



COSMO CONSULT
Business-Software for People



IoT in Mechanical and Plant Engineering

CHARTS BIG DATA CAPITAL INDUSTRY 4.0

INTERCONNECTION

DIGITISATION

CUSTOMER JOURNEY PRODUCTION ERP AND CRM

SERVICE PARTNERS

INTERNET OF THINGS CORE PROCESSES

Microsoft
Partner



- Gold Enterprise Resource Planning
- Gold Cloud Customer Relationship Management
- Gold Collaboration and Content
- Gold Data Analytics
- Gold Cloud Platform



PREFACE

Dear readers,

When interpreted correctly, IoT provides a close interconnection between sales, production and after sales. How can machine and plant engineering capitalise on political initiatives, buzz words like Industrie 4.0, Internet of Things (IoT) or Big Data? This guide will show you how to turn envious glances at sparkling flagship projects into a software environment which is feasible, digital and interconnected.

Join us on the journey from quotation preparation through to planning and production to after sales services. See how the IoT and classic software systems such as CRM and ERP interact and enable new opportunities for machine and plant engineering. You will learn that you do not have to reinvent the entire IT landscape to capitalise on added value from IoT.

Enjoy reading!

Yours sincerely, Patrick Welch



Patrick Welch

General Manager, COSMO CONSULT SI GmbH, Austria

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IoT in Mechanical and Plant Engineering

Why IT innovations will not fail because of 20-year-old machines

IIOT: YOU DO NOT HAVE TO REINVENT THE ENTIRE IT LANDSCAPE

The Internet of Things is no longer a long way off – there are lighthouse projects which show how digitisation creates competitive advantages and can provide a quantum leap in terms of customer journey. Everyone speaks of these exciting projects in the context of IIoT and Industrie 4.0, however, some have already buried the initiative again. But no matter how you look at it: digitisation concerns all of us and no machine or plant engineering company can be excluded if they want to remain competitive.

What challenges have led to the drastic discontinuation of IIoT strategies or the reservation common in German-speaking countries? On the one hand, we find a variety of digitisation degrees in machine and plant engineering and, on the other hand, the question of the concrete benefit of the IIoT in operational processes comes up time and again.

Our answer: You do not have to reinvent the entire IT landscape in a company to capitalise on added value from the IIoT and other smart IT applications. Interconnecting existing ERP and CRM systems with business intelligence applications and IIoT gadgets

leads to significant success. Interfaces between CRM and ERP systems have already become an absolute standard repertoire. This interconnection of processes, considered a matter of course, will also continue in the future. With the help of sensor data and the possibilities that the IIoT offers, the interconnection turns into a marriage of the IT process landscape – and this changes everything. The big advantage is that you do not have to adapt your entire IT, but the company still gains a competitive edge and has its fingers on the pulse of the time.

The next few pages will show how, with optimum interaction, IT systems generate the greatest benefit for machine and plant engineering. Stop with us at the following processes in the company: marketing and sales, production, warehouse and logistics, as well as after sales and service.



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/1 SALES & MARKETING – BANKING ON THE RIGHT SALES OPPORTUNITIES!

Marketing and sales must provide a company with new customers, but this is often not that easy in project business. Of course, sellers can rely on their – positive and negative – gut feeling when evaluating sales opportunities. However, the wrong gut feeling can cause a lot of damage especially in machine and plant engineering where sales cycles are very long and almost every project is an individual order. Although the CRM supports optimally in the quotation preparation and, thanks to stored data from past projects, you can access existing product bundles in quotation preparation, however, high costs of sales and expensive engineer working hours due to

complex calculations for quotation preparation arise – to put it in a nutshell: a lot of effort for a doubtful deal.



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THANKS TO THE INTRODUCTION, WE HAVE ACHIEVED THREE MAJOR GOALS: WE ACCESS CLEANSSED DATA, PURSUE OUR CUSTOMER REQUESTS BASED ON A STRATEGIC SALES PROCESS AND HAVE THE NECESSARY TRANSPARENCY TO BE ABLE TO ANALYSE OUR BUSINESS FROM A VARIETY OF ANGLES.

ROBERT CANINS

Project Manager CRM of Lenzing Technik GmbH

Avoiding unnecessary kilometres in sales

But how can you avoid these “unnecessary kilometres” in sales and focus on the right sales opportunities? This is where the cc|crm salesup add-on comes into play; it is an add-on for traditional CRM systems. cc|crm salesup supports the sales department in recognising those sales opportunities which most probably lead to success. It does so based on KO criteria jointly defined throughout the company. The calculation of the likelihood of closing a deal is effected through simply answering predefined questions which can also be adapted individually to the company. This allows recognising if a deal is promising or not very early in the sales process – if possible even before elaborately preparing a quotation.



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Fast sales reporting: visit reports directly in CRM

Finally, this also maps sales reporting including pipeline management directly in cc|crm salesup. Thanks to the seamless integration into the CRM, all data are maintained for the long run and a history of each and every customer, lead and interested party is established. Sales staff thus save valuable time for direct contact with the customer.

