

## **Market Guide to Product Configuration**

Axel Brinkop

Issue 1  
April 18, 2014

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## Introduction

The "Market Guide to Product Configuration" shall help companies who want to initiate a configuration project by giving them an overview of the market. The German version of the guide has initially been issued in 2007 and reached issue 30. This is the first issue of the international version.

This guide focuses on supplier of configuration software with product configuration as their core business. Their product configurators can be run stand-alone or can be integrated in the existing IT landscape.

One will not find supplier in this guide, which offer configuration just as an add-on to their main business.

The first part of the guide gives an introduction to product configuration. It serves as theoretical background for the second part.

The second part is built up by contributions of the supplier. On two pages for each supplier one can find their answers to the questionnaire, company / product description, and references.

For any additional information please feel free to contact me. A first consultation by phone is free of charge (+49-6398-993369) .

Additionally, I'm offering the seminar "Aspects of Product Configuration" which has been designed to give a more detailed introduction to this topic. Please see page 9 for more information.

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# Factors for the choice of configuration software

Axel Brinkop

*What are the factors to be taken into account when looking for a configuration software? The field of application is broad and intended user groups are diverse. Dependencies between components make configuration problems challenging. The possibilities to express these dependencies are important criteria, but not the only ones. Depending on the user group, the user interface is of high relevance, the adaptation of the commercial calculations is crucial, or the options for document template design can't be neglected. Not to forget the requirements which facilitate a seamless integration into the IT landscape.*

## 1. Terms

The term „product configuration“ is understood differently. Especially in scientific research a configuration problem is defined as “constructing an object by combining elements of a given set of objects” [Brinkop 99]. Applying this definition to product configuration, all possible components have to be completely defined in advance.

In engineering science there are the closely related terms “product parameterization” and “product design”. First stands for a problem solution where properties of the product are to be specified to fit given requirements, and the second for a problem solution, where the structure of the product has to be determined additionally.

To differentiate between these types of problems is only important when reasoning about the right software method to solve configuration problems. For an industrial application these differentiations are irrelevant. Therefore I use the following, simplified definition.

**Product configurator:** A tool that helps to determine a product to fulfill given requirements.

A product configurator can be developed by several methods. It can be programmed individually (coded) or it can be developed by using a specialized tool. The tool to develop a product configurator is called **configuration software**.

## 2. Business processes

I distinguish between three types of configuration tasks: product identification, sales configuration and manufacturing configuration. Figure 2 shows all configuration types with their respective results.

Given the customer requirements **product identification** determines the right product or product class. For this type of problem you can find product catalogues with specialized searching methods or so called product advisors.

Assistance in product identification is very important for users who don't know the product portfolio very well. This is the case for customers, sales partners and newly hired sales agents.

Outcome of the **sales configuration** is a proposal ready to be sent to the customer. To achieve such a document the following tasks have to be fulfilled:

- The product has to be specified technically correct and complete
- The sales price has to be calculated commercially sound
- The proposal has to be generated
- The calculation sheet for internal review has to be generated
- The configured product has to be visualized (sketch, 2D, 3D)

A product configurator for sales configuration primarily helps to increase the performance of your sales team (less working time per proposal, more proposals per time unit) and reduces errors (sound and

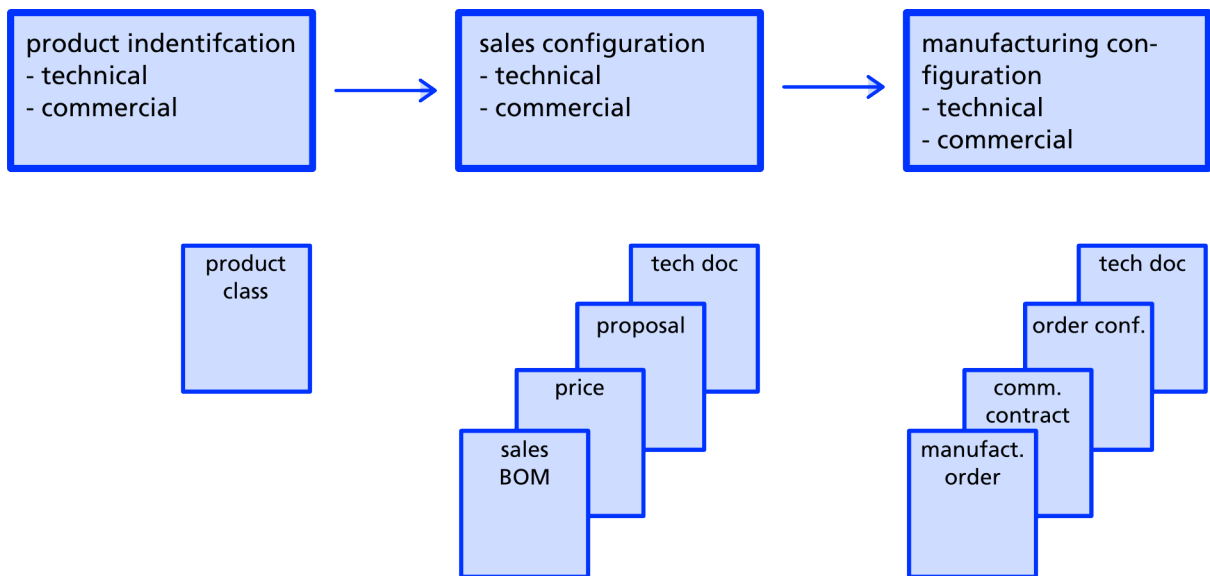


Figure 1: Configuration types

complete technical specification with the right price).

The **manufacturing configuration** helps capturing orders. A stand-alone manufacturing configuration has to achieve an error free order specification. When the manufacturing configuration is installed in combination with a sales configuration, the sales configuration takes over this task. Outcome of the manufacturing configuration is all relevant manufacturing information.

Error free order specifications are reducing processing time for orders significantly, since time consuming call backs to the customer are avoided.

It is very important, which **user group** will work with the product configurator. You can distinguish between

- customer
- sales partner
- sales
- sales support

The user interface will be different for customer and sales support, the sales team member wants to see other commercials as the sales partner etc.

Business processes and user groups are very important for the IT architecture as well. For instance, a member of the sales support team needs a close integration into the ERP for order capturing (see chapter 5 System Technology).

### 3. Modeling

A product configurator can be developed in different ways. Depending on the availability of resources, either the supplier, IT department, or product experts develop the initial version of the product configurator.

In either case the maintenance of the product configurator should be done by the product experts, as best by the technical and commercial product management. Figure 2 shows the roles of the user groups involved.

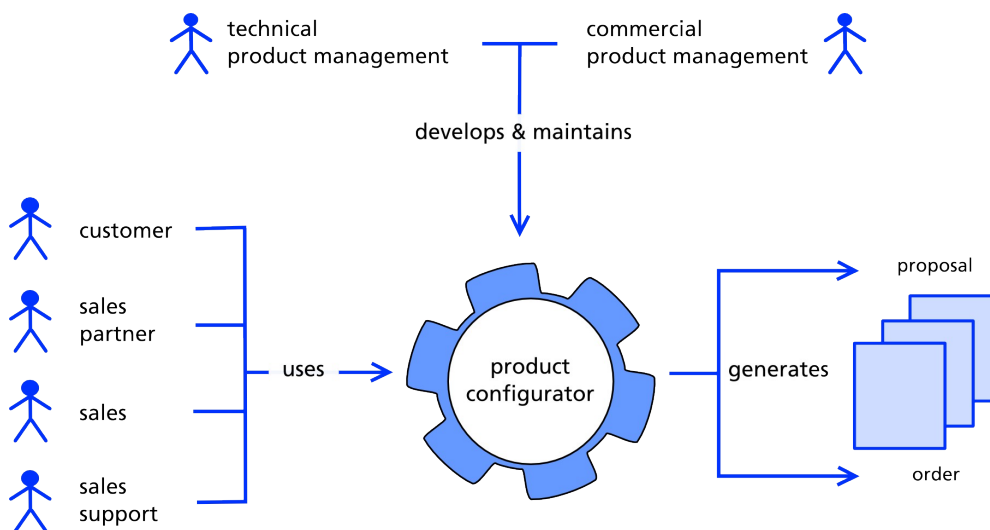


Figure 2: Roles of users

If new facts or errors show up they are contemporarily implemented or corrected respectively. Knowledge from product management will be transferred to sales and sales support, where it can be used for daily work immediately.

