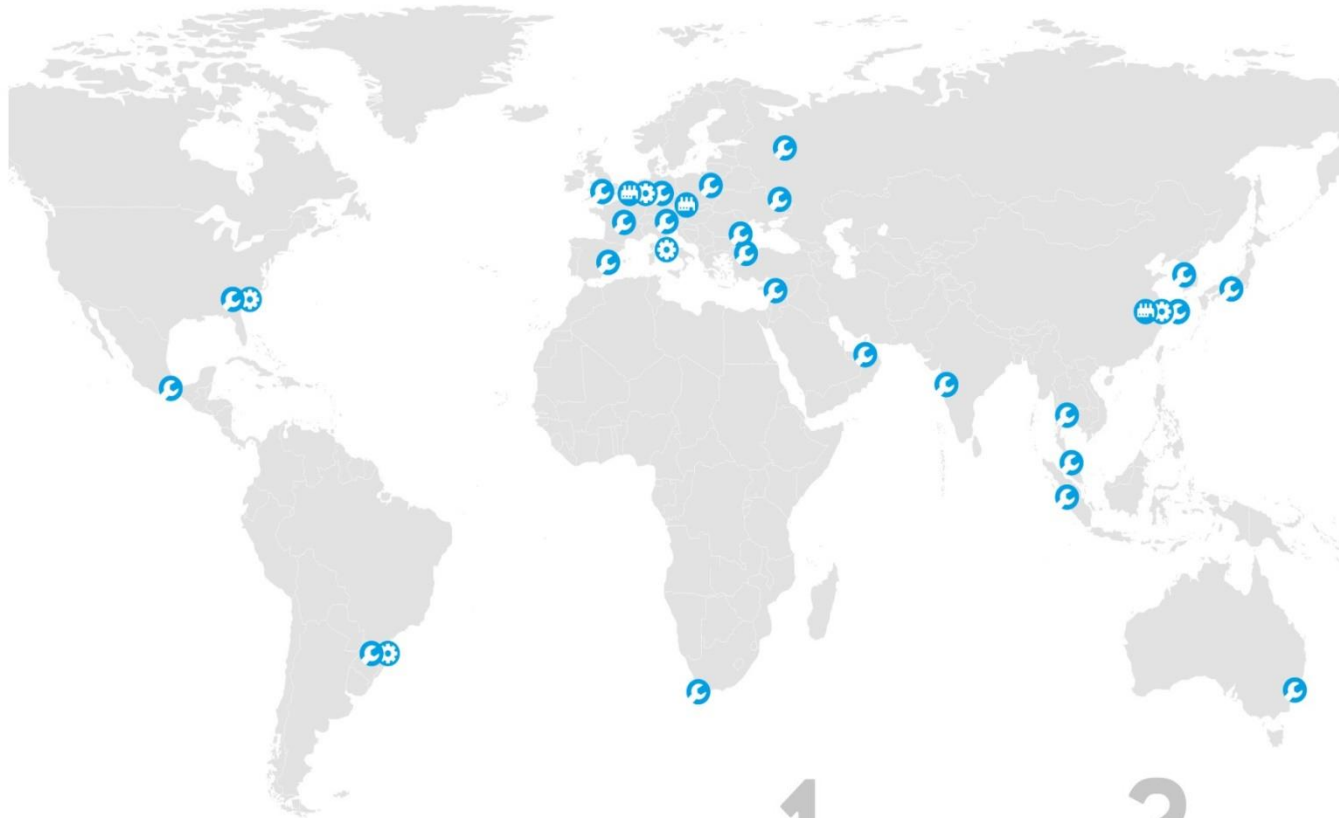
349 employees

2016



1,840 employees

BHS Worldwide



1

Corrugators

Production sites:

- Weiherhammer, Germany
- Tachov, Czech Republic
- Shanghai, China

2

Corrugating Rolls

Production sites:

- Weiherhammer, Germany
- Shanghai, China
- Knoxville, USA
- Curitiba, Brazil
- Milan, Italy

3

Service

Service operations in more than 20 countries in Europe, Africa, Asia, North and South America

