# *Lean Order Management*

***(Activity Chain Modelling)***

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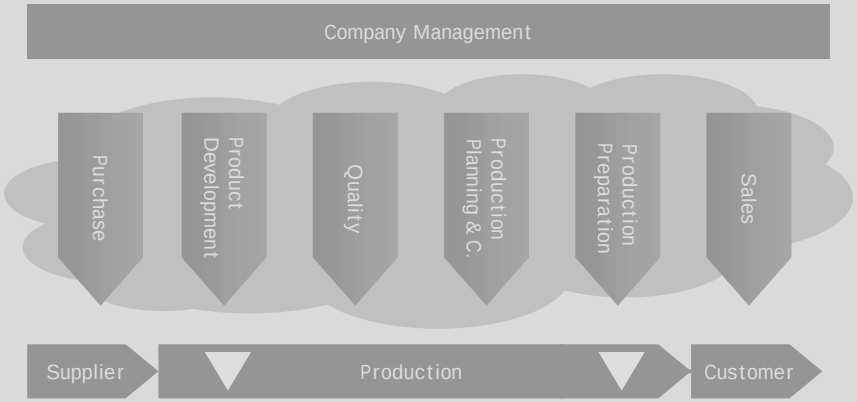
## Manufacturing Framework




Departments work individually, but they are all involved in the (customer) order process due to the increase in customer specific production (PTO, ATO, CTO).



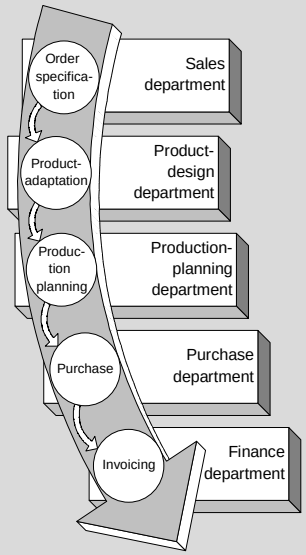
## Order Management

By managing the order process

***as a chain of activities through the individual departments***

it is possible to increase the resource utilisation and to reduce the leadtime

In many companies more time (manhours & lead-time) are spend in ordre processing than in production !!!





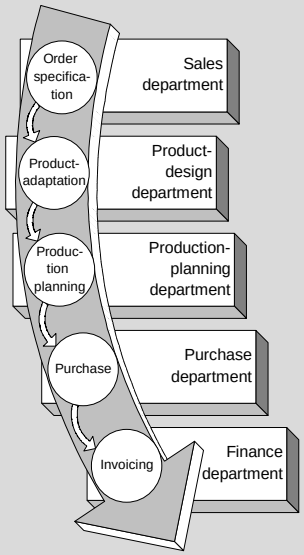

## Order Management

Focus are changed from individual tasks to flow.

Order management requires a co-ordination of ALL orders with consideration for the TOTAL costs and ALL available resources.

Who is in charge of the order ?

Does the overall schedule include both production, purchase and customer specific design activities ?



# Order Management

Who needs Order Management ?

- Does the adaptation to customer specific orders result in more orders (but of less value) ?
- Does the responsibility often change during the order processing ?
- Is the consumption of man-hours increased compared with sales ?
- How many orders are delivered on time?
  Is it increasing or decreasing ?

How often are drawings or materials missing during assembly or production ?



# Order Management

Is the information process effective ?

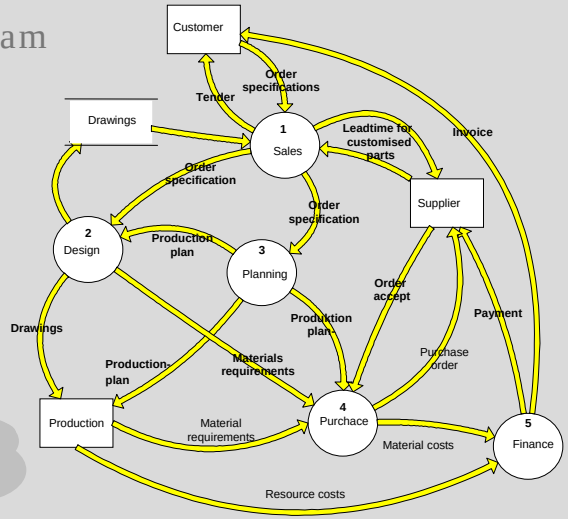
- How much time is spent on seeking information which ought to be available ?
- When was the latest evaluation of the information flow, forms, reports and screens used in the order process ?
- How well integrated are the systems used for sales, planning, quality control and design?



