



THE FLEXIBLE FACTORY

- A METHODOLOGY -

The "Flexible Factory" is a comprehensive methodology for the improvement of competitiveness and profitability of small and medium manufacturing organizations. The concept of the "Flexible Factory" as focal point of the supply chain has been developed by Werner E. Jung and Eduard Ryser. It has been proven in many applications and has been published widely in the past years.

65% of the Assets and 70% of all Cost of a manufacturing organization are, on average, attributed to "The Factory". This is where most of the potential for improvement is hidden. The optimal use of the resources will ensure sustained profitability and competitiveness. Demand driven production and the consistent elimination of non-value-adding activities reduce lead-times, improve on-time deliveries and reliability and adds value for the customer through speed, flexibility, response and reliability.

Realization of short-term Results Ensuring lasting Success

The characteristic of this methodology is the short implementation time and the short-term generation of additional cash-flow through the project itself. .

The key criteria are:

- **Flexibility**
- **Speed**
- **Quality**
- **Cost**

The "Flexible Factory" methodology has been specifically developed for small and medium enterprises with the ease of implementation in mind. A fast and efficient implementation has the goal to realize competitive advantages quickly and to add real value for the customers.

The concept of the "Flexible Factory" is the concentration on the key principles of proven elements of modern manufacturing principles:

- **Toyota Production System (T. Ohno)**
- **Process orientation (M. Hammer & J. Champy)**
- **Theory of Constraints (E. Goldratt)**
- **TQM / SPC (E. Demming)**
- **Supply Chain Management**

The intensity and degree of application of one or the other method or tool depends on the specific situation in each company. The starting point and the management objectives are the decisive factors. No two implementations are identical.

The complete methodology consists of:

- **Analysis of short & medium term potentials**
- **Training, Seminars and Workshops**
- **Establishment of a Masterplan with defined milestones**
- **Structured implementation with defined phases**
- **Software to assist in efficient implementation**
- **Audits and certifications**

The Project Steps:

1. Analysis of potential Benefits

- Analysis of the current situation
- Determination of potential benefits through implementation of the methodology
- Estimate of cost versus benefits

2. Training

- Fundamentals of the Flexible Factory
- Tools and Methods for Implementation (advanced course)
- Planning, Controlling and Supply Chain Management in the Flexible Factory

3. Masterplan

Joint development of a Masterplan for the implementation and realization of the potentials. A roadmap and a timetable for the implementation is developed jointly with the project team and the management of the customer.

- Definition of the goals and the priorities
- Definition of the project scope & assignment of the project team
- Determination of training requirements
- Definition of key performance indicators and milestones

4. Implementation

The implementation follows the goals and milestones defined in the masterplan. The specific phases are defined in the 5-Phase Program. J&P is part of the implementation team and acts as coach. The phases are conducted as workshops with the team and results are presented to management after completion of each phase. The milestones are controlled by management and the coach.

5. Longterm profitability through continuous improvement

A continuous improvement program will be installed so that the benefits of the Flexible Factory will be ensured also in the future and new ideas can be incorporated continuously.

Reference Projects: (partial list)

Company	Industry	Project
Amman Verdichtung GmbH Hennef, Germany	Road equipment	New assembly
NACCO Material Handling Nijmegen, Netherlands	Fork-lift trucks, Container-Movers 12 – 24 to.	Assembly and prefab
NACCO Material Handling Masate, Italy	Fork-lift trucks, 1.0 – 2.5 to.	Assembly and prefab
American Standard GmbH Wittlich, Germany	Armatures, fittings	Fittings production
Vidima American Standard Sevlievo, Bulgaria	Armatures, fittings	Fittings production
Torrington Bearings (Timken) Halle, Germany	Axial bearings production	Redesign for flexibility and speed
Ingersol Rand Wigham, UK	Mobile air compressors	New assembly line
Otto Sauer Achsenfabrik Bessenbach, Germany	Truck & Trailer Axles Automotive supplier	New production facility
Sunrise Medical GmbH Malsch, Germany	Wheelchairs	Production electric Wheelchairs
Inficon (Balzers) Balzers, Liechtenstein	Vacuum sensors Gas analyzers	Sensor production Appliance assembly
Cerberus (Siemens) Volketswil, Switzerland	Fire & safety products Intrusion control	Printed circuit assemblies Control units
Siemens Building Technology Berlin, Germany	Building safety , fire & intrusion	Control units
Nelm SA Mendrisio, Switzerland	Electronics production	Printed circuit board assembly, equipment
Fri-Jado B.V. Etten-Leur, Netherlands	Retail store equipment Cooling systems	Cooling systems production
Grassair B.V. Oos, Netherlands	Compressors, medical oxygen supplies	Redesign compressor production
Portescap SA (API) La Chaux de Fond, Switzerl.	Electric Micromotors	New Motor assembly
Portescap SA (API) Fribourg, Switzerland	Electric Micromotors	New Motor assembly
Allweiler (Danaher Corp) Radolfzell, Germany	Pump production	Kanban System
SMG Steel Göppingen, Germany	Stainless steel fittings and equipment	Redesign of logistics
Capax Electronic B.V. Eindhoven, Netherlands	Electronic switches and Sensors	Hybrid production Switch assembly
Dold Regler GmbH Fellbach, Germany	Industrial electronics Sensors & control units	Complete redesign of the facility.
Wieland Dental & Technik Pforzheim, Germany	Precious metal alloys and semi-fab products	Redesign for flexibility and speed.

Training / Workshops for: Allweiler AG, John Deere, SAP, Tegometall, Zumtobel-Staff, Heraeus, Leybold, Miele, Bosch, Bär Fahrzeugbau, Pfander Präzision, SWF-Valeo, Sirona, Brooks Instruments, Amman, Bomag, Wabco, ABB, Fisher-Rousemount, Alfmeier Präzision, Ascom, Philips Medical Systems, TNO, Esser, Norgreen, EADS NACCO, Siemens.....