Further links

Details on cc|crm salesup:

<http://bit.ly/crm-add-on-salesup>

Details on Microsoft Dynamics 365:

<http://bit.ly/cc-crm>

Say goodbye to the shotgun approach: focus on the right target groups in marketing

A CRM system in the background ensures that contacting prospects is target group-specific and personalised from the beginning. Mass mailings are a matter of the past, campaigns are tailored to industries, job titles of the persons, company sizes or other data stored in the CRM. Not measurable stand-alone marketing activities lead to low response rates and do not bring the desired success. The CRM allows mapping, measuring and evaluating campaigns with all associated activities – phone calls, mailings, blog posts. Seamlessly integrated CRM add-ons allow additional website tracking, campaign automation, newsletter dispatch and event management. Thus, the entire marketing is mapped directly in the CRM and can be traced back to each contact.

Thanks to this complete contact history, everyone in the company knows when the last touch point with the customers was – whether through internal sales, a seller, in the course of a campaign or by means of

the contact actively approaching the company, for example, by filling in a form on the website. Prospects are regularly reminded of the company but will not be deterred by the same old advertising campaigns.



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*WITH COSMO CONSULT WE HAVE FOUND
A PARTNER WITH WHOM WE CAN
IMPROVE OUR PROCESSES IN A
PARTNERSHIP AND WITHOUT BUREAUCRACY.
THE EXAMPLE OF THE QUOTATION PROCESS FOR
FIELD SERVICE SHOWS THAT WE MADE
THE PERFECT DECISION.*

ALFRED PALKOSKA

Authorised Officer/Head of IT, Synthesa Group



/2 PRODUCTION – ALWAYS KEEPING TRACK OF THE PROJECT STATUS

Once the deal has been won, production planning for the construction of the plant or machine must take place. ERP systems support the entire creation process: your ERP system collects all the project details from CAD drawing to project documentation and service contract.

All in time: react before the project gets out of control

From the project start, all project costs such as kilometre and time records, machine data and many more are constantly updated. Will the project be finished in time? Is everything going according to plan? What are the costs of the project and what can be invoiced? Questions like these can be answered at any time by comparing the plan and actual values of the project. This way, the entire project team and business management can react in time if something gets out of control in the project.

Improving production processes with IoT

ERP as a standalone software helps a lot, as described above. However, the biggest added value is created with IoT interconnections. IoT offers two major areas of application for machine and plant engineering:

1. Using the Internet of Things for your own process improvement
2. IoT as a driver for a new business model

The first of the two points is important in the production process. In this industry, the company's own machines often have a lifespan of several decades. You do not just exchange one of those machines overnight like you do with consumer goods just because buzz words like Industrie 4.0 or IoT put the industry in a flurry. Therefore, the desire for radical innovation can sometimes come apart due to "banalities" such as the non-integrability of a 20-year-old machine. This is why a sensible interconnection of existing machines and systems with

the new smart IT is the road to success. Machines are retrofitted with sensors and become "smart" this way.

These sensors continuously provide up-to-date data which are compared and evaluated. If there are deviations from normal data, an automatic notification is triggered. Downtimes due to broken machines are a thing of the past because the worn out components or other error sources are fixed before the occurrence of a total failure.

Not only smart but also beautiful

Operational BI, i.e., the evaluation of IoT data, is not only smart but also beautiful. The evaluations of the data are represented in a user friendly and interactive way in apps or other GUIs. The best thing: Most machine and plant engineers already collect these data during operation, but just do not use them. The entire production area is thus a network of people, machines, objects and software systems that are connected through the internet and communicate with each other.

Further links

Details on Microsoft Dynamics 365 for Finance and Operations:

<http://bit.ly/d365-erp>



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/3 WAREHOUSE AND LOGISTICS

ERP-systems not only support production and administration, but also the warehouse. The warehouse connection consistently monitors the current inventory, when individually defined minimum stocks are reached, the in-house or external suppliers are informed and replenishment arrives at the warehouse in time. Supply is also automated in the direction of production. Real-time data show the consumption of the built-in parts in production and a notification is sent to the warehouse as soon as new parts need to be delivered to a workplace. Material consumption is thus completely transparent.

/4 AFTER SALES AND SERVICE – FROM PRODUCT SELLER TO SERVICE PARTNER

We have already addressed the great scope of applications of the IoT for machine and plant engineering, the improvement of internal processes in the area of production. The second essential application scenario comes into play after delivery of the machine or plant: The Internet of Things as a driver for a new business model, away from product seller to become a service partner for the customer.

Revolutionary service with CRM and IoT

Machines and plants in regular operation continuously send data back to the manufacturer. Collected operating data – as mentioned above – provide information about which parts must be replaced at an early stage. These measures avoid expensive downtimes of plants and their components; all is well if customers can solve problems themselves. In case of unexpected plant failures which cannot be solved independently, a service technician in the area of the customer is informed immediately.

Thyssen Krupp's maintenance-free elevator is an impressive example of that. With the help of Microsoft Azure IoT services, the company has transformed their service model from a reactive and cost-intensive

service to a predictable and significantly more cost-effective service.