BHS Manufacturing Sites Worldwide

Weiherhammer, DE
Machines and Corrugating
Rolls



Knoxville, US
Corrugating Rolls



Curitiba, BR
Corrugating Rolls



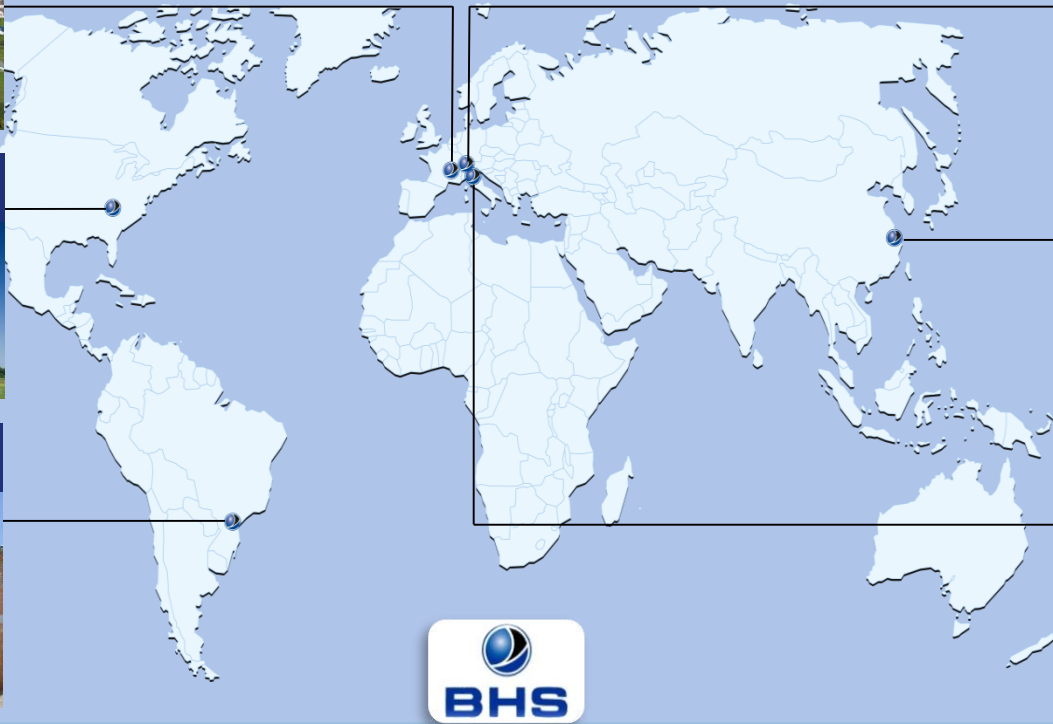
Tachov, CZ
Machines



Shanghai, CN
Machines and Corrugating
Rolls

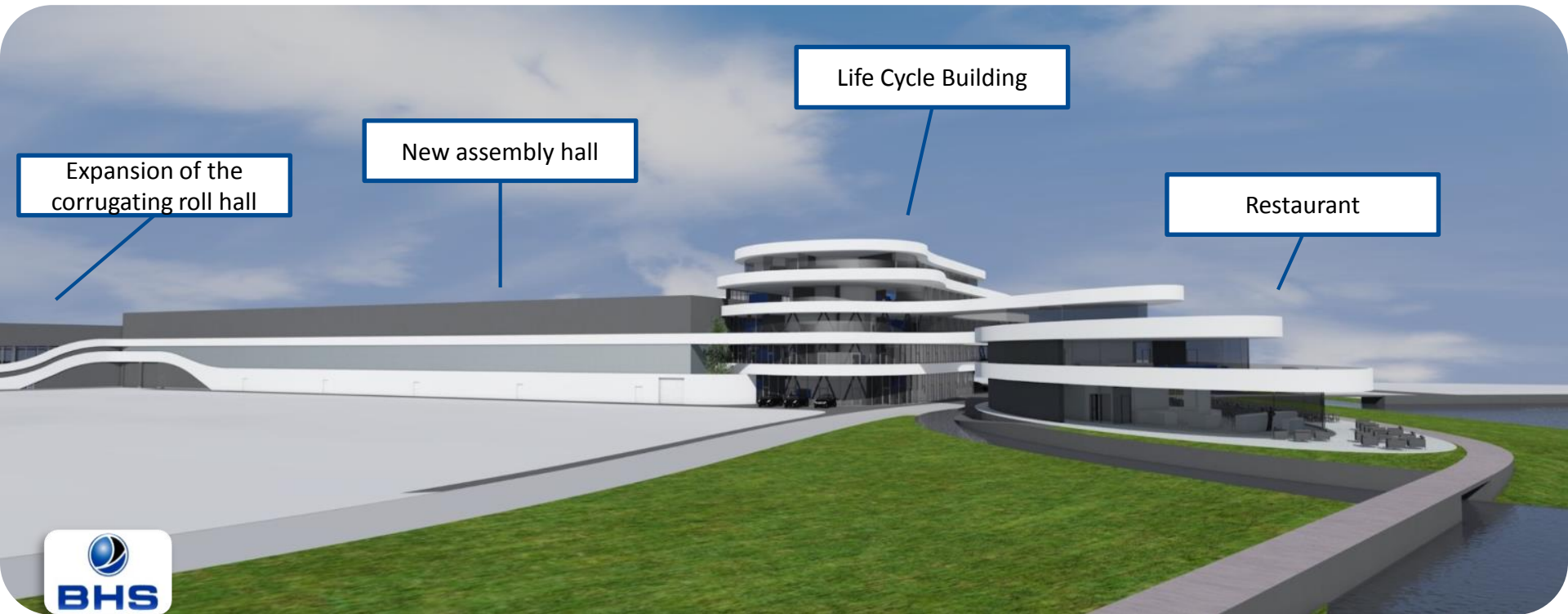


Milano, IT
Corrugating Rolls



BHS Today: Impressions

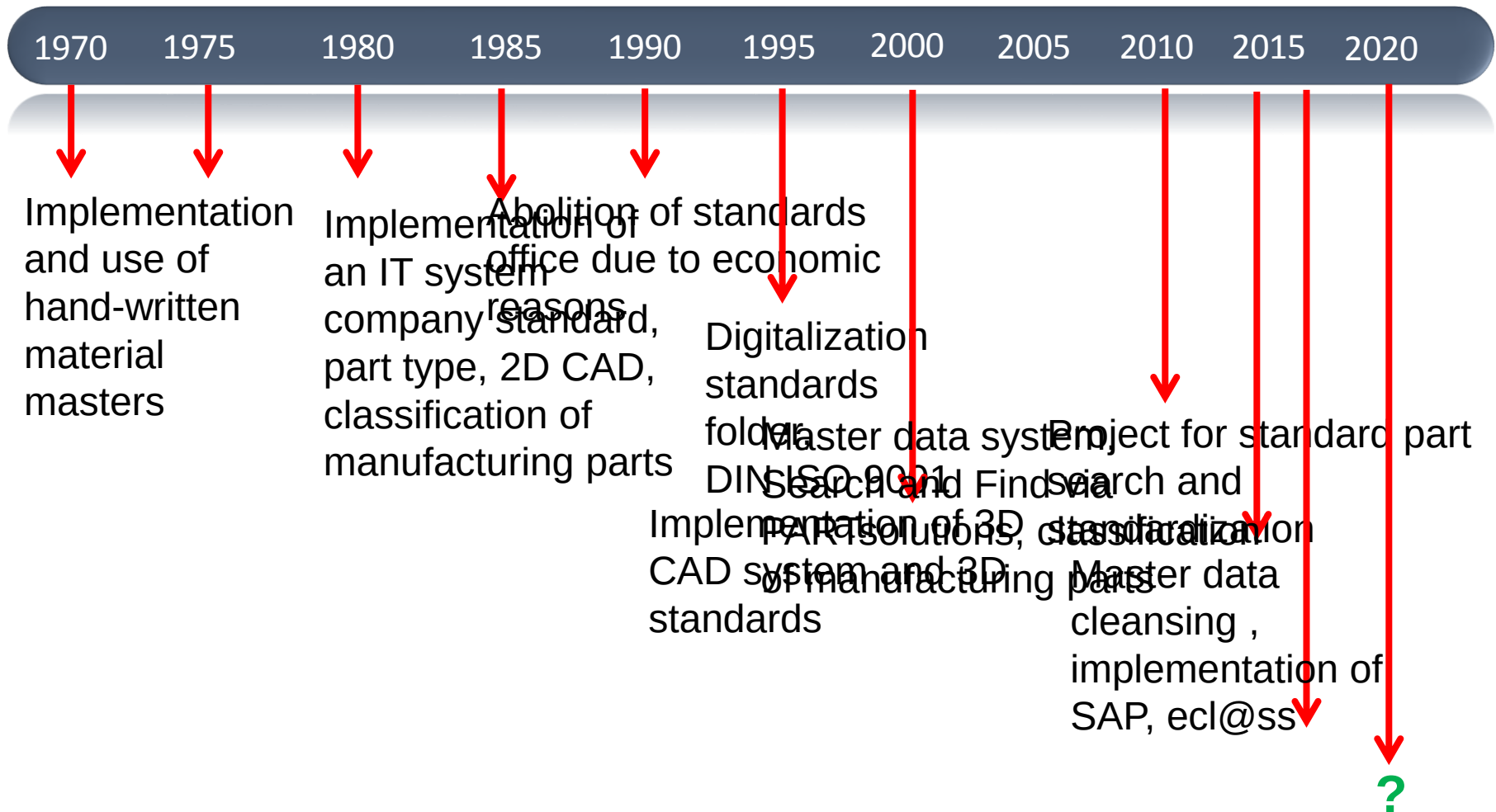
First impressions: The Corrugated Competence Center (CCC) on May 25, 2017



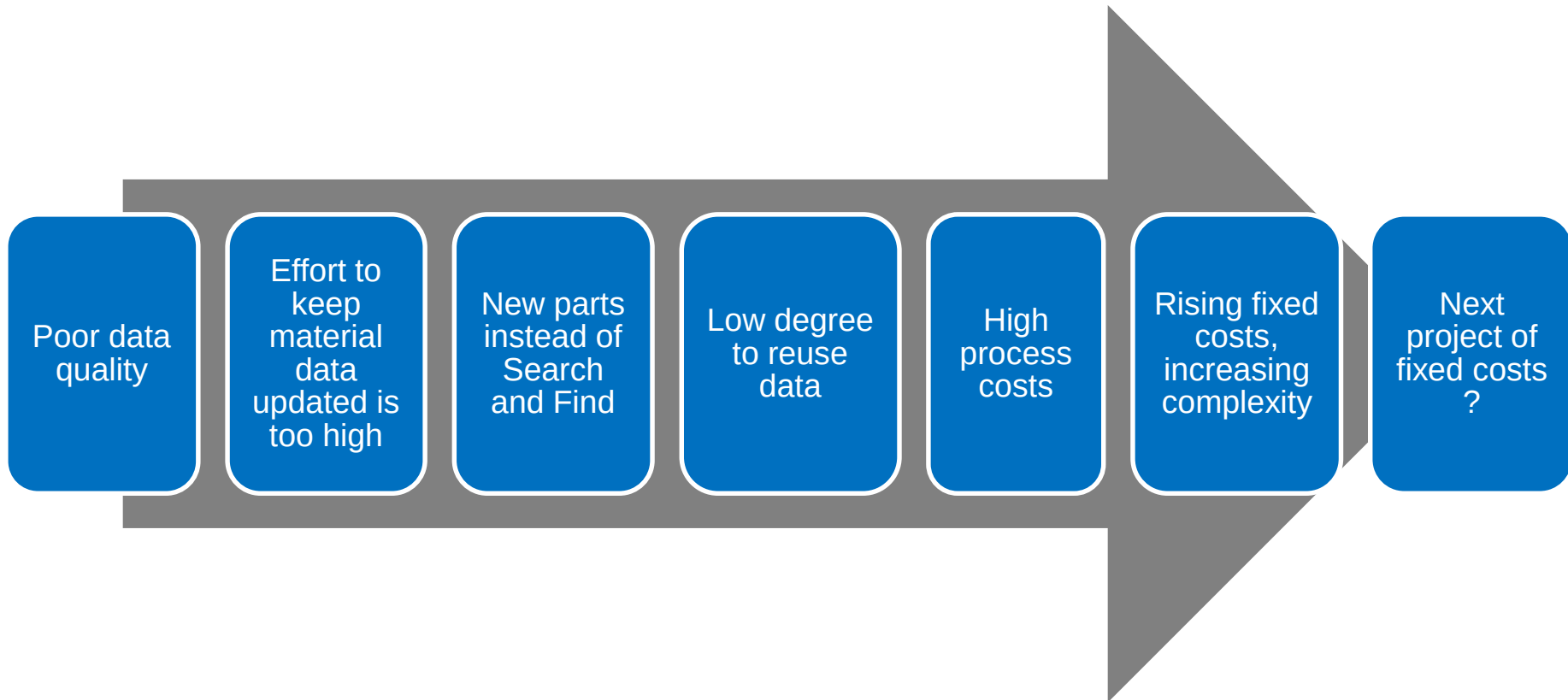
BHS Today: Current Top View (September 14, 2016)



