'Effects of Integrated and Transparent Supply Chain on Customer Services and Production Performance'

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List of Abbreviations

SCM	Supply Chain Management
OEM	Original Equipment Manufacturer
ICT	Information and Communications Technology
MRP	Material requirement planning
TL	Truck Load
LTL	Less than Truck Loads
3PL	Third Party Logistics
CRM	Customer Relationship Management
PLM	Product Life Cycle
ERP	Enterprise Resource planning
LMIS	Logistics management information systems
SOPs	Standard Operating Procedures
CEO	Chief Executive Officer
MNC	Multi-National Company
BPO	Business Process Orientation
SME	Small and Medium Enterprise
EDI	Electronic Data Interchange
MDM	Master Data Management
ROI	Return on Investment
SCEM	Supply Chain Event Management
RFID	Radio Frequency Identification
EPC	Electronic Product Code
EPCIS	Electronic Product Code Information Services
DC	Docking Door

BACKGROUND

The supply chain of a manufacturing enterprise is a world-wide network of suppliers, factories, warehouses, distribution centres and retailers through which raw materials are acquired, transformed and delivered to customers. In order to optimize performance, supply chain functions must operate in a coordinated manner. But the dynamics of the enterprise and the market make this difficult: bank rates change overnight, political situations change, materials do not arrive on time, production facilities fail, workers are ill, customers change or cancel orders, etc. causing deviations from plan. In some cases, these events may be dealt with locally, i.e. they lie within the scope of a supply chain function. In other cases, the problem cannot be "locally contained" and modifications across many functions are required. Consequently, the supply chain management system must coordinate the revision of plans or schedules across supply chain functions.

If enterprises can handle environmental dynamics they will be successful. If they react inappropriate, it will negatively influence the operating performance. Beside a high environmental dynamic, the surrounding of supply chains is often non-transparent. The problem is a lack of trust between supply chain partners and enterprises are shrewd and both lead to information barriers that hamper the communication and coordination within the supply chain substantially. Due to the insufficient transparency, processes along the supply chain and the existing environmental dynamic, get more and more non-transparent and subject to disorders.

Enterprises are therefore encouraged to react flexible to changes in their environment without reducing the efficiency. How flexible an enterprise can react, shows its ability to tackle unexpected events. Events are based on status reports, and changes in a process that can be positive and negative. They can trigger further processes or be recognized as mistakes and signal a deviation of plans.

This ability is often limited by coordination problems between planning tiers. If an event occurs, under certain restrictions the responsible planning tier must be evaluated. Due to the high amount of events there is a high probability of coordination problem what then results in an overload of tiers, nervousness in the system and a belated reaction to events and disorders.

The supply network of producing companies consists of many suppliers and transport service providers. Changes in the system trigger coordination processes that are unmanageable and very soon get non-transparent to all participants. In fact, sudden changes happen not only due to changes in environment, but on the customer's side. Therefore this factor is hardly predictable.

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