



Guidelines

for supplier evaluation

Version 2.3



Versions

Version	Date	Comment	Processed by
1.0	05.01.2006	First version	Christian Mannke
2.0	23.03.2015	Update to TOOL SOFTCON LB	Helmut Schmitzberger
2.1	22.12.2015	Update Presentation QM hard fact quality level	Richard Ross
2.2	19.01.2016	Update chart purchase soft facts	Helmut Schmitzberger
2.3	19.05.2016	Update Statement regarding complaint, Adherence to deadlines and measures – complaints	Christian Hufnagl

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1 Guidelines



Perfection in Automation - This motto has determined all our doing since the company founding. We understand this to mean not only being able to deliver the most innovative technology anytime and anywhere in the world but also being able to find solutions together with our customers. The creation of complete industrial automation is at the centre of all our work.

The technological excellence of B&R in the field of industrial automation is particularly founded on the reliability and innovative strength of our products.

True to this philosophy we ensure the highest quality level together with our best suppliers.

On this basis we strive to achieve a long term and plannable strategy in the cooperation. Those who wish to be successful in global competition must be able and willing to aim at continuous optimisation and make ongoing improvements.

An economic benefit for both sides can only be achieved on the basis of a trusting and cooperative partnership in which costs, quality, innovation and adherence to delivery dates are in the foreground.

Our buying and quality team will, therefore, determine, in an open dialogue together with you, optimisation potential.

These practical guidelines will contribute to this and help you to understand our supplier evaluation and accept this as a tool.

Handwritten signature of Peter Schuch in blue ink.

Peter Schuch
General Manager Global Sourcing

Handwritten signature of Richard Ross in blue ink.

Richard Ross
Head of Quality Management

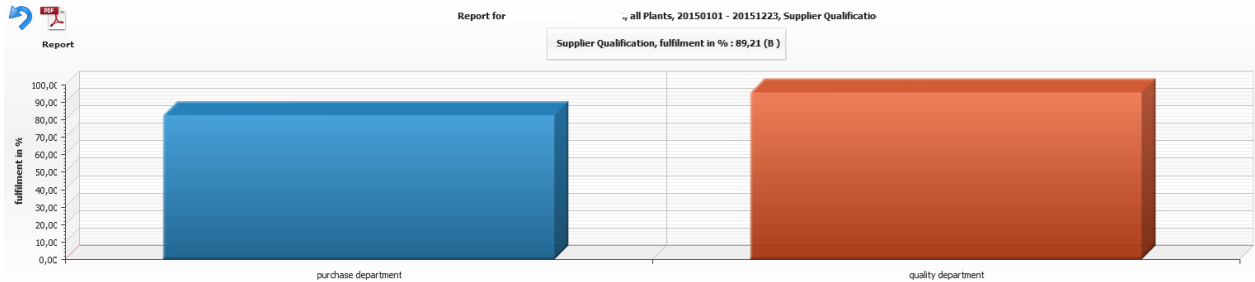
Handwritten signature of Edmund Schatz in blue ink.

Edmund Schatz
Head of Quality Management



2 Basis of evaluation

Our suppliers will be periodically evaluated – target: 1x year or according to target agreement – in the areas of buying – logistics – quality with a view to their measured results.

