

4PS MAGAZINE

THE MAGAZINE WITH NEWS ABOUT MICROSOFT DYNAMICS NAV 4PS CONSTRUCT, INTEGRATED SOFTWARE FOR THE CONSTRUCTION, CIVIL ENGINEERING AND INSTALLATION INDUSTRY

NOVEMBER 2018



BAM International and 4PS Construct

The challenge: implementing one ERP system in multiple countries, each with their own language, culture, time zone and working method.

Preface

The year 2018 is drawing to a close. We can safely say that it has been a special year for us. A year dedicated to our customers and innovative products. In addition, we will continue to invest in our people and processes, with a special focus on efficiency and customer focus.

The evolution of Microsoft Dynamics

A particularly interesting development in the field of technology is the introduction of Dynamics NAV's successor Microsoft Dynamics 365 Business Central. For 4PS Construct users, we consider this to be an evolution of the application, but with additional options such as a Microsoft Cloud version. This will no doubt boost the further expansion of 4PS considerably.

International developments

In July 2017, we acquired our former partner Metaphorix and joined forces to transform the organization into the "4PS UK" office together. It is great to see how much has been going on since; several leading companies have opted for 4PS Construct.

The same can be said for the international partners we work with. Demand for our solutions is growing widely. All this is made possible by our customers, by you. The BAM International story in this magazine is a perfect example of this. The challenge: implementing one ERP system in multiple countries, each with their own language, culture, time zone and working method.

Digital transformation

As usual, this magazine contains an explanation of our product strategy. In this edition 4PS Control is highlighted. This new solution focuses on the flows of information between supply chain partners. In addition, we will provide you with an update on a number of apps and share the latest developments with respect to the Graphical Resource Planning. Finally, we will explain more about our solution for planning capacity requirement in projects and get you up to speed on the expansions regarding contract control and forecast in the 4PS Construct Service & Maintenance module.

For now, we hope you enjoy reading our magazine and thank you for your interest in 4PS.

Martin Westerink, Partner 4PS



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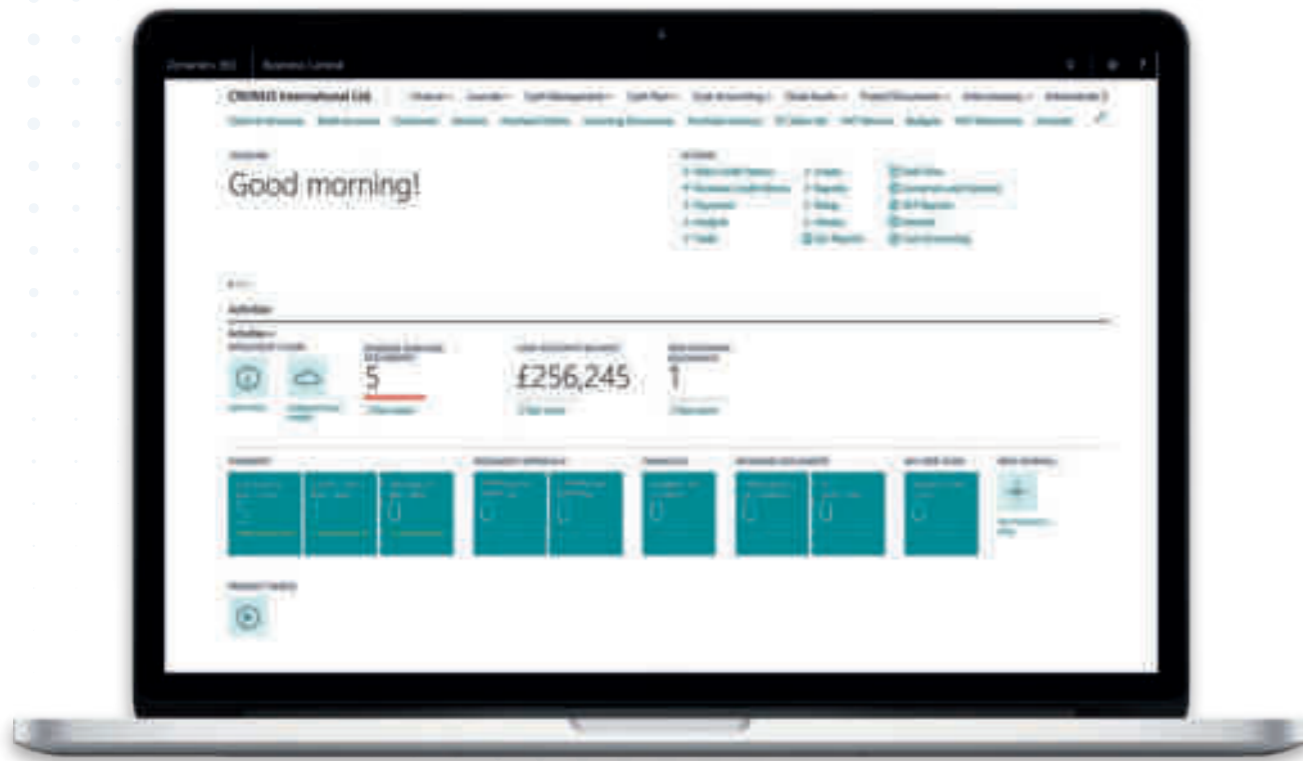
This magazine informs you about the developments regarding to business software, our 4PS Construct solution and complementary solutions of our partners. Intended for the Installation, Civil Engineering and Construction Industry.

