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# Offer and Sales Process In Konecranes ICS

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<p>Tämän insinööriyön tarkoituksena oli tutustua Konecranesin tarjous-, myynti- ja valmistusprosesseihin ja niissä käytettäviin työkaluihin. Tavoitteena työssä oli määrittellä tulevaisuuden tarjousprosessi ja löytää tapoja kuinka uutta myynnin ja tarjoustuen työkalua Coronaa voitaisiin hyödyntää mahdollisin nopeasti ja tehokkaasti.</p> <p>Työn aluksi tutustuttiin Konecranesin tarjousprosessiin ja siihen liittyviin toimintoihin. Työssä esitellään käytössä olevia ohjelmistoja ja niiden roolia Konecranesin nykyisessä prosessissa. Konecranesilla on menossa uusien IT-järjestelmien käyttöönotto ja kehitys, joten myös myynnin ja tarjoustuen ohjelmistot uusitaan. Kehityksessä olevan Coronan vaatimuksia selvitettiin haastattelemalla lukuisia asiantuntijoita ja suunnittelijoita, joiden perusteella pohditaan mahdollisia vaihtoehtoja tulevaisuuden tarjousprosessille. Työssä esitetään kehitysehdotuksia uusien ohjelmistoihin ja esitetään kuinka prosessi voisi parhaimmalla mahdollisella tavalla parantaa Konecranesin toimintoja yhtiön strategian mukaisesti.</p> <p>Työssä selvisi, että Konecranesilla on suuri tarve uudelle myynnin ja tarjoustuen työkalulle. Tuloksissa esitetään ratkaisuna mallia, jossa yksinkertaisia parannuksia tehden saavutetaan nopeasti parannusta nykytilanteeseen. Vasta näiden parannusten jälkeen on mahdollista siirtyä rakentamaan automaattisempaa tarjouskonfiguraattoria. Työn tuloksena myös todettiin, että kehitteillä oleva työkalu tarvitsee vielä lisäsuunnittelua ja entistä tarkempaa tarpeen määrittelyä.</p>	
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<p>The purpose of this Bachelor's thesis was to study the offer, sales and production process and used by Konecranes. The objective of this thesis was to define the future offer process and find ways how the new sales and offer support tool Corona could be utilized efficiently as soon as possible.</p> <p>The project work began with studying offer process and adjacent functions of Konecranes. This thesis introduces the programs in use and their role in Konecranes present process. Konecranes' in going through the development and implementation of new IT-systems, and also the sales and offer support tools are renewed. The requirements for the new offer support tool in development were studied by interviewing numerous experts and designers and based on those interviews, possible solutions for a future offer process are examined. In this thesis recommendations for the development of future programs are made and how the new offer process could benefit the Konecranes in accordance with the company's strategy.</p> <p>It was discovered that Konecranes has a great demand for new sales and offer support tool. In conclusion, Konecranes should do simple renovations to present state and by those renovations achieve improvement in present state. After these renovations, it is possible to create an automated offer configurator. It was also found out that the tool in use needs more planning and an even more accurate definition of the need.</p>	
Keywords	Process definition, offer configurator

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## Abbreviations

CRM	Customer Relations Management. A model for managing customer information
ICS	Industrial Crane Solutions. Konecranes engineered to order and tailor made cranes business unit
ICP	Industrial Crane Products. Konecranes standard or close to standard industrial cranes business unit
SMA	Strategic Market Area. Konecranes uses SMA to classify customer by their business area
PLM	Product Lifetime Management
PDM	Product Data Management, part of PLM
ERP	Enterprise Resource Planning
ETO	Engineered to Order
CTO	Configured to Order
GOM	Global Order Management
WTE	Waste-to-Energy Crane
ASRS	Automated Storage and Retrieval System
LV	Konecranes' name tailor made crane

## 1 Introduction

### 1.1 Background

Konecranes is a Finnish company which manufactures and offers service for various kinds of cranes and lifting equipment and also service for machine tools. Konecranes operates globally, with operations in 48 countries and headquarters located in Hyvinkää. Konecranes' history dates back to 1910 when Kone Oy was founded, and in 1994 it became an independent company known as KCI Konecranes International Oy. Konecranes changed its name to Konecranes in 2006.

