APPENDIX 2

RULES FOR WORKING WITH SUPPLIERS

Introductory words

In Bulgaria, the most reputable resorts with nerve-soothing cool mineral water are Narechen Baths in the Rhodope Mountains and also Karlukovo Baths in the Balkan Mountains. If in Bulgaria before the 1990s someone had said that they would evaluate, select, rank, and re-assess suppliers, that they would audit them and help them develop, they would direct him to cool off at Narechen or Karlukovo. Years later, timidly stepping into the free market of materials and services, we started asking for three offers and switching suppliers day in and day out.

Recently, slowly we began to understand that the stable quality of the product and its long-term marketability have become increasingly and critically dependent on the rational selection of suppliers, on channelled communication with them, and on the vision of mutually beneficial interaction for the benefit of customers.

Most of foresighted companies have already realised that they need long-term business with a small number of skilled and loyal suppliers in order to be able to reduce costs and have the certainty that performance would always be stable.

Written Rules

Every modern and self-demanding company must define and maintain:

(1) Written rules for initial assessment, selection, and classification of suppliers.

(2) Written rules for working contacts and interactions with suppliers.

(3) Written rules for periodic reassessment and reclassification of suppliers.

A2.01. Initial Assessment of Suppliers

In recent times, four criteria for the initial evaluation of suppliers have become popular in business life in Bulgaria –

1. "Satisfactory" quality.
2. Low price.
3. Short delivery time.
4. Deferred or postponed pay.

According to the same criteria, a reassessment is also performed, usually for each deal separately. Criteria for price, delivery time, and payment terms are fraudulently misleading because they are neither independent nor compatible.

Eleven criteria should be used for the initial assessment of unknown or little-known suppliers. The eleven criteria are applied in the following order:

1) Financial and market stability – assessed, for example, by volume of revenue in the last two or three years; number of permanent customers and/or number of new customers in the last few years (this criterion necessarily comes first if a long-term relationship with the supplier is sought; for a one-time deal, this same criterion may be secondary, and its weight may depend on the volume and/or risk of the particular deal).

2) Technical potential – assessed by such characteristics as conformity of the material with the specified requirements, quality management system in force, technological resources, production capacity, and technical competence (including outside the scope of ours deals with this supplier).

3) Total delivery price – this is the amount of the price of the entire quantity of material, plus the logistical costs and losses associated with the purchase, plus costs for it to reach the desired level of readiness for use of the material, plus costs and losses incurred due to the poor or instabilised quality of the material.

4) Allocation of cost of material in the cost of production – on how many units of the product are allocated the cost of the material. As a rule, some more expensive materials have a better allocation, and, when allocated to the products, they have a lower relative cost. It is important how much one unit of material costs, but it is more important to how many units of product this cost is allocated (this criterion is applicable to tools, technological consumables, spare parts, and any other materials through whose longevity and economical consumption the production cost of the product can be reduced).

5) Degree of readiness of use of the material – both as the ability to achieve individualised delivery conditions and as an important component in the total delivery price. The degree of readiness for use of the material is an indicator of the time and cost required to bring the material to the required readiness for use.

6) Business loyalty – for initial assessment, the indicators here are reviews from other customers (similar companies, partners, and even competitors), from sectoral employe guilds, rating agencies, and from other independent sources.

7) Logistical and communication amenities which make it easier to work with this supplier – location, accessibility, technical level, and security of the means of communication used. The weighting of this criterion is determined by the share of logistical and communication costs in the total delivery price.

8) Level of reserving in production, logistical, and communication infrastructures of supplier, backup plans ensuring security of supply and business continuity. In a number of cases, the weighting of this criterion may strongly depend on the uniqueness of the material and/or the significance of the customer's order.

9) Technical, technological, and production capabilities of the supplier for adequate and fast acceptance of additional and special orders and purchases, even with increased quality requirements and/or other conditions of delivery.

10) Supplier has other customers (their quality requirements and/or delivery conditions are similar to or exceed our requirements and delivery conditions).

11) The supplier's business does not depend to a large extent on its deals with us.

The initial assessment of supplier can be refined with additional data based on test orders results and/or impressions from previous or past work with him. References from competent and correct persons known to us are also useful.