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Future-proof with Dynamics 365 Business Central



Role Center

In 2019, 4PS will provide the 4PS Construct solution on the latest ERP platform: Microsoft Dynamics 365 Business Central. This solution, specifically designed for companies within the Construction, Installation, Civil Engineering/Infrastructure sector will be available on premise as well as in the cloud. 4PS Construct in D365 (Dynamics 365) Business Central offers new functionalities and, compared to Dynamics NAV, is more focused on user-friendliness. By opting for 4PS Construct D365 Business Central you will be assured of a future-proof ERP solution. Fully integrated with other Microsoft technologies, and available on any device anytime and anywhere.

Difference between Dynamics NAV and Dynamics 365 Business Central

The main difference between Dynamics NAV and Dynamics 365 Business Central is that the latter is not only very end user-friendly, but offers a cloud and web based solution as well. Dynamics 365 Business Central is fully integrated with other

Microsoft cloud services and can be expanded with additional Microsoft solutions such as Flow and Power BI. All the familiar 4PS Construct functionalities, options and advantages are available in the Dynamics 365 Business Central version.

You will have access to all of your business processes anywhere and at any time and they can easily be expanded to include other Microsoft solutions and apps that are on the 4PS white-list. As a result, data can be shared with other Microsoft Apps easily. This provides our customers with the opportunity and freedom to optimize and/or realize apps themselves. In addition, Microsoft Dynamics 365 Business Central has a safe and stable cloud-based database, the Common Data Service, providing a comprehensive management solution.

4PS Construct Dynamics 365 Business Central

In October, Microsoft made available the latest version of Dynamics 365 Business Central. The next few months, 4PS will focus on preparing the industry-specific solution 4PS Construct for this updated platform.

Web Client Dynamics 365 Business Central: What's new?

The release of Dynamics 365 Business Central also included an impressive facelift for the web client. Compared to the web client in Dynamics NAV2017, the new web client has also become much more user-friendly. The most important improvements are listed below:

Modern user experiences

The web client has been refurbished in order to meet modern day standards. The role center, list pages and card pages have all been fitted with a modern look.

Improved search function

The menu structure can be used for finding the usual actions such as pages and reports. The same now applies to the help information. For example, when a user is on the item card and wants to revalue, all he needs to do is type in "revalue" and the appropriate page will be displayed.

