

Imagine...

Your organization in the Year 2002+

Evolutionary developments of business concepts, new combination of world-leading business strategies, and latest cutting-edge technology provide advanced best-of-breed business and application solutions, and create tomorrow's market leaders.

A new business and technology strategy has evolved: Value Stream Technology™. Integrating engineering, manufacturing, and supply processes supported by available technology it provides the opportunity to lead the market and to

increase manufacturers profit margins. Now, agile manufacturers can count on a new powerful weapon in Speed-to-Market.

/Kersten Ellerbrock.*



Imagine...

Your sales department responds to customer orders the same day, confirms immediate shipment of requested products. Your customers are satisfied, receiving a high quality product customized to their requirements and specifications, exactly on the requested date.

Orders are automatically scheduled and sequenced for integrated manufacturing processes.

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All assembly lines and your workforce are well balanced; bottlenecks in manufacturing processes and material supply are eliminated, and products are manufactured in a fraction of the time needed in the past, while costs are reduced more than thirty percent.

Your factory assembly stations receive work instructions not only electronically, but fully visualized, breaking language and understanding barriers. Assembly teams view visual assembly instructions and immediately understand what to do and how to do it. Information based on Engineering Changes is transmitted real time and makes sure latest product information is used for the actual production.

Lights at the racks, controlled by applications, provide exact information what material to pick for the assembly process ('pick-to-light'), increasing speed, accuracy and quality in assembly.

Material quality issues are identified and reported by assembly teams online, with point and click, information flows automatically to quality departments and supply sources for immediate correction and preventive measures. No time is lost increasing quality levels. Suppliers are completely integrated into your processes and operations, and provide high quality components directly to your assembly lines. Extensive quality control at goods receipts is obsolete, high quality is determined at the workplace.

Suppliers frequently receive latest planning and forecast information electronically, showing fluctuations and trends, as well as the actual production information, which allows

and supply processes.

Suppliers reduce their costs leveraging better information flow, and supply pull-strategies. No cost-extensive warehouses, just material buffer zones are required to balance incoming goods.

Workload is balanced, avoiding bottlenecks and providing an equal work assignment throughout the workforce at all assembly lines, eliminating non-value-added time in the entire process. Work-in-process inventory has been reduced to twenty percent compared to the time before the change. Potential material shortages are monitored and preventive measures are taken in order to receive the right material at the right time at the right place.

**Yesterday's Dream...
...is today's Reality
...and tomorrow's
'Weapon' in
Speed-to-Market!**

'Just-in-time' is not a concept anymore; it is reality...

All this results in suppliers reducing their prices based on better planning cooperation, which allows lower costs for materials; suppliers deliver exactly what is needed, lowering inventory costs.

You can manufacture much faster and cost efficient with no rework due to new manufacturing strategies, and customers receive their products in higher quality, immediately, and with lower costs, lifting manufacturers market share and profit margin to a new dimension.

Science Fiction?

Not anymore! An evolution of business concepts, the new combination of world-leading business strategies, and latest cutting-edge technology provide competitive advantages and new opportunities to lead the market.



Over the last couple of years a successful business and technology strategy has evolved:

Value Stream Technology™.

Integrating engineering, manufacturing, and supply processes supported by available technology provide the opportunity to rapidly implement and leverage the benefits long before the competition does.

Looking at a typical assembly-oriented manufacturer, personnel costs only reflect about ten to twenty percent of the overall costs, in other countries even less. Traditionally, companies adjust headcount in order to reduce costs. However, is this really the opportunity?

It is not! The opportunity lies in fast, efficient and high quality manufacturing and supply processes. Material cost usually represent more than 40 % of all cost elements, often even more than 60%. Here the opportunity presents itself. When the dream comes true, agile manufacturers produce much more cost efficient in higher quality, and they will use the chance to win more business, and expand.

From Vision to Reality and Opportunity

Some years back companies tried to implement strategies such as Just-in-time, in many cases without looking at the entire picture, for sure without having cutting-edge technology at low costs on hand.

Today, decreasing costs for technology definitely support a new generation of business strategies and comprehensive integration of processes and systems. Even powerful Personal Computers meanwhile range well below 600.00 US\$ and flat screen monitors are dumping in pricing drastically, too.

