



Supply Chain Monitoring Recommendation

“Questions and Answers”

What are the benefits of SCMo?

Supply Chain Monitoring (SCMo) is an important building block for build-to-order and short time to delivery goals. SCMo makes it more efficient to master difficult to manage supply networks because it allows:

- Smooth and secure supply with minimal safety inventories
- Increased speed and flexibility of supply networks
- Reduction of non value adding cost (trouble shooting, administrative effort to manage and control material flow, etc.)
- Reduction of premium freight
- Avoidance of scrap due to obsolescence (e.g. in case of engineering changes, end of production)
- Best practice approach from experts of the automotive industry
- Clear roadmap for software providers, marketplaces and deciders in the automotive industry

Can you give me a practical example of why SCMo is important?

It is Friday afternoon and all production orders are running according to schedule. The production manager is already making plans for a quiet weekend with his family when the telephone rings. An important customer has just noticed that an unplanned delivery has to be made on Monday and also in the following days the real demand will be significantly higher compared to the original planning. At the same time, releases for another product will be cancelled. A view of the production schedule and the inventory status shows that he has to organise an extra weekend shift and his own suppliers probably need to take immediate action too. Why didn't the customer recognise the shortage a couple of days earlier? Are large buffer stocks the only way to protect against the bull-whip effect?

If you have experienced similar situations and are interested in eliminating the important root causes of the problem, Supply Chain Monitoring, as described in the new Odette Recommendation, will be the ideal solution....

What is the background to the recommendation?

Odette Supply Chain Management Group

The Odette Supply Chain Management (SCM) group was created in March 2001 and comprised experts from Audi, BMW, DC, Ford, PSA, Renault, Volvo, VW; Bosch, Faurecia, SiemensVDO, Treves, Galia, SMMT and VDA.

The Odette SCM group (see box above) was created due to the rather slow deployment of web-based, cross company SCM-concepts, in spite of quite promising results in several pilot projects. Two main reasons were identified:

- Every supplier is confronted with a multitude of different solutions that are initiated by their customers. In order to use such an application, the supplier has to log-in manually, check the situation and key-in data manually via a browser, **or** he has to invest in a costly integration of backend systems. Therefore, in many cases, the benefits of the new concepts do not offset the extra costs to use and operate them.
- Many concepts were not mature and complete at the time of the planned roll-out.

What were the objectives?

The Odette SCM Group was put into place to remove the reasons for the slow deployment of new SCM concepts in the automotive industry. This resulted in the following tasks:

- Gather and systematically compile the existing Know-how and the concrete practical experiences regarding SCM (**best practice** approach).
- Create recommendations/standards for selected SCM building blocks based on those best practices.
- Enable and actively promote **interoperability** (see box below) of solutions from different software vendors (basis for profitability and seamless process integration with all relevant business partners).

Interoperability means that several decentralised applications from different software vendors interact in a specific way. In terms of functionality, the users shall experience no difference between a central application and a decentralised, interoperable implementation. A good example for interoperability in our daily life is the telephone: We only need the correct telephone number, to call from a Nokia mobile phone via Vodafone as a service provider to a person who has an Alcatel telephone and a France Telecom contract.

Without interoperability we would first need to buy the same Alcatel telephone and make a contract with France Telecom to call that person.

What is SCMo?

SCMo is a cross-company concept, that delivers transparency with regard to the state of a supply network. SCMo features a functionality that cannot be achieved with decentralised ERP-systems, which are focussed on every single enterprise. SCMo is operated in parallel to the existing ERP-systems that remain the leading systems in every organisation (see Figure 1.). The main benefit is the speed of information flow and the cross-company visibility and synchronisation. Examples of well known SCMo implementations are the supply networks for leather seats and leather trim parts for DC and BMW and the Audi Space Frame (ASF) for the Audi A2 made out of aluminium. Around 100 companies have already been using SCMo in January 2002 and a rapid growth can be foreseen for the near future.