2. Classification of Material Master Data



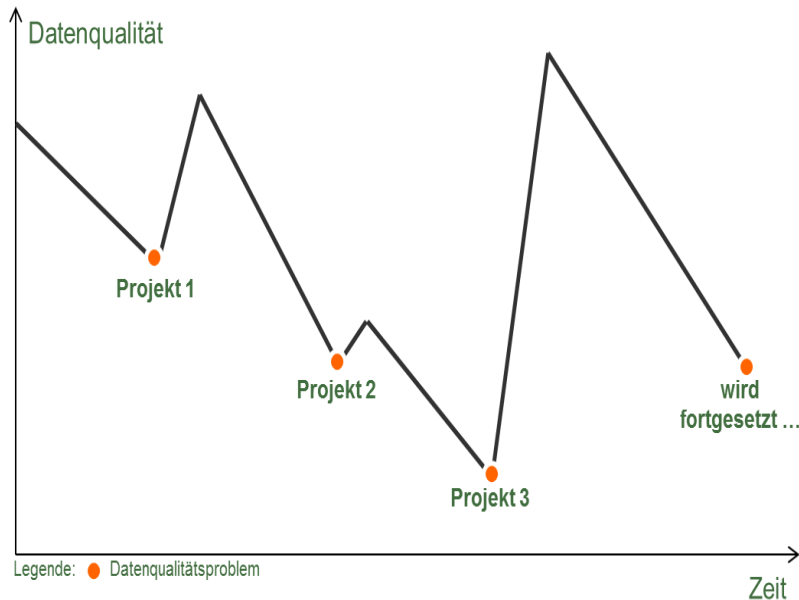
2. Classification of Material Master Data



Realität und Herausforderungen im Datenmanagement

reaktive Aktivitäten überwiegen, die Aufgaben und Erwartungen wachsen

Ein typischer Managementansatz für Datenqualität:



Reaktives Datenqualitätsmanagement führt zu:

- Konstantem «Firefighting»
- Hoher Frustration
- Vermeidbaren Kosten

Ein besser Ansatz ist zu bestimmen:

- Wie stellen wir den Beitrag von Konzerndatenqualität zu den Unternehmenszielen gegenüber der Geschäftsleitung dar?
- Wie steht unser Unternehmen im Vergleich zu anderen?
- Wie können wir messen, wie gut wir sind im Management von Konzerndatenqualität?
- Was kostet die Anlage und Pflege der Konzerndaten?
- Wie etablieren wir Data Governance im Unternehmen?
- Was ist das richtige Mass an Standards und Regeln für unser Unternehmen?
- Wie erreicht man ein einheitliches Verständnis über die Konzerndaten? Wie wird es aktuell gehalten?
- Welche Datenarchitektur ist die richtige und wie setzen wir sie um?
- Wie nutzen wir innovativen Technologien und Konzepte (z. B. In-Memory-Technologien, „Linked Data“)?
- Wie können wir den Wert von Unternehmensdaten bestimmen?

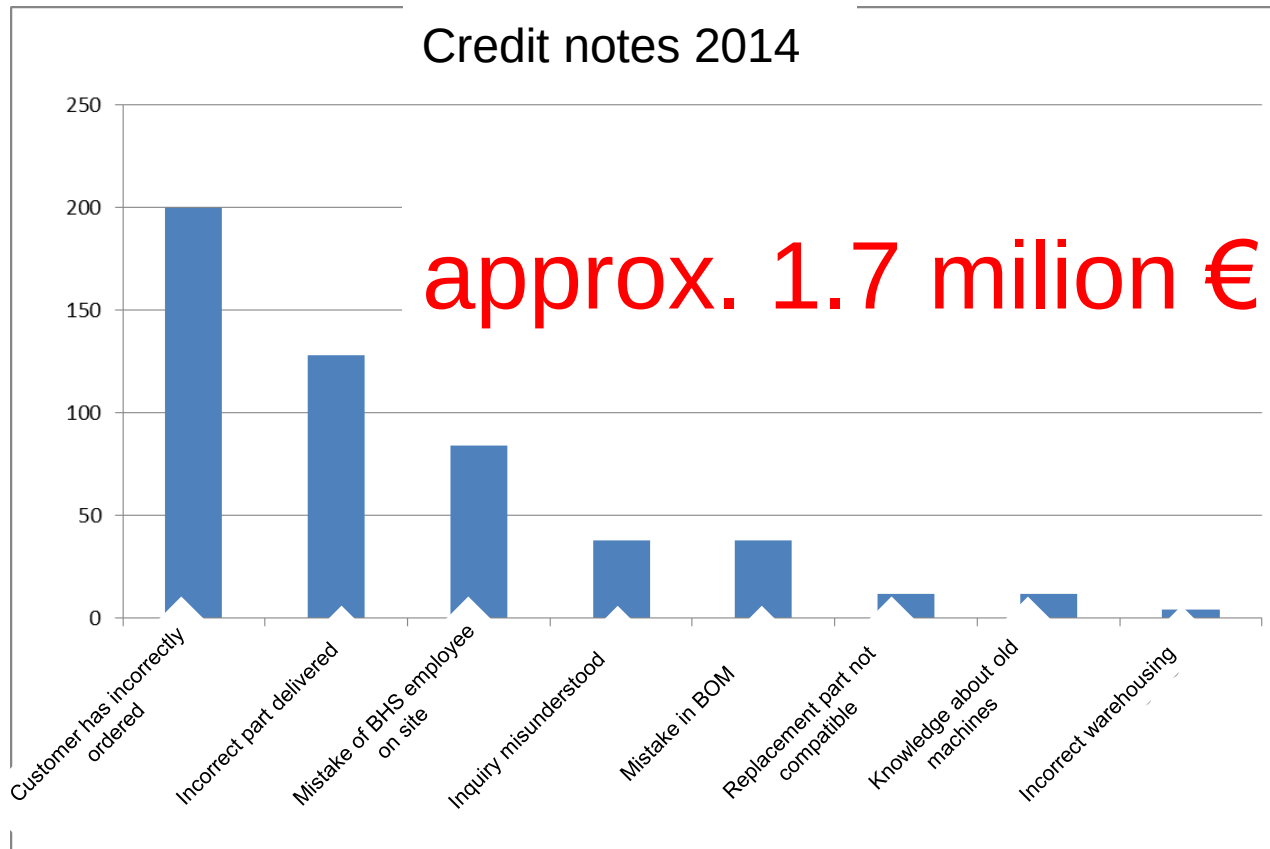
2. Classification of Material Master Data

Data quality? How can it be quantified?

- Credit note for incorrect deliveries
- Search time for component parts (already existing/or not)
- Commitment to suppliers
- Commitment to manufacturing (non-BHS/BHS)
- Limited use of component parts
- Expenses with replacement part