New business model: lease machines and plants

There is still a higher level: Machine and plant engineering can orient themselves towards lease models in the future. Such business models have been common for printers and other office equipment for many years. What does this mean in concrete terms? Machines or plants will no longer be sold but leased to the customer. Customers get the machine set up on site and work normally with the machine. However, invoicing is effected per unit produced, for example, per stamped part. If the company does no longer need the machine, the machine engineer will pick it up and lease it to the next customer – in the same version or slightly adapted. This business model does not apply to special machinery engineering.

THE BEST IS YET TO COME – CHECK LIST FOR YOUR START WITH THE INTERNET OF THINGS

As shown in the guide, you do not have to make any major IT investments in order to have interconnected machines and plants. Often, retrofitting of sensors or the connection of two existing systems is enough. In the check list below, you will learn how machine and plant engineering can approach the Internet of Things in the best possible way. Step by step to smart IT.

CHECK LIST

Step 1 / Think big, start small:

First, think about which data you can collect with your existing systems in order to optimise operational processes.

- ▶ Is there already someone in the company who deals with this issue?
- ▶ Where can big effects be achieved with small retrofits? (e.g.: installing sensors on existing machines)

Step 2 / Optimising processes instead of reinventing them:

IoT does not necessarily mean defining new processes; start with the optimisation of the existing core processes.

- ▶ Are there already machines or systems which provide data, but this data is not evaluated and used yet?
- ▶ Is there already a way of connecting the core processes of sales, purchasing, production, warehouse and after sales in a better way?

Step 3 / "Listener" approach first:

Use the information that sensors, machines or value creation provide you in general. Only then does it make sense to feed back information to the machine.

- ▶ Which data do the machines provide?
- ▶ Where are they provided to?
- ▶ How are the data used?

Step 4 / Processing and visualisation:

The data provided by machines and plants have to be processed because simply collecting data is pointless. Think about how and in which systems this data should be processed.

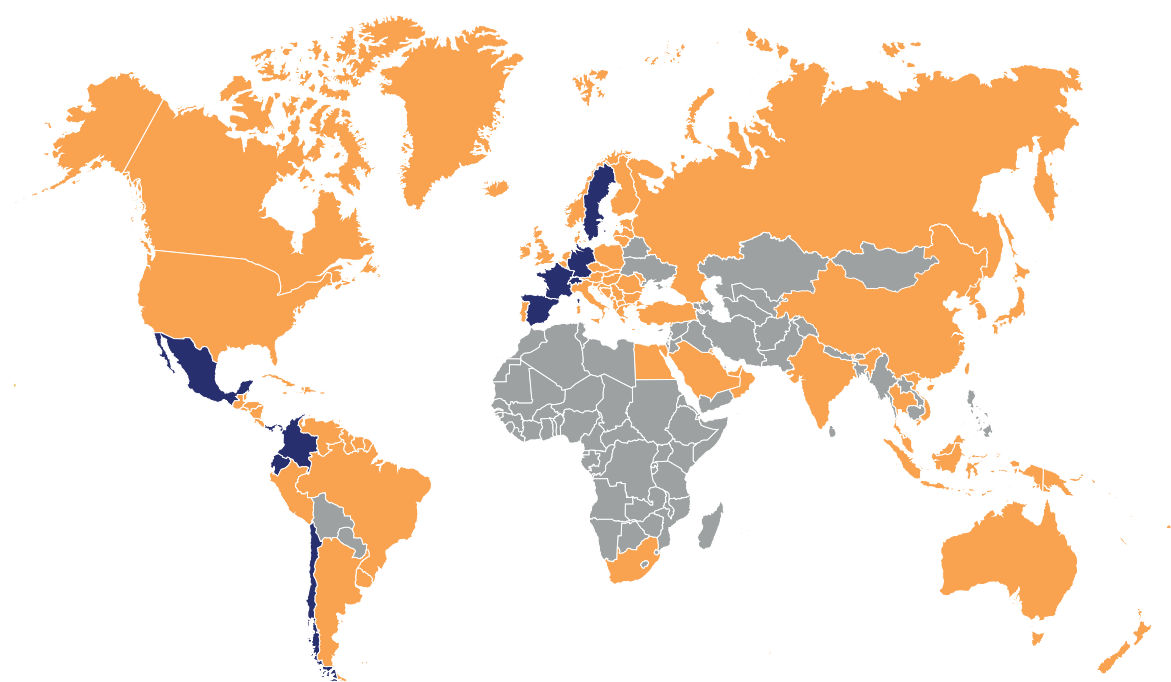
- ▶ How do you obtain the data from sensors or machines and how are they then represented in the CRM or in a Business Intelligence user interface?
- ▶ How and where are the data stored?

Step 5 / Availability and provision:

Think about whom you want to provide with the information and in which form. Employees should not suffer under the flood of data and constant push messages. A balanced level of information should facilitate everyday life of the employees, but should not overload them or confront them with data that they do not need for their daily work.

- ▶ What are the rights and access roles that must be assigned?
- ▶ Does the recipient have to pick up the information or should they be supplied with them proactively via push?





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