Such is the case, and with the initial assessment of suppliers who serve the needs innovation and development units. The criteria may be the same but applied in a different order and/or with a different weighting. The criteria for the technical potential, the degree of readiness for use of the material, and for the production and technical ability to accept special orders, as well as these with high quality requirements and very short delivery times, are leading.

Additional criteria are the total supplie price of material and business loyalty. Other supplier initial assessment criteria (criteria such as financial and market stability, readiness for use of the material, communication amenities, and logistical position) will or will not be applied according to specific situations.

Example of Criteria for the Initial Assessment of a Supplier of Standard and Catalogue Materials

Criterion 1 – Quality of the material – fully conforms or does not conform to the specified quality requirements.

Criterion 2 – Production capacity (or delivery capacity) – completely covers or does not cover our company's needs.

Criterion 3 – Financial condition – facilitates and supports, or prevents the supplier from performing extended reproduction of his business.

Criterion 4 – Time of delivery – it is commensurate or is not commensurate with the times of fulfilment customer orders.

Criterion 5 – Completeness of the supplie – the supplier may supply only this material or may supply others similar or related materials.

Criterion 6 – ISO 9001 (or other standard) certification – certification is real or fake, external audits reports, feedback from the Certification Organisation.

Criterion 7 – Are other regulatory or industry-required certifications, for example, for special processes, consistently and robustly maintained?

Criterion 8 – Right to CE marking of products (if applicable) – do they have them or not; feedback from the accredited Conformity Assessment Body.

Criterion 9 – Logistical and communication amenities for the operative working.

Criterion 10 – Simplified and fast access mode to data and to production sites.

Criterion 11 – Degrees of reservation and stable continuity of communication.

Important note! The criteria from 1 to 4 must be fully met. The criteria from 5 to 11 are complementary criteria and are considered to confer advantages.

Example of Criteria for Initial Assessment of a External Subcontractor

Criterion 2 (Reliability) and Criterion 1 (Competence) – assessment is based on written references from the supplier's customers and mostly on verbal references from these same customers (references for the last few years).

Criterion 3 (Confidentiality) – assessment is based on official and oral customer references and on commercial and public image.

Criterion 4 (Specifics of the supplier's customers) – does the supplier have or not have rich experience working with companies that are similar to our company.

Criterion 5 (Experience doing business with companies, similar to our company, or competitors) – it's an additional advantage for the supplier if the material delivered or the external service we are looking for has an industrial specificity.

Criteria from 1 to 5 must be fully met, especially criteria 1 and 2. At our discretion, compromises with criteria 3, 4, and 5 may be admissible.

Three Types of Supplier Evaluation Criteria

The evaluation criteria shall be restrictive, weighted, and comparative criteria.

Restrictive criteria are eligibility criteria of the type YES and NO (for example, local suppliers are eligible, unacceptable delivery period of more than 20 days, unacceptable low quality, permissible deferred payment, unacceptable prepayment, admissible product reworking, ISO 9001 certification, and others).

Weight criteria are used to compare scores or percentage estimates. The grades are on three, on five, or on ten grade scales (an example of three grade scales – poor, acceptable, and good quality – the respective grades are 1, 2, and 3).

Percentage assessments give weighting coefficients in the integral criterion, which is a linear combination of weighted local criteria (for example, the integral criterion sums up local scores for term, price, and quality, with the assessments are on a 10-point scale and are summed with weights of 40%, 20%, and 40%).

Comparative grades are grades to choose from among two or three candidate suppliers who have overcome the restrictive criteria and received equal or comparable weight grades. For example, I prefer candidate X, not candidate Y.

A2.02. Selection and Initial Ranking of Suppliers

The initial ranking determines the status and priority of the supplier. According to the initial assessment, the supplier will be classified in the following status:

- approved;
- not approved;
- subject to further inspection;
- implementing prescriptions for acquiring the ability to provide conform material.

According to the initial assessment, the supplier is also ranked by his priority:

- main supplier;
- secondary supplier;
- backup supplier.

A range of different people, such as constructors, technologists, technicians, production managers, economists, logisticians, and others, may participate in the assesement, selection, and ranking activities, as the specific case may be.

