INCONTROL ENTERPRISE DYNAMICS

Logistics Suite®

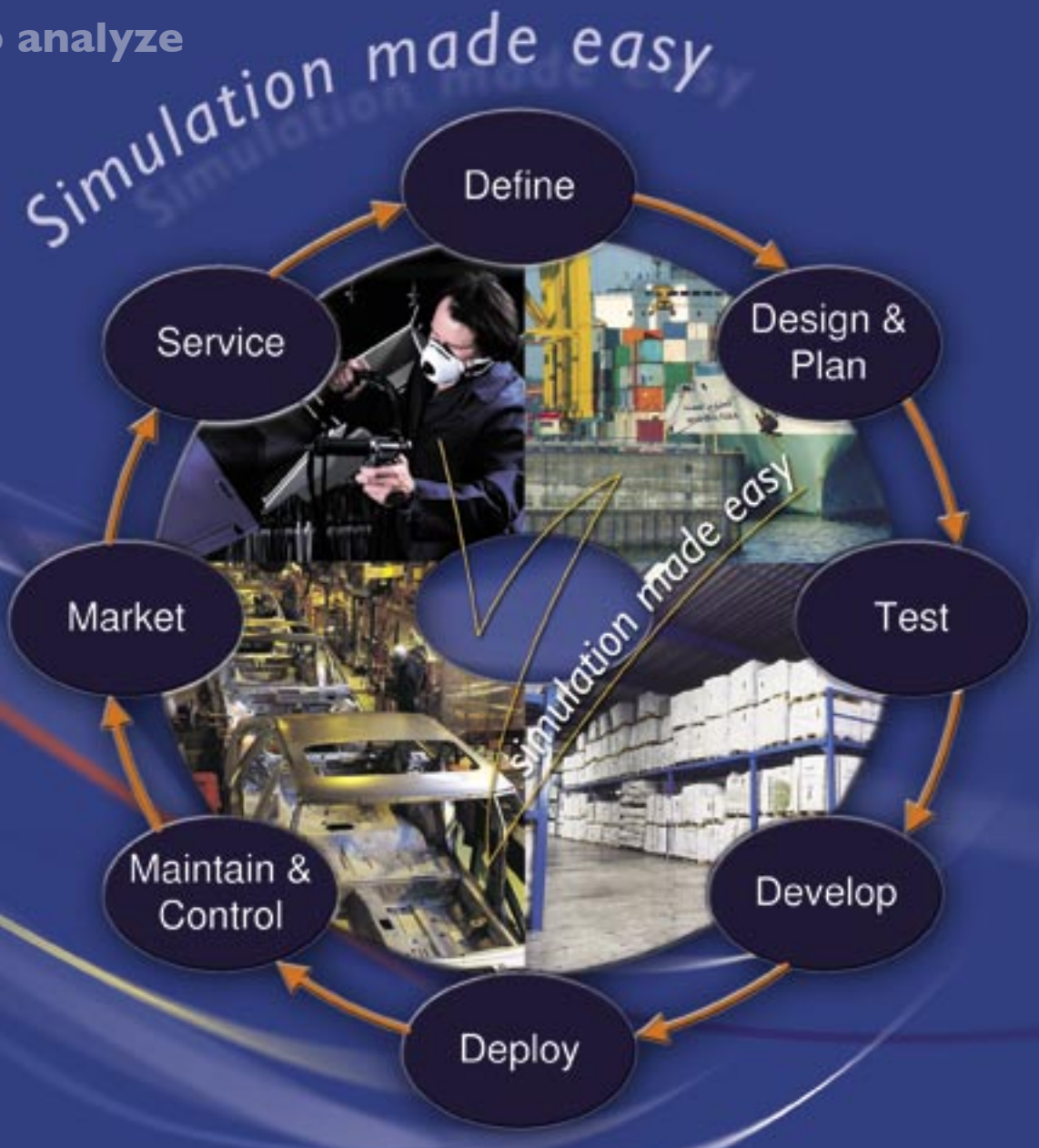
Simulation solutions for manufacturing & logistics