The components of the configuration problem cannot be chosen independently from each other what makes configuration problems hard to solve. Number and type of dependencies determine the complexity of the configuration problem.

To compare the complexity of configuration problems the following classification is helpful.

- "Pick-to-order" (**PTO**): The components of the product (proposal) are chosen independently from each other. There is no assistance by a product configurator. If there are dependencies between the components they are taken care of by the user.
- "Configure-to-order" (**CTO**): Components cannot be chosen independently, dependencies have to be taken into account.
- "Assemble-to-order" (**ATO**): Subclass of CTO where the components are premanufactured and kept in stock.
- „Make-to-order“ (**MTO**): Subclass of CTO where the components are manufactured on demand.
- "Engineer-to-order" (**ETO**): Not every component is known in advance. There are components which are constructed and manufactured on demand, given requirements determined during the configuration process.

When comparing the configuration approaches of the different configuration systems, the way dependencies are expressed is relevant for differentiation. One can find scripts, rules, decision tables, and constraints as alternatives to express dependencies.

**Scripts** are helpful when expressing dependencies based on procedures (algorithms). That is the case when one has to compute something by an iterative calculation or by database search.

**Rules** express very elegantly dependencies like  
*if condition then action*

On the left side one can combine several conditions. All of them have to be fulfilled before the rule applies and all actions of the right side are executed. The dependencies expressed by rules are directed, all variable references of the left side have to be known (more exactly their values have to be known) before the status of the rule (applies or not) can be determined.

In **decision tables** rules with the same structure can be grouped together, each line of a decision table representing a single rule.

**Constraints** express statements about the combination of variables' values, for instance one can list all legal value combinations. In this case all value combinations not listed are assumed to be illegal. Or one can express constraints based on listing of illegal value combinations or based on predicates. The evaluation of constraints is not directed, it is tried to derive the maximum of information at each point of time in the configuration process.

#### 4. Customizations

Depending on addressed business process and user group it is important how the user interface, the commercial calculations or the document templates can be customized to your needs.

The user interface is very important for the acceptance of the product configurator. By programming the user interface individually by the supplier one can achieve the highest degree of individuality and conformity to the corporate design.

The other extreme is the automatic generation of the user interface based on the configuration model. The principles of user interface generation are based on the experience of the supplier. Therefore one can achieve a high degree of ergonomics. Additionally, one can save a lot of project time otherwise spent discussing about the user interface.

The middle course is provided by using a dialogue editor, where predefined user interface elements can be used to program a user interface by yourself.

Especially for ETO problems (see chapter 3 Modeling) the integration of the product configuration in the CAD system is an interesting approach.

When considering a product configurator for proposal preparation, customizing the commercial calculations of the proposal is very important. Each company has its own way to calculate a proposal. There are the basic principles, that the price (cost) of an item is based on the sum of the prices (costs) of its sub items, and the discount of an item has to be distributed to its sub items. Beside these basic principles the calculation methods vary a lot from company to company. Depending on the complexity of the calculation method specialized administration tools might be used or the calculation methods have to be programmed individually by the supplier or the IT department.

The way document templates are maintained is a key factor as well (for proposals, contracts, calculation sheets, etc.). The maximum of flexibility can be achieved by an individually programmed adaptation as well. Using XSLT the IT department can achieve adaptations very efficiently, whereas the management of document templates using office software or report generators is the best way for non IT experts.

## 5. System Technology

Figure 3 shows the functional modules of a product configurator.

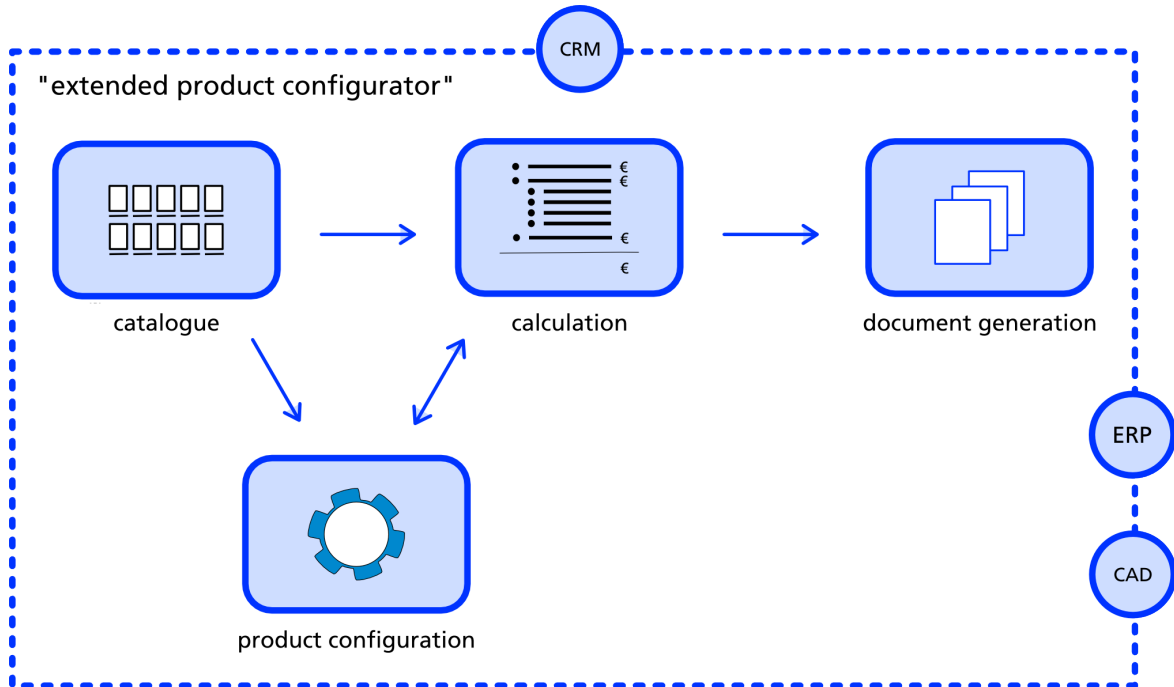


Figure 3: Functional modules

Beside the “pure” **product configuration** module, the module **calculation** is responsible for the content of the proposal (and other documents) and for the commercial calculations. This module is sometimes called “cart” as well.

The **catalogue** might be helpful to specify the content of the proposal. The user navigates through the catalogue and selects the items he wants to include in the proposal. In PTO problems the configurator module might be completely obsolete. In other cases, selecting a configurable product from the catalogue automatically starts the configurator module. Very often the interaction between catalogue and configurator is very close. The catalogue helps to find the right product class (represented by a configurator). If necessary, the configurator offers a subset of the catalogue to the user to choose a component.

