Customizing at SAP
- mySAP Supply Chain Management
(Edition 2004)

Marian Krupa (PhD)

University of Information Technology and Management in Rzeszow

SAP Project Manager

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   Literature

Rzeszow 2004

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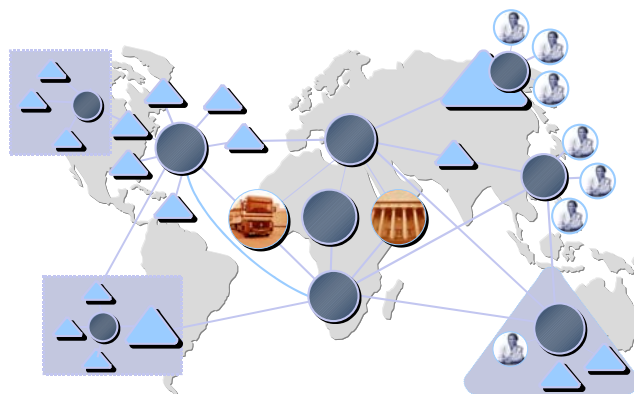
Introduction

Based on the manufacturing industry research report performed by "Forrester Research"[1] organization we may point out three key areas of business model development within time frame of 10 years. Accordingly to above mentioned report SAP AG has developed so called „**Supply Chain Dynamics"**[2] concept which covers three following key issues:

1. **"Outsourcing.** As manufacturers … increasingly turn to outsourcing, the ability to manage multi-tier product quality, scheduling and costing will decide the winners.

2. **Mass Customization.** Manufacturers … will increasingly face pressure to customize products for demanding consumers. For example, 21 percent of all new cars purchased by 2010 are expected to be built-to-order, up from 5 percent today.

3. **Shrinking Product Life Cycles.** As the major drug companies face increasing competition from generics and me-too drugs, companies … will be forced to shrink their development cycle by 25 % to remain competitive."[3]
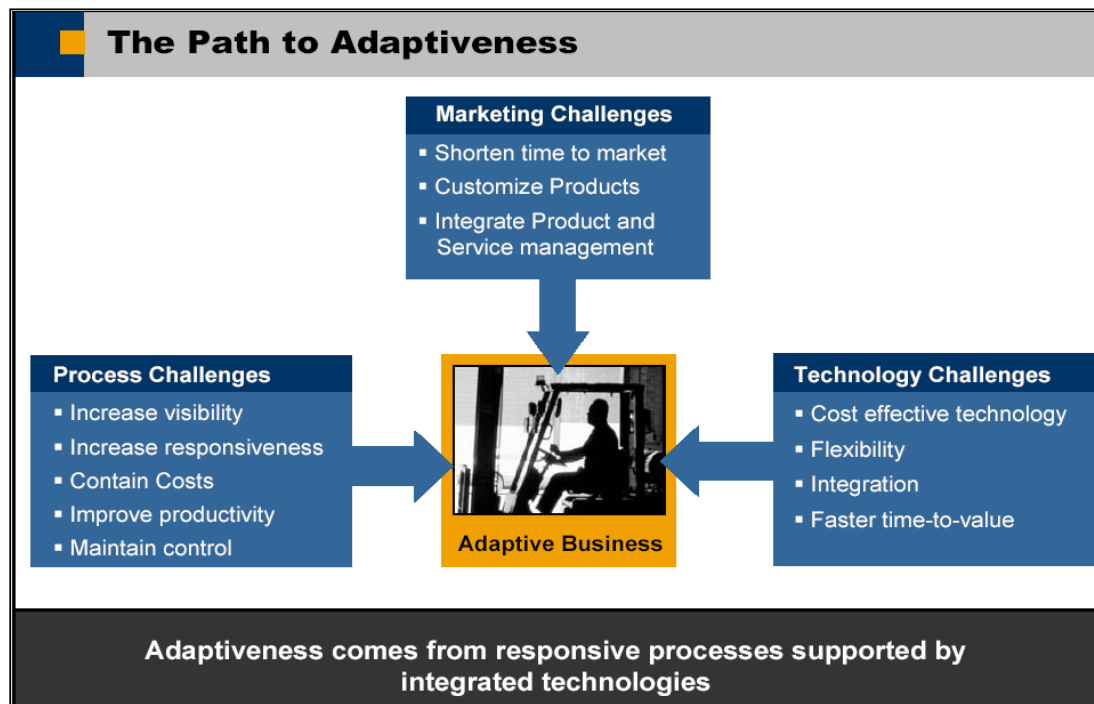

Illustration 1. B. Herrmann, *The path to Adaptiveness*, in: *mySAP SCM Introducing SAP SCM 4.0*, SAP AG 2003, SAP Skills, October 2003.