Improved productivity in lists

A field-based search was already available. Now, advanced filter options and limit totals such as the ones in the windows

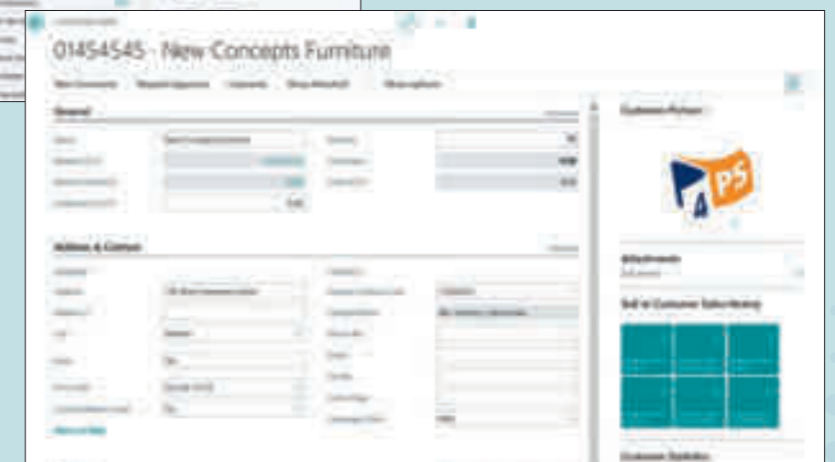
client have also been included in the web client. In addition, the copy-paste functionality has been improved. Users can now paste rows in Excel. After editing the information in Excel, it can be imported back into Business Central. Users can also apply the personalization of pages more flexibly. For example, the option of moving fields across tabs has been added to the web client. Finally, the "F8" function (copy the information above) has been reintroduced in the web client.

Intelligent Edge

As stated earlier, the October Business Central release will be available both on premise and in the cloud. If you are using on premise, you can still enjoy the advantages of working in the cloud with respect to the connection with other apps. This connection is established by means of the Intelligent Edge. This will safely synchronize your data on premise to the cloud and allows you to use Power BI, Power Apps, Flow and Artificial Intelligence to provide insights and useful messages that enhance the performance of your company.



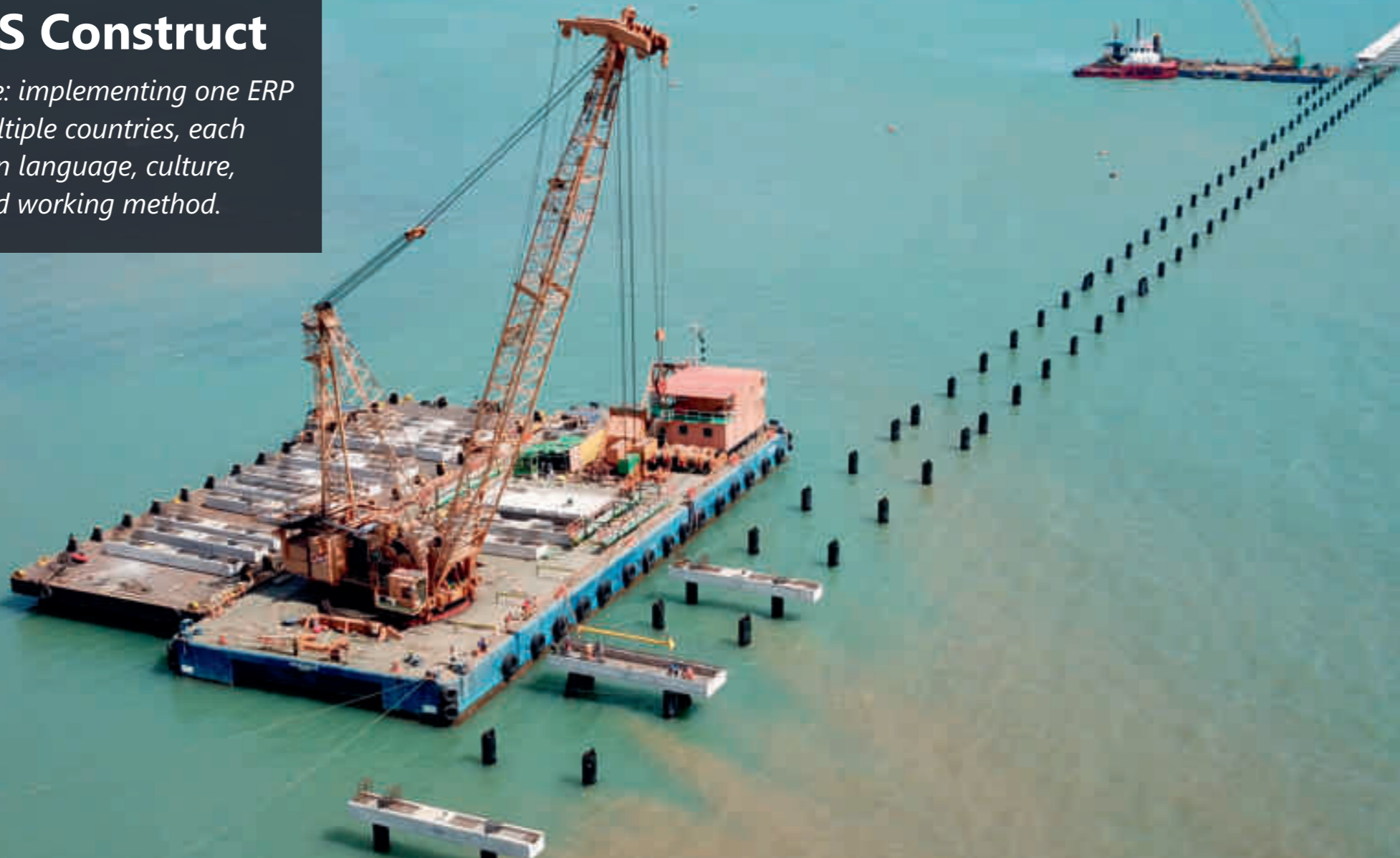
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Card page