In either case the result of the process ends in the calculation / cart. As already stated, this module is responsible for individual commercial calculations and for the input to **document generation**. The user selects the type of document to be generated. Additional options to fine tune the document can be available.

A product configuration system is not a stand-alone system; it should be integrated into the IT environment. Given the details of your IT environment, one has to decide whether it is better to integrate module by module or to integrate the product configurator as a system.

If there is a **CRM** system, information about customers and sales projects are managed in the CRM. An interface has to be installed to provide all relevant information to the product configurator. Typically these are quote number, customer address, customer specific discounts, etc.

For integration with an **ERP** one has to distinguish between two types of interfaces, one for the runtime environment and one for maintenance environment. The runtime system assists the sales process, the interface to the ERP has to transfer the data of the order. In scenario without CRM, the ERP sometimes takes over the proposal / quote management. In this case the interface has to transfer the quote data as

well.

The interface to the ERP is important for the model maintenance as well. For modeling the interface is responsible for the synchronization of articles and parts between ERP and product configurator. The catalogue might be filled via this interface as well.

An interface to the **CAD** can be driven one way or bidirectional. Very often a visualization of the result is very helpful. Therefore the data is transferred to the CAD where a 2D or 3D visualization is generated. This can be done parallel to the configuration process or at the end. An even closer integration will be chosen for ETO problems.

Depending on the scenario additional interfaces might be needed. It is quite common to use an interface to a content management or a PIM system to integrate marketing texts and graphics into catalogue and proposal.

For a specific case not every module has to be present. For instance, in case the main focus is order capturing by the sales support, a lot of functions can be taken over by modules of the ERP.

## 6. Summary

It is very common to use the term "product configurator" for a software tool that assists to parameterize / to design / to assemble a product in such a way, that it fulfills the given requirements. The tasks product identification, sales configuration, and manufacturing configuration are processed. Results are technical and / or commercial specifications with the respective emphasis on product, sales and manufacturing.

It is evident to investigate the kind of business process the product configurator should assist. Initially it has to be clarified what kind of business processes and what kind of users the product configurator should assist. It is also obvious, that the type of dependencies to be expressed have to be investigated, as they determine the degree of complexity.

It is important as well to investigate the needs for additional customizations. Depending on business process and user group, the options for user interface design, commercial calculations, and document template maintenance might be crucial.

The IT environment has to be taken into account as well in order to achieve a seamless integration of the product configuration into the existing IT landscape.

## 7. Literature

[Brinkop 99] Axel Brinkop: "Variantenkonstruktion durch Auswertung der Abhängigkeiten zwischen den Konstruktionsbauteilen", Dissertationen zur Künstlichen Intelligenz, Band 204, Infix, St.-Augustin, Germany, 1999



## Seminar

### **Aspects of Product Configuration**

By setting a product configurator in operation you can reduce costs and raise turnover significantly. I know from experience that the strongest effects are achieved when the configuration fits best your needs. But what makes up your needs?

The seminar is designed for companies, which want to introduce a product configurator for the first time or want to optimize their product configurator's operation. It has been designed to address decision makers and project managers. A special IT background is not required. The seminar will enable you to analyze your situation by yourself.

The seminar introduces the factors for successful development and operation of a product configurator. It helps you choosing the right configuration software by explaining the topics mentioned in this market guide in depth.

The seminar addresses the following questions:

- Individual or standard software?
- Configure-price-quote or routine design?
- Novice or expert mode?
- Selector or configurator?

Additional topics are the differences between runtime and development system and the requirements on the functional modules of the runtime system.

The "product variety paradoxon" is explained and it is discussed how it can be avoided.

Finally the concept of integrated model development is introduced. Consequential requirements on the functional modules of the development system are explained.

Your individual questions will be answered at any time during the seminar. To guarantee a treatment of your individual points of interest, the number of participants is limited to three persons.

The one day seminar will be held in the rooms of Brinkop Consulting in Oberschlettenbach. It is split into two blocks of four hours each. The participation fee amounts to 800,00 € per person plus tax.

Please contact me for the next seminar date available:

<mailto:brinkop@brinkop-consulting.com?subject=Next date for seminar Aspects of PC>

The seminar can also be conducted on your premises.

Axel Brinkop

## Seminar

### Introduction to K-Model

The knowledge how to configure a product is generally distributed on many heads of your company. This knowledge must be collected, documented, and discussed - a task that might become challenging.

K-Model (K = Konfiguration, German for configuration) is a methodology for systematic, structured development of configuration models. It consists of two components:

- a formalism to describe product structure, variants and configuration knowledge
- a process for acquisition of configuration and product variant knowledge

You can find detailed information on K-Model on [www.k-modell.de](http://www.k-modell.de)

The seminar is designed for companies, which want to introduce a product configurator for the first time or want to optimize their product configurator's development. It has been designed to address modelers and project managers. A special IT background is not required. The seminar will enable you to develop models with the K-Model by yourself.

The seminar shows on a running example how to model the following topics:

- Product structure and variant management
- Product configuration – questions and dependencies
- Product configuration – bill of material
- Hierarchical product configuration
- Product catalogues

Your individual questions will be answered at any time during the seminar. To guarantee a treatment of your individual points of interest, the number of participants is limited to three persons.

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[mailto:brinkop@brinkop-consulting.com?subject=Next\\_date\\_for\\_seminar\\_K-Model](mailto:brinkop@brinkop-consulting.com?subject=Next_date_for_seminar_K-Model)

The seminar can also be conducted on your premises.

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## Overview of Supplier

Supplier (in alphabetical order)

ACATEC Software GmbH.....	12
Cameleon Software.....	14
camos GmbH.....	16
CAS Software AG.....	18
customX GmbH.....	20
Enomic GmbH & Co. KG.....	22
Lumo Graphics GmbH .....	24
Resolto Informatik GmbH.....	26
Verenia .....	28

The suppliers are responsible for their contributions.

Product (family) spyydmaxx Enterprise  
Supplier ACATEC Software GmbH  
Location(s) Hannover, Frankfurt  
Employees 26  
Website [www.acatec.de](http://www.acatec.de)

### Business Processes

The product configurator helps ...

- the customer to find a solution for his task
- the sales partner to prepare a quote
- the sales person to prepare a quote
- the sales partner to submit an order
- the sales support to process an order

The product configurator assists in ...

- finding the right product
- configuring the product technically
- finding the right price
- preparing the quote document
- visualizing the product
- constructing (designing) the product
- preparing the BOM
- preparing the routings

The product configurator is developed in general by ...

- supplier
- IT department of the customer
- product department of the customer

The product configurator is used ...

- in the internet
- in the intranet
- locally
- in the network and locally

The product configurator is best for problems where ...

- products are selected (PTO)
- products are combined (ATO)
- products are configured (CTO)
- products are designed (ETO)

### Configuration approach

Characterization of the configuration approach:

Object and structure operations on the basis of minimum or maximum structures

Knowledge about dependencies is expressed primarily by ...

- macros
- rules
- decision tables
- constraints

### Customizing

The user interface of the product configurator ...

- is developed individually by the supplier
- is generated automatically
- is created with specific dialog editor
- is integrated in the CAD system

The quote calculation (cart) ...

- is offered as a turn-key module ready to use
- is developed individually by the supplier
- can be modified with help of an administration tool
- can be coded individually

Document templates ...

- are developed individually by the supplier
- are developed by XSLT
- are developed using a report generator
- are developed with office software

### System

Available functions:

- Product catalogue
- Product configuration
- Cart
- Document generation

The functions tagged above are available ...