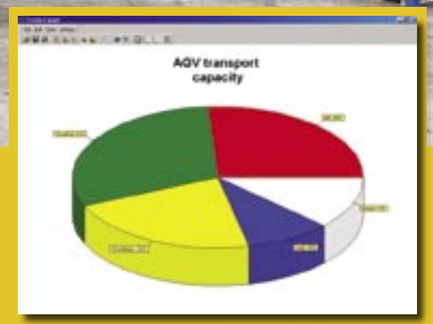
Easy to model

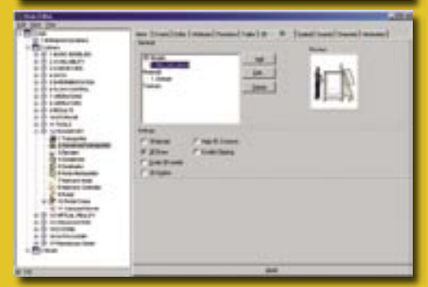
Easy to simulate

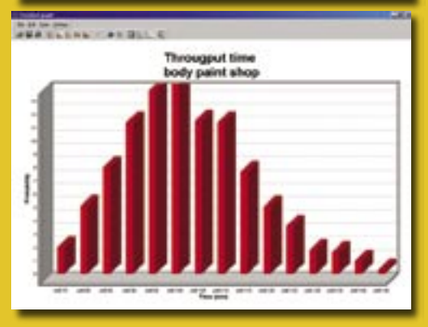
Easy to visualize

Easy to analyze









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Simulation is the most powerful technique available to analyze and optimize material flows in manufacturing, material handling and storage systems. A simulation is a computer model that mimics the operation of the real or proposed system, such as the day-to-day operation of a warehouse, the running of a conveyor sorting system, or the staff assignment of a manufacturing line.

Benefits

Simulation cuts costs and improves efficiency. With simulation you can quickly try out your ideas at a fraction of the cost of trying them in the real organization. It lets you try more ideas in less time, resulting in better utilization of existing capacity and avoiding unjustified investments in new capacity. Simulation helps to reduce work-in-progress and release cashflows from undesired material stocks. Using simulation, companies around the world feel confident changing their operations and investing in new products and production facilities.

Applications

Simulation has a wide variety of applications in any factory, warehouse or distribution center. It evaluates layouts, solves bottlenecks, increases capacity utilization, improves throughput, reduces leadtimes, determines buffer requirements, minimizes safety stocks or optimizes system control strategies. And it does it without disturbing reality. No system breakdowns, no production loss, no irritated operators. Errors are for free in the virtual world, not in reality.

Software

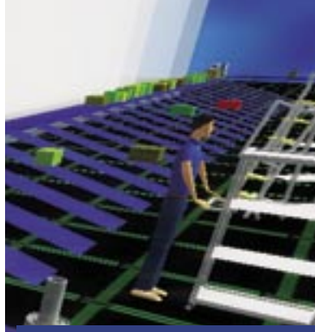
Enterprise Dynamics® software makes simulation easy. It describes reality as any industrial or logistics specialist would, using layouts, flow charts and straightforward instructions in clear parameter windows. Open source simulation objects guarantee that you will always be able to model what you want. Not just roughly, but exactly including functionality and appearance. Enterprise Dynamics makes simulation models easy to create, easy to understand and easy to communicate.

Company

Incontrol Enterprise Dynamics is a leading simulation solutions provider since 1984. Our simulation platform Enterprise Dynamics offers a wide variety of simulation solutions, ranging from off-the-shelf software to custom-made simulation applications. We not only provide the tools but also the knowledge to successfully implement them in your organization.