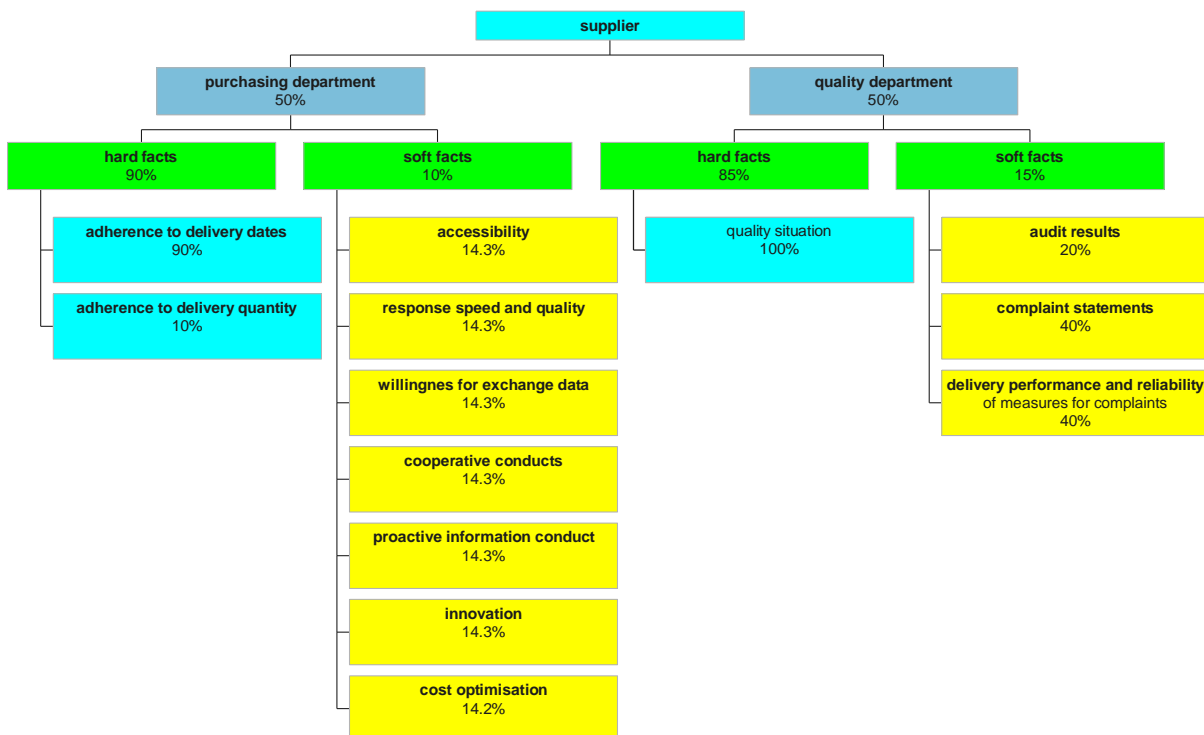


Suppliers will be provided with the result of this evaluation in the form of a PDF. Any differences or uncertainties to the hard facts can be crosschecked due to clear individual changes on SAP receipt level.

3 Weighting factors

Evaluation occurs according to the following total weighting:

Only automatically or manually evaluated criteria will be taken into consideration. Non-evaluated criteria will not be used in the evaluation and the weighting of the evaluated criteria increased proportionately so that evaluation is again at 100%.

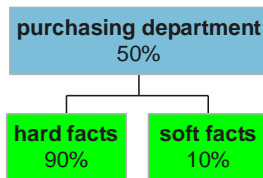




4 Buying

4.1 Area criteria

Evaluation of buying is incorporated in the total evaluation with 50% and comprises of:

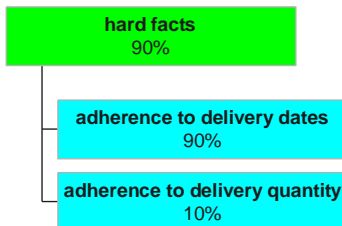


Hard facts are determined through the selected period from the B&R ERP System (currently SAP) from the movement data.

The subjective evaluation criteria (=soft facts) are determined periodically by the buying employees responsible for the suppliers. If there is more than one soft fact evaluation, the average of all evaluations is used.

4.2 Hard fact buying

The hard fact evaluation is incorporated in the total evaluation of buying with 90% and comprises of adherence to delivery dates and delivery quantity:



4.2.1 Hard fact buying – adherence to delivery dates

Adherence to delivery dates is incorporated in the hard fact evaluation of buying with 90%. The selected evaluation period determines which incoming goods are used for the evaluation, the data is taken from the SAP system and depicts the arrival date (=booking date, corresponds to date delivered to B&R) of the deliveries. The delivery dates (=statistical delivery date) most recently agreed between B&R and the supplier serve as the basis. Delivery dates which are subsequently postponed and/or confirmed by suppliers are not taken into consideration. Only delivery items are used for the evaluation. A delivery item (=material) may comprise of n items.

If the booking date of an incoming goods delivery occurs in the evaluation period and the incoming goods delivery is relevant, it is to be evaluated. Incoming goods for a material on the same item of an order receipt are accumulated per day. The booking date of the incoming goods is compared to the statistical delivery date of the schedule of the order receipt. Weekends and bank holidays as stated in the B&R work calendar are deducted from this.

The established difference is converted into points using the following criteria:

More than 5 days early	0 points
2 - 5 days early	75 points
1 - 0 days early	100 points
1 - 3 days late	40 points
More than 3 days late	0 points



The evaluation of the delivery items occurs according to the causative principle. I.e. a late delivery causes more work and costs than an item delivered too early. As a result, delivery items which arrive late are evaluated with a lower score (=deduction).