2. Classification of Material Master Data



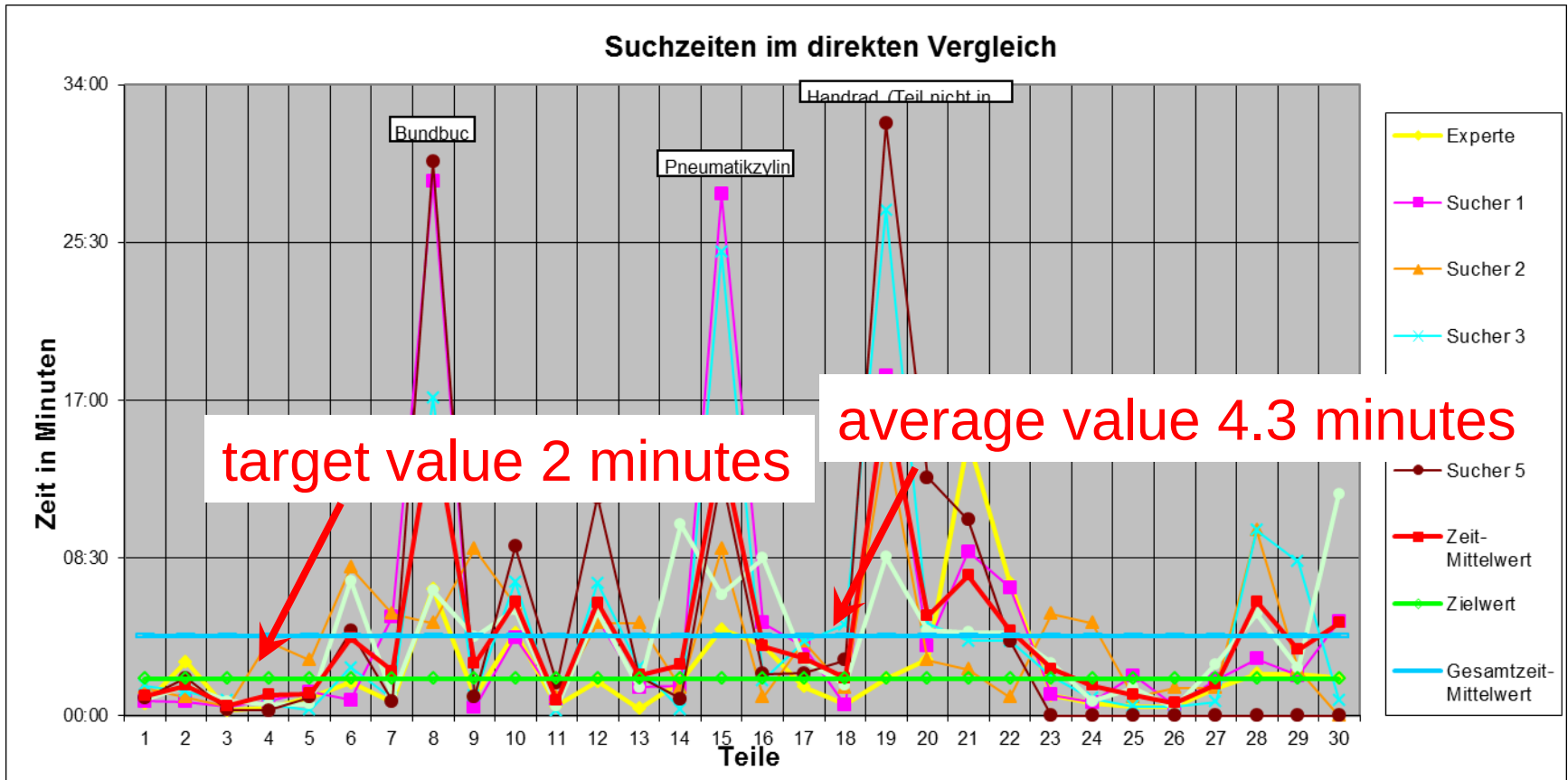
2. Classification of Material Master Data

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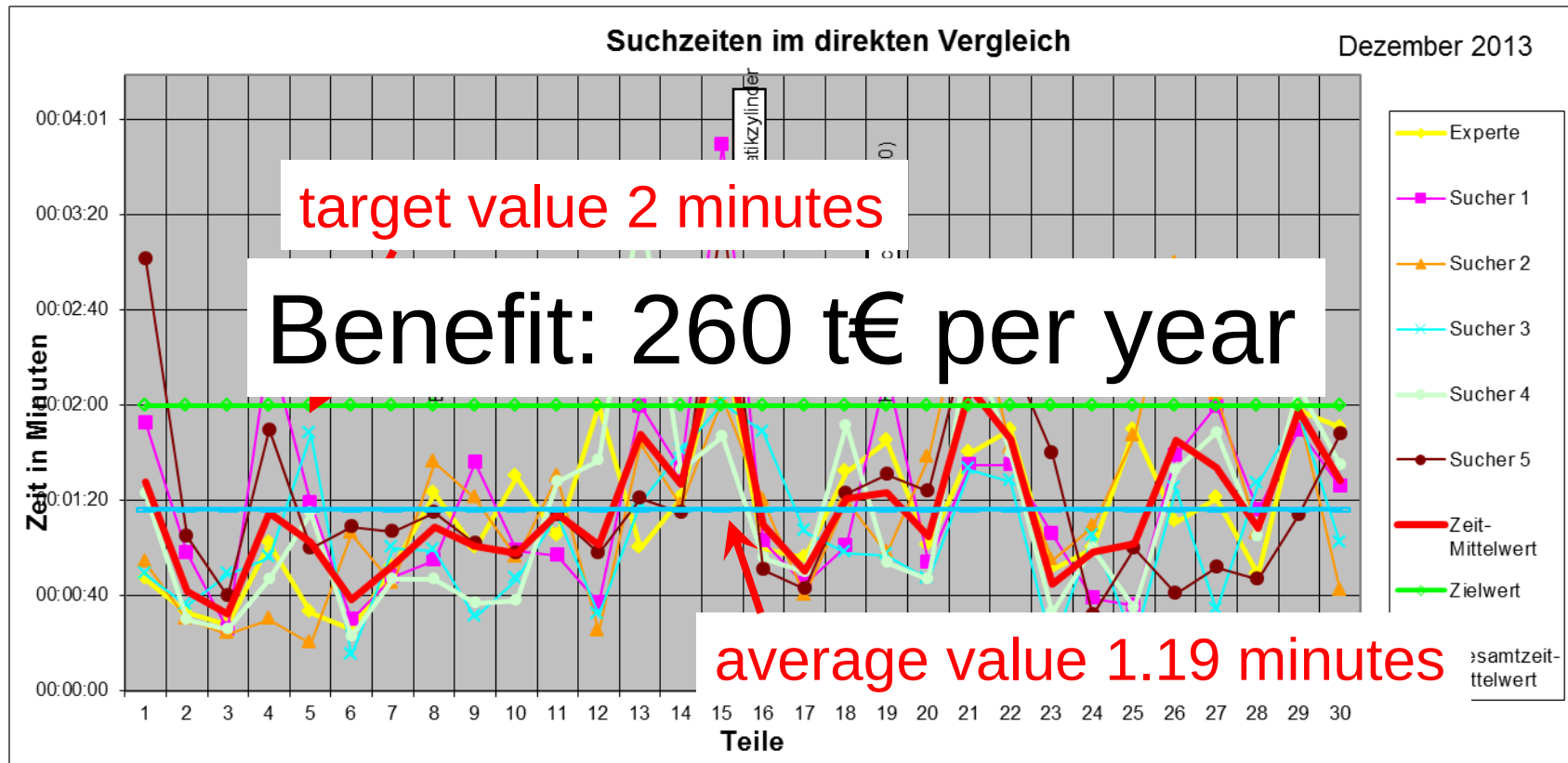
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2. Classification of Material Master Data



2. Classification of Material Master Data



2. Classification of Material Master Data

Why shall I search, when it is faster to make out new material master data?