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[1] Forrester Research, Commentary: *Making manufacturing flexible*, April 9th, 2003.
[2] Benedikt Herrmann, Application Solution Management, *mySAP SCM Introducing SAP SCM 4.0*, BSG Manufacturing Industries, SAP AG 2003, SAP Skills, October 2003.
[3] *As above*.

In fact, to adapt to new factors of success every manufacturing organization has to face three major challenges: marketing challenges, process challenges and technology challenges (Illustration 1). SAP delivers ready-to-use software solutions which address those three key areas of present and future business challenges. In this presentation we would like to focus on **Mass Customization** in relation to SAP state-of-the-art software business solutions.

1. Customizing and SAP business software solutions

Customer orientated value management organizational model has been for many years a main focus for SAP software development departments. The bottom line for any SAP solution is such technological platform that allows customers, employees, partners etc. to fully collaborate (Illustration 2) in an entire integrated business process. Today, in a highly competitive business world, only in this way we can achieve above average customers' satisfaction at the lowest possible price.
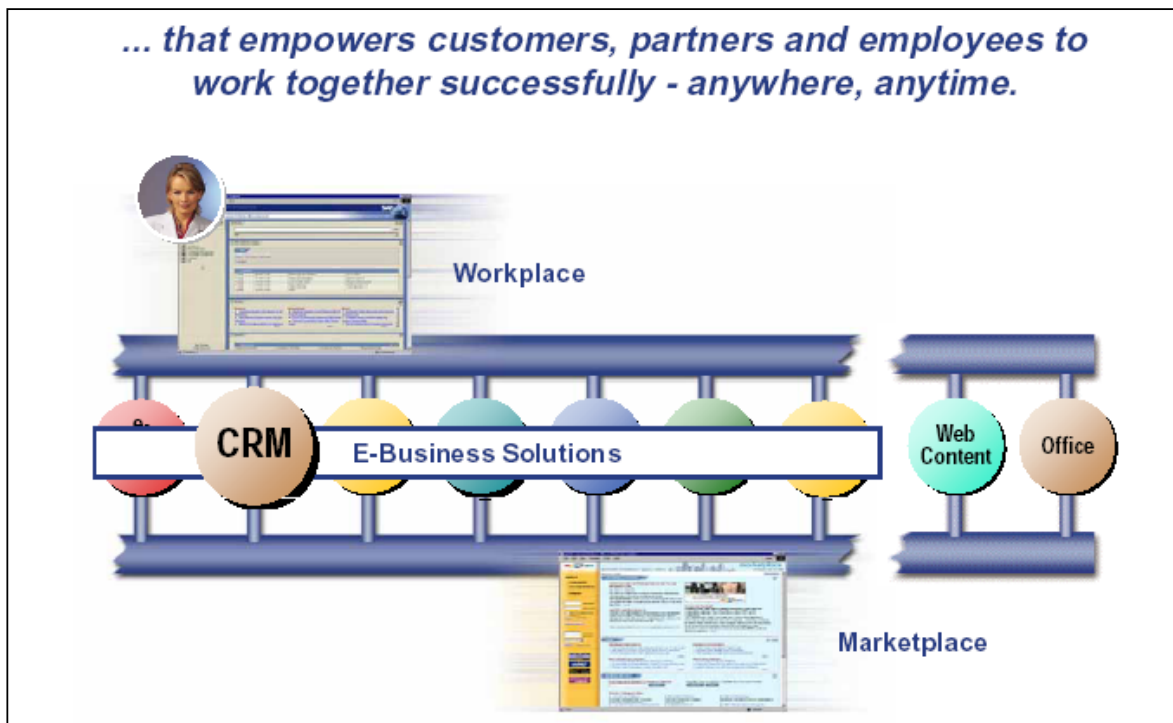

Illustration 2. P. Zencke, *mySAP.com is collaborative business platform*, in: *mySAP CRM - Analytical CRM for Profitable Business*, mySAP Business Intelligence Conference, Hamburg, Germany November 2000.