According to the stages of launching a new product, the leading role is different. At the experimental stage of test samples, the designers and technologists have the leading role. At the regular production stage, the production managers, economists, and logisticians are leading (logisticians and economists are leading in the initial assessment, selection, and ranking, and further – for the periodic evaluations, production managers have the leading role). It is appropriate for the company to have a standing committee for initial evaluation, selection, ranking, reassessment, and reclassification, composed of above stakeholders.

Depending on the significance and risks of the particular deal and the scale and/or duration of interaction with supplier, the level of responsibility for the supplier selection will be different. If we conditionally assess the significance and risk of the deal by giving them a low, medium, large, or very large weight, then we can reason as follows bellow. With a low deal weight, responsibility can be assumed by operative personnel and, if appropriate, middle management. With an average deal weight, the responsibility can be assumed by middle management and, if appropriate, by senior managers. With a greater weight of the deal, the responsibility can be assumed by senior management and, if appropriate, by a collective body. In the case of a very large weight of the deal, it will be appropriate for the responsibility to be taken by a specially designated collective body. The clearer and more objective the selection criteria are, the lower the level of responsibility for the selection can be assumed.

Approved Suppliers and Suppliers with Unclear Status

A supplier is an approved supplier if we agree to work with them. The approved supplier meets agreed or regulatory requirements and accepts our delivery terms, such as quality, packaging, quantities, prices, discounts, delivery times and locations, and other arrangements, if any. We work with approved suppliers. We do not work with unapproved suppliers because they do not meet someone or some of the following criteria: satisfactory material conformity with the specified quality requirements, sufficient production capacity, stable financial and/or market position, and acceptable delivery times.

The status of suppliers where additional checks are to be carried out in order to assess their ability to deliver always conform material and/or to whom we have prescribed how to achieve this ability is unclear until the fully completed check.

Following additional inspections and/or a following assessment (by documents and/or assessment on-site) that our prescriptions have been efficiently implemented, this supplier will either be approved or will not be approved.

Main Suppliers and Other Suppliers

The term Main Supplier is a conditional and not entirely correct term. These are suppliers with whom we work constantly or more often and/or to whom we direct the majority of orders for materials or purchases for cooperated products. In the case of several main suppliers,

Preferred Suppliers are these that always show better performance compared to others, and this over a long period of observation. With a supplier that has performed well for a long time and is getting better, forms of cooperation can be sought and/or investment in its development can be made.

Potential Suppliers are some of the approved suppliers that we have not worked with but will work with when there is a production or other need to buy or order from such a supplier. As potential suppliers can also be considered all the suppliers to whom measures have been prescribed in order to acquire the ability to provide material that conforms to requirements.

Additional Suppliers are these approved suppliers we rarely work with and/or rarely purchase from, or in more modest volumes – usually to supplement or diversify the purchases from the main suppliers – due to a insufficient capacity of the main suppliers or to hint delicately to them that they are not the only ones and irreplaceable.

Backup Suppliers are these who are approved but with whom we only work occasionally or have not yet worked. Backup Suppliers may be needed in the following cases:

- a forthcoming expansion of one or another of our production;
- a forthcoming market launch of certain products;
- deteriorated performance or financial instability of our main supplier;
- we have signals of incorrect trading behaviour,
  for example, the supplier is in collusion with competitors;
- changes have been made to the supplier's ownership
  (Caution! There is a risk that the new owner will radically change its policy towards customers and/or conditions of its business with them).

When working with potential, additional, or backup suppliers, we must be able to maintain a good tone with main suppliers and with all the others suppliers.

Integral Suppliers

The integral suppliers are collecting-distributing buffers between us and some primary suppliers. Working with integral suppliers reduces significantly logistic costs (material prices, delivery costs) and simplifies and facilitates all the inbound logistics organisation.

Different types of integration are possible:

- by type of materials (for example – integral suppliers of seals, fasteners, plastic products, rotary parts, corpus details, spare parts for repairs, etc.);
- by type of finished products (e.g., integral supplier for product A, integral supplier for product B, etc.);
- according to the series length (for example – integral supplier for shorter series, for medium series, for long series, etc.);
- according to the location of primary suppliers (domestic, foreign);
- and others.

Different types of integration can be used individually or in various combinations.