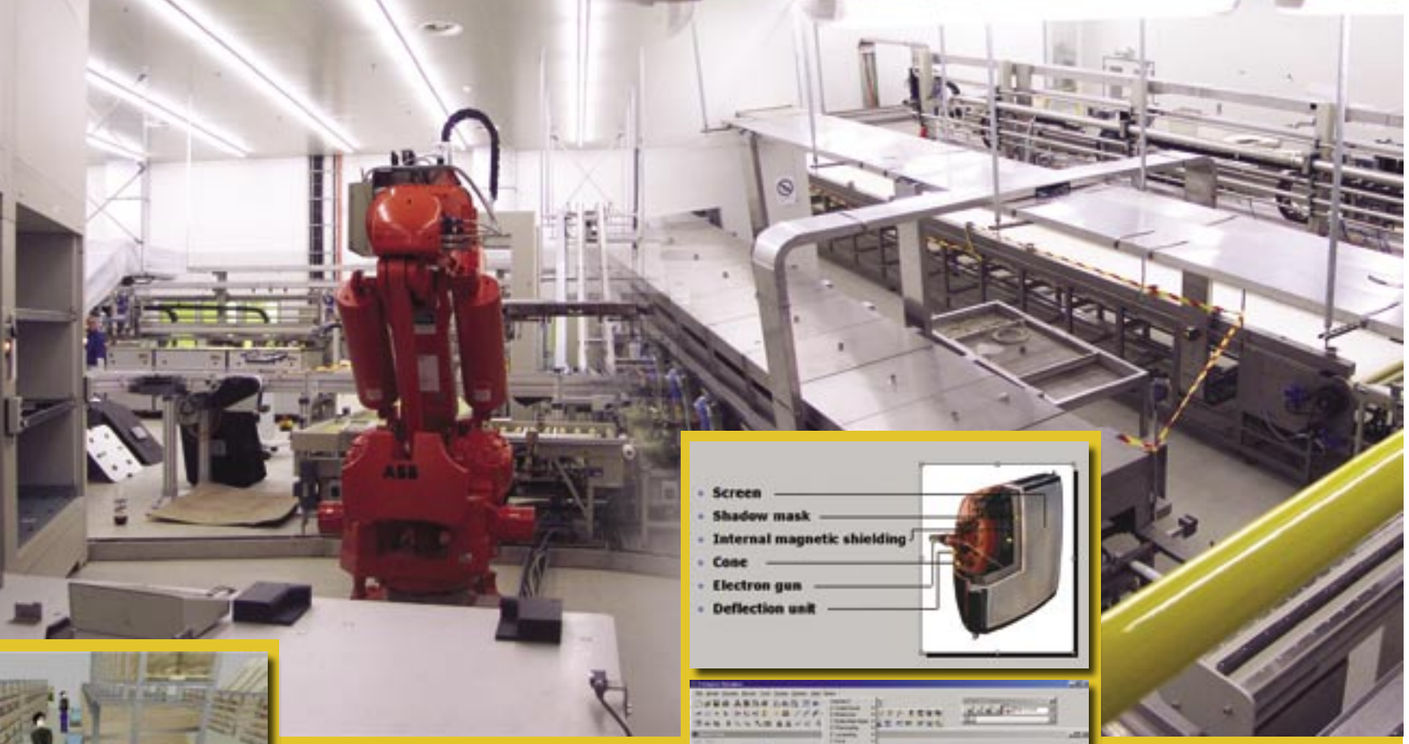
You

It is our mission to make the use of simulation as easy as possible. Whether your function is operations manager, logistics manager, warehouse manager, capacity planner, operational planner, industrial engineer, application developer or supply chain analyst, Incontrol Enterprise Dynamics offers you a simulation solution that can be embedded within your core process and is easy to use. Page through our brochure for references in your business area or contact us at siminfo@enterprisedynamics.com.



ENTERPRISE DYNAMICS

- Viking Direct
- Nestlé
- Rambøll
- Frans Maas Logistics
- Sara Lee / Douwe Egberts
- ABB
- DHL Solutions
- Heerema Marine Contractors
- Caterpillar Logistics
- Linde
- Heinz
- Imatra Steel
- Caterpillar
- Federal Express
- Coloplast
- Ericsson Radio Systems
- Arcadis
- Deutsche Post
- Tyco Electronics
- Micron Technology
- TNO
- Stork Bouwtechniek
- Foth & Van Dyke
- Kellogg
- Volvo Cars Europe



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With a market share of 27%, LG.Philips Displays is the world's market leader in color picture tubes for use in televisions and computer monitors. The company is the joint venture between the cathode ray tube businesses of LG Electronics of Korea and Royal Philips Electronics of the Netherlands.

Having designed a new manufacturing line for television tubes, LG.Philips Displays called in Enterprise Dynamics to help and maximize the output. Since simulation offers the controlled environment LG.Philips was looking for, the entire production line was put in a specially designed computer model. Manufacturing television tubes means finding a way to put 130 different process steps into one production line. Since every tube needs to take the same route, it is of crucial importance to locate possible bottlenecks and try to find a way around them.