- integrated in one application
- as optional modules of an application
- as stand-alone modules

Interface to CRM

- Interface to supplier's own CRM
- Generic interface to CRM

Interface to ERP

- Generic interface to ERP
- Interface to SAP; INFOR, Navision
- Further interfaces to ERP on request

Other interfaces:

- Interface to Autodesk Inventor, CATIA V5, NX, Pro/ENGINEER, Solid Edge, SolidWorks, Agile, Pro/INTRALINK, Compass, ProfiDB, MaxxDB, DBWorks, MySQL, Oracle, MS SQL, MS Word, MS Excel, MS Access, MS Powerpoint, Teamcenter, Windchill, Magento

## Company

Solutions for the generation of customized products

With our widely used technology, - spyydmaxx® Enterprise - you can:

- in your already existing IT systems (ERP, CRM, CAD, PDM, MS Office, databases, ...) find and/or generate as well as provide individual product variants automatically, quickly and safely with product finders, interpretation systems and product configurators. These are, for example, request specific sales data for the bid processing such as offers, data sheets, specifications, parts lists, etc., and order-specific production data for the order processing like 3D items, 3D assemblies, drawings, parts lists, etc.
- automate and connect seamlessly your business processes as well as operate the involved IT systems rule-based by remote control (e.g. ERP, CRM, CAD, PDM, databases ...).
- capture your product knowledge with authoring systems and WEB- technologies and / or with providing native user interfaces at the push of a button.
- visualize tailor-made products based on a lightweight, parametric 3D viewing model interactively in real time during configuration

spyydmaxx® Enterprise guarantees your prospects and customers on the internet, your sales and your technique the ultimate benefit – generate fast and error-free tailor-made products, sales and production data, automatically and without media break. Its decisive advantage: spyydmaxx® Enterprise assists you in product marketing as well as in the order processing. The following spyydmaxx® Enterprise products are available: spyydmaxx WEB, spyydmaxx SALES, spyydmaxx ENGINEERING, spyydmaxx REMOTE and spyydmaxx AUTHOR.

## Reference #1: Adolf Würth GmbH & Co. KG, Obersulm-Willsbach

"That with spyydmaxx® Enterprise realized 3D-planning and -configuration tool "PlaTo3D" allows our sales and trading partners to arrange individual ORSYmobil- vehicle equipment three-dimensional and interactively. Thus, we now have a much better view as it is feasible in 2D. Our customers are enthusiastic. Additionally, they get, besides to 2D and 3D data, also an offer at the push of a button.

Furthermore, we highly automated and accelerated the order processing by factors including SAP and SolidWorks integration with spyydmaxx® Enterprise. From the sales department until the production we have achieved a consistent and reliable supply chain."

Willi Weber, Head of Product Management ORSY® mobil

## Reference #2: Mühlböck-Holztrocknungsanlagen GmbH, Eberschwang

"In the past, the quotation for one of our plants took three days - now thanks to spyydmaxx® Enterprise it only takes eight minutes. And of these eight minutes only 55 seconds fall upon the actual computing time, the remaining seven minutes are required for the data input. That solved one of our biggest problems - it eliminated the bottleneck in sales. Just because we are now able to quickly generate an offer of high quality for individual constructions of potential customers, we can handle the flood of orders."

Markus Mühlböck, Head of IT

## Reference #3: Aufzugswerke M. Schmitt + Sohn GmbH & Co. KG

"Due to spyydmaxx® Enterprise ACATEC has put us in the position to speed up the application-specific design process for elevator cars by a factor of 5. Under the use of the ERP system Navision and the 3D CAD system Autodesk Inventor, the whole process of preparation work could be largely automated. This guarantees a constant quality of the generated order-specific product specifications and bills of material as well as the assemblies, parts, drawings and geometries for the laser processing. Lack of user's day form, one of the most common sources of errors in previous systems, thus is no longer a problem. The full implementation, including rules, user interface, CAD-data and data-integration was realized by our own employees in just 16 man months."

Martin Schmitt, Managing Partner

Product (family)	Cameleon CPQ
Supplier	Cameleon Software, a PROS company
Location(s)	Paris (FR), Toulouse (FR), London (UK), Chicago (US), Houston (US), Austin (US), Cary (US), Munich (DE)
Employees	800
Website	<a href="http://www.cameleon-software.com">www.cameleon-software.com</a> , <a href="http://de.cameleon-software.com">de.cameleon-software.com</a> , <a href="http://www.cameleon-software.fr">www.cameleon-software.fr</a> , <a href="http://www.pros.com">www.pros.com</a>

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### Configuration approach

Characterization of the configuration approach:

'Constraint Solution Problems' concepts which lead to easier and faster maintenance in complex and large volume situations

Knowledge about dependencies is expressed primarily by ...

- macros
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### Customizing

The user interface of the product configurator ...

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- Interface to salesforce.com CRM; SAP Business ByDesign CRM; Selligent CRM; Coheris; Microsoft Dynamics CRM

Interface to ERP

- Generic interface to ERP
- Interface to SAP; INFOR XA; Microsoft Dynamics AX; INFOR LN

Other interfaces:

- Interface to SOA / Web Services allow integration to eCommerce platform, CAD system, 3D generators

## Company

Cameleon Software provides a next generation multichannel, multi-device Configure Price Quote (CPQ) solution enabling companies to optimize the quote-to-cash cycle and improve sales effectiveness. Cameleon CPQ empowers sales teams to quickly configure, price and quote product and service offerings and generate high quality sales proposals. The solution also enables marketing teams to design and launch new offers faster and simultaneously on every sales channel. Thanks to Cameleon, organizations can both drive growth by reducing the time-to-market and increasing sales productivity, and rethink the way they interact with customers by providing an outstanding user experience. Cameleon CPQ integrates with leading CRM and ERP systems, including Salesforce CRM, SAP, Microsoft and Oracle, is available both in SaaS and OnPremise and accessible from mobile devices. Cameleon is the most scalable, high performance CPQ on the market. The solution is tightly integrated with social networks such as Chatter, Facebook and Twitter. Cameleon serves a wide range of SMB and enterprise businesses worldwide in the Manufacturing, Insurance, Financial Services, Telecommunications, Media and High Tech sectors, such as Gamma, Medtronic, Pearson, Sage, SFR, Touring Club Switzerland, ThyssenKrupp and Tyco.

## Reference #1: Manitou

The Manitou Group is a global leader in the design, assembly and distribution of material-handling solutions for agriculture construction & industry markets. Founded in France in 1957, Manitou today counts 1400+ outlets and employs 3300 people worldwide. "Our teams and resellers have been using Cameleon for over a decade and the solution enabled us to both improve the quality of the services we offer and to streamline our sales. Cameleon's experience of large scale deployments, the robustness of its solution as well as the potential its mobile CPQ offers convinced all of us that they were the best company to continue to teamwork with." Kim Vernier, CRM Manager.

## Reference #2: Fläkt Solyvent-Ventec

Fläkt Solyvent-Ventec, subsidiary of the Fläkt Woods Group, develops, manufactures, markets and distributes fans and energy-efficient solutions for the manufacturing, energy and infrastructure equipment markets. In order to streamline and improve its overall sales processes and enable its teams to work better and faster Fläkt Solyvent-Ventec chose to deploy Cameleon Cloud CPQ. Cameleon enables Fläkt Solyvent-Ventec' sales force to configure offers and generate quotes more efficiently by making the sales process more agile.