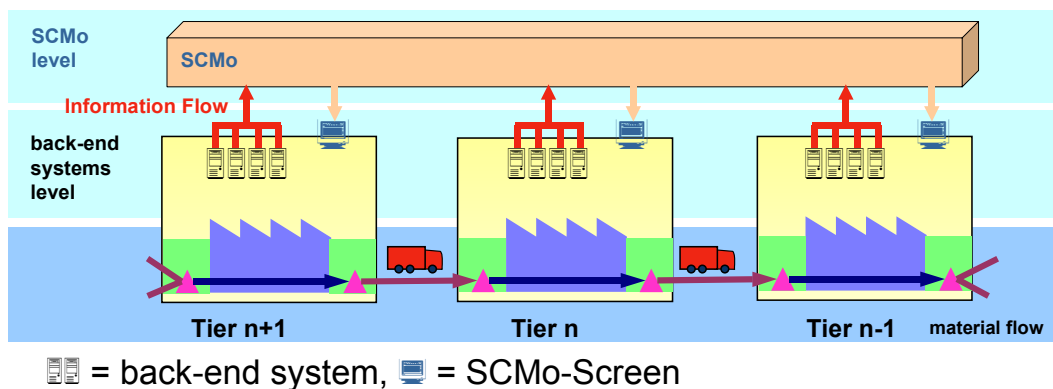


Figure 1: Basic Information Flow

SCMo addresses the problem of high stock levels, premium freight, interruption of supply and high administrative effort in difficult to master supply networks. The basic idea is to automatically alert the employee in charge (e.g. via email) as soon as the **inventory** in the supply network (cross-company view) is either too low or too high regarding the real (final) **customer's demand**. That means the companies involved get clear signals how to adjust production according to short-term variations in demand. The result is a smooth and secure supply with minimised safety buffers. Also for the optimisation in bottleneck situations, SCMo has proven to be very effective.

How should I prepare for it?

In order to operate SCMo, the participating companies need to identify firstly the relevant part of the supply network and represent it in a model. An important success factor is to keep the complexity low, e.g. the number of parameters and the modelling detail. The following **preparatory steps** are necessary:

- Identification of the **critical part of the supply network**:
The Criteria are, for example: a high probability of supply interruptions, long lead and reaction times, high inventory levels, frequent engineering changes, creation of variants at an early stage, bottleneck / allocation situations on low tier level, etc.

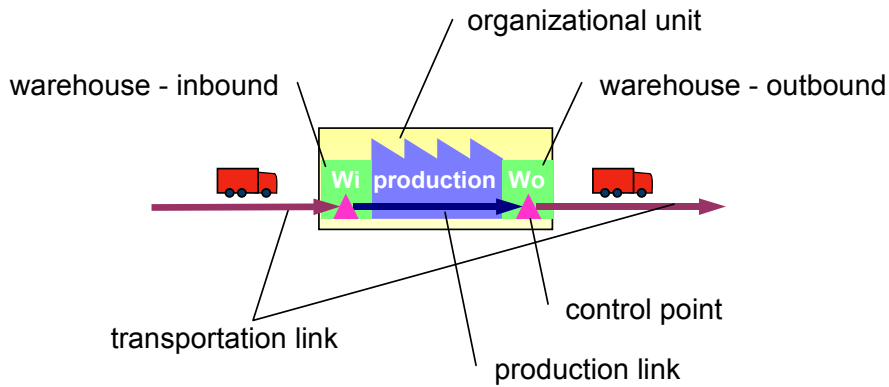


Figure 2: Elements of the SCMo Model

- Representation of the network structure in the **SCMo-Model**:
The network is modelled as a set of organisational units (e.g. companies or production plants) and interconnected control points. Those control points represent in general warehouses (inbound, outbound, consignment, semi-finished products, etc.) and can be seen as *nodes* of a mathematical graph. Transportation and production links represent the *edges* of the graph (see Figure 2).
- The resulting model is entered into the SCMo system as shown in Figure 3.

