Swarm organization – a new paradigm for the E-enterprise of the future

With the transition to the real time enterprise, organizational models are also undergoing a radical change. Formerly, the thought process was aligned to mechanical principles where organizations should purr along like clockwork: accurate and in step. Network aficionados thought in a more socio-technical manner.

Under their leadership, hierarchies flattened out, entire levels of management evaporated and highly equipped technological teams were founded. The idea of networking mesmerized an entire generation. Everything was networked with everything else. As a result, however, the degree of complexity—both internally and externally—also increased exponentially. In contrast, in the real-time business of the future, we think socio-biologically and carry out management according to swarm logic.

Scenario 2020: vision of a normal working day

This morning everything looked quite quiet. Ralph Robertson stared at the screen. The business process monitor suddenly emitted a warning signal. Apparently, simultaneously in different European major cities, there was an increased demand for these new, synthetic low-carb products. This suggested at least the current sales numbers of the ‘SuperStores’ which Robertson always monitored in real-time. Robertson recognized this effect only too well. Consumers in major cities around the world exhibit a similar purchasing pattern during the day and then suddenly, on some days, pounce on specific products almost as if by agreement. This may well have changed again by the following day. This effect is called ”Magic Synchronization”. How it exactly functions, however, remains an unsolved enigma of the developed information society. Anyway it must be dealt with immediately in order to stay on the crest of the wave and to respond to the market as quickly as possible. Robertson acquires an overview of the situation. He
displays the entire stock of low-carb products in the logistic network. In this way he knows precisely what inventory stocks are available where and which products and units are already en route on trucks or by train. At the same time, the potential production capacity for the next 24 hours is automatically requested from the manufacturer.

Robertson is satisfied for the present. It doesn’t seem to be a problem to meet the projected European demand. Now it is simply a question of bringing the right number of products into the shops at the right time. Robertson is a professional. He has been doing the job of independent “market coordinator” for an international marketing consortium for the last six years. The customers trust him and his incredible intuition for the sudden caprices of the market. “The markets are 95% psychology”, he always says, “because the best artificial intelligence simply can’t cope.” However, in this case, he decides to activate the “dynamic logistic optimizer” anyway, a neural network for process optimization in real-time markets. It doesn’t take long until the system has determined a target scenario. According to this, a clear intervention in the current goods flow is required. The routes of a whole series of trucks must be changed, detours made to temporary storage, inventory transferred between different stores and also the production schedule at the manufacturer must be adapted ad-hoc. Because of the vast number of actors involved – many of the logistic service providers are independent small companies – this is not so easy to enforce in the short-term.

He requests an “assisted conference” with the disposition agents of the largest members of the marketing consortium. Thanks to efficient presence management, this takes place within a few minutes. Robertson briefly explains the situation while the members follow the strategy simulation on their respective terminals. After a short discussion, an electronic ballot takes place. The majority of members are in favor of Robertson’s proposal and they provide him with the software agents together with the respective security access to transfer the target scenario into the logistic network. The actual agreement and control of the modified production and logistic processes, the route control and resources disposition then proceeds autonomously between the numerous participants and the vehicles in the network. At lightning speed and supported by the agents, co-operations are agreed between the logistic service providers, cargos are accepted and truckloading reorganized. Less time-critical cargos are stored temporarily at the next available logistics center instead, in order to bring low-carb products to the point of sale as quickly as possible.

Robertson tracks the processes on the business process monitor. He sees the flow of goods moving across the screen as colored lines and patterns