BAM International and 4PS Construct

The challenge: implementing one ERP system in multiple countries, each with their own language, culture, time zone and working method.



The Tanjung Jati project in Indonesia: the first project in 4PS Construct since the 'Go Live'

The challenge: implementing one ERP system in multiple countries, each with their own language, culture, time zone and working method. Chief Information Officer, James van de Merbel, was faced with this challenge when he starting working for BAM International in 2013.

Every company that has ever implemented a new ERP system knows: it is the people that use it who ensure the system reaches its potential. Creating more insight, obtaining a better grasp on information and being able to make more informed decisions. Therefore, it is of crucial importance to involve these people in the process of change.

Explaining what the new ERP system can offer them, how to use it and continue to be persistent. This is not an easy task, especially when the people using the system are spread across multiple countries, each with their own language, culture, time zone and working method... Nevertheless, BAM International did it. And they did it successfully. Exactly as planned, the company started using 4PS Construct at the beginning of this year. James van de Merbel, who as CIO is in charge of strategic Information Management, and Mike Durenkamp, Lead Business Analyst within the information management team, tell us how they managed this.

sible. Together with Business Information Analyst, Mike Durenkamp, he sunk his teeth into this giant task, because commissioning a new computer system is far from easy nowadays.

Assessing the scope of the project first

James: "In the sixties, an ERP system was purely a financial system. These days, it is much more than that as it comprises almost all business processes. Putting such a system into use requires proper preparation, or it will fail. Initially, we at BAM International thought we would be able to put the new ERP system into use by the end of that same year. We soon realized that was not feasible, especially considering all the additional challenges involved with an international environment. With the help of an external party, Decla Consultancy, we were able to properly define the scope of the project. Where are we now and what do we want to achieve? What is our aim and how easily can we achieve this from where we are now? An ERP system such as this one has so much potential, but do we need to use all its functionality immediately? We decided to take it one step at a time."

"What do we want to achieve? What is our aim?"

"An important consideration was that we knew we had to get our people on board as well. Communication is a key factor during the course of a process such as this. At first, a new system can be very abstract, how do you explain its benefits to your people? You are asking for a change, a new way of working. Obviously, they want to know: What's in it for me? The change management associated with the successful implementation of a new ERP system is of crucial importance."

Not just a matter for the head office

With a team of 60 employees, James and Mike embarked on the adventure of mapping the supply chain processes (purchase, finance (including all project accounts), plant and commercial (project control)) of all areas (BAM International departments abroad). They used the AS IS & TO BE method. First, you define existing working methods (AS IS). Subsequently, you determine how you would like to/need to work, how software can help you achieve this and in which phases it is best implemented.