# Modelling

Data Flow Diagram

Information flow
Activities
Data-files

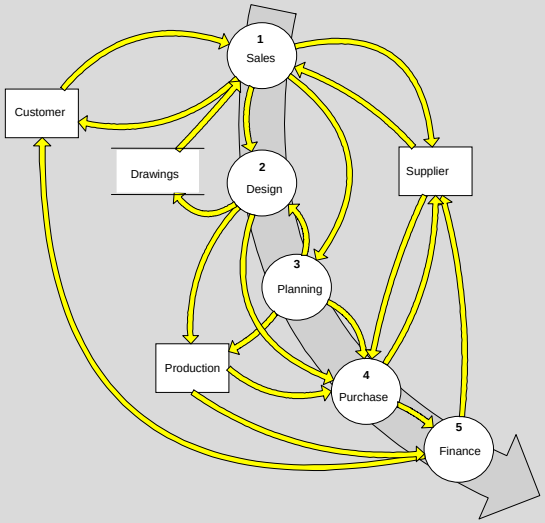



*Focus:*
*Nice view*



# Modelling

Data Flow Diagram
*continued*



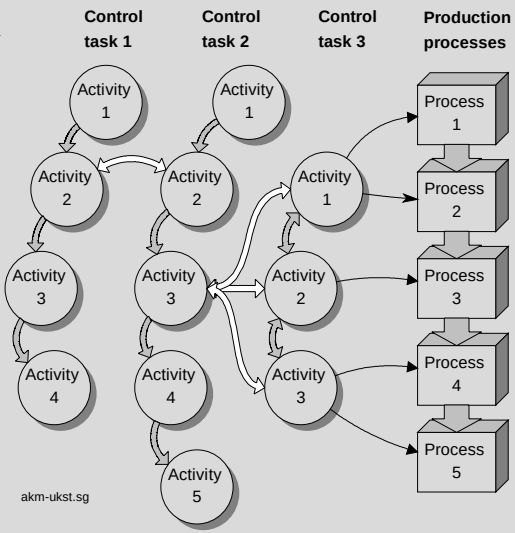

*Focus:*
*Flow*

# Modelling

Activity Chain Model

Focus on:

- forward flows
- major tasks (chains)
- few changes of responsibility
- resource utilisation in the administration
- simple to use






# SME Case study

75 employees

30 in the administration

45 in the production

Turnover: 12 million Euro

150 customer orders pr. year

Sales offices in Germany and The Nederlands

All facets of manufacturing (production, sales, product-development, customer specific adaptations, finance)



# SME Case study

Problem areas

- Lack of information in spite of increased paper flow
- Administration costs increased 10 times
- Drawings and product specifications are often late
- Order specifications are often insufficient
- Much overtime work
- Too much transfer of responsibility
- Many rush jobs caused by customer order changes
- A lot of manual paper work
- Double filing

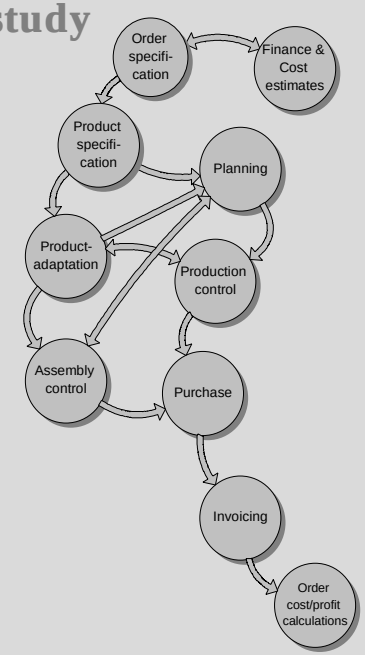


# SME Case study

Activity Chain Model

Customer order ”chain”

Too many backward loops




Based on the customer order chain it was decided to analyse the number of persons involved in the single activities and value adding versus non-value adding activities

# SME Case study

| Activities: | Resources (Hours/Week) | Involved persons | Involved departments | Value added time (%) |
|---|---|---|---|---|
| Order specification | 132,0 | 8 | 2 | 98 |
| External Relations | 23,5 | 7 | 4 | 91 |
| Product specification | 154,5 | 18 | 6 | 58 |
| Production planning | 19,5 | 3 | 3 | 100 |
| Product adaptation | 186,0 | 10 | 4 | 76 |
| Assembly control | 157,0 | 7 | 2 | 92 |
| Production control | 10,0 | 2 | 2 | 63 |
| Purchase | 81,5 | 9 | 3 | 98 |
| Invoicing | 45,5 | 7 | 3 | 93 |
| Order cost / profit calc. | 21,0 | 4 | 4 | 95 |
| **Total** | **830,5** | **-** | **-** | **-** |
| **Average** | **75,5** | **7** | **3** | **88** |



# SME Case study

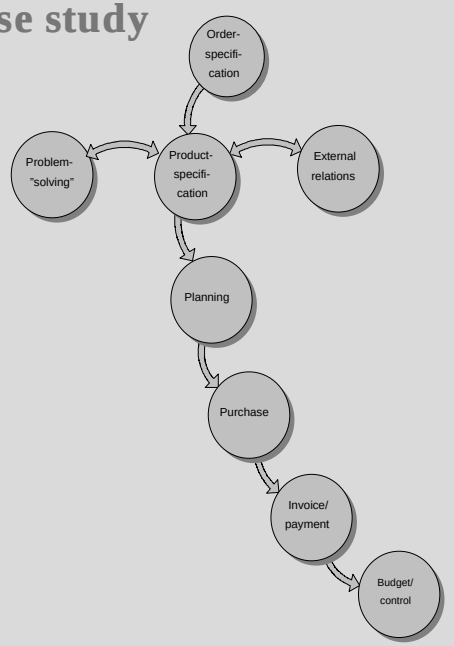
Improved order chain

External related subtasks united in one activity

Problem-solving ”task force” to maintain high efficiency for all *standard* tasks

Most non-value adding tasks removed

Time consumption was reduced by 23%






# Conclusions

Activity Chains are helpfull to improve the order process and to adapt the organisation

Activity chains are more manageable for industry than IDEF and Dataflow diagrams

The four completed case studies showed a high potential of improvements in SMEs

Internal improvements are a necessary step before moving on to Supply Chain improvements