## Reference #3: Sage

Sage is a leading supplier of business management software. The company chose to deploy Cameleon CPQ solution. With Cameleon, Sage can feature its products within an electronic catalog and generate quotes based on multi-criteria searches (selected module, volume of users, price...). "Customer satisfaction is a top priority for us. Our software solutions must be easily accessible and enhanced. Each update or new product launch must be deployed simultaneously through our partner online portal as well as to our sales teams. As a result, implementing Cameleon is a key asset to support this strategy." Catherine Flamand, Chief Information Officer.

Product (family)	camos Application Suite
Supplier	camos GmbH
Location(s)	Stuttgart, Germany
Employees	75
Website	<a href="http://www.camos.de">www.camos.de</a> , <a href="http://www.camos.eu">www.camos.eu</a> , <a href="http://www.camos.com">www.camos.com</a>

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Document templates ...

- are developed individually by the supplier
- are developed by XSLT
- are developed using a report generator
- are developed with office software

### System

Available functions:

- Product catalogue
- Product configuration
- Cart
- Document generation

The functions tagged above are available ...

- integrated in one application
- as optional modules of an application
- as stand-alone modules

Interface to CRM

- Interface to supplier's own CRM
- Generic interface to CRM
- Interface to SAP CRM, Salesforce.com, Marketing Manager, Saratoga, Genesis World et. al.

Interface to ERP

- Generic interface to ERP
- Interface to SAP R/3, infor, Microsoft Dynamics, proAlpha, PSI, et. al.

Other interfaces:

- Interface to CATIA V5, SolidWorks



## Company

Mastering high product variation

Since 1986 camos Software und Beratung GmbH in Stuttgart has been a reliable partner of reputable companies not only from the engineering sector. The company is specialised in the simple and efficient product and offer configuration of products with a high variation. With over 360 international customers and approx. 60.000 named users' camos is one of the most important suppliers of software solutions in this field.

The international strength and competitiveness of the European engineering sector is also attributable to the high degree of customer orientation. Modularisation and product configuration are a condition for exactly calculated and technically precise offers. These methods guarantee variability in the offer phase and in the subsequent process steps. Intelligent modular systems in connection with an efficient product configurator from camos provide customer-specific systems and product variability. Cost-intensive special designs are unnecessary.

With the integrated solution for Customer Relation Management, product configuration and offer preparation camos supports international companies in the enhancement of their distribution processes. Close customer connections, high external variance of products, secure product configuration and correct offers are important targets.

## Reference #1: Siemens AG

camos configurator is used worldwide in the energy sector online and offline

The challenge existed in the combination of standardised functions and products within the software solution as well as different formalities and limited system possibilities in individual regions. In order to meet the market differences the central data basis can be extended individually through the acquisition of regional products with different prices and currencies.

The main aim, namely to keep down the administration and maintenance costs of the solution, is exactly achieved with at the same time full acceptance by the user.

## Reference #2: Voith Paper

With camos Configurator the preparation of offers has been considerably speeded up. In the interactive configuration process the distribution worker selects the most suitable single modules and in this way puts together the complete paper factory. Stored texts support the preparation of up to 2,000 pages of extensive offers. Due to the high project costs in the presales phase early and exact calculation is a central function of camos solution. The further processing of orders can be considerably simplified and speeded up. The international organisation of Voith Paper and the configuration in different languages is no longer a challenge thanks to the configuration software.

## Reference #3: KONE

KONE, the second largest producer of elevators in the world, uses camos configurator integrated into Salesforce.com and SAP as a central instrument for the preparation of offers and orders. Nearly 2,000 users worldwide employ the camos solution. The software solution is part of the growth strategy of KONE and achieves higher efficiency in distribution through lower costs, time-saving and enhanced product quality.

Product (family)	Configurator
Supplier	CAS Software AG (Merlin)
Location(s)	Karlsruhe
Employees	300
Website	<a href="http://www.cas-merlin.de">www.cas-merlin.de</a>

### Business Processes

The product configurator helps ...

- the customer to find a solution for his task
- the sales partner to prepare a quote
- the sales person to prepare a quote
- the sales partner to submit an order
- the sales support to process an order

The product configurator assists in ...

- finding the right product
- configuring the product technically
- finding the right price
- preparing the quote document
- visualizing the product
- constructing (designing) the product
- preparing the BOM
- preparing the routings

The product configurator is developed in general by ...

- supplier
- IT department of the customer
- product department of the customer

The product configurator is used ...

- in the internet
- in the intranet
- locally
- in the network and locally

The product configurator is best for problems where ...

- products are selected (PTO)
- products are combined (ATO)
- products are configured (CTO)
- products are designed (ETO)

### Configuration approach

Characterization of the configuration approach:

The graphic data maintenance in our intuitive editor is a unique approach to product configuration.

Knowledge about dependencies is expressed primarily by ...

- macros
- rules
- decision tables
- constraints

### Customizing

The user interface of the product configurator ...

- is developed individually by the supplier
- is generated automatically
- is created with specific dialog editor
- is integrated in the CAD system

The quote calculation (cart) ...

- is offered as a turn-key module ready to use
- is developed individually by the supplier
- can be modified with help of an administration tool
- can be coded individually

Document templates ...

- are developed individually by the supplier
- are developed by XSLT
- are developed using a report generator
- are developed with office software

### System

Available functions:

- Product catalogue
- Product configuration
- Cart
- Document generation

The functions tagged above are available ...

- integrated in one application
- as optional modules of an application
- as stand-alone modules

Interface to CRM

- Interface to supplier's own CRM
- Generic interface to CRM
- Interface to Microsoft Dynamics CRM, SAP CRM

Interface to ERP

- Generic interface to ERP
- Interface to Microsoft Dynamics NAV, Sage / Bäurer, SAP ERP

Other interfaces:

- Interface to iPad-App, PDM/PLM

## Company

CAS Software AG: Comprehensive expertise in product configuration. For more than 25 years now, CAS has been developing configuration systems to optimize sales processes.

The graphic maintenance of product data (structure, constructability rules, plausibility, cardinality, prices,...) is CAS Configurator Merlin's unique feature. Users can instantly start working with the intuitive and well-arranged editor - no programming skills are necessary. We specialize in highly complex and data-intensive configuration problems, which frequently arise in industry sectors like Mechanical Engineering, Automotive, Aviation, Energy and IT services. CAS Configurator Merlin supports your sales department as well as your product managers and engineers.

The new module M.Variety offers versatile possibilities for graphical analysis of your variants' diversity. The range of variants becomes visible and can further be enhanced with additional information. Connections between sales oriented and production oriented aspects become obvious. Hence successful product combinations as well as unprofitable, costly variants are identified at the same time. M.Variety was developed in cooperation with P3 Group, which offers consulting for variant management.

The system seamlessly integrates into your existing IT landscape consisting of CRM, ERP or PDM systems. We accompany your configuration project from requirements analysis to live operation and support. Get inspired by both our teams and solutions. There is a bright future ahead – become a part of a community of innovative organizations.

CAS Software AG – your partner for long term cooperation. CAS Software AG was founded in 1986 in Karlsruhe. Today, more than 300 employees at the CAS App Center Karlsruhe work on innovative solutions for successful organizations.

## Reference #1: Daimler AG

"The truck configurator is the only vehicle configurator on the Internet, worldwide, that offers vehicle configuration at this scope and level of detail. Website visitor data shows that this medium enjoys high levels of consumer acceptance."

Klaus Fuchs, Manager of Digital Sales Channel MB Trucks

Truck Online Configurator (TOC) & Van Online Configurator (VOC)

- Web configuration for all trucks and vans
- More than 100.000 basis products, which can be furnished with hundreds of equipments each
- Live systems: <http://tinyurl.com/casmerlin1> and <http://tinyurl.com/casmerlin2>

## Reference #2: EnBW Energie Baden-Württemberg AG

"CAS is a great business partner for EnBW, we enjoy a pleasant, fair and cooperative team-working environment."