On an operational level in the customer oriented approach model, we can achieve above average customer's satisfaction through four steps process: 1) Engage with a customer; 2) Make an appropriate transaction in the system; 3) Fulfill an order and 4) Deliver after sale service both to the customer as well to the marketing department (Illustration 3).
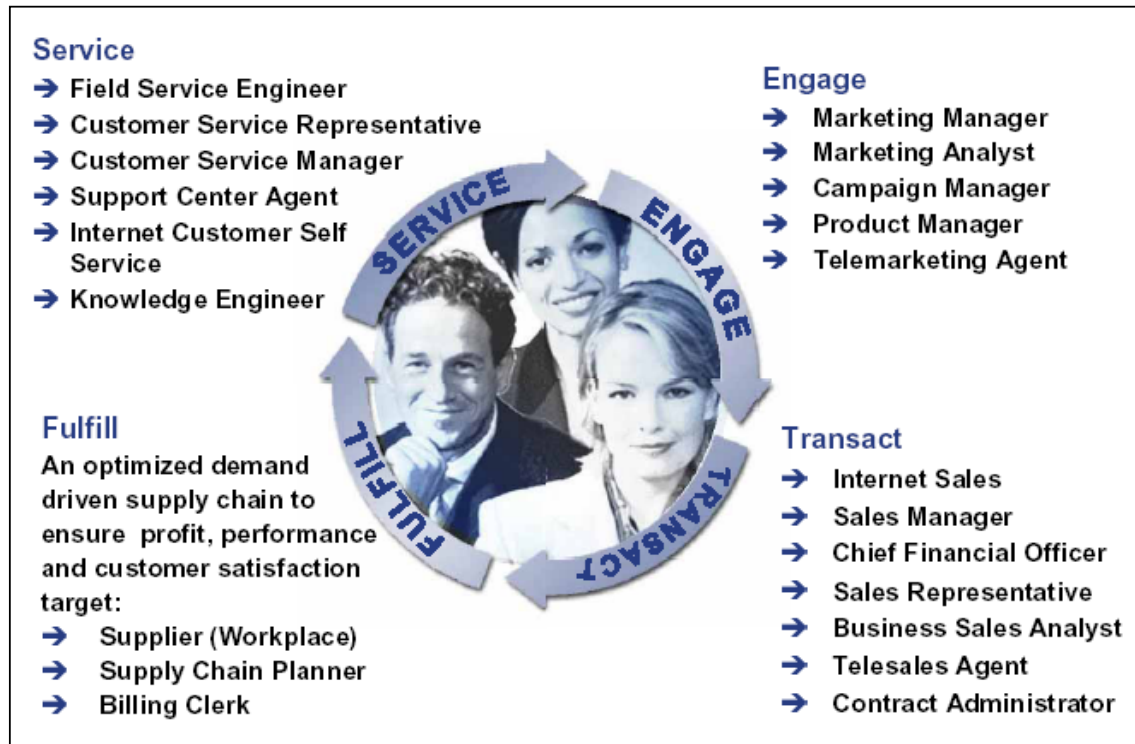

Illustration 3. P. Zencke, mySAP CRM – Operational scenarios, in: *mySAP CRM - Analytical CRM for Profitable Business*, **mySAP Business Intelligence Conference, Hamburg, Germany November 2000.**

Basically we have three major solutions at SAP which are directly focused on customers individual needs and preferences from one hand and on supply chain optimization on the other. The first one is named as the **Internet Pricing & Conditions**[4] (IPC), the second – which is the core of the SAP customer oriented solution - **mySAP Customer Relationship Management**[5] (CRM), and the third - **mySAP Supply Chain Management** (SCM). In this paper we will research in detail **mySAP SCM** end-customer oriented business software solution as a Collaborative Planning, Forecasting & Replenishment tool.