Konecranes is best known for its bridge cranes, but it also manufactures port cranes and other container handling equipment (like RTG and RMG), lift trucks, shipyard cranes and light lifting equipment. About 60 % of the sales comes from equipment sales, and 40 % from service business.

This thesis was done for Konecranes Industrial Crane Solutions-unit. ICS is specialized in heavy duty, complex and tailor made crane solutions. ICS products are usually engineered-to-order-type of products, although there are some products in ICS that are quite standardized and don't need much engineering. Such products in ICS are e.g. metal industry cranes, waste to energy cranes, paper mill and paper roll storage cranes, Coker cranes and power plant cranes. In those the loads can vary from 5 t up 500 t or even more. Paper roll storage cranes and waste to energy cranes represent more standardized products, as metal industry cranes are the most complex cranes in ICS.

Examples of products in ICS:

- Smarton crane, configurable, quite basic heavy duty crane with some automation features.
- WTE, waste-to-energy crane quite well defined product, with different levels of automation.

- ASRS crane, automatic storage and retrieve crane. Various kinds of application, for example paper roll storage crane.
- LV cranes, which means tailor made cranes. The type, layout, technology and everything varies a lot. In this category falls for example all metal industry ladle and charging cranes.

List above is not complete or 100 % accurate, but just to give some idea about the diversity of the products in ICS.

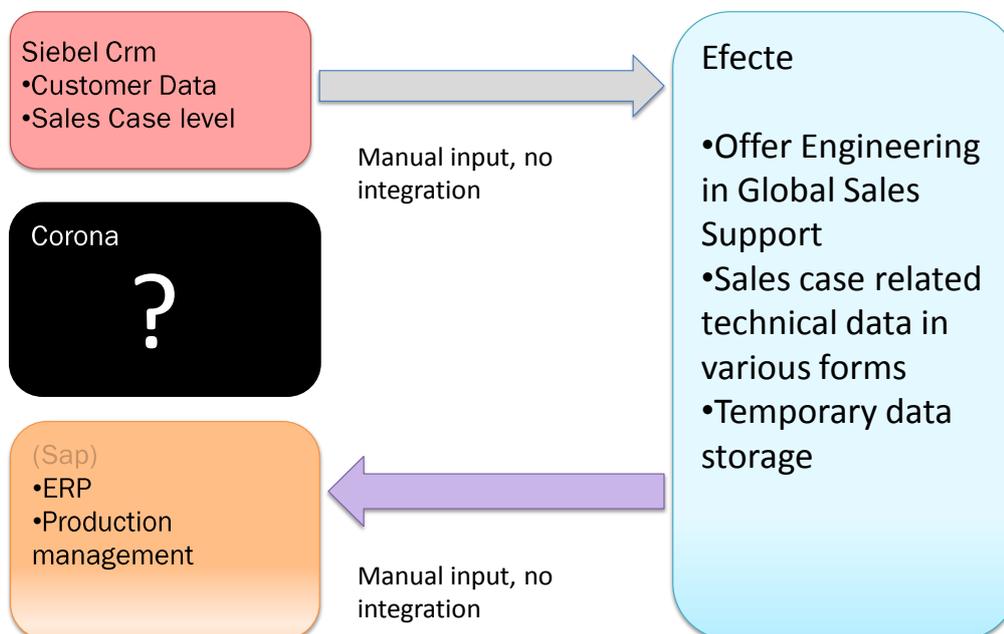
Due to the nature of the business in ICS, a lot of engineering is required in all phases of the process, from the offering to the deployment. [1]

## 1.2 Initial point

Konecranes is going through a process of reforming and synchronizing their IT systems and related software. In addition all processes are refined to fit new systems and more effectively support the world wide business of Konecranes. This project is called "1KC"- and it includes reforms in all aspects of the company, from HR to CRM and ERP.

Konecranes is renewing its offer and sales process, by replacing the older systems with new ones, which have been partially made.

# Siebel-Corona-Sap



Kuva 1. Simplified representation of ICS Offer process as it is now.

Nowadays in ICS the sales and offer support systems CRM and Efecte are in use, but one is missing. It's the Corona system, which is the sales configuration platform to be used in all Konecranes units.