Microsoft Excel
ro-Enabled Works

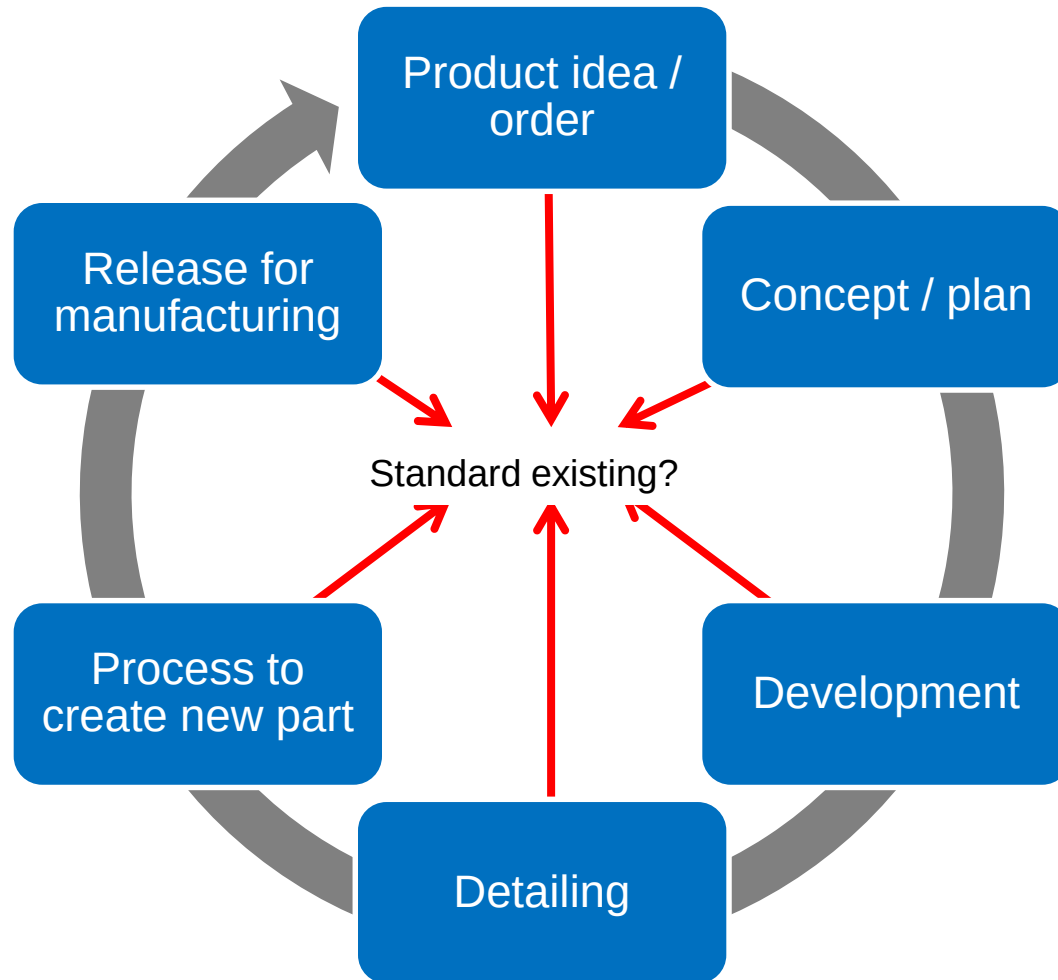


2. Classification of Material Master Data

Reasons for product variants

Reasons for diversity of parts within the organization

3. Intelligent Search and Use

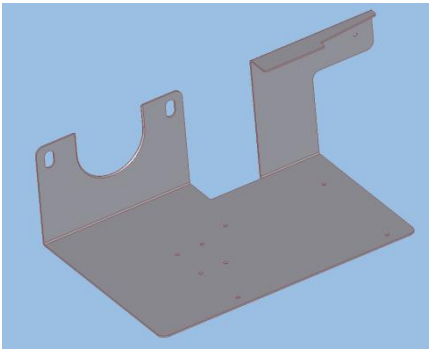


3. Intelligent Search and Use

STL files + data SAP

+ metadata from CAD

= data set in ParSol



e.g.

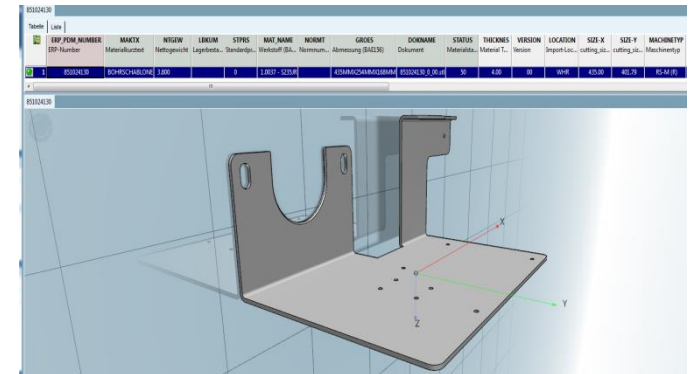
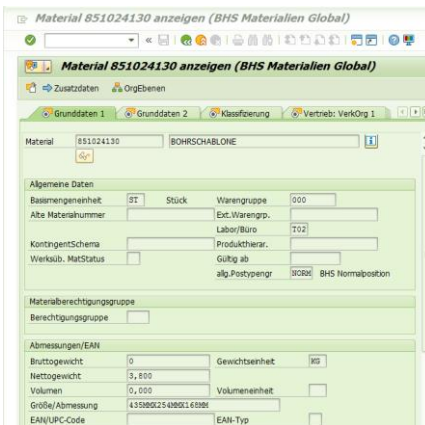
Material thickness=4.00 mm

Neutral factor=0.460

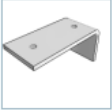
Cutting_size_x=435.00 mm

Cutting_size_y=399.63 mm

...

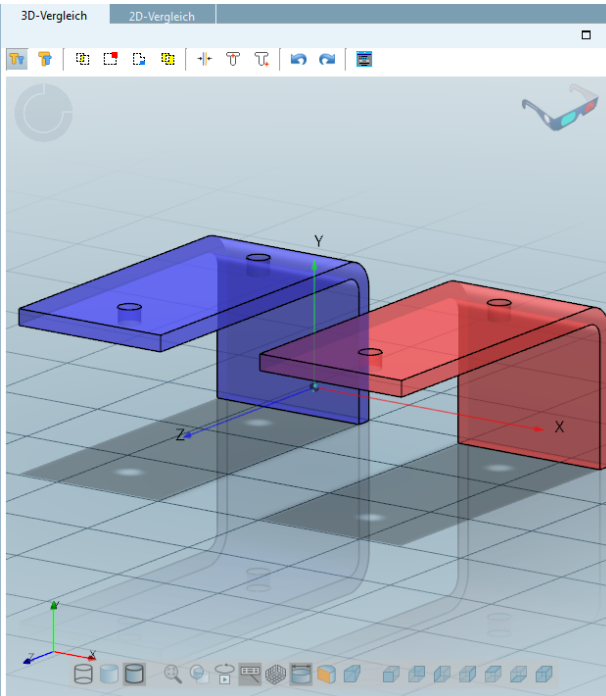


Use of Graphical Similarity Search to Reduce Parts (Drawing Part Compared with Drawing Part)

1		STACKER	851027501
100.0%			THICKNES = 5.00 VERSION = 00 LOCATION = WHR MACHINETYP = AS-M FILETYPE = PSM MODEL-DE ERP-Number = 851027501 Materialkurztext = BLECH Nettogewicht = 0.284 Standardpreis = 0. Werkst GB/T 704-1988 Abmessung (BAE156) = BL.5-50X146 Dokument = 851027501_0_00.stl Materialstatus = 95
2		STACKER	851020586
100.0%			THICKNES = 5.00 VERSION = 00 LOCATION = WHR ERP-Number = 851020586 Materialkurztext = BLECH Nettogewicht = 0.284 Normnummer (AA0830) = 851020586_0_00.stl Materialstatus = 50

Standard and material

		851027501	851020586
Geometrische Ähnli...		100.0%	100.0%
ERP-Daten			
ERP_PDM_NUMBER	ERP-Number	851027501	851020586
MAKTX	Materialkurztext	BLECH	BLECH
NTGEW	Nettogewicht	0.284	0.284
LBKUM	Lagerbestand	-	-
STPRS	Standardpreis	0	-
MAT_NAME	Werkstoff (BAB664)	1.4301 - X5CRNi18-10	-
NORMT	Normnummer (AA0830)	GB/T 704-1988	DIN 1543
GROES	Abmessung (BAE156)	BL.5-50X146	BL.5X50-146
DOKNAME	Dokument	851027501_0_00.stl	851020586_0_00.stl
STATUS	Materialstatus	95	50
PLMTABLE_DOCVIEW	PLM Dokumente	kein Dokument	kein Dokument
Parameter			
THICKNES	Material Thickness	5.00	5.00
SIZE-X	cutting_size_x	-	-
SIZE-Y	cutting_size_y	-	-
VERSION	Version	00	00
LOCATION	Import-Location	WHR	WHR
MACHINETYP	Maschinentyp	AS-M	-
FILETYPE	FileType	PSM	-
MODEL-DESCRIPTL...	3D-Modell-Beschreibung	-	-
MODEL-DESCRIPTL...	3D-Modell-Beschreibung_2	-	-
Topologie			
Größe			
Volumen		36205.9 mm ³	36205.9 mm ³
Oberfläche		16659 mm ²	16659 mm ²
Längste Ausdehnung		105 mm	105 mm
Mittlere Ausdehnung		50 mm	50 mm
Kürzeste Ausdehnung		49.5 mm	49.5 mm
Ausdehnung in x-Richtung		50 mm	50 mm