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[4] "The SAP Internet Pricing and Configurator (IPC) is the component that enables sales of configurable products and business transaction pricing in all mySAP CRM scenarios. The IPC provides consistent pricing and configuration information in all business transactions such as sales or service orders, contracts, quotations or campaigns." Source: http://www.sap.com/company/saplabs/france/projects/#bookmark12.
[5] http://www.sap.com/solutions/crm

2. mySAP Supply Chain Management – business map solution – Edition 2004

SAP solution maps[6] allow managers to fully explore and implement all possible today and in the near future capabilities of any given solution. For mySAP SCM we can develop several functionalities at 9 levels of our analysis, such as: Strategic planning, Demand Planning, Supply planning, Procurement, Manufacturing, Warehousing, Order Fulfillment, Transportation and Visibility (Illustration 3).

Within chosen "Sales Order Processing" solution at "Order Fulfillment" level we can perform following detailed customer related tasks[7]:

- Rules-based Available-to-Promise (ATP)
- Product Allocation
- Capable-to-Promise (CTP)
- Multilevel ATP Check
- Backorder Processing

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[6] "mySAP Supply Chain Management is a complete solution that covers supply chain networking, planning, coordination, and execution. And thanks to the SAP Business Maps, you can understand the benefits and value these processes and solutions deliver". Source: http://www.sap.com/businessmaps.

[7] "**Rules-based Available-to-Promise (ATP)**: Companies use predefined rules to automatically or manually optimize the decision-making process for choosing between alternatives such as products, locations, or production process models. To fully utilize this functionality, the following products should be evaluated Advanced Planning & Scheduling (applies to mySAP SCM), mySAP Supply Chain Management

Product Allocation: Unpredictable problems can lead to critical situations in order processing. Product allocations help companies address and control such problems early by providing visibility into which quantity of a product will be used for which purpose. To fully utilize this functionality, the following products should be evaluated Advanced Planning & Scheduling (applies to mySAP SCM), mySAP Supply Chain Management.

Capable-to-Promise (CTP): The solution lets companies call production during an ATP check when the requested product is not completely available, in order to produce the remaining quantity or to procure it externally. To fully utilize this functionality, the following products should be evaluated Advanced Planning & Scheduling (applies to mySAP SCM), mySAP Supply Chain Management.

Multilevel ATP Check: This is useful when a large part of the value-added activity arises at final assembly, because the components needed to produce an end product are checked when a sales order is created. To fully utilize this functionality, the following products should be evaluated Advanced Planning & Scheduling (applies to mySAP SCM), mySAP Supply Chain Management.

Backorder Processing: Companies can redistribute confirmed or partly confirmed quantities according to priorities and hierarchies, and override or manually affect the results of the ATP check when necessary. This is an important feature for companies that have large key customers making up the majority of overall demand. To fully utilize this functionality, the following products should be evaluated Advanced Planning & Scheduling (applies to mySAP SCM), mySAP Supply Chain Management". Source: http://www.sap.com/businessmaps.

Strategic Planning	Strategic Supply Chain Design		Strategic Sourcing	
Demand Planning	Forecasting & Lifecycle Planning	Promotion Planning	Consensus Demand Planning	
Supply Planning	Safety Stock Planning	Supply Network Planning & Outsourcing	Distribution Planning	Customer Collaboration	Supplier Collaboration
Procurement	Purchase Order Processing	Receipt Confirmation	Invoice Verification	
Manufacturing	Production Planning & Detailed Scheduling		Manufacturing Execution	
Warehousing	Inbound Processing	Outbound Processing	Cross Docking	Warehousing & Storage	Physical Inventory
Order Fulfillment	Sales Order Processing	Logistics Coordination	Billing	
Transportation	Transportation Planning	Transportation Execution	Freight Costing	
Visibility	Procurement Visibility	Manufacturing Visibility	Fulfillment Visibility	Transportation Visibility	Supply Chain Analytics

Illustration 4. mySAP Supply Chain Management – business map solution – Edition 2004. Source: http://www.sap.com/businessmaps.

More detail characteristic of entire SAP SCM solution we would like to present in relation to the "Vendor Managed Inventory (VMI) at SAP/SCM", "Collaborative Planning, Forecasting & Replenishment at SAP/SCM" and "Supplier Managed Inventory at SAP/SCM".