Different types of integration have different advantages and disadvantages and imply a variety of potential opportunities and a variety of potential risks.

Work with integral suppliers has big pros, but there are also insidious hidden negatives – the strong dependence on powerful mediators and the low level of security due to this that the connection with the primary suppliers is not direct.

A2.03. Reassessment and Re-ranking of Suppliers

A reassessment is carried out periodically or as necessary, for example, following an additional inspection and/or following the fulfilment of prescriptions for obtaining the expected ability to provide a conform material.

The reassessment serves for reclassification (revision of current status – approved, unapproved, or fulfilling prescriptions supplier; or main, additional, or reserve supplier), as well as for determining the nature and weighing the measures that our company may decide to apply to a supplier in the purpose to improve the material (or the service) and/or to develop the mutual partnership.

The reassessment of suppliers uses various criteria, for example:

- experience with the supplier in his previous work with us;
- stable fulfilment of our specific requirements for the quality of the material and the conditions of its delivery;
- tendency of the supplier to introduce improvements.

In the case of reassessment of the main suppliers, with whom we work on a constant or frequent basis and/or to which the majority of the delivery orders and requests for sub-contracted products are directed, the leading criteria are:

- speed of response to our inquiry or request;
- willing to discuss our terms of the offer;
- tendency to accept shorter delivery times;
- makes deliveries in quantities convenient for us;
- ease of working communications.

Production and other company units working with the same supplier exchange assessments of efficiency and other specifics of interaction with that supplier.

The reassessment period of a supplier may vary – be three months, six months, or a year, and will strongly depend on four conditions:

(1) Supplier status – approved supplier, or implementing prescriptions supplier, or main supplier, or additional supplier, or backup supplier.
(2) The value of the purchased/ordered materials.
(3) The stabilised level and the persistence of assessments compared to previous reassessments of the supplier.
(4) Impressions from the past history of our business relationship with this supplier and the availability of potential and prospects for development.

When re-assessing suppliers and cooperated subcontractors which serve the needs of our innovation and development departments, criteria are the same or similar – speed of response to inquiry; willingness to discuss the technical conditions of the inquiry or request; operative ability to deliver in small quantities; ability to deliver in a short time; stable fulfilment of our specific requirements on quality; tendency to perceive modified, additional, and new requirements quickly; communicability; expeditiveness; and confidentiality.

A2.04. Scope of Working Interactions with Suppliers

Operative interactions with suppliers may include a variety of one-way or two-way activities, for example – requesting/ordering/assigning, ongoing working

communications, monitoring and controlling the course of the performance of the order, acceptance of the delivered materials, exchange of information, etc.

Depending on the importance and the status of the supplier, all or only one specific part of the activities listed above may be carried out in different scopes, levels of detail, and levels of formalisation. If the supplier is a main supplier or otherwise is very important to our company, the responsibility for the interaction (for example – ordering, subsequent maintenance of work communications, etc.) must be personalised and carried out by the same official, if possible, for the entire duration of our relationship with that supplier.

Formalisation of Supplier Interaction

The degrees of formalisation of the interactions with the suppliers, in particular with regard to the requesting (or the ordering, or the assignment), to ongoing communications, and to acceptance control of materials, may be depends on:

- their status (under assessment, new, or already stabilised suppliers);
- their performance (weak or strong, constant or unstable);
- the financial scale of the deals;
- the familiarity or novelty of these suppliers for us company;
- the type and level of risks of non-performance of the deals.

The written rules of our company for requesting (for ordering, for assigning, for ongoing working communications, for monitoring and control of the performance of the order, for acceptance of materials, and for access mode to data and physical objects) must be communicated to suppliers and accepted by them, including that they have a commitment to comply with these rules.

The formalisation is an introduction of written rules for managing the stages of "supplier-customer" interaction and their respective documentary exchange.

Formalisation does not prevent personalised communication between the official representatives from both partnering companiea, as mentioned earlier. Nor does it prevent relations between the two companies representatives from having a certain informal element, as long as it does not hinder good business.

The subject of the risks of informal relations is addressed in Chapter 13, p. 423.

Changes in Suppliers

It is very important to constantly monitor such changes with ours suppliers that would impair their ability to provide us with always-conform materials.