Oliver Haendel, Technical Project Manager, EnBW Operations GmbH

B2B quotation generator for power supply contracts

- Central storing of rules and knowledge for product design and contract generation, resulting in a transparent overview of possible solutions
- Automatic consideration of dependencies during the generation of offers to ensure correctness of quotations

## Reference #3: Herbold Meckesheim GmbH

"CAS Merlin creates a completely new connection between customers, sales, and technical product knowledge. We can create more quotations in less time, and are still able to consider customer needs even more precisely"

Andrea Waizenegger, Product Manager Herbold Meckesheim

Sales configurator for plant specifications and commercial quotations in mechanical engineering

- Decrease time to quotation by 50%
- Reduce time to configure complex products
- Provide lasting relief to both technology and the sales department

Product (family)	customX
Supplier	customX GmbH and Man and Machine subsidiaries
Location(s)	Limburg (Germany), Wessling (Germany), Thame (Oxfordshire, UK), Aalst (Belgium), Paris (France), Vimercate (Italy), Łódź (Poland), Bucuresti (Romania), Winkel (Switzerland), Großwilfersdorf (Austria)
Employees	300
Website	<a href="http://www.customx.de">www.customx.de</a>

### Business Processes

The product configurator helps ...

- the customer to find a solution for his task
- the sales partner to prepare a quote
- the sales person to prepare a quote
- the sales partner to submit an order
- the sales support to process an order

The product configurator assists in ...

- finding the right product
- configuring the product technically
- finding the right price
- preparing the quote document
- visualizing the product
- constructing (designing) the product
- preparing the BOM
- preparing the routings

The product configurator is developed in general by ...

- supplier
- IT department of the customer
- product department of the customer

The product configurator is used ...

- in the internet
- in the intranet
- locally
- in the network and locally

The product configurator is best for problems where ...

- products are selected (PTO)
- products are combined (ATO)
- products are configured (CTO)
- products are designed (ETO)

### Configuration approach

Characterization of the configuration approach:

rule-based configuration, automatical construction instead of selection

Knowledge about dependencies is expressed primarily by ...

- macros
- rules
- decision tables
- constraints

### Customizing

The user interface of the product configurator ...

- is developed individually by the supplier
- is generated automatically
- is created with specific dialog editor
- is integrated in the CAD system

The quote calculation (cart) ...

- is offered as a turn-key module ready to use
- is developed individually by the supplier
- can be modified with help of an administration tool
- can be coded individually

Document templates ...

- are developed individually by the supplier
- are developed by XSLT
- are developed using a report generator
- are developed with office software

### System

Available functions:

- Product catalogue
- Product configuration
- Cart
- Document generation

The functions tagged above are available ...

- integrated in one application
- as optional modules of an application
- as stand-alone modules

Interface to CRM

- Interface to supplier's own CRM
- Generic interface to CRM
- Interface to CRM-SAP, CAMOS

Interface to ERP

- Generic interface to ERP
- Interface to SAP and others

Other interfaces:

- Interface to AutoCAD, Inventor, SolidWorks, MS Excel, MS Word, DXF, DWF, PDF, XML, MS SQL

## Company

customX GmbH was founded in 2002 by Klaus Kreckel.

The main product is the configuration software customX, which was developed in 2002 and has since been successfully implemented in numerous companies. Ongoing development and improvement of the software enables the adaption to modern companies and markets as well as their shift to process optimized thinking.

Today, customX GmbH employs about ten highly trained professionals. Their perfect teamwork is the result of long collaboration.

We train our customers and support them during standardization and systematization of their products. This requires a profound technical understanding – which is why our team mainly consists of engineers.

Managing director Klaus Kreckel on the philosophy of his company: "We concentrate on long-term perspectives. For our customers we are a long-lasting partner, who works professionally and reliably on their orders. At customX it is most important that we enable our customers to optimize their processes. Customer satisfaction is not only a phrase for us."

Since 2009, customX is majority-owned by Mensch und Maschine Software SE, one of the leading European suppliers of CAD/CAE-software. Mensch und Maschine has subsidiaries in many European countries and employs more than 300 people worldwide.

## Reference #1: TLT-Turbo GmbH

Manufacturer of industrial fans.

customX is used for construction and calculation of radial fans. After choosing a basic type, all documents such as offers, bills of material and drawings are produced automatically by customX.

It works together with an earlier implemented configuration software. This allows the automation of construction without changes in the interfaces – customX works here completely in the background.

Radical time saving, error-free construction and improved documents are achieved by using customX.

[http://www.customx.de/images/stories/pdf/mb\\_tlt.pdf](http://www.customx.de/images/stories/pdf/mb_tlt.pdf)

## Reference #2: SKS Metaplast Scheffer Klute GmbH

Manufacturer of mudguards.

customX is used for generating drawings automatically.

Sales staff or customers make a conceptual design, which is simply transferred to the production planning system. All know-how is integrated into customX and can be used by everyone. Know-how is independent from the staff which leads to an increase of transparency and speed.

[www.customx.de/attachments/article/17/MuM\\_Anwenderbericht\\_SKS\\_13701.pdf](http://www.customx.de/attachments/article/17/MuM_Anwenderbericht_SKS_13701.pdf)

## Reference #3: AKM-Tore GmbH

Manufacturer of industrial gates.

Gates are constructed according to individual demands. While growing as a company, AKM has decided to implement a configuration system instead of establishing a big engineering department. Compared to handmade drafts, AKM was able to reduce their projection time by half – compared to conventional construction processes, construction with customX would be ten times faster. Furthermore all documents are error-free and allow traceability of projects.

<http://www.customx.de/images/stories/pdf/caddenl062012a.pdf>

Product (family)	Enomic
Supplier	Enomic GmbH & Co. KG
Location(s)	Karlsruhe
Employees	25
Website	<a href="http://www.enomic.com">www.enomic.com</a>

### Business Processes

The product configurator helps ...

- the customer to find a solution for his task
- the sales partner to prepare a quote
- the sales person to prepare a quote
- the sales partner to submit an order
- the sales support to process an order

The product configurator assists in ...

- finding the right product
- configuring the product technically
- finding the right price
- preparing the quote document
- visualizing the product
- constructing (designing) the product
- preparing the BOM
- preparing the routings

The product configurator is developed in general by ...

- supplier
- IT department of the customer
- product department of the customer

The product configurator is used ...

- in the internet
- in the intranet
- locally
- in the network and locally

The product configurator is best for problems where ...

- products are selected (PTO)
- products are combined (ATO)
- products are configured (CTO)
- products are designed (ETO)

### Configuration approach

Characterization of the configuration approach:

Enomic algorithm with listener principle, universal configurator engine, generating instead of programming

Knowledge about dependencies is expressed primarily by ...

- macros
- rules
- decision tables
- constraints

### Customizing

The user interface of the product configurator ...

- is developed individually by the supplier
- is generated automatically
- is created with specific dialog editor
- is integrated in the CAD system

The quote calculation (cart) ...

- is offered as a turn-key module ready to use
- is developed individually by the supplier
- can be modified with help of an administration tool
- can be coded individually

Document templates ...

- are developed individually by the supplier
- are developed by XSLT
- are developed using a report generator
- are developed with office software

### System

Available functions:

- Product catalogue
- Product configuration
- Cart
- Document generation

The functions tagged above are available ...