3. Vendor Managed Inventory (VMI) at SAP/SCM

In the traditional business model, both manufacturer and vendor is forced to keep extra level of inventories in a case of unpredicted orders coming in. In this particular model, the entire logistic (supply) chain has very little information about the demand side. This situation is both costly for all parties and does not guarantee customers' satisfaction.

Presented below Business Scenario Map shows how manufacturers, vendors and other business parties including key customers can optimize their supply chain planning process[8] to deliver customers' satisfaction at lowest possible price of sales order processing.

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[8] "This business process is supported by Best Practices for SAP Business Suite. Best Practices for SAP Business Suite represent prepackaged business expertise in the form of methodology, documentation and reliable preconfiguration for SAP solutions. This helps you to start with a fully documented and reusable prototype for this scenario only days after you have installed the software. A prototype representing the results of a complete

Value Potentials	Business Benefits	Vendor	Customer / Retailer	Business Benefits	Value Potentials
100%****	Increased Revenue	Transfer of inventory and sales data		Increased sales	100-200%****
70%****	Lower inventory levels	Generate demand forecast / Supply and distribution planning		Lower inventory turns	27-70%****
From 89% to 98%*	Increased service level	Efficient Truck load building / Automated sales order creation		In-stock rate improvement	From 2% up to 3%****
Up to 28%***	Reduced operating costs through full truck loads	Sales order processing and delivery	Automated purchase order creation	Improved customer service and relationships	From 93% up to 99%**
	Enhanced visibility		Inbound Delivery	Reduced supply risk	
	Less paperwork			Higher cash flow	

Source:
* SAP APO Consumer customer
** Barilla / Cortese - SCMR 10/2000
*** Manco - Mfg Systems 9/2000
****AMR-Report 8/2003

The value potentials shown in this table have been reported by selected SAP customers or independent third parties as referenced herein. However, there is no guarantee that such value potentials can be realized in any particular customer-specific business processes, and SAP does not make any representations and disclaims any liability as to the appropriateness of the referenced value potentials for any specific customer situation.
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Illustration 5. Vendor Managed Inventory (VMI) at mySAP Supply Chain Management – business map solution – Edition 2004. Source: http://www.sap.com/solutions/scm.

In general, "VMI programs allow manufacturers to make better decisions on how to deploy goods across various customers, which leads to increased customer service levels, lower transportation costs, reduced inventory levels and lower sales cost"[9]. All business parties, customers, manufactures, trade people, suppliers etc. benefit from reduced cycle times, lower overheads, lover costs in general, since the process can be highly automated and at the same time can be under full management and customer control.

4. Collaborative Planning, Forecasting & Replenishment at SAP/SCM

One of the main issues of supply chain performance today is the lack of the so called "visibility" into down-stream demand. This means in short: lost sales and high inventory levels for both retailers and manufacturers.

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implementation project done up front and encapsulated in one single product that can rapidly turn into your productive solution. Best Practices for SAP Business Suite puts the power of SAP Business Suite in your hand". Source: http://www.sap.com/businessmaps.
[9] *As above*.

In traditional business model demand level is projected by using historical customer orders or shipment levels. Based on historical data we can build patterns of future sales. As we already know in the past this method was quite successful, however today in a volatility business environment using historical data to project future stream levels of demand is far from exactness and perfection. Especially, this problem has direct implications in customized oriented organizations. Because of that, "by providing business partner visibility into inventory and by collaborating on a single shared forecast of customer demand, supply chain partners can positively impact a set of key business drivers to create value across supply chain partners"[10].

The business scenario presented below shows how enterprises can carry out collaborative supply chain planning activities with their business partners over the Internet, illustrates benefits of collaboration, sharing information about customers; needs and demands (Illustration 6).