Example of a punctual delivery

Item 00010 classification 1: is confirmed for arrival on 03. Nov.15 and arrives on 02. Nov.15

Example of a late delivery

Item 00010 classification 1 is confirmed for delivery on 03. Nov.15 and arrives on 11. Nov.15

Example of item splitting

Item 00010: 40 items are confirmed for delivery on 03. Nov. 15; 25 items arrive on 02. Nov. 15. Remaining 15 items arrive on 11. Nov. 15. Delivery date 02. Nov. 15 is evaluated as punctual and delivery date 11. Nov. 15 as too late.

Example of subsequent postponement

Item 00010 is scheduled to arrive on 03. Nov. 15. Item is later scheduled to arrive on 11. Nov. 15 when it also arrives. Item is evaluated as too late.

The average of all items evaluated in the selected period is used for the evaluation:

Example: total 5 delivery items:

$(100+0+100+0+0)/5 = 40$ percent points

4.2.2 Hard fact buying - adherence to delivery quantity

The adherence to delivery quantity is incorporated in the hard fact evaluation of buying with 10%. The selected evaluation period determines which order receipt schedules are used for the evaluation. For this the schedules are chosen by means of their statistical delivery date.

Only schedules with a goods receipt quantity are taken into consideration. If the delivered quantity is 0, the delivery is not considered for the evaluation.

The adjusted goods received relevant for these schedules are used and compared with the statistical delivery date of the schedule by means of their goods received booking date.

Deliveries received before (no limit) or up to 3 days after the statistical delivery date are used.

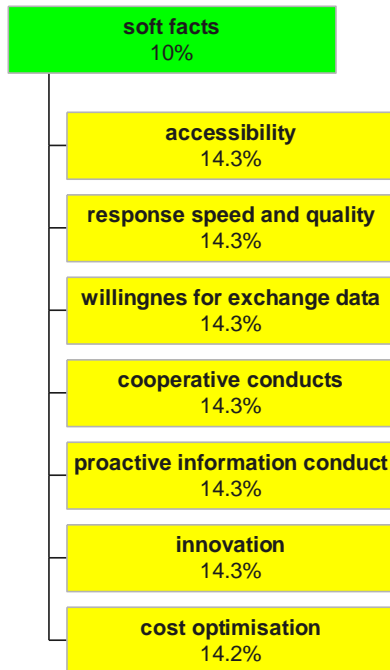
These received goods quantities are added up and compared with the scheduled quantity taking possible tolerances with regard to insufficient / excess quantity into consideration.

If the quantity is correct, i.e. 100% the same or all right under the tolerance aspects, a score of 100 points is allocated, otherwise 0. The average of all items evaluated in the time period is used.

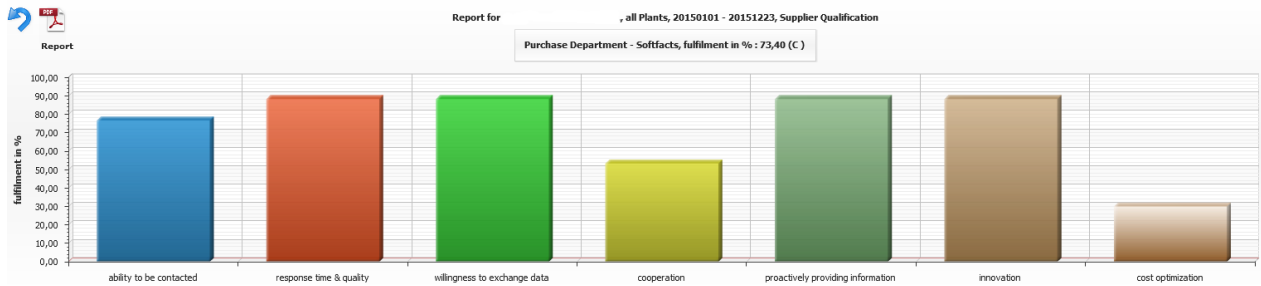


4.3 Soft fact buying

The soft fact evaluation is incorporated in the evaluation of buying with 10%. It comprises of the following 7 criteria, each is worth 14.3% of the total soft fact evaluation.



- Accessibility
How easy it is to reach the contact persons
- Response speed and quality
Response times of contact persons to queries / enquiries of all kinds as well as quality of supplied information
- Willingness for data exchange
Willingness to use modern data transfer media
e.g. ERS, EDI, Forecasts, etc.
- Cooperative conduct
Willingness in agreement of contracts (contractual penalties, framework delivery agreement, quality assurance agreement, logistics contract, etc.)
- Proactive information conducts
Voluntary declaration, early warning, delivery time extension, etc.
- Innovation
Willingness for customer specific developments, technology expertise
Willingness for free technology workshops
- Cost optimisation
Open calculations, currency hedging, taking increasing item number into consideration, support with free samples of first samples, series price in start-up phase, etc.