- integrated in one application
- as optional modules of an application
- as stand-alone modules

Interface to CRM

- Interface to supplier's own CRM
- Generic interface to CRM
- Interface to Salesforce, SuperOffice, CAS genesisworld, Siebel, DynaCampaign et al.

Interface to ERP

- Generic interface to ERP
- Interface to SAP, Oracle, MS NAV Dynamics, Infor, Baan, MAS90, M3 movex, Sage, Proalpha, abas, heiler, oxaion u.a.

Other interfaces:

- Interface to MS Excel, MS Word, MS Outlook  
PDF, XML/XSLT, CSV  
SOAP, IDoc, SQL, Macro  
IBM WebSphere Commerce, Magento  
GAEB

## Company

Enomic optimises business processes with rule-based software solutions, thereby making complex business logic cost-effective. Central component is the adaptable configurator that manages highly complex business logic efficiently in a flexible body of rules. Thus companies get in a efficient way their specific application to create offers, configure products and handle calculations. Enomic's software is flexible adaptable, easy maintainable, highly compatible and complexity administrable.

### Software products

- Enomic Offer - Quotation software with configurator
- Enomic Calculation - Software for complex calculation tasks
- Enomic Configurator - Product configurator for sales and production
- Enomic Webconfigurator - Product configurator for Internet and online shops

### Sectors

- Industry
- Energy, supply, telecommunications
- Finance
- Service, retail, construction

### Enomic principle

The Enomic algorithm allows the product logic to be mapped in clear sub-steps. Each sub-step describes only the variable that it affects, meaning that the body of rules remains manageable. If anything changes, only the relevant sub-step has to be changed or enhanced, thereby ensuring the system remains transparent and easy to manage. It also results in the system having the highest standards when it comes to variability and performance.

### Unique position

- High degree of coverage for sales, calculations and production
- Extremely short implementation time (usually between 3 and 6 months)
- Value-driven development at runtime: roll out soon, short trial stages, parallel expansion
- Efficient system maintenance
- Authoring tool: System can be maintained and enhanced by users
- Individual user interface build and functionalized in self service
- Rapid computing of mass data (big data)

### Technological advances

- universal configurator engine (also for applications)
- high flexibility, adaptable at any point of the application
- Enomic algorithm with listener principle reduces complexity in the body of rules
- client-capability of the user interface and of the content
- usage via PC, Laptop, Tablet etc. – online in LAN, WAN, Internet – offline (incl. data replication) – with native client or web browser

## Reference #1: Spectron Gas Control Systems

"The configurator has accelerated our processes by performing time-consuming operational tasks. Furthermore it helped to increase production quality."

(Gerhard Grüning, TQM-Manager at Spectron)

## Reference #2: Swisscom Banking Provider

"With Enomic Calculation, Swisscom Banking Provider AG can calculate in 20 minutes what previously took around 5 days because the parameters in numerous spreadsheets had to be changed and checked. This resulted in time savings of around 98%. The pricing tool makes pricing, cost management and controlling easier for Swisscom Banking Provider AG."

(Reto Jaeggi, the responsible Project Manager and Market Performance Manager for products)

## Reference #3: Herold Business Data

The media company from Austria supports sales promotion on the phone and in field service with Enomic Webconfigurator. The software optimizes the presentation of products and increases the sales appeal on Internet and on laptop. By integrating Oracle Siebel CRM and legacy ERP the whole process of ordering and all combinations of products are available on Internet.

Product (family)	LumoLogic, LumoVis
Supplier	Lumo Graphics GmbH
Location(s)	Karlsruhe
Employees	30
Website	<a href="http://www.lumographics.com">www.lumographics.com</a>

### Business Processes

The product configurator helps ...

- the customer to find a solution for his task
- the sales partner to prepare a quote
- the sales person to prepare a quote
- the sales partner to submit an order
- the sales support to process an order

The product configurator assists in ...

- finding the right product
- configuring the product technically
- finding the right price
- preparing the quote document
- visualizing the product
- constructing (designing) the product
- preparing the BOM
- preparing the routings

The product configurator is developed in general by ...

- supplier
- IT department of the customer
- product department of the customer

The product configurator is used ...

- in the internet
- in the intranet
- locally
- in the network and locally

The product configurator is best for problems where ...

- products are selected (PTO)
- products are combined (ATO)
- products are configured (CTO)
- products are designed (ETO)

### Configuration approach

Characterization of the configuration approach:

LumoLogic is the standard solution for an efficient and comfortable combination of 3D visualization and product configuration.

Knowledge about dependencies is expressed primarily by ...

- macros
- rules
- decision tables
- constraints

### Customizing

The user interface of the product configurator ...

- is developed individually by the supplier
- is generated automatically
- is created with specific dialog editor
- is integrated in the CAD system

The quote calculation (cart) ...

- is offered as a turn-key module ready to use
- is developed individually by the supplier
- can be modified with help of an administration tool
- can be coded individually

Document templates ...

- are developed individually by the supplier
- are developed by XSLT
- are developed using a report generator
- are developed with office software

### System

Available functions:

- Product catalogue
- Product configuration
- Cart
- Document generation

The functions tagged above are available ...

- integrated in one application
- as optional modules of an application
- as stand-alone modules

Interface to CRM

- Interface to supplier's own CRM
- Generic interface to CRM

Interface to ERP

- Generic interface to ERP

Other interfaces:

- Interface to SAP (LO-VC, IPC, WebChannel)
- BigMachines
- Acbis
- Camos
- Encoway
- CAS



### **Company**

As a pioneer in 3D product configuration visualization, Lumo Graphics has been successfully active on the market since 1998. Our interdisciplinary team of more than 30 employees combines top visualization competence with process know-how and software for Mass Customization. Our contribution in the field of 3D visualization awards like "CyberChampion High Potential" in 2007 and 2010.

### **Reference #1: Mercedes Benz Buses and Setra**

Mercedes-Benz buses and Setra present their customers an individually configured bus with a 3D interior design configurator. The customer can fly through the bus, replace seat types, and select different fabrics and colors for the configurable components to evaluate the design of the bus in real time. The customer can make a 100% safe decision and he gets exactly what he has seen.

### **Reference #2: Berchtold**

Berchtold creates individually configured products in the field of medical technology. In addition to the interactive 3D visualization, the company uses the solutions of Lumo Graphics to automatically create a correct technical drawing from a 3D product configuration.

### **Reference #3: Schindler Elevators**

Schindler, a globally leading provider of elevators, uses a 3D Web Configurator of Lumo Graphics in customer consulting. The solution was realized together with the company Autodesk and is based on the standard software LumoLogic. With the Schindler 3D Interior Designer the product design of the lift can be configured interactively in high visual quality during the customer consultation.

Product (family)	Resolto Product Configurator
Supplier	Resolto Informatik GmbH
Location(s)	Herford, Germany
Employees	21
Website	<a href="http://www.resolto.com">www.resolto.com</a>

### Business Processes

The product configurator helps ...

- the customer to find a solution for his task
- the sales partner to prepare a quote
- the sales person to prepare a quote
- the sales partner to submit an order
- the sales support to process an order

The product configurator assists in ...

- finding the right product
- configuring the product technically
- finding the right price
- preparing the quote document
- visualizing the product
- constructing (designing) the product
- preparing the BOM
- preparing the routings

The product configurator is developed in general by ...

- supplier
- IT department of the customer
- product department of the customer

The product configurator is used ...

- in the internet
- in the intranet
- locally
- in the network and locally

The product configurator is best for problems where ...