## 1.3 Object

The object is to research how offer and sales procedures are done at the moment in ICS, interview expert how they see the future development of the Corona tool in ICS, and bases on information gained create a proposal and a roadmap for Corona development in the near future and in long haul, too. In this thesis, I should be able to find the most fastest and efficient way to put Corona in use and how it could be developed further.

## 2 Environment

### 2.1 1KC-project

OneKonecranes project is a part of the Konecranes strategy, along with the industrial internet and an emerging markets offering. OneKonecranes process describes how Konecranes functions and how all operations are carried out. Main purpose of 1KC is to define the process and modernize Konecranes information systems and streamline the way of working. By these means the company achieves higher profitability and efficiency.

1KC includes several different sections, main topics being:

- Management
- Product
- Sales
- Material Delivery
- Service Delivery
- People
- Finance

As it can be seen here, 1KC-process covers all aspects and areas of Konecranes. The thesis has focus only on the small section of 1KC-process. The visible part of the 1KC is the new IT systems being taken in to use and implemented. Those systems are:

- Origo, which means SAP implementation in supply units

- MAINMAN 4, which is the service sales program, and defines the process in CRM and SAP for service, too.
- Globus, which means the implementation of Siebel CRM to Konecranes.
- Pronto, which means delivering new PDM system to Konecranes. This system is Teamcenter and will be taken in use globally on Konecranes.
- People, which improved the HR systems overall.
- Corona, which is the next generation sales configurator platform for Konecranes, which main integrations are with SAP and CRM systems. Corona system is in the center of this thesis.

### 2.1.1 Globus

Konecranes uses Siebel Systems CRM tool, which is a brand name of Oracle Corporation customer relationship management solution. CRM is used to manage all customer related data, including basic data (Name, location, contacts etc.), current offers and offer history.

### 2.1.2 Corona

Corona is the main offer creating tool, and it acts as a sales configurator and pricing tool. It should be linked to different programs, including Globus, Teamcenter, SAP, Design Hour Estimation Tool and so on. Corona is next generation sales configurator, which preceding tool was MarkMan 2000. [2]

### 2.1.3 Efecte

Efecte is a Finnish company, which specializes in IT management software. Konecranes uses Business Efecte for its ticketing software to handle support requests. Efecte is quite versatile software, and it simplifies corporate communications. Instead

of extensive emails sending, people can use Efecte tickets, which will make each case much easier to handle since all info is stored in one web page.

In Efecte, it is possible to restrict user access to only cases and files they need to see, which improves both security and usability, as individuals only see cases which they need to see. Using a web based ticketing software, it makes it easy to handle the case from one person to another, as one only needs to send the ticket forward, instead of tracking down all related emails and files.

In Efecte, user can attach different files and even a technical sheet to include various levels and amounts of info in ticket, although it seems that the info in tickets varies a lot depending on sales person and the sales case. [3]

#### 2.1.4 SAP

SAP AG is global corporation with operations in more than 130 countries, headquarters is located in Germany. SAP is also the common name for their ERP-products, which has multiple different modules, which can be implemented on use one by one in most cases. Implementing SAP to company is a long and difficult process, but if carefully planned and well executed, it can greatly benefit the company by streamlining and speeding up their processes.[4]

#### 2.1.5 Teamcenter

Teamcenter is product lifecycle management (PLM) program by Siemens. Teamcenter uses item based system to create product trees and to manage revisions and changes. Teamcenter houses and connects the information together about material, properties and up to individual drawings. Teamcenter functions on item based design, from top most assembly level down to a single bolt or nut. [5]

#### 2.2 MARKMAN 2000

MarkMan 2000 is a product configurator now used in Konecranes. MarkMan 2000 is powerful tool, capable to handle all steps of an offer. MarkMan creates everything from

an offer letter to bill of materials, and performs all calculations needed and chooses components accordingly. MarkMan utilizes Konecranes own calculation tool to calculate everything from main girders, end carriages to drive and hoist motors.

Drawback in MarkMan 2000 is that it's not really versatile. MarkMan is an excellent tool to configure and offer standardized or modular products, but it lacks the ability to handle customized and tailor made solutions. MarkMan 2000 has a very limited ability for customization, and if there is configuration that MarkMan cannot handle, whole crane needs to be created by hand.