Evaluation occurs by means of point allocation per criterion:

1. fully applies = 100 points
2. applies mostly = 65 points
3. almost applies = 30 points
4. does not apply = 0 points
5. is not evaluated = n.e. -> counts as evaluated but is omitted as question

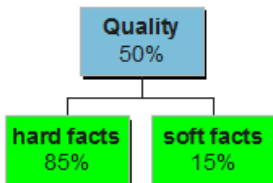
In addition, the evaluating buying employee may also write a comment on each criterion which is also provided in the report given to the suppliers.



5 Quality

5.1 Area criteria

The evaluation of the QM management is incorporated in the overall evaluation with 50% and comprises of:



5.2 Hard fact quality

The hard fact evaluation is included in the overall evaluation of quality with 85%.



5.2.1 Hard fact quality – quality level

The quality level is included in the hard fact evaluation of quality with 100%.

On detail level 1, the agreed targets, established ACTUAL values as well as the SCORE is depicted accumulated:

B&R plant	vendor no.	vendor name	oom Vendor...	oom Material...	oom material...	oom main ma...	target failure r...	delivered oua...	quantity defec...	failure rate/oo...	sco...
AT01	374		374	C0038673-01			7	3139,0	1369,0	436126	0
AT01	374			C0032166-01			77	42320,0	1000,0	23629	0
AT01	374		374		03001004		777	742783,0	3715,0	5001	0
AT02	374		374		03001004		777	735,0	250,0	340136	0
AT01	374				03001005		12345	10941,0	54,0	4935	100
AT02	374				03001005		12345	255,0	0,0	0	100
AT01	374					100010003	2456	140,0	0,0	0	100
AT01	374		374				5000	50570,0	303,0	5991	0
AT02	374		374				5000	1475,0	0,0	0	100
SUM							1149	852358,0	6691,0	7849	0

The evaluation of the quality level occurs by means of the following formula:

$$failure\ rate\ [ppm] = \frac{Quantity\ of\ faulty\ external\ components}{Quantity\ of\ delivered\ components} * 10^6$$

The valid target values according to the agreed quality targets from Attachment 1 quality evaluation and quality targets for QA agreement are used as target value_k.

The last respective valid value in the calculation period is used as target value_k.



The respective quantity of supplied parts in the calculation period is used as delivery quantity_k.

The quantity of “faulty parts external” is determined by the fully processed (with a view to sales and technology) and accepted complaints in the calculating period.

If exactly one target value k is agreed, calculation occurs by means of the following formula:

$$failure\ rate\ [ppm] = \frac{Quantity\ of\ faulty\ external\ components}{Quantity\ of\ delivered\ components} * 10^6$$

If more than one target value_k is agreed, calculation occurs according to the following scheme:

$$ppmTarget_{tot} = \frac{\sum_{k=1}^n (ppmTarget_k * Delivery\ quantity_k)}{\sum_{k=1}^n (Delivery\ quantity_k)}$$

$$ppmActual_{tot} = \frac{\sum_{k=1}^n (ppmActual_k * Delivery\ quantity_k)}{\sum_{k=1}^n (Delivery\ quantity_k)}$$

k = number sub-group (this means: material ., material group, main material group or generic)

Example:

main material group	ppm target	delivery amount	ppm actual
A	100	900	120
B	1000	100	1800

$$ppmTarget_{tot} = \frac{\sum_{k=1}^n (ppmTarget_k * Delivery\ quantity_k)}{\sum_{k=1}^n (Delivery\ quantity_k)} = \frac{((100 * 900) + (1000 * 100))}{(900 + 100)} = 190$$

$$ppmActual_{tot} = \frac{((120 * 900) + (1800 * 100))}{(900 + 100)} = 288$$

$$ppm_{eval} = \frac{(2 * 190 - 288)}{190} * 100 = 48; \{ppmTarget < ppmActual \leq 2 * ppmTarget\}$$