- products are selected (PTO)
- products are combined (ATO)
- products are configured (CTO)
- products are designed (ETO)

### Configuration approach

Characterization of the configuration approach:

Combining articles by way of constraints using geometry and properties. Validation by rule engine with a natural rule language.

Knowledge about dependencies is expressed primarily by ...

- macros
- rules
- decision tables
- constraints

### Customizing

The user interface of the product configurator ...

- is developed individually by the supplier
- is generated automatically
- is created with specific dialog editor
- is integrated in the CAD system

The quote calculation (cart) ...

- is offered as a turn-key module ready to use
- is developed individually by the supplier
- can be modified with help of an administration tool
- can be coded individually

Document templates ...

- are developed individually by the supplier
- are developed by XSLT
- are developed using a report generator
- are developed with office software

### System

Available functions:

- Product catalogue
- Product configuration
- Cart
- Document generation

The functions tagged above are available ...

- integrated in one application
- as optional modules of an application
- as stand-alone modules

Interface to CRM

- Interface to supplier's own CRM
- Generic interface to CRM

Interface to ERP

- Generic interface to ERP

Other interfaces:

- Interface to MySQL, Oracle, PostgreSQL, MS SQL, ...  
Further interfaces on request.

## Company

Since its establishment in 2003, Resolto Informatik, which is based in Herford, Germany, has been developing „rich internet applications“, specialised for the industry.

We develop complex internet applications with very elaborate usability. Our standardised software modules for 3D configurators are technologically state of the art, as they enable 3D configuration within the browser – no specific plugins or installations needed! Our configurator can even be used in a browser on smartphones or tablets such as the iPad without any installations and generates documents such as: parts lists, CAD files, quotes and documentations.

Our clients include mid to large-sized companies that serve global markets with products that are individualized or come in many variations.

Here is a list of some of the features:

- User-friendly usability for the graphical configuration in 2D and 3D
- Configuration of complex technical products compliant to rules, online without having to install any software or plugins.
- Special functions specific for each use case e.g. inspiring scenarios for furniture configurations; consideration of location, roof, roofing, measurements, roof construction, sub-roof and interfering surfaces for planning photovoltaic systems.
- Generation of quotes, complete parts lists, 2D/3D CAD files, calculations of profitability, cost calculations, assembly drawings, photorealistic renderings...
- Significant key data regarding the use of the configuration tool according to clients, areas, products etc.
- The configurator can be easily integrated into existing software environments, so that the processes between PIM, ERP, CRM, PLM, CAD and the configuration software can be automated to a large extent.

Resolto Informatik is also a successful developer of knowledge management software.

You know what you want, but not how it's achievable? Don't hesitate to ask us. We are not only developers, we're also consultants.

## Reference #1: Centrosolar AG

Centrosolar asked us to develop an installation-free 3D application that enables the complete planning of photovoltaic systems without any plugins.

Our solution supports the process from the request, to the roof planning in 2D and 3D for the quote, right down to the order and its even connected to existing systems, such as an ERP system. All the files that are needed for the following steps, such as the plant documentation and parts lists, are offered to the user as a download.

Now sales personnel and customers can easily plan, configure and order photovoltaic systems with our 2D and 3D planning tools in a browser, no plugins needed!

## Reference #2: WAGO Kontakttechnik GmbH & Co. KG

We developed an installation-free web-based 3D configurator for WAGO with a multilingual user-interface.

In doing so the existing product database was optimized and integrated. We also continued to use existing interfaces to established systems. The integrated rule engine guides the user to an error-free configuration. WAGO can edit all the rules via a domain-specific rule language.

The Admin tool enables articles and settings to be edited and added by WAGO at any time, without any programming. Finished configurations can be downloaded as a CAD file or even sent directly to the online shop.

## Reference #3: Alape GmbH

We were asked by Alape to develop a 3D installation-free configurator that allows the configuration of bathroom furniture and the presentation of recommendations.

Getting started is easy: either by choosing one of the inspiring scenarios or an empty room. Upon selecting the object that is to be configured a filtered list of suitable products appears. Then the project can easily be placed via "drag & drop". The system guides the user to a correct configuration.

The finished configurations can then be downloaded by the user as a CAD file along with the prices, parts list, assembly drawings, and photorealistic renderings or they can be imported directly into further processes.

Product (family)	Product Configurator
Supplier	Verenia
Location(s)	Naperville, IL, USA
Employees	10
Website	<a href="http://www.eoscloudstore.com">www.eoscloudstore.com</a>

### Business Processes

The product configurator helps ...

- the customer to find a solution for his task
- the sales partner to prepare a quote
- the sales person to prepare a quote
- the sales partner to submit an order
- the sales support to process an order

The product configurator assists in ...

- finding the right product
- configuring the product technically
- finding the right price
- preparing the quote document
- visualizing the product
- constructing (designing) the product
- preparing the BOM
- preparing the routings

The product configurator is developed in general by ...

- supplier
- IT department of the customer
- product department of the customer

The product configurator is used ...

- in the internet
- in the intranet
- locally
- in the network and locally

The product configurator is best for problems where ...

- products are selected (PTO)
- products are combined (ATO)
- products are configured (CTO)
- products are designed (ETO)

### Configuration approach

Characterization of the configuration approach:

Bottom-up rules-based search engine provides multi-directional access, superior to traditional top-down models

Knowledge about dependencies is expressed primarily by ...

- macros
- rules
- decision tables
- constraints

### Customizing

The user interface of the product configurator ...

- is developed individually by the supplier
- is generated automatically
- is created with specific dialog editor
- is integrated in the CAD system

The quote calculation (cart) ...

- is offered as a turn-key module ready to use
- is developed individually by the supplier
- can be modified with help of an administration tool
- can be coded individually

Document templates ...

- are developed individually by the supplier
- are developed by XSLT
- are developed using a report generator
- are developed with office software

### System

Available functions:

- Product catalogue
- Product configuration
- Cart
- Document generation

The functions tagged above are available ...

- integrated in one application
- as optional modules of an application
- as stand-alone modules

Interface to CRM

- Interface to supplier's own CRM
- Generic interface to CRM
- Further interfaces to CRM on request

Interface to ERP

- Generic interface to ERP
- Interface to Made2Manage, Sage, Intuitive ERP
- Further interfaces to ERP on request

Other interfaces:

- Interface to Sketchfab
- Built in code editor and Web API for individual interfaces

### **Company**

Verenia is the developer and vendor of EosCloudStore, A robust product configurator/quote and order system. A complete guided CPQ solution for manufacturing and services.

We have forty years of collective experience in product configuration and our system provides an industry transforming, cloud-based platform with unmatched flexibility and capability.

Staying solutions oriented and customer driven is our mission and we take pride in providing solutions that work both for and with our clients.

We also offer a full range of project implementation and development services from project management to turnkey implementations.

Our customers experience quick ROI and benefits such as... time and money savings with natural workflow and process improvements, and increased revenue opportunities by gaining more exposure for their company and products.

### **Reference #1: Freedman Seating Company, Chicago**

"We believed so strongly in the software and the culture of Verenia, that we decided to invest in the company as well as use their software. I have every confidence that Verenia will not just be our software vendor, but our partner in finding solutions to the business problems we face."

Craig Freedman, President

### **Reference #2: SoundOff Signal, Michigan**

"Verenia's commitment to our successful implementation of EosCloudStore has been tremendous. At every turn, we have had all the support we need from all levels of the company. I am glad we chose Verenia and would recommend them to anyone."

Tom Roe, CFO

### **Reference #3: Yates Cylinders, Michigan**

"Simple User Interface for the basic user, powerful and customizable for the power user"

Vernon Berels, IT Director