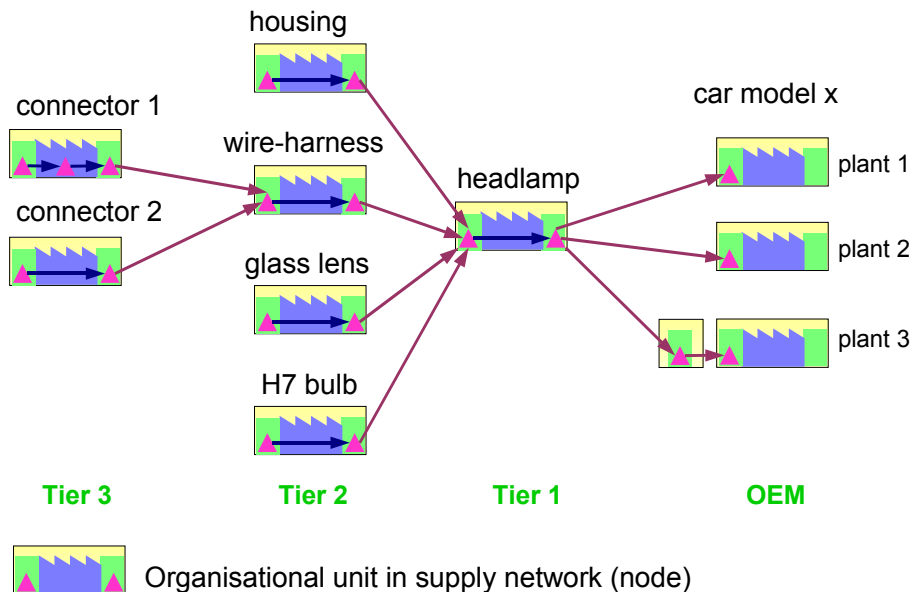


Figure 3: SCMo Model for critical part of Supply Network

- The last preparation step is to enter the model **parameters**:
 - ⇒ *organisational units* (e.g. contact persons, organisation ID)
 - ⇒ *control points* (e.g. minimum/maximum inventory levels)
 - ⇒ *production link* (e.g. production lead-times, bill of material)
 - ⇒ *transportation link* (e.g. transportation lead-time, part number reference table)

How does it work on a day-to-day business?

After finalisation of the preparatory steps, a model with all the necessary master data exists. Now the SCMo system needs to be updated regularly with the required dynamic data (automated or manually). Based on this data, the solution is able to detect alert situations. The process in the day-to-day business is the following (see also Figure 1)

- **Inventory**-information and **demand**-information are updated regularly (inventory at least daily). The SCMo system immediately carries out a demand calculation for all downstream supply tiers in the network.
- As soon as a monitored value (e.g. inventory level in outbound warehouse for product x) is exceeding the predefined thresholds (= exceptional situation) the SCMo system generates automatically an alert (e.g. e-mail).
- The cross company **transparency** of all relevant data allows the user to understand and handle the alert situation quickly and easily.
- The documentation and control of the counter measures is supported by a simple **workflow**.

What is in the Odette recommendation?

The Odette Recommendation includes an introduction to SCMo, a detailed description of the processes (flow charts) and functionalities, as well as statements concerning responsibilities, data and technical aspects.

What is the outlook for SCMo?

Supply Chain Management means a significant **change** for every organisation. SCM concepts – and thus SCMo – are based on mutual **trust** and **openness**. In contrast to many other SCM building blocks, SCMo is not intended to be used for complete supply networks. Furthermore, SCMo is an **add-on to existing systems**. For that reason SCMo should be a good possibility for every organisation to make its first steps towards modern Supply Chain Management and Collaboration, without high investments and risk. SCMo has already proven itself in many real-life implementations and will continue to spread further. The Odette Recommendation will contribute to speeding up this process as the standard will give a clear orientation, encourage further software vendors to step into this market segment and reduce the risk of investment.

Can you give me an example of SCMo in everyday life?

An analogy with headlamps may help to explain the value of SCMo.

During the day, or on a well lit road we do not need headlamps. In other words, for clear, easy to master supply networks we do not need SCMo. However, without headlamps, we would be forced to drive extremely slowly and with high levels of concentration in the dark. Nevertheless, we will sometimes come off the road or hit an obstacle. That means, in difficult situations we will generally keep high safety stocks (drive slowly) and critical supply situations will still happen from time to time. With headlamps (or SCMo

respectively) we get the **visibility** that allows us **to operate proactively**. We will be able to speed up on a straight part of the route and slow down in good time before a sharp bend without losing control. With SCMo we reduce the volatility of supply networks and secure supply with minimal safety stocks. I definitively prefer to have good headlamps when driving in the dark!

Where can I get the recommendation?

The recommendation for the SCM-Building Block "Supply Chain Monitoring (SCMo)" can be downloaded free of charge from the Odette Homepage (www.odette.org).