### **3 Process Now (As Is)**

#### **3.1 Process in general (ICS)**

Simpler and easier cases are handled fully by frontline sales units and in some cases by regional support teams. For more demanding or complex cases frontline/regional units will ask for help via Efecte from Global Sales Support, which works in close cooperation with industry specialists and technology platform teams.

In Technical Offer phase the input or starting information can vary greatly, as sometimes cases have all related info and the potential customer has everything figured out already, which means quite straight forward task for Technical Offer. Some cases might have very little or almost no starting information, which makes it easier in a way, but can also include a lot more hustle, since offer can go back and forth numerous times between the sales and Technical Offer team. Time from first sales person lead or contact to actual crane deployment is measured in months and years.

#### **3.2 Process in general ICP**

The process in ICP is much more streamlined and easier in a way. Majority of the work is done purely by sales person using the MarkMan 2000, as the products are very standardized and there are not that many special needs. In ICP, the sales person can use the MarkMan 2000 when visiting the customer, and get a calculated offer at the

place, since all work is carried out by the configurator. If sales person needs support, he can contact regional support, which is more extensive in many regions compared to ICS regional support. All communication (help requests) is carried out by Efecte tickets. In normal orders in ICP the offering is fast, and the production is very streamlined. In the case that customer places an order, sales person can immediately send an automatically created component list and purchase order to component factory and drawings to crane factory.

Manual work has been minimized in ICP for standard crane process. If the crane is quite simple and doesn't have any extra features, the offer to order can be done in 20 minutes. Majority of the functions are automated, and thus the process is very fluent.

The use of MarkMan2000 has also another great benefit. Because MarkMan 2000 is fast and easy to use for standardized cranes, it guides the sales person to offer the standard crane, instead of offer some customized feature. This is a big difference compared to ICS. In ICS the tradition goes years back and people are proud of their custom made cranes and solutions. This is great and admirable, but there's also the downside in this approach. As people are used to do things their own way, it can be difficult to get them do more standardized solutions which could decrease the costs.

### 3.3 Tools in use

#### 3.3.1 Siebel CRM

Offer process start from CRM lead. Stages of leads are:

- Registered lead
- Qualified lead
- Opportunity
- Qualified opportunity
- Offer

- Hot offer
- Order received

CRM is mainly used by sales person, who inputs common customer info, creates sales cases, and if already known, the SMA code and other info. This info can include some business number or other remarks. CRM can only handle business numbers, and it doesn't have any technical data input possibility. It is possible for the sales person to write in as a free text such as some technical details, but it is not required, and because it is a free text it can't be utilized in any other way than just to provide additional info. Free text cannot be utilized by any software.

### 3.3.2 Efecte

Efecte is ticketing software used by Konecranes globally. Main function of Efecte is the support request ticketing. In ICS usually it means that when sales person needs help or support with crane offer, he/she creates new ticket, fills in all applicable data about the case (also the CRM sales case ID). This data can vary a lot, but usually at least, SMA number, crane load, span and other basic data is required to be included in ticket. This ticket then goes to first level regional support, which will go through it, and if needed forwards it to second level global support team. The global support team then starts to work with the ticket, directing it to person responsible and conducting all necessarily work to be done.

The support request can vary a lot, from small detailed question to full crane offers, and everything there between. After receiving the ticket, and acting upon it, support team will mark it done and send it back to front line, with all needed info attached (calculations, component lists, pricing, drawings...)

Efecte has lots of different reporting and chart options, good for monitoring the offers in general level. The results from these reports get better to relation how well sales person has filled the ticket in the first place. The more accurate information is filled in first place, the better it can be used afterwards for future offers/other use. New tool called "Solution Library" is also developed to make it easier to search.

### 3.3.3 Calculation tools

#### 3.3.4 Design Hour Estimation Tool

Design hour estimator is an MS Excel-based tool, which I've developed for Konecranes ICS team. It is used to estimate design and start-up hours for different cranes. Design hour estimator tool is now on referred as "DHET", to make it shorter.