James: "Together with all areas we identified our working methods at the time. We took a photograph of our organization at that time, as it were, in order to determine how we could align all areas. For the new ERP system we would of course have to

A research station in Antarctica, the remarkable Museum of the Future in Dubai, a new terminal on the Julius Nyerere airport in Nairobi, Tanzania, enormous wharfs for freight ships and shipyards in Australia, Jordan, Cameroon, Malaysia, Sierra Leone and Panama, among others. BAM International, an operating company of the Royal BAM Group, has projects all over the world.

When James van de Merbel joined BAM International in 2013, the company was already aspiring to use one single ERP system internationally throughout the company. One system would provide real-time insight into the course of projects, would facilitate more efficient working methods and help forecast the course of projects. James gladly accepted the job of making sure the implementation of the system was as smooth as pos-

use one single working method. Mapping all these processes beforehand was a lot of work, but proved invaluable. This “photo-graph” helped us assess the size of the step to take in order to get where we want to be.”

Mike: “The cooperation with all areas played a huge role in this process. This whole process wasn’t just a matter for the head office. It couldn’t have been, not if you want all of them to start working with the new system. Their input was of great value. What were their suggestions for improvement and process optimization? We soon discovered how significant cultural differences can be. Whereas in some countries departments were very pro-active and started work straight away, others needed more guidance and coaching when they remained cautious and were reluctant to ask questions. It was important to make sure our questions were understood. For this reason, we moved some deadlines along the way, in order to ensure timely delivery.”

Well-informed decision to go for 4PS Construct
All in all, the process analysis took approximately a year and a half. At that point, it was time to make a decision on the ERP software package. At the beginning of 2016, BAM International signed the collaboration agreement with 4PS for the implementation of 4PS Construct. James: “We drew up a top 10 of issues we wanted solved and compared a number of options based on this list. 4PS Construct came out on top. For example, a flexible setup is important for us, since we deal with different legislation and payroll administration in various countries. For this reason, multi-currency is also a requirement for us. Not many systems can handle this, but 4PS provided us with a customized solution.”

Mike: “We also wanted everything to be available online at all times. A cloud solution. We do not have data connections everywhere, we cannot set up data centers everywhere and we use

satellite connections on a regular basis. The research center we are currently building in Antarctica, for example. In some cases, we may suddenly need to evacuate and leaving all project data behind is not an option. 4PS was able to provide all this, and on top of this offered good value for money. The thing that ultimately tipped the scale was 4PS’ experience in the construction industry. This experience helps them understand our processes better and facilitates cooperation.”

Taking it step by step

The 4PS international consultants and the BAM International team were now ready to prepare the software for roll out to all BAM international offices and project locations. James: “At BAM, we agreed that we would process existing projects just like we had done in the past. New projects now run via 4PS Construct. This was a conscious decision because of the international environment we are operating in. We are taking it step by step. In consultation with 4PS, a number of adjustments were made in the standard software. A prerequisite for our business and an enhancement of their standard product for 4PS.”

Real-time information

In June 2017, head office started using 4PS Construct and at the beginning of 2018, exactly according to schedule and within budget, all areas followed. We now have two projects in the system. A special startup team provides on-the-job training. Mike: “The biggest challenge was still to get and keep everyone motivated. You really need the commitment of local employees. We are now taking them by the hand and showing them how to use 4PS Construct in their daily activities. Showing them how it works and explaining the benefits for them. Merely using videos for his purpose is not enough. A video may be useful to fall back on, at best. We will continue to monitor the use of 4PS Construct in the areas. We need to keep reminding people of the impor-



Tatjung Jati project of BAM International in Indonesia



BAM International project group

tance of adhering to the processes and not reverting back to their old and familiar ways. Placing an order without a purchase order is a no-go, as the data in the system will be corrupted.”

James: “Proper use of the system is an absolute must, since it no longer constitutes IT alone. Managing information in a structured manner, which provides business intelligence, is the main focus. In the past, the management board was presented with a small Excel report, which in some cases may even have been slightly embellished by the people providing it. Now, everyone has access to real-time information in the system. This means more informed decisions can be made regarding projects. The circumstances surrounding projects are now clearly displayed in the system and accessible to all. There are much less surprises than there were before. Naturally, data quality in the underlying

systems, such as ERP, forms the basis of business intelligence. It is impossible to create proper dashboards and reports when the data is not organized.”