Of course LG.Philips Displays first calculated the performance of the line using static spreadsheet models, but dynamic simulation also offered them the opportunity to view the manufacturing line in full swing and to take a closer look at some of the less elaborately calculated junctions of material flows. For instance, flowcoating – applying light-sensitive phosphor to the inside of the screen – presented a bottleneck situation. Simulation proved its worth by calculating the optimal speed of production at that particular part of the conveyor belt and dimensioning material buffers in front and behind it.

Specialists at LG.Philips Displays are convinced of the added value delivered by simulation. *"The size of that buffer is essential. If we had built one for 50 and needed one for 80 screens, we would have lost money and valuable production time. The estimate the simulation gave us was spot on, we knew exactly what was needed. The good thing about Enterprise Dynamics is that they're always at our service. We get software support when and where we need it, as quickly as possible. It's comforting to know they work just as hard as we do to keep our line running."*

As a "one-stop solution provider" KNAPP provides the answer to all aspects of logistics integration. The company provides tailor-made solutions to all tasks involved in running a distribution centre. KNAPP's services encompass simulation, layout design, installation and comprehensive staff training.

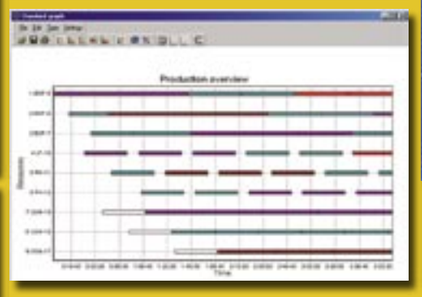
The investments associated with warehouse automation may be significantly. In such cases KNAPP often provides its customers with a full range computer simulation even before the contract has been signed. A simulation reassures both KNAPP and the customer that the solution will live up to its specifications. If not, the design can still be altered at only a fraction of the post-implementation costs of modifications. KNAPP has selected Enterprise Dynamics for its simulations and has implemented virtual copies of its entire product range of conveyors, cranes, vehicles and so forth. This level of customization enables KNAPP to transform a warehouse layout into a simulation model in hardly any time at all.

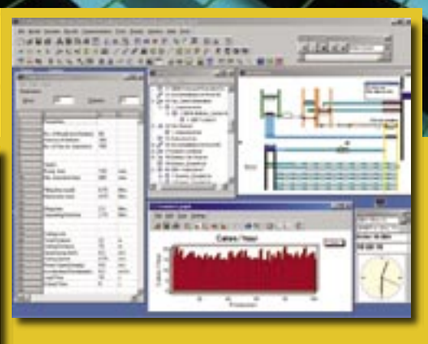
Klaus Malli, manager of software engineering at KNAPP, explains that a clear view on the entire process is of eminent importance in complicated warehouse situations. "What happens when? Somewhere down the process flow you'll inevitably meet surprises, but using computer simulations you are one step ahead. Therefore simulation minimizes our implementation time; we can test several alternatives and only implement the best on the spot. Customers rely on the quality we provide, simulation makes it easier for us to maintain that standard."

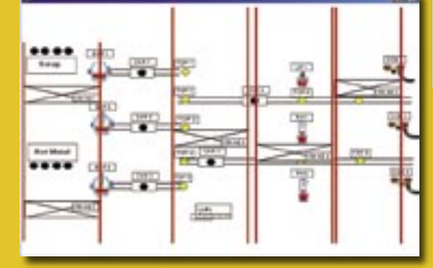
The R&D department also benefits from simulation. "We also develop new machinery and control software", says Malli. "Obviously we want to verify their operational functionality before releasing them. Simulation gives us the chance to experience if a new product is usable, user friendly and reliable. We have a strong position in the pharmaceutical and food industry, where every day millions of cartons run through our zip sorters, check stations, belt conveyors and so on. Making sure that customers get exactly what they need is crucial. Simulation helps us in doing just that."

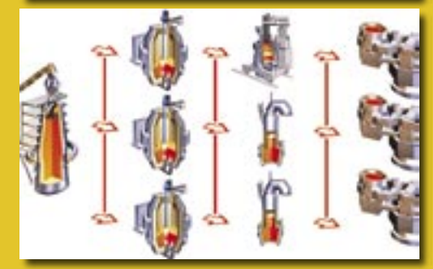
ENTERPRISE DYNAMICS

- KHS Maschinenbau
- Akzo Nobel
- Coca-Cola
- Liebherr-Hausgeräte
- Fraunhofer IML
- Kappa Packaging
- British American Tobacco
- Bosch
- Alstohm power
- Astra Zeneca
- Danish Crown
- Pepsico
- KLM Cargo
- ESG Logistik
- Viastore Systems
- Heidelberger Druckmaschinen
- Montupet
- Hamilton Sundstrand
- Linjapinta Oy
- Tamglass / Glaston
- Hamilton Sun
- Vanderlande Industries
- Flextronics
- DAF Trucks
- Post Denmark