By this tool, Konecranes is able to offer more accurate price, which will obviously be an advantage in offer competition. Second great benefit is the project management, as it will get more accurate and realistic budget for their project, in order to create more accurate timetable and to avoid project delay and delay penalties/other inconveniences. Third important benefit for the use of this tool is the systematic data acquired. When making an offer, offer engineer fills in estimator and gets result, and that result is the base for budgeting hours for the project in offer leading to order. After project is done, project manager will take a look how correct the estimation is, and then needed adjustments are made, thus improving the quality of estimation and increasing offer accuracy and project budgeting. By these means Konecranes can have lean way on offer phase, as there is reliable knowledge of needed design hours for certain kind of crane, which will lead to better pricing and it increases the chances of winning the projects.

DHET main user group is offer engineers, and it was developed to support them in offer phase to more accurately estimate design hours needed for certain projects. Offer engineer will fill in the tool, and save it for the offer. When offer turns into order and kick-off meeting is held, project group and offer engineer will go through the DHET-result once again, and agree on it. After the project is done, PM will go through the project and check if the DHET results are accurate, and ask needed adjustments to be done. Result of this is increased accuracy and great database of detailed hour estimation data for different kind of projects, which can be utilized in future for better and result.

#### 3.3.5 Other Tools

There are other so called secondary tools just like the DHET, developed by Konecranes. Many of them are real applications, others just more like MS Excel sheets,

used to calculate different technical data or business numbers. The actual applications are more sophisticated and advanced tools, and are used by engineers. The applications are KC Lift, KC Drive, KC Girder and KC Gantry, for example. The excel tools do not necessarily have a name. They can be just sheets developed by individuals to help their own work.

Common to all these tools and applications is that they are not connected to any other program or environment. So every time the user needs to manually fill in the basic data, even though it can be similar for all programs. Also the results needs to be manually extracted, which mean copy pasting again.

### 3.4 Order

Global Order Management (GOM) covers the component and possible engineering order process from sales hand over (after “Order received” step in CRM) to component delivery. When sales case is in “hot offer” or “won” stage, the Global Order Management comes also in picture, after project manager has confirmed “as sold specification”. Although GOM can place material orders and reserve production slots in “hot offer” phase already, but these needs to be confirmed in sales hand over meeting (internal kick off) with project manager and sales. The process steps in Global Order Management equipment delivery are following:

- Order processing and project management
- Purchasing
- Manufacturing
- Delivery
- Installation

### 3.4.1 Crane order forms

In component unit there is basically 4 different ways to place the order, and the first two options are mainly for ICP:

- MarkMan 2000 order
- MarkMan 2000 order, with features
- Smarton order form
- Work order

## 4 Process in the future

### 4.1 Process summary

Konecranes ICS offer process is still in progress and it needs to be discussed if the Corona as it is now planned is the best solution for ICS in near future. But these following findings and suggestions are based on that assumption that Corona will be the future tool in ICS.

In picture 4 you can see the full process chart for Konecranes business. As you can see, there are some sectors that are not discussed in this thesis, like the Field service module in Siebel. Also it should be kept in mind that this picture is just a vision how the process could look if everything would go as planned.

### 4.2 Input (Siebel CRM)

The input from CRM will be the same as it is today, because Siebel CRM system is already the new 1KC-process standard customer relationship management tool for Konecranes. Even the last units will be starting using Siebel CRM, and thus Konecranes will gain even wider coverage of the customers. Consequently, the more cus-

customer data will be added on CRM making it more and more useful and becoming a very useful and efficient tool for sales personnel.

### 4.3 Corona

Corona is the future tool which will be used to make an offer, it gathers together the component lists, price lists, design hour estimations and so on. Corona is opened “inside” CRM (in technical sense, Corona is independent system and not part of CRM, but to the user it looks a little like that), and under each sales case a new Corona case is created, that links all info related to certain order/offer to CRM customer data.

As Corona will be the main environment for an offer creation in Konecranes, it is the very important part of the process.

The picture 5 and 6 shows the possible future development of Corona in Konecranes. For ICS, next Corona step will be the first release in summer 2014. This release will make it possible for offer engineers to use Corona for tailor made such as LV. On the first phase, there will be component selection and price list (more in part 4.3.1), which are connected to each other. After the first releases next improvements for Corona are developing the LV model further. At first release, only hoisting machinery model works as a configurator, others are just long dropdown lists of component. In the second release the model will be developed further and also technical documentation section has been added. This is the development that has already been agreed and people are working on it.