The ultimate dream

James: “Together we have demonstrated that, given the right preparation, implementing a new ERP system can go smoothly. We will now continue to monitor the proper use of the ERP system and implement improvements. It is great to see that people working with the system are now discovering the benefits it holds for them. We still have plenty of ambitions. We aim to link more and more processes together, such as CRM planning tools and HR data. Also, we would like to link project data. This will provide us with information management on a strategic level and give us the insight needed to make our processes as efficient as possible and help us compete.”

Mike: “I would like to think we are not far from applying the Internet of Things to our projects. This requires all data to be in order, but it will help improve production based on the information available. For example, information on how many hits it takes to put a pole into the ground, depending on the soil type, the type of pole and the vendor providing the pole. Or measuring concrete strength using sensors. This insight will provide super-efficient processes with respect to planning, purchase, plant and finance, but above all a better quality projects.”

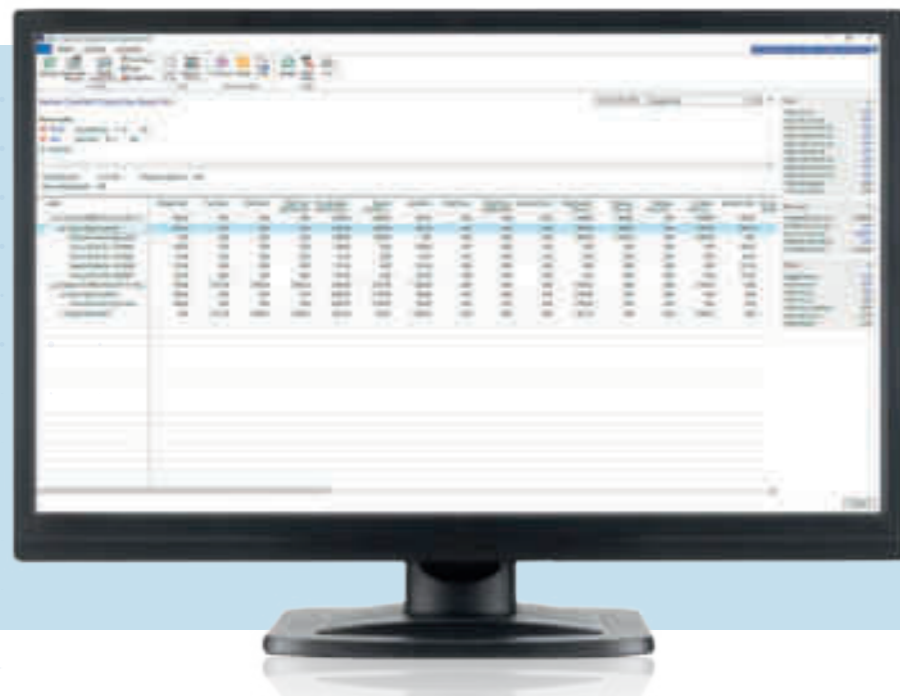
James: “Applied artificial intelligence is the ultimate dream. But taking these things step by step has proved to be most effective, so we will hold on to that method.”

Now, everyone has access to real-time information in the system. This means more informed decisions can be made regarding projects.

Expansions Contract Control and Forecast

in the 4PS Construct Service and Maintenance module

Last year, 4PS introduced the new contract control and forecast of the S&M module. As a result of a new tree view structure, these have become much more accessible. During the last few months, 4PS has further optimized the contract control and forecast.



Example of Contract Control with new columns and expanded fact boxes.

Expansion of levels and options in contract control

Users can now drill down to underlying entries on all levels of the contract structure. Additional filters make sure irrelevant information is filtered out, e.g. closed control periods and so-called "0-lines". Expansion of the fact boxes enables you to obtain more detailed information. Moreover, users can now drill down to cost type and cost object level information. As a result, all sorts of information can be accessed quickly. All hours spent on maintenance per service category, for instance.

In addition to existing result calculation methods based on costs, revenues and forecasts, columns were added that provide insight into estimated results. These are results that are already in place when embarking upon a new contract or contract year based on the contract control and instalments. The contract control is completed by the addition of columns for closed costs and revenues.