Logistics Suite®

SMS Demag is the leading supplier of machinery and plants for the world's steel and aluminum industries. The company provides high-performance products along with a customer-centered approach featuring sound advice and extensive service. As part of this, SMS Demag offers material flow optimization for steel casting processes using simulation based planning.

Continuous steel casting is a process that requires a detailed planning, especially because the input for the casting process – melted steel – is prepared in batches. If a batch arrives too late, the casting is interrupted and valuable production time is lost. On the other hand, if a batch arrives too early the steel will cool down. Furthermore, the number of ladles, cranes and rail guided vehicles used to handle the batches of steel, should be reduced in order to save costs. These restrictions and interdependencies make it hard to predict what the overall performance of a plant will be.

Facing more and more detailed questions from customers SMS Demag concluded that only simulation could provide them with the right answers. SMS Demag selected the Enterprise Dynamics simulation platform because of its flexibility to tailor simulation modeling objects exactly to the steel making industry. Incontrol built them a unique zero-user-programming simulation library including production scheduling features and detailed 3D animation.

The final application exceeded every expectation. It has reduced modeling time at SMS Demag with a factor 10. It has also added transparancy and credibility to visual presentations during the sales process, which on its turn has triggered the R&D department at SMS Demag to link up simulation models with virtual reality software.

Stork Bouwtechniek designs and builds production systems for the autoclaved aerated concrete, sand-lime brick, pre-cast and other building material industries. The company is a leading supplier of complete plants, machinery, equipment, know-how and services for this industry. Stork Bouwtechniek is part of the Stork group, an industrial group whose machine engineering and construction operations span the globe.

The engineering department of Stork Bouwtechniek received the challenging request to transform an existing concrete casting factory into a modern plant without disturbing the regular production. Besides, the transformation was time critical because floor space limitations started to affect the production cycle times. In order to verify the design and proof the customer that the complicated handling system would not contain any bottlenecks, Stork Bouwtechniek called on Incontrol Enterprise Dynamics.

Incontrol provided two independent simulation models reflecting the situation during and after the transition of the factory. Both models displayed the simulation results both graphically and numerically. But this was not the only way for the customer to check the validity of the design. A stunning and detailed 3D animation allowed them to validate all product movements and cycle times like in reality.

The simulation models revealed a number of unexpected bottlenecks in the design which were discussed and altered. This repetitive cycle of design, simulation, feedback and redesign involved the customer in such a way that the design became his. The numerical results and 3D animation proved to convince the customer of the correctness of the new design.

ENTERPRISE DYNAMICS

- VA-Tech Voest Alpin
- Van Doorne's Transmissie
- Atlas Copco
- Erdemir Iron & Steel
- Stuart Energy Systems
- Auramo Oy
- Equinox
- Witron
- Forbo Flooring
- Whirlpool
- Paul Hartmann AG
- Fuji Photo Film
- Knapp Automation
- NMBS Cargo
- Saint-Gobain Isover
- Sappi
- Fraunhofer IPA
- Andritz
- LG Philips Displays
- Aidima
- SMS Demag
- CTT Correios

INCONTROL ENTERPRISE DYNAMICS

Enterprise Dynamics

simulation solutions

You operate in a complex and unpredictable business environment where tuning capacity to demand determines your performance and profits. You deal with a lot of uncertainty and have to rework your planning continuously. For such cases, Enterprise Dynamics is the ultimate decision support and planning tool to balance your resources.

Enterprise Dynamics models, simulates, visualizes and controls the flow of goods and information through logistic and manufacturing processes. Ranging from operation of a single production line or service unit to entire plants and supply chains.

Enterprise Dynamics balances your resources for optimal and cost effective process execution and is a powerful instrument in the (re)design of layouts and flows.

The unique combination of Enterprise Dynamics' software features allows you to analyze, predict and control system behavior. This prevents you from making costly mistakes and therefore saves a lot of time and money.

Enterprise Dynamics, the power to build the future!

Logistics Suite®