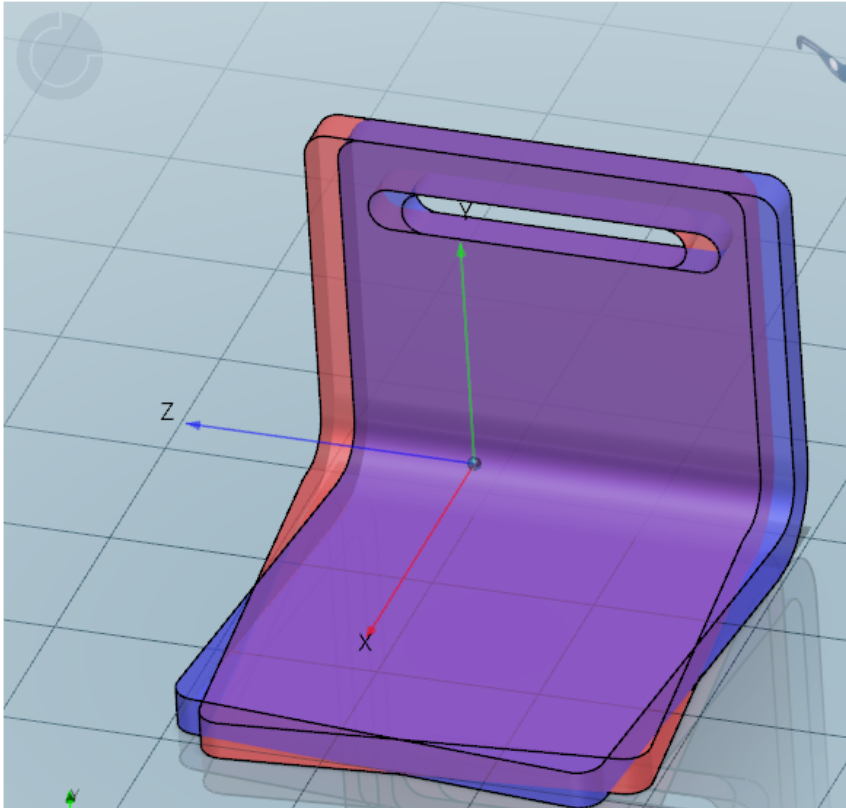


Use of Graphical Similarity Search to Reduce Parts (Drawing Part Compared with Drawing Part))

Left Part – Right Part

Beschreibung	851025019	851024998
		
	M 1 2	M 1 2
	100.0%	99.4%
ERP-Number	851025019	851024998
Materialkurztext	WINKELBLECH	WINKELBLECH
Nettogewicht	0.928	0.928
Lagerbestand	-	-
Standardpreis	0	0
Werkstoff (BAB664)	-	-
Normnummer (AAO830)	DIN EN 10029	DIN EN 10029
Abmessung (BAE156)	BL.8X80X107	BL.8X80X107
Dokument	851025019_0_00.stl	851024998_0_00.stl
Materialstatus	50	50
PLM Dokumente	kein Dokument	kein Dokument
Material Thickness	8.00	8.00
Version	00	00
Import-Location	WHR	WHR
cutting_size_x	-	-
cutting_size_y	-	-
Maschinentyp	M025T03V01	M025T03V01
FileType	PSM	PSM
3D-Modell-Beschreibung	-	-
3D-Modell-Beschreibung_2	-	-
Volumen	118177 mm ³	118177 mm ³
Oberfläche	34771.6 mm ²	34771.6 mm ²

3D-Vergleich 2D-Vergleich



3. Intelligent Search and Use

Number of classified component parts:

In the BHS classification (ecl@ss 8.1):	47,216
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e.g.

Class 23 (machine elements, fixation elements)	38,335
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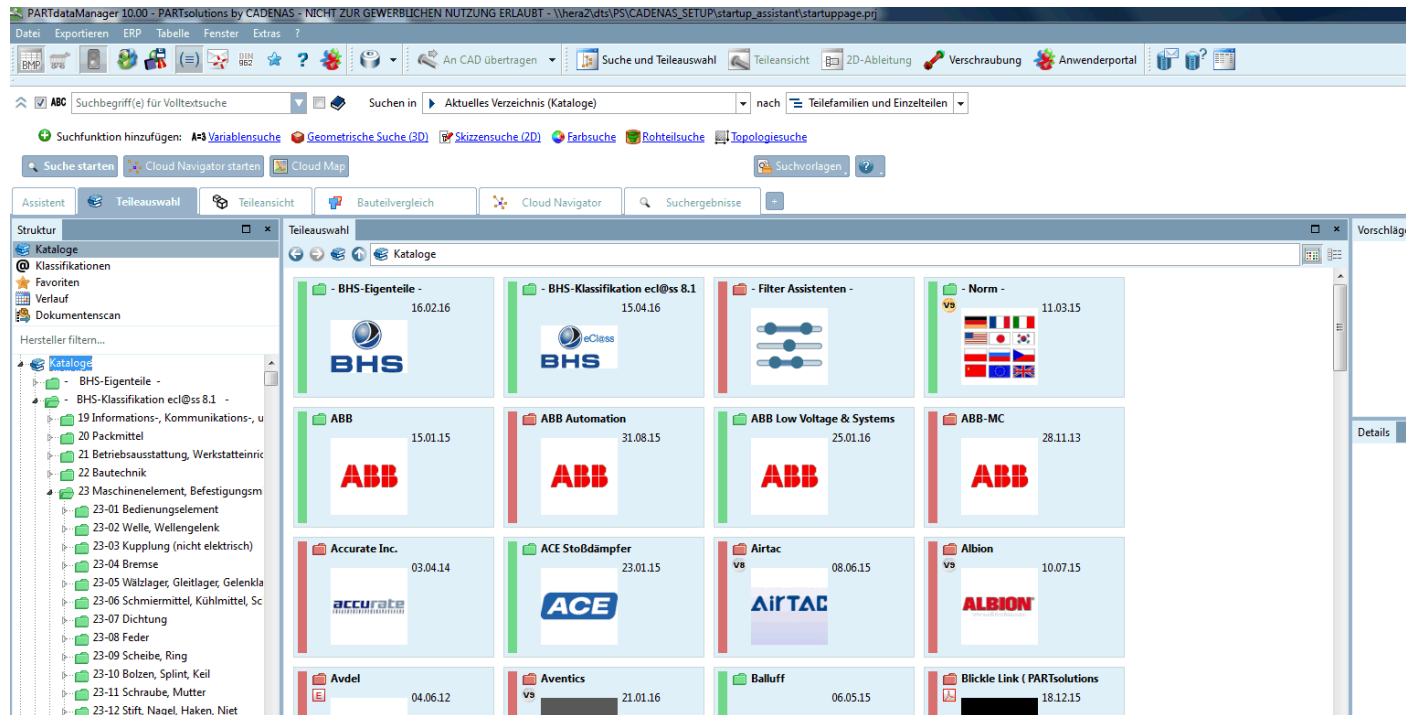
Class 27 (electrical engineering, automation technology)	4,565
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In den drawing parts:	15,400
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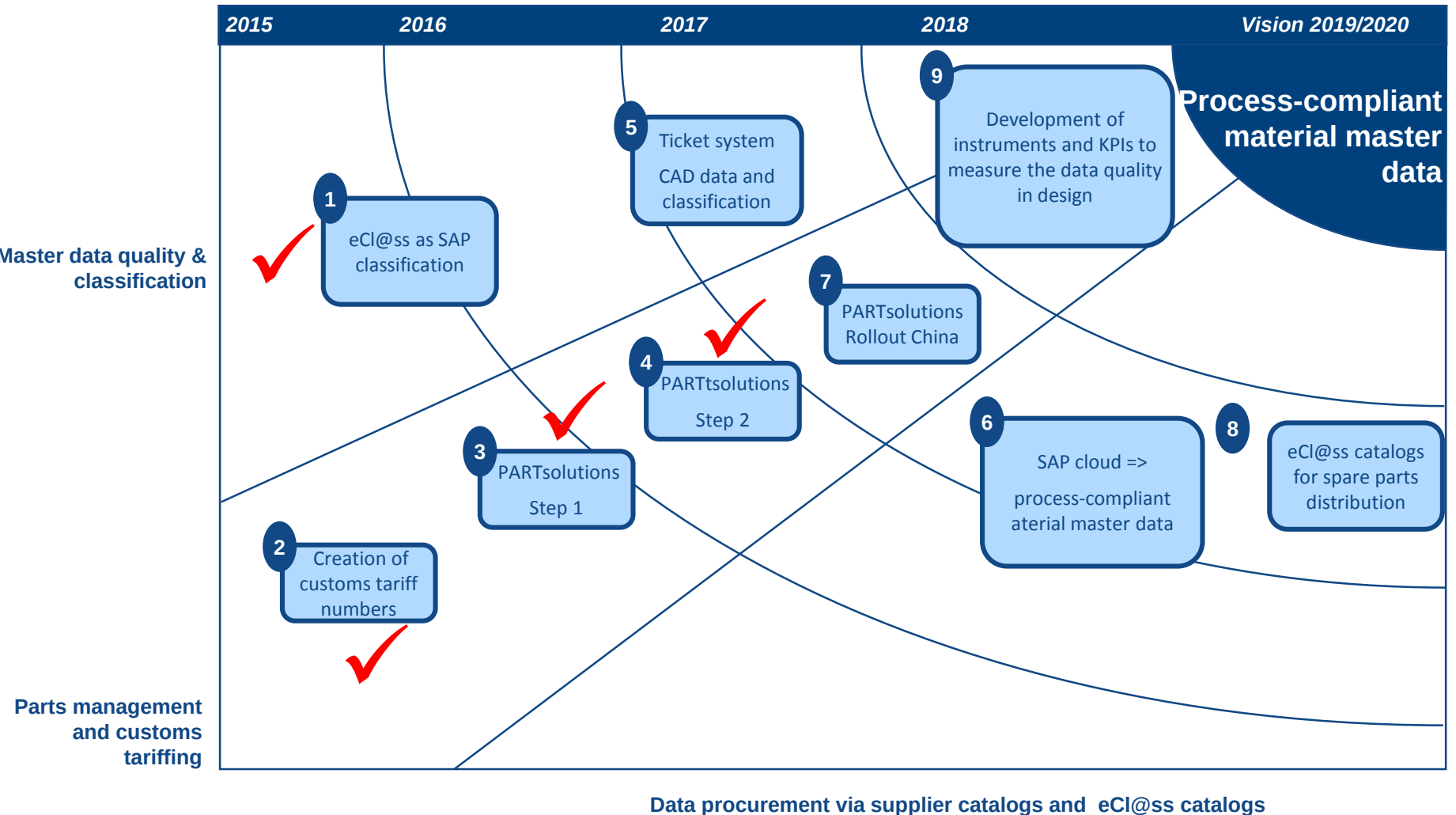