New forecast method

New options have also been added to the forecast. We are already familiar with the "recording expected hours and costs" forecast method. The system adds this forecast (recorded by the user) to the posted costs and open commitments (including surcharges) and offsets it against the budget. The forecast result is calculated based on this information.

Instead of "expected cost", you can now also record the forecast as a "deviation from budget". The idea is that you record the deviations from budget that are found during execution, apart from the hours and costs posted already. If necessary, you can include explanatory comments. The forecast can also be recorded in a more detailed way, even on cost type level and cost object level.

New functionality in the contract forecast

Forecasts can now easily be copied to a next date and can be "frozen" in order to ensure users cannot inadvertently make changes to reported periods.

Project Capacity Requirement Planning

Many companies are looking for an answer to the question: "Will our current staff be sufficient to cover the expected workload for the coming period? Does supply meet demand? Where are the peaks and troughs with respect to staffing? In which cases are we off balance? When do we have staff to spare and when do we need to hire external staff? ..." or: "Which jobs can be rescheduled?"

Development project with customers

Together with a number of customers, 4PS started a development project in order to make sure this planning element runs centrally via 4PS Construct. The purpose of this new functionality is gaining overall insight into the capacity required, presented in time (workload) offset against available capacity. First and foremost, it is a long-term capacity planning. This distinguishes this planning from the Graphical Work Order Planning (GWP) and the Graphical Resource Planning (GRP). The latter are mainly intended for scheduling resources for short-cycle jobs and dispatching to the field service.

Record project request

At the start or even before the start of a project, users can record the estimated capacity requirements on discipline level. In most cases, this translates into the number of hours required per week. The system will immediately record this in the overall capacity requirement across all projects. As insight into the project increases, users can further specify the capacity requirements.

Graphical view

The bar chart in the example below depicts the total capacity requirement, tailored to the user, filtered based on cost center, region, discipline, status etc. The capacity requirement from service and maintenance can also be displayed in this overview. The system offsets this against the available capacity in the graphical cart, taking into consideration (company) working hours, part-time work, illness, leave etc. The result of this is a line depicting the overcapacity and undercapacity in time. This provides users with an overview of capacity peaks and troughs at a glance.

Schedule employees

Another important function of the project capacity requirement planning is the possibility of scheduling employees for projects, without having to use resources and/or work orders.



Example bar chart workload versus occupation

Our new software solution 4PS Control

helps you keep your information flows transparent and manageable

An increasing number of companies are part of a dynamic chain and/or partnership in order to tackle (community) projects together. In cases where various interests are involved, proper cooperation in a chain is a must. But how do you keep the information flows coming from all parties transparent and manageable?

Our new product 4PS Control will help you achieve this. 4PS Control aims to make information, documentation and functionality from 4PS Construct accessible to your customers, subcontractors or (supply chain) partners, in an organized and manageable way. One portal that can easily be set up for individual customers and user groups and can be modified to suit the needs and requirements of that customer and/or user group. In this way, they will only be presented with information that is relevant for them.

4PS Control enables you to share information such as service calls, service orders, service location, contracts, objects, documents and/or projects from 4PS Construct with your customers in a user-friendly way. In addition, this platform allows you to create a call or show Power BI reports and statistics from your (performance) contract or SLA.



More than service alone

4PS Control replaces the current 4PS Service Portal and Subcontractor Portal. The functionality of these portals will be incorporated in 4PS Control. In the new architecture, these functions will be more effective. Furthermore, 4PS Control is more than service alone. For example, it enables you to share documents and project-related information with your customer.

What makes 4PS Control stand out from other 4PS products and the Service portal and Subcontractor portal in particular, is the fact that it is based on a SaaS solution (Software as a Service). This means that 4PS will take care of the installation, updates, compatibility and management of 4PS Control. There is always just one version of the software, which ensures you will have the latest version at all times.

How does it work?

4PS Control uses functional "cues" to make information from 4PS Construct accessible. For each cue, you can decide which view is available for certain users or user groups and suits the needs and requirements of the customer or partner you are working with. There are four types of cues that can be added to the portal.