#### 4.3.1 Component Selection

Corona used for ICS will start as a manual component selection and electronic price list tool. First ICS Corona release will make it possible for the engineer to use Corona in ICS in offer phase as a component selection tool and pricing tool. In the first phase, Corona includes only electrical component lists which are linked to electrical price list. As the engineer goes on with the component selection, and chooses different components, Corona will constantly calculate the price of the crane, and there is no need for anyone to go through hundreds of pages of component price list, as it is done now.

This component selection is done manually at least in the early releases, but plans for at least semi-auto selection have been made.

#### 4.3.2 Component Pricing

This phase of the offer process will be made automatically with the introduction of Corona, as all components now include the price data and pricing is made at the same time with component selection and no component pricing needs to be done manually anymore.

#### 4.3.3 Calculation tools

Future of the independent calculation tools looks unclear, as there has not been any real plan for their implementation to Corona. Most likely in near future they continue as an individual tool, with no link to Corona.

#### 4.4 Efecte

In future, Efecte will most likely continue to serve as prior ticketing software for Konecranes. The vision is, that Efecte would run on the background of Corona, and user could be able to send help request straight from Corona, without the need to open Efecte and then create a new ticket. Efecte would continue to be independent software, but it would be linked to Corona. This improvement would make processes much faster and more streamlined, as the user wouldn't anymore need to create a ticket and attach all related documents with the ticket by him. Instead, the support person could just follow the Efecte link straight to the Corona and see all related info without going through multiple attachments. The support person could make all changes and measures needed in Corona, without the need to copy paste by hand and sending numerous attachments back and forth.

Other solution could be the wider use of the Efecte technical data sheet possibility, where it is possible to create sorted technical data, such as crane load and span or voltage or other even more detailed info. It could be a possibility to link this info with related fields in Corona, and to avoid the tedious copy paste and errors caused by it. It

would take more training for the sales persons to start using this feature more to make it a feasible solution. Also it requires the technical solution to be created so that this option could be used more effectively.

In technical sense, both ideas stated earlier could be possible solutions. I've found out that Efecte is quite versatile program, and it could be modified to perform tasks like stated above.

#### 4.5 Output

Outputs of Corona would be the same as it has been previously, except with few major changes. All info could be sent straight from Corona for the next step, which will be SAP in the future. Because info in Corona should always be up to date, the info sent forward would be so too. The use of Corona would greatly benefit the GOM, as it eliminates the possibility of missing documents and not up to date facts to be sent forward. This is made possible in Corona, by creating "stoplights" to prevent proceeding with the order if not all files are "as sold" state and have the latest revision.

##### 4.5.1 SAP and Teamcenter

SAP plays major role in future Konecranes, as it is one major element in 1KC-project. Thus integration between SAP and Corona should be made possible. This would mean that all data in Corona should be in same format as in SAP, or at least transferable to such. This has already been taken to account, and future ICS Corona release is structured so that it should be SAP compatible. Also for example the Design hour estimation tool has been developed keeping this in mind.

##### 4.5.2 Production

The wide use of Corona would benefit greatly the production phase. All documents and information created in offer phase could be stored in order and reasonable way in Corona. This could bring down the amount of missing and not updated documents, and reduce the email traffic. If the full potential of Corona is used, the amount of documents

and order form could be much smaller, increasing the effectiveness and decreasing errors and mistakes.

## **5 Technical execution**

In developing new processes and tools, technical execution is of course one key factor that should be considered carefully. Although technical execution is not in the center of the scope in this thesis it will be considered, too.

As stated above, in future Konecranes' offer phase, there will be most likely three different main programs in use, Siebel CRM, Corona and Efecte. In addition to these, there will be multiple smaller programs and excel based tools in use. The ideal state would be that all of these are integrated and data transfer is smooth as possible and all unnecessary work is eliminated. As I have been talking a lot with system experts and according to them, all these programs are quite versatile, and it could be possible to integrate these without any major changes in programs. Combining these programs would mean a lot of work, but it should be possible in technical sense.

## **6 Future possibilities and things to consider**

### **6.1.1 Corona guiding the offering**

During the research period the topic that using Corona could guide the offering to desirable direction. This is an interesting topic which should be studied more.

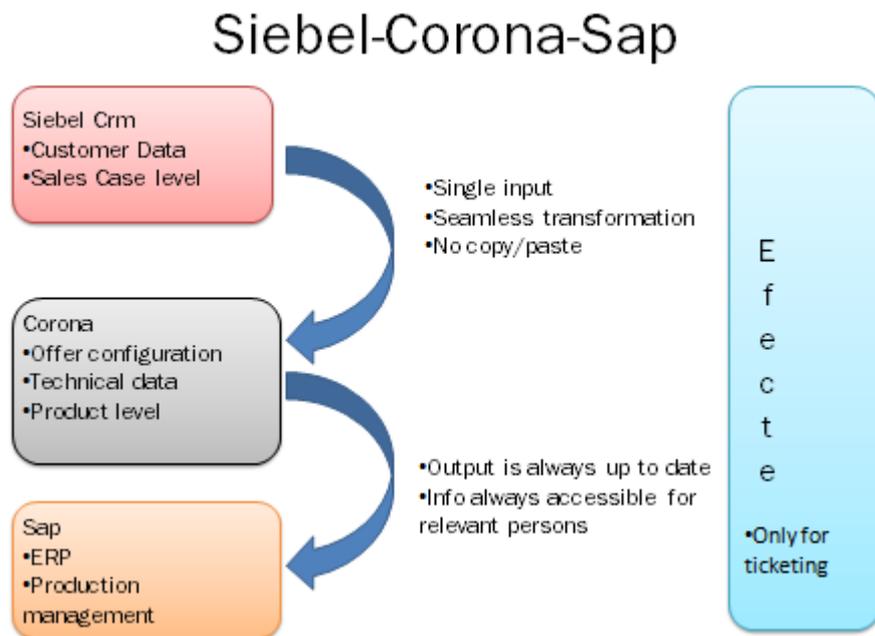
### **6.2 Crane library**

Konecranes should take a look at the possibility of creating "crane library", where engineers could not only store the projects and offers made, but also to include an advanced search option to it, so that designers could be able to utilize more efficiently work already done for previous projects, and thus minimizing the work need to create a crane by using a similar project as a base. This is already the way it is done, designers try to memorize if there has been a similar kind of project in the past, but of course

one person can memorize only certain amount of projects. By creating this crane library Konecranes could be able to streamline the offer phase by decreasing the work to be done for each case by making the use of old projects as a base easier. This crane library could be created by storing the info input in Corona, and linking it with the general items.

## 7 Summary

### 7.1 Results



Kuva 2. Simplified presentation of Future Siebel-Corona-Sap- Efecte relations.

In picture 9 is the simplified representation of what could be the ICS offer process tools relations and use (compare this to picture 1.). This picture represent the simplified ideal state, not necessarily realistic vision of future.

Konecranes ICS in transition state with their IT systems, and especially with the offer/sales configurator. It is important to get the systems running as soon as possible,

and then start to improve them. ICS should be considered differently than ICP or light lifting equipment, due to the different nature of the business and large variety.

After all, the most important for Konecranes would be starting the Corona as soon as possible and this could be done by doing the simple stuff first, and the fine tune later.

These all apply only with the presumption that Corona will be the best way for ICS. Other way could be conducting more research and see if there would be some other and easier ways and start using those first and worry Corona later.

## 7.2 Working process and challenges

The project started in spring 2014, with few meetings with Ismo Tamminen and Jari Kaiturinmäki and starting to define the topic. After few meetings an actual starting meeting was held with Pekka Salonen, Ismo Tamminen and Jari Kaiturinmäki.

Most of the work consisted of interviews and meetings held with numerous experts, and this report is based on those conversations. Biggest challenge in this project was the fairly wide and difficult topic, and it was quite hard to define the scope for this work, and also the somewhat tight schedule increased the challenge. Despite the challenges project went fine, thanks to helpful staff at Konecranes, who were able to create space in their busy schedule and offered vital information and made this thesis possible in the first place.

## Sources

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