E-Procurement – Further Possible Options

- PARTsolutions – comprehensive cross-database, independent of machines and manufacturers as far as parts identification and procurement are concerned



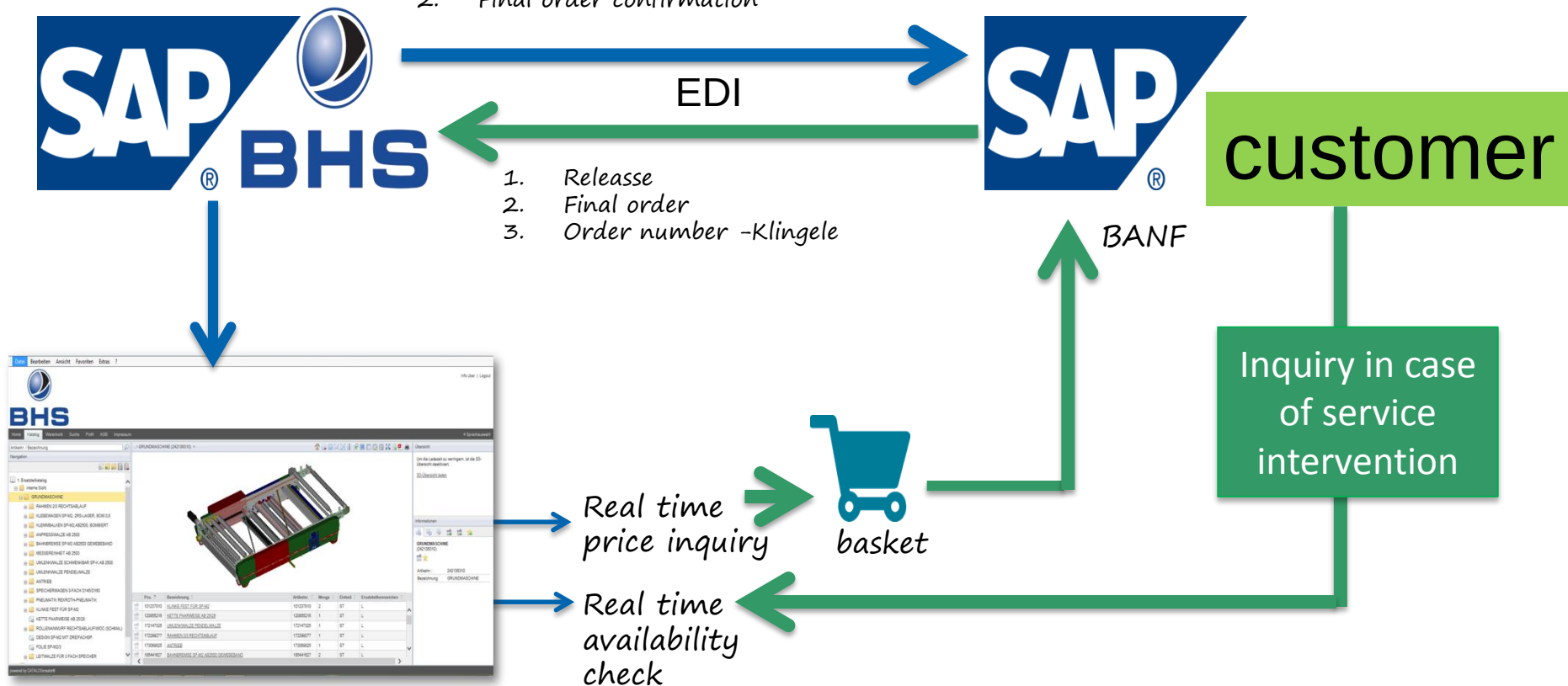
3. Intelligent Search and Use



4. Spare Parts System with SAP Connection

Work flow with SAP connection – order in the spare parts shop

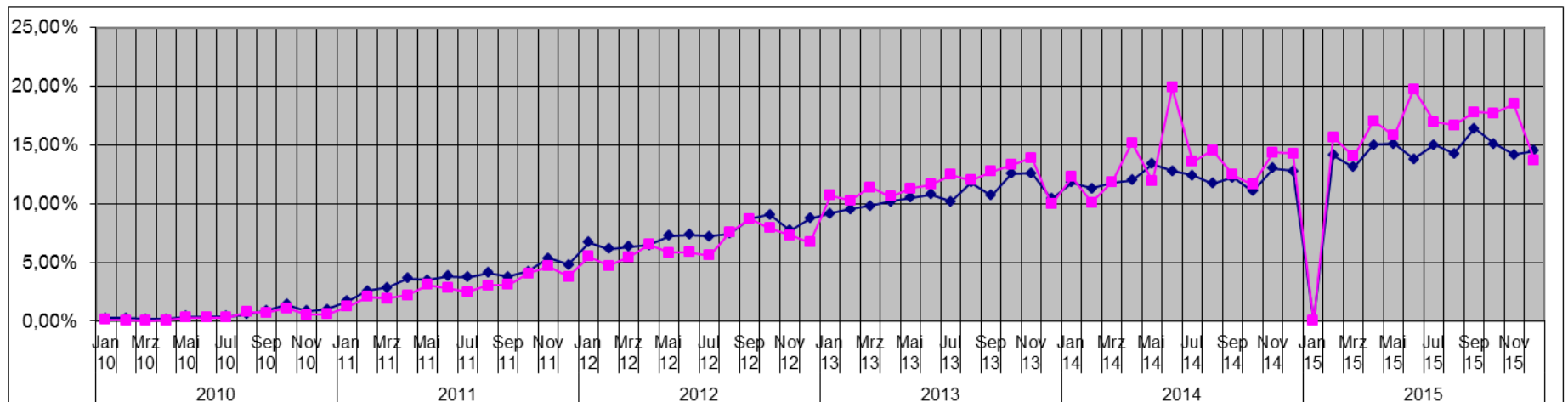
1. BHS order
2. Final order confirmation