Points for evaluation are determined as follows:

$$ppm_{aval} = 100; \{ppmActual \leq ppmTarget\}$$

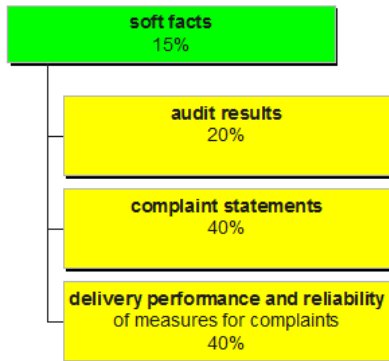
$$ppm_{eval} = \frac{(2 * ppmTarget - ppmActual)}{ppmTarget} * 100; \{ppmTarget < ppmActual \leq 2 * ppmTarget\}$$

$$ppm_{eval} = 0; \{2 * ppmTarget < ppmActual\}$$



5.3 Soft fact quality

The soft fact evaluation is included in the overall evaluation of quality with 15% and comprises of the following 3 criteria:



The subjective evaluation criteria (=soft facts) complaint response and adherence to deadlines and measures are periodically established by the QM employees responsible for the suppliers. If there is more than one soft fact evaluation, the average of all evaluations is used. With more than one evaluation in the evaluation period, the arithmetical average is used.

5.3.1 Audit result

The evaluation of the audit result occurs by means of classification – which results from the audit – according to the following scheme:

Classification	Evaluation
A	100
B	50
C	0



5.3.2 Statement regarding the complaint

If an 8D report is requested for a complaint, the statement regarding the complaint is evaluated according to the following table:

Missing Discipline / Grade	1	2	3	4	5
D1 "Define the team" The team (incl. team leader) for finding a solution to the problem is defined and suitable for the task.	✓	✓	✓	✓	✗
D2 "Describe the problem" The problem is clearly described and defined (inspection card, histogram, Pareto diagram, etc.).	✓	✓	✓	✓	✗
D3 "Emergency measures" The emergency measures ensure that the customer (internal/external) is no longer confronted with the problem. Defective parts are entirely removed from circulation (inventory control). Measures are taken to maintain the delivery capability / assurance.	✓	✓	✓	✓	✗
D4 "Analyze causes" Possible causes for the problem are determined, cause-effect relationships are identified and displayed. After checking the possible causes for the problem, the (real) core cause of the problem is identified (cause-effect diagram, correlation chart, etc.).	✓	✓	✓	✓	✗
D5 "Define corrective measures" Possible corrective measures have been developed, evaluated and selected. The selected corrective measures have been tested and their effectiveness has been demonstrated. (FMEA, testing plan, process capability studies, etc.).	✓	✓	✓	✗	✗
D6 "Establish corrective measures" Corrective measures are established within the organization for the long term, emergency measures are canceled (custom work plan/test plan/control plan/training plan, etc.).	✓	✓	✓	✗	✗
D7 "Preventive measures" Implemented corrective measures are also used for other products/processes (construction guideline, audit checklist, FMEA database, etc.).	✓	✓	✗	✗	✗
D8 "Finalize solution to the problem" Successful implementation of the agreed measures has been (formally) finalized.	✓	✓	✗	✗	✗
"Structured / clear / complete" A clearly defined common thread guides you through the necessary steps to solve the problem. A systematic approach is used. In the individual steps, appropriate tools are used to solve the problem. The 8D report can be understood without asking questions. Information and data are in a clear, structured and comprehensible form. The 8D report includes all 8D items in a complete form.	✓	✗	✗	✗	✗

✓ Available ✗ Not available

The grade is converted according to the following calculation:

Arithmetical average (rounded)	Evaluation
1	100
2	90
3	60
4	20
5	0



5.3.3 Adherence to deadlines and measures – complaints

Scheduling and implementation capability (based on the quality assurance agreement and the statement) is determined according to the following calculation:

Grade	Description
1	On schedule
2	1 AT delay
3	2 AT delay
4	3 AT delay
5	>= 4 AT delay

Dated agreed upon for a general or specific case are calculated.

A general agreement can, for example, be a target agreement or a report (or similar). An agreement for a specific case can e.g. be listed in a report.

A deadline has been met if all measures in the complaint were completed on time. Exceptions to this are measures regarding credit memos.

The grade is converted according to the following calculation:

Arithmetical average (rounded)	Evaluation
1	100
2	90
3	60
4	20
5	0

6 ABC Classification

The supplier evaluation establishes a classification from the total sum of hard and soft fact evaluation according to the following scaling:

A = PREMIUM:	100%	to	>=90%
B = STANDARD:	< 90%	to	>=75%
C = LOW:	< 75%		

Example:

Supplier Qualification, fulfilment in % : 47,63 (C)