Information cue

An "Information" cue provides the user with information (data from 4PS Construct). An overview of service orders or service contracts, for example. When you select the "service calls" information cue, a list of all calls from the company is displayed. Or all calls belonging to a specific service location. Drilling down on a specific call will prompt a detailed overview in which you decide which information regarding the call you want to be displayed. It only takes two clicks to access detailed call information.

The service call overview can be displayed in the form of a list, miniature view or -if latitude and longitude are known-, on a map (2D/3D/satellite). This is particularly convenient for the Civil Engineering/Infrastructure industry which deal with objects that are not linked to a particular address, such as lampposts and traffic lights.

Functionality cue

A "Functionality" cue helps you send data from 4PS Control to 4PS Construct. For example, creating a malfunction call based on a web form in Control designed by you.

Clicking this cue will prompt the page where end users can record the necessary information relating to the call or malfunction such as a description, the object number, priority, location, the person creating the call etc. In addition, an attachment can be included, such as a photograph of the object in question or the environment that may be relevant to the malfunction.

Documents cue

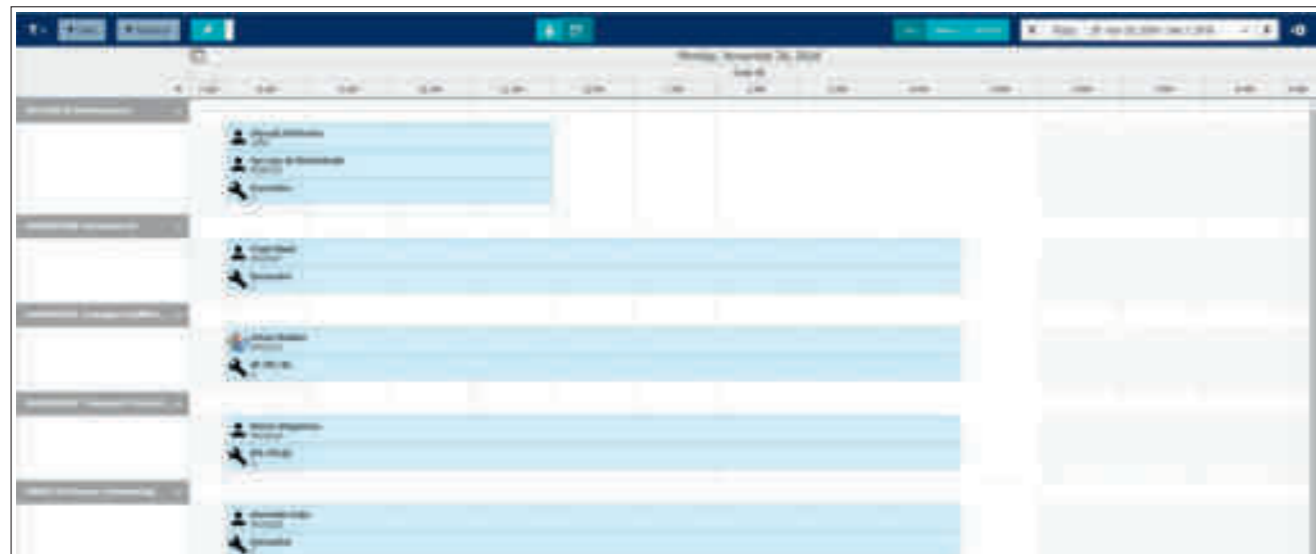
This cue can be used to list documents. A condition assessment (report) for a location, an inspection report for an object or purchase orders for a contract or project, for example. These documents can be grouped based on service location and/or document type.

Statistics/KPI cue

The "Statistics" cue enables you to display the entire content of a Power BI report or Power BI dashboard. Just like in Power BI itself, users can obtain detailed information by a simple click of the mouse. This detailed information may include the results of object condition assessments, satisfaction, follow-up time, resolution time etc. The statistics cue works on the basis of Microsoft Power BI.

4PS Graphical Resource Planning: update on new developments

The Graphical Resource Planning (GRP) allows you to simply schedule plant items, people and/or crews for the short (daily schedule) and medium-term. Initially, this planning tool was created specifically for civil engineering companies for the purpose of requesting resources. By now, we have