Spare parts shop:
Spare parts catalog per
customer and machine

4. Spare Parts System with SAP Connection

Eingegangene Online-Bestellungen&Anfragen seit März 2009:													22.355 GESAMT
2016	Jan	Feb	Mrz	Apr	Mai	Jun	Jul	Aug	Sep	Okt	Nov	Dez	2015
Anzahl online bestellende Kunden (verschiedene):	115	106	108	104	110	107	98	111					193 KUNDEN GESAMT
Quote bestellende Kunden zu onlinefähigen Kd.:	24,0%	21,9%	22,3%	21,4%	22,6%	21,9%	20,0%	22,7%					22,1% MITTELWERT
Anzahl Online-Zugriffe auf E-LIB (KUNDEN Total)	2.453	2.386	2.649	2.483	2.414	2.583	2.490	2.714					2522 Ø pro Monat
Quote Online-Bestellungen / Zugriffe auf E-LIB	35%	22%	18%	23%	23%	20%	14%	20%					22% Ø pro Monat
Anzahl Online-Zugriffe auf E-LIB (KUNDEN Einzelpersonen)	277	283	299	290	281	303	300	296					291 Ø pro Monat
Anzahl Online-Zugriffe auf E-LIB (BHS Total)	1.018	1.202	1.268	1.042	967	930	983	1.014					1053 Ø pro Monat



BHS

E-SERVICES PARTS AND DOCUMENTS

HILFE
 ABMELDEN

Benutzerkonto: trainer
 Sprache Deutsch

E-PARTS

E-LIB

KUNDE

MASCHINEN

Maschinensuche

Teilesuche

Teilelisten

MASCHINENSUCHE (Kundennummer: 2405282)

Maschinenwerknummer ①

Typ ②

Maschine

Inbetriebnahmejahr

Anzeigeeinstellung

Teilegruppenfilter

Standardmodus

Suchen

Löschen

BHS CORRUGATED

MASCHINEN- UND ANLAGENBAU GMBH

POSTFACH 107 D-92729 Weiherhammer Germany

Type ②

Year of constr.

Works-No. ①

Machine-No.

kVA

V

A

Hz

SUCHERGEBNISSE

		Maschinenwerknummer	Typ	Maschine	Inbetriebnahmedatum
		2100125	AS-M	Ablage	19.10.04
		2100602	UPGRADE AS-M	Nachrüstung Ablage	26.11.12
		2500362	SR-P	Schneid- und Rillautomat Parallel	19.10.04
		2500363	LFS	Linienachführung	19.10.04
		2500364	SC	Swing Change	19.10.04
		2500455	WCL	Webcleaner	19.10.04



Browser address bar: <http://10.1.72.16/cocoon/tpso/apps/iposweb/7d2e6d52102c782e5d426e64480a6b502e195b/> 10.1.72.16

kostenlos - Englisch ⇌ Deu...

BHS E-SERVICES PARTS AND DOCUMENTS

HILFE ABMELDEN

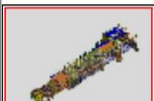
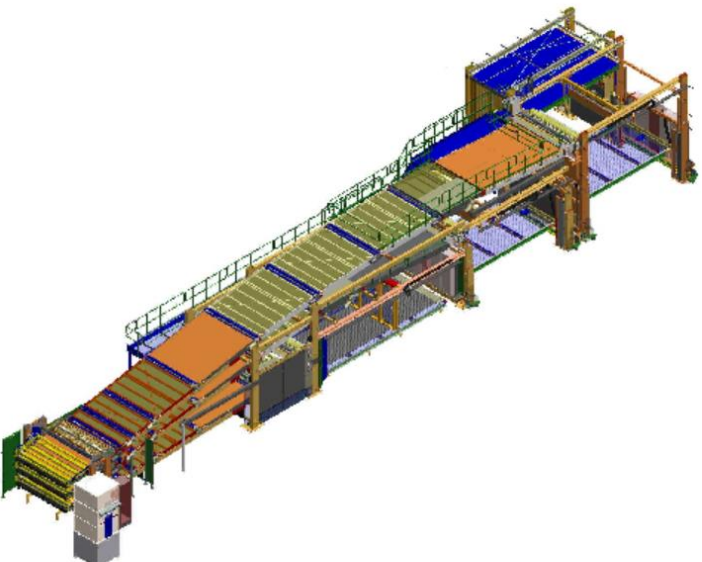
Benutzerkonto: trainer
Sprache: Deutsch

- E-PARTS
- E-LIB
- KUNDE
- MASCHINEN

SUCHE:

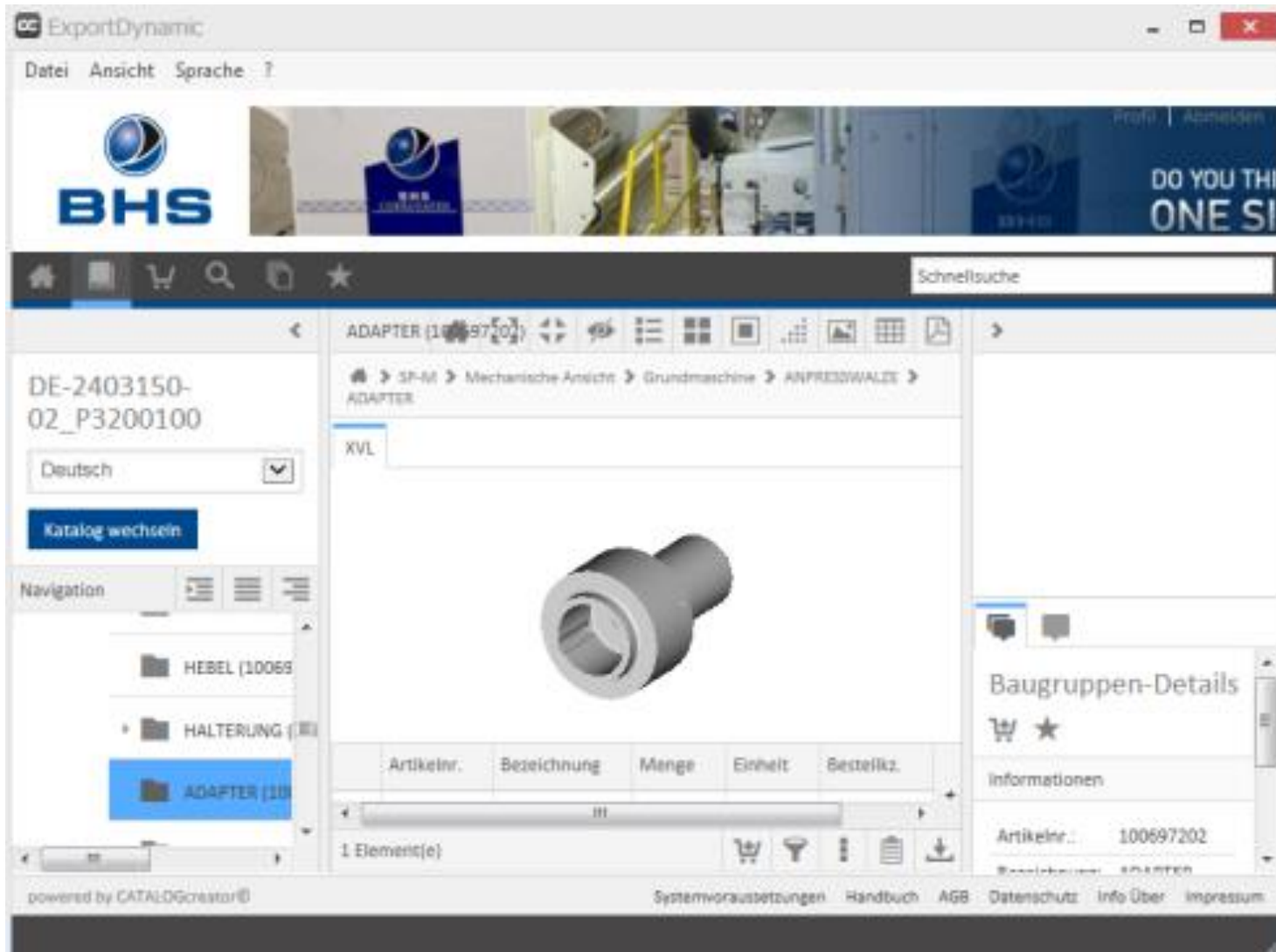
NAVIGATION:

- Maschinenwerknummer: 2100125
- BUERSTENSTATION
- HUBVORRICHTUNG
- KAMMER EINS
- BAENDER
- KAMMER ZWEI
- KAMMER DREI
- HUBTISCH



Teilenummer	Bezeichnung
149047400	HUBVORRICHTUNG





W:\TM\nt\My Document



5. From a Spare Parts System to a Service Portal



BHS consignment stocks



Simplify increase in production



customer



Increase in efficiency



Thank you very much for your attention