Collaborative Planning Forecasting and Replenishment (CPFR) represents a paradigm of holistic approach to supply chain management both on an individual customer's needs and preferences as well as on a business (dynamic planning and optimizing) perspective.
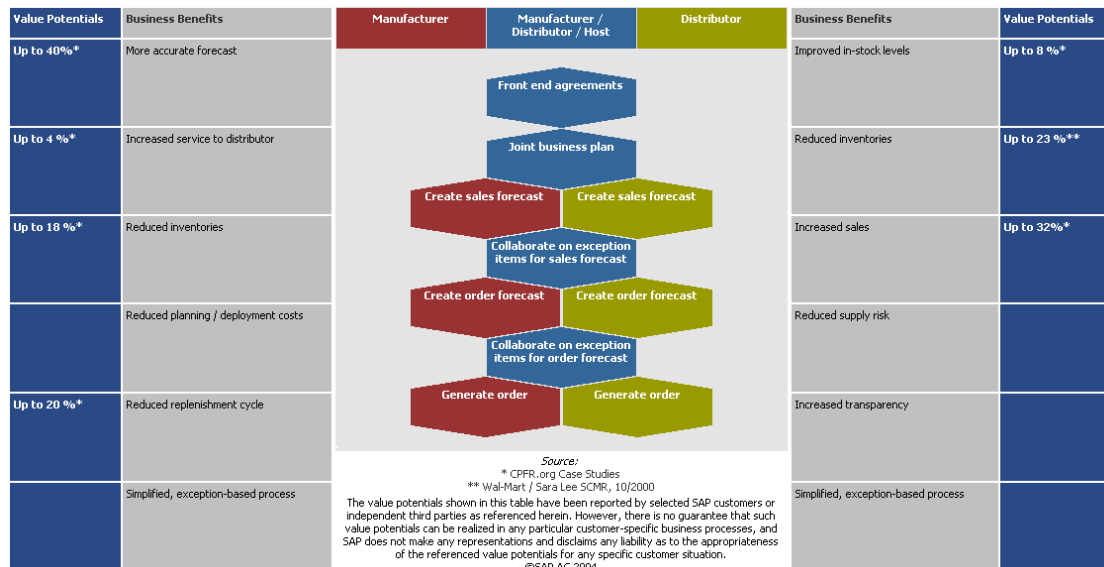

Illustration 6. Collaborative Planning, Forecasting & Replenishment at mySAP Supply Chain Management – business map solution – Edition 2004. Source: http://www.sap.com/solutions/scm.

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[10] *As above.*

5. Supplier Managed Inventory at SAP/SCM

The same principles we can apply to supplier side of the SCM. All suppliers are determined by orders coming in from their customers (manufacturers) which is in turn a response to the end-customers' needs and demands. The supplier in the traditional business model has no or very little knowledge about the end-customers plans and buying activities or preferences, which means that the supplier cannot perform an appropriate stock movements in terms of quality and quantity. It means higher cost and lower quality of service to all parties.