Less than a handful modern business applications provide innovative manufacturers with a new weapon in today's increasingly challenging competition in Speed-to-Market; however, faster customer response with increased quality of products ensures market leadership.

Innovation and rapid change from traditional strategies towards advanced business strategies ensures not only being one of the first companies adopting but also being one of the first ones efficiently leveraging the comprehensive benefits of the new trends.

The benefits are overwhelming, and examples have shown drastic improvement:

- Reduction of material costs by 40 %
- Reduction of production lead-time up to 90 %
- Rapid response to customer orders
- Increased Through-put
- Reduced administrative and organizational costs
- Balanced workload
- Increased Quality

Modern high technology companies already started to adopt this new weapon, saving costs and increase market share, Automotive and Consumer Product manufacturers are following, and even leading pharmaceutical companies have begun to extend their view into this new technology and business strategy.

Solutions reach from dynamic demand management over integrated manufacturing engineering to electronic visual work instructions in the factory, accelerating assembly operations and increasing product through-put drastically.

Combining best-of-breed business strategies with cutting-edge technology provides a powerful solution to compete, and to increase profit margins.

With new integrated application suites, such as CellFusion's Value Stream Technology, manufacturing processes are designed and optimized fast, using Drag & Drop



technology, visual alerts, interactive balancing, and embedding techniques for leading graphics and drawing applications in order to create visual work instructions based on comprehensive component drawing libraries. In fractions of the time needed in the past visual assembly instructions are created and transmitted to the factory, real time, displayed on integrated flat screen monitors at the assembly workstations.

Assembly lines are optimized, incorporating demand information and assembly line specifications. Material is synchronized with its points-of-use in order to reduce non-value added time and to increase assembly speed and quality.

Today's worker scans a bar code label of the product to be assembled. Immediately visual assembly instructions with easy to understand drawings appear on his monitor, showing exactly how to assemble the product, what materials to be used as well as how to verify and ensure quality. The worker can see what materials to pick for this specific assembly process: materials to be used are highlighted with small lights at the rack compartment. These two techniques guide the worker and increase quality and reduce re-work necessities.

Fully integrated 'point and click' Total Quality Control ensures easy reporting and actions in case of material quality issues. However, also the need of material replenishment can be signaled directly from the workstation.

Material planners manage demand and fluctuations dynamically and monitor material supply throughout

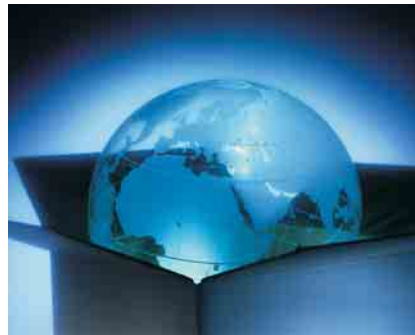
Agile Manufacturers cannot wait...

The market requires to adopt latest business and application solutions immediately and fast...



the supply chain in order to avoid material shortages. Visual alerts show them when material supply is late and material shortages may occur. Action can be taken, early enough to avoid serious issues. And this is the background philosophy for all solutions:

Action instead Reaction!



Profile

Kersten Ellerbrock is a Lean Manufacturing and Supply Chain Management expert, recognized speaker in North America, Europe, Japan, and South East Asia, and former executive at one of the world's leading ERP and Supply Chain software providers. Studying Logistics and Manufacturing strategies in Europe, USA and Japan, the leadership of Industry and Strategy Focus Groups, and especially the long work relationship to world-class manufacturers in High Technology, Automotive, and Consumer Products, have provided him with wide-range and in-depth knowledge of best-practice Supply Chain and Flow Technology strategies.

Mr. Ellerbrock has been leading initiatives in research and development of Lean Manufacturing, electronic Kanban and Just-in-time strategies, Flow Technology, and advanced business strategies for several years. Mid of the 90's Mr. Ellerbrock moved to North America focusing on advanced business applications and solutions supporting modern Supply Chain Management and Flow Technology business strategies .

Since 1999 Mr. Ellerbrock leads the company CellFusion, Inc. as Chief Executive Officer



www.cellfusion.com

providing High Technology, Automotive, and Consumer Product manufacturers not only with new business application vision, but comprehensive practice-oriented business solutions .

**Today,
large organizations
compete for more
market share...**

**...tomorrow,
only efficient and fast
Supply Chains will
survive!**