Such changes may be, for example, market crashes, disrupted financial stability, damage suffered by technical accidents, natural disasters, epidemic situations, or other force majeure circumstances, change of ownership, and other similar.

A system of rapid decision making has to be developed and played out in case of change – new negotiation, recovery aid, working with a backup supplier...

A supplier's signs of an improved or improving ability to provide conform materials should also be monitored. These could be, for example, signs of a stable and growing market share and financial result, investments in technical modernisation and technological innovation, new and upgraded products brought to the market, new and stricter standards for management systems, geographical or sectoral expansion of the market. If there are such signs, we reclassify the supplier, and we may seek forms of cooperation with him.

A2.05. Information about Suppliers

An up-to-date dossier for each assesed supplier must be created and maintained at all times. It must containing, as appropriate: data on the supplier's company; data on the key figures there; prices and discounts; number of deliveries received, quantities and prices thereof; total purchased quantity; total purchase price; accepted, disputed and acknowledged claims; our internal losses due to poor quality; delivery times and volumes, and other specific delivery conditions; supplier capacity; business continuity assuring systems; material quality level; audits results; unfulfilled and efficiently performed audit follow-up actions; agreements and contracts; offers and orders and related technical and commercial documentation; records of initial and periodic assessments, current status and previous statuses; records of measures applied to the supplier and results thereof; and as well as any other useful information.

A database of all suppliers (approved, potential, and,backup) is maintained, regardless of their status (current or previous) or the nature and volume of the business with them. The database is constantly updated, including with regard to suppliers with whom we have no current relationship. This database allows to make searches, inquiries, and analyses in a variety of cross-sections.

There may be a knowledge base for suppliers. The knowledge base contains systematised company knowledge of typical and specific cases in assessment and ranking of suppliers, in inspections and audits of suppliers, in working relationship with suppliers, also in the processes of cooperation with them.

Individual cases are described, along with the corresponding analyses, decisions made, and their results. Such systematised company knowledge cuts down on reaction time for known cases and helps find solutions to similar and new cases.

It may be appropriate to create an information and reference system, a.k.a., Paralogistics information system, which contains the data for the paralogistical entities with which our company has had, has, or may have a relationship. Such paralogistical entities may be any kinds of insurers, freight forwarders, couriers, customs, distribution warehouses, and any authorities, organisations, and companies that have important to the inbound logistics of our company.

A2.06. Specifics of Monopoly Suppliers

Monopoly effect is often seen when material is scarce and/or if the purchasing company is a small customer of a big supplier. The supplier can then dictate restrictions on minimum delivery times, minimum delivery volumes, and other logistical and economic terms of delivery. Although it may seem impossible and desperate at first sight, relations with some monopolists can and must be set on a parity basis. This is gradual and requires delicate but unflinching persistence. Achieving parity happens in only one way. At carefully prepared meetings at the senior management level, our company will approach the supplier from such a position, as if it is a large company, which in the future will become larger and, as it grows, will be more and more significant for the supplier.

Dr. Juran gives us some desperate advices for working with monopoly suppliers.

First advice is to apply enhanced control. For example, 100% inbound control with idea to sort of what is fit from what is unfit. Or performed by us acceptance control on site at the supplier before he has shipped all the material to us.

Our company Alpha Quality has some deep doubts about the capabilities of the so-called "second part acceptance controllers" to assess "in site" the delivered materials – if they don't get them drunk, or bribe them, or beat them up, they might get the job done. This is precisely why, in the 1990s, Western European assignors of Bulgarian tailoring factories have been replaced their quality inspectors "in site" in the factories every three months.

The second advice is to put up with poor quality – to make the unsuitable material suitable, we correct it as much as we can. Or we change our processes (or our products). Or we change the intended use of the product.

The third advice is to be form an alliance with other stakeholders – seeking

help from and/or assisting the suppliers of the supplier, putting pressure on the supplier with the joint efforts of other injured customers of the same supplier, or setting up lobbies in some technical committees for standardisation.

The fourth advice is to look for a radical solution – the company produces instead of buying, the company integrates with the supplier "under one umbrella", the company buys out the supplier, the company stops buying the material, stops producing the problematic product, and… end the torment.

There are other possibilities that can be called "Shifting the problem outside".

This is achieved by buying from another larger customer of the supplier, joint buying together with other customers of the same supplier, buying from an intermediary trader of the supplier, creating a trading company – own or co-owned with the supplier, or searching for surrogates of the material.

When I talk about these ridiculous possibilities, I think of how, during the times of the deficit-ridden socialist economy, the managers of Bulgarian companies had learned to act like cunning fakirs in their relations with monopoly suppliers.

The famous trick with forgotten gallon brandy bottle worked magical wonders. I remember, during a revision of a warehouse of a plant that owned one single Lada car, they found 40 sets of brake hoses. Why 40 for just one car? Answer was: "These are gifts to bribe suppliers". For the reader to understand me,

I recall that in the Bulgarian market had a constant shortage of all kinds of brake hoses and whatnot in those charming times of the communist planned economy.

Working with monopolists is difficult and delicate and should be the subject of special analyse and actions to reduce or eliminate dependence on such supliers.

Sometimes it can be useful and even obligatory to do a logistical expertise of our products. Expertise may lead to conclusions that some products should be stopped from production or at least limited if the necessary materials are difficult to access, expensive, or of poor quality and/or their suppliers are uncommunicative, have unfavourable delivery terms, or are negligently disloyal.

Such expertise is mandatory in the development of a new product, still at the stage of technical assignment or even before it. It may lead to conclusion that some ideas for development of new products should be stopped or postponed "for better times". Or to make another decision – the company should start producing the "difficult material" on its own (if this is possible for him).

A2.07. Cooperation with Suppliers

The cooperation between the buyer and seller will depend on the perspective of their business relationship and can be presented in the following table.

Relationship perspective	Short-term	Long-term
Evaluation criteria	Price and quality	Technical level and development potential
Approval criteria	Instant benefits	Common interests
Product control	At the buyer	At the seller
Reassessment	For every deal	Periodically and regularly
Mutual Informing	Episodic and on the complaint occasions	Constant and channelled for continuous improvements
Partnership investments	They are not needed	Mutual, mutually beneficial
Performance	No, it's unnecessary	The basis of the relationship

Here are the basic pillars of cooperation with the supplier: exchange visits for acquaintance and understanding; mutual information on results and intentions; integrated quality control and management systems; targeted investments for training, technical support, and development; joint plans and implementationof common projects; reduction of total costs for the benefit of the end customer.

Compromise between Real and Intended Use

The intended use of the material is the use according to the views of its designer or producer. Real use of the material is the use according to the manners and conditions of its use by the customer.

If there are significant differences between the intended and real use of the material, they will lead to customer dissatisfaction.

Let's see the characteristics of the use of the material in two cuts:

1) Difficult or easy to achieve by the producer/supplier.
2) Important or unimportant for the customer given the real use.

The above "two by two" possibilities results in four combinations.

Therefore, this large set of material characteristics can be divided into four smaller subsets:

(1) Characteristics that are difficult for the producer (or the supplier) to achieve but are important for the real use of the material by the customer.

(2) Characteristics which are easy for the producer (or the supplier) to achieve but which are important for the real use of the material by the customer.

(3) Characteristics that are difficult for the producer (or the supplier) to achieve but are unimportant for the real use of the material at the customer.

(4) Characteristics that are easy to achieve by the producer (or the supplier) but unimportant to the customer in terms of the real use of the material.

Characteristics of the material that are difficult to achieve by the producer (or the supplier) and, at the same time, unimportant to the real use by the customer are usually numerous, or at least most often so. In parallel with this, characteristics of the material that are easy to achieve by the producer (or the supplier) but at the same time important for real use are usually few in number.

It makes sense to redirect resources and efforts from the large number of characteristics that are unimportant for the customer but difficult to achieve by the producer (supplier) to the other smaller number of characteristics that are easy to achieve by the producer (supplier) but very important for the customer.

This compromise between the intended use and the real use of the material is always justified, as it works in favour of customer satisfaction. A balanced compromise between the real use and intended use of the material is the leading axis of cooperation with the supplier, and any other line of cooperation actually helps to resolve the task of achieving such balanced compromises.

Investing in the Supplier

The total delivery price is the sum of four components:

(1) The price of the material purchased.

(2) The logistical costs and losses associated with the purchase.

(3) The costs necessary to make the material ready for use.

(4) The costs and losses associated with the poor quality of the material.

Any kind of investments in the supplier, which in one way or another way leads to a reduction of any or some of these four components, can be considered mutually beneficial, moreover, it is also to the direct benefit of the customer.

Targeted and Channelled Mutual Provision of Information

Mutual provision of data and information can be in many and different planes – for example, between different categories of staff, between different structural units and levels, and to flow through different channels and by different means. But as a minimum, this provision should cover information of the following types:

a) for the specifics of the real use of the product – for what purposes, in what ways, and under what conditions will the customer use this product (hence – why and for what purpose are defined the requirements for this material);

b) for the technologies and for production and control and monitor equipment at the supplier;

c) for our assessment of the supplier's performance (for the quality of the material he has achieved) and for our new quality requirements;

d) for the new technological and production resources and corresponding new technological capabilities;

e) for the plans and achievements in the training of personnel and in the their level of informing;

f) for the innovation and investment intentions and plans.

The mutual provision of data and information may also include other topics of common interest for the benefit of the customer.

Most efficiently, it takes place through the exchange of visits – at the level of production and technical professionals, as well as at the level of management.

Both in visits and in all other forms of communication, the two parties strive to achieve increasing trust and ascending perfection in field of human relations.

Good human relations and the spirit of frank openness have an important meaning in attaining and maintaining trust and empathy between companies.

If we have or intend to develop long-term cooperation with an important for us supplier or cooperating subcontractor, then it is a good idea to personalise an interrupted communication at a managerial, technical, and commercial level. Of course, never we should not allow the informal factor to harm our business.

Integrated Quality Assurance and Control Systems

Our quality management system can be "extended" to the quality management systems of some suppliers and subcontractors by standardising the following:

- company glossaries of terms and abbreviations related to quality;
- forms for records of the quality status of purchased materials;
- forms for dispositions of non-conforming materials;
- forms for records for monitoring, measurement, and evaluation of customers' satisfaction;
- forms of structuring quality audit plans and audit reports;
- forms of structuring input and output data for management reviews.

The integration of quality management systems should lead to:

- common classifiers of defects;
- joint methodologies for control planning;
- agreements for mutual recognition of methods and control results.

Technical and Other Assistance

Technical and other necessary assistance is defined in Supplier Development Plan and usually includes the following actions: deeping integration of quality management systems, improve the training of suppliers, enhance of technical awareness, expanding of production capacity, increasing production efficiency, and continuously improvement of the conformity and the quality of materials.

Quality Plans

Quality plan sets out measures needed to meet new, amended, or additional requirements beyond or above applied so far. There are three kind quality plans.

There are quality plans to meet modified or new requirements related to the contracts, orders, or customers – such are the usual and well famous quality plans within the meaning of the standardised quality management systems, such as ISO 9001, ISO 13485, ISO 9100, AQAP 2110, or IATF 16949, and similar.

Other plans are for absorbing changes in technical or production capabilities – new capabilities of materials and tools, product design changes (structures, compositions, formulations, etc.), and in processing and assembly technologies.

The third type of quality plans are for the implementation of corrective measures to eliminate the causes of non-conformities based on the following: remarks and prescriptions from customer audits, non-conformities found in internal audits, and instructions given in product or process audits.

Audit of Suppliers

Supplier audit is a delicate matter. Supplier audit is not universally applicable.

I will ask three questions that we rarely consider, and I will frankly answer them.

The first question is why do we audit? Before we start working with a supplier, we audit it to assess its ability to deliver a constantly conforming material (this ability to deliver a constantly conforming material is an ISO 9001 requirement).

In process of work with supplier, we audit it to guide it on how to achieve more and more complete conformity of its material with the specified requirements.

If the same supplier demonstrates a constantly improving fulfilment of the requirements, then audits serve to help it further develop this capability (this is the Total Quality principle of bilateral beneficial cooperation with the supplier).

The second question is who we can audit. The answer depends on the ratio of forces... We know the risk of a modest buyer daring to audit a large seller. He will be politely indicated where the door is. We can only audit suppliers of our calibre or relatively smaller of us.

There is also no point in auditing suppliers of standardised materials or of catalogued materials and articles from which we buy and use "as is". By performing audits, we will not improve their quality, or so it is in most cases.

Audits are useful in working with contractors of products whose characteristics are determined by us and/or we have provided their production technologies.

The third question is whether we are capable to perform an audit. Do we or do we not have people trained to audit? Are they good enough as specialists – will they be able to see and evaluate conformities and discrepancies in supplier's products and processes, will they be able to give adequate and feasible recommendations and prescriptions for further development of conformities and for elimination of discrepancies. If we do not have the ability to audit and we need to audit, we will decide whether to build our own team, if the audits will be made by an external organisation, or if we we will use a mixed approach.

A2.08. Balanced Supply Chain

Most of problems with suppliers and subcontractors come from ignorance or neglect of a golden rule of logistics. Rule tells us that the supply chain must be stable and balanced. A balanced supply chain can mean many different things, but there are three conditions that are most essential and must be respected.

The first condition is that the convenient for the buyer tact to make orders is equal with or is a multiple of the convenient for the seller tact to shiping the material.

The second condition is that the quantities purchased by the buyer should be equalised to or multiples of the expedition quantities convenient for the seller. This condition, in some cases, means that the seller and the buyer must be proportionate.

This is a crucial criterion for the mutual choice between buyers and sellers. Proportionality is the condition that prevents cruel suffering of the small buyer in dealing with bigger sellers and of the small seller in dealing with big buyers.

The third condition for a balanced supply chain is that it is compact – that its units are closely spaced from each other. In general, this means that there are fewer units in it, the units communicate directly with each other, and the delivery times are short. I pay particular attention to the delivery times.

Regardless of whether the goods will be prepaid or paid after receipt, the long delivery times lead to immobilisation of working capital, either with the seller or the buyer. Such a blocking of assets is an indirect but powerful factor in slowing down money turnover. In this way, an inflationary chain reaction is fuelled. There are many mostly naive explanations for world inflation in the 2022, 2023, and 2024 years, but it is strange why delays in supply chains, as the main cause of this inflation, and in the foreshadowing symptoms of inflation, and at the beginning of its unleashing, somehow escaped our sight or were neglected.

We are now aware of them, but after the stable door was bolted, and we have already suffered all the consequences. Again, by inexplicable mental inertia, instead of shortening and speeding up logistics chains, we succumb to the price pressures of these who created the inflation in order to profit from it.

Summary of the Rules for Working with Suppliers

In everything written so far in this book, most principles and good practices for working with suppliers and subcontractors were presented in a rather "idealistic" look – how to apply these good rules in a saturated and perfectly balanced market of the materials, cooperate products, and external services.

For years, the Bulgarian market has been looking in the right direction, and there is no turning back. But the positive changes are slow to come. They come in waves, and the market is still neither really saturated nor really balanced.

Therefore, the principles and good practices for working with suppliers and subcontractors should not be viewed in a straightforward way and with blind trust. They should be applied soberly, creatively, in doses, and cautiously, depending on whether or not they are applicable to the realities of our company.

Sometimes, and these cases are becoming more and more frequently, our future customers have to you one truly reasonable question, "Tell me who your suppliers and subcontractors are, so I can decide whether to work with you".

The managers of the Bulgarian companies are focused on the customers and do not have the same interest in and care for the suppliers. If we go to business or informal meetings with customers, invite them to demonstrations, and send them New Year's greetings, why don't we do the same with suppliers? This is actually something that the more serious commercial companies do, but it has not yet become a style in the everyday lives of industrial companies.

Let's return to the problem that has beset us since 2019 and continues to do so. This is connected with interruptions and delays in large and important supply chains, which, in addition to making orders and purchases more expensive, also create the need to overstocking. The higher the relative share of expenses for materials in direct production costs, the more acute the problem.

It's not always possible to reduce expenses for materials sharply and quickly.

This is a technical and investment task that requires longer time and financial resource. The easy task to solve is shortening of the production cycle by means of applying one or other Lean tools in order to reduce times and level the flows.

This is a promising area of work in which the principles and tools of Lean Production and Industrial Logistics can be successfully applied individually and together in the aims to increase overall production and business efficiency.