SMI solution allows supplier to manage inventory programs, that "can offer their customers a value added service by performing the replenishment planning task for their business partners"[11]. Besides "giving the supplier increased visibility into actual demand, SMI also recognizes that suppliers often may have more knowledge and control over the logistical processes involved. By increasing visibility into actual demand as well as inventory levels"[12].
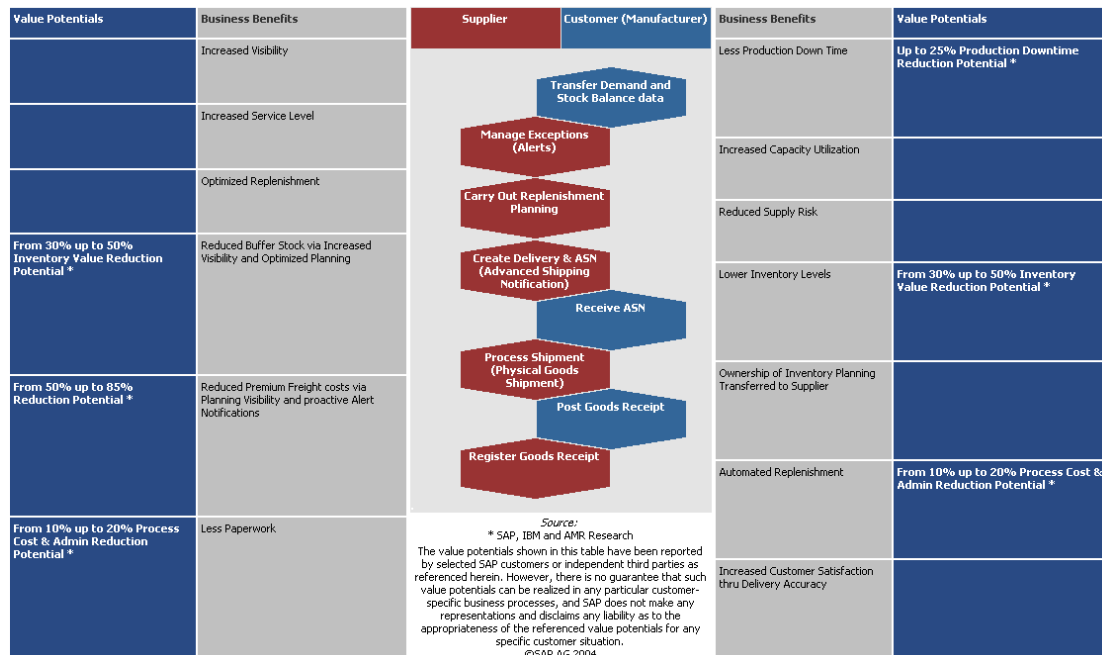
Value Potentials	Business Benefits	Supplier	Customer (Manufacturer)	Business Benefits	Value Potentials
	Increased Visibility		Transfer Demand and Stock Balance data	Less Production Down Time	Up to 25% Production Downtime Reduction Potential *
	Increased Service Level	Manage Exceptions (Alerts)		Increased Capacity Utilization	
	Optimized Replenishment	Carry Out Replenishment Planning		Reduced Supply Risk	
From 30% up to 50% Inventory Value Reduction Potential *	Reduced Buffer Stock via Increased Visibility and Optimized Planning	Create Delivery & ASN (Advanced Shipping Notification)	Receive ASN	Lower Inventory Levels	From 30% up to 50% Inventory Value Reduction Potential *
From 50% up to 85% Reduction Potential *	Reduced Premium Freight costs via Planning Visibility and proactive Alert Notifications	Process Shipment (Physical Goods Shipment)	Post Goods Receipt	Ownership of Inventory Planning Transferred to Supplier	
From 10% up to 20% Process Cost & Admin Reduction Potential *	Less Paperwork	Register Goods Receipt		Automated Replenishment	From 10% up to 20% Process Cost & Admin Reduction Potential *
				Increased Customer Satisfaction thru Delivery Accuracy	

Source:
* SAP, IBM and AMR Research
The value potentials shown in this table have been reported by selected SAP customers or independent third parties as referenced herein. However, there is no guarantee that such value potentials can be realized in any particular customer-specific business processes, and SAP does not make any representations and disclaims any liability as to the appropriateness of the referenced value potentials for any specific customer situation.
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Illustration 7. Supplier Managed Inventory at SAP/SCM at mySAP Supply Chain Management – business map solution – Edition 2004.
Source: http://www.sap.com/solutions/scm.

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[11] *As above.*
[12] *As above.*

7. Business goals and objectives that can be achieved through the implementation of mySAP Supply Chain Management - conclusions

In conclusion**,** the implementation of **mySAP Supply Chain Management** solutions allow to achieve the following business goals and objectives[13]:

- Improving Customer Service
- Better service levels
- Strengthen partnerships and account management
- Lowering Working Capital
- Improve collections, reduce receivables
- Managing Fixed Assets & Resources
- Maintain asset value adjusts
- Reducing Operating Costs & Increasing Efficiency
- Reduce order processing costs
- Reduce transaction costs

Al in all, facing new goals, perspectives and challenges of the customer driven economy, implementation of the sophisticated SAP software solution such as **mySAP Supply Chain Management** can assist in achieving a competitive edge today and in the future for an entire collaborative organization.

LITERATURE

Herrmann B., *The path to Adaptiveness*, in: *mySAP SCM Introducing SAP SCM 4.0*, SAP AG 2003, SAP Skills, October 2003.

Zencke P., *mySAP.com is collaborative business platform*, in: *mySAP CRM - Analytical CRM for Profitable Business*, mySAP Business Intelligence Conference, Hamburg, Germany November 2000.

Forrester Research, Commentary: *Making manufacturing flexible*, April 9th, 2003.

http://www.sap.com/solutions/scm

http://www.sap.com/businessmaps.

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[13] http://www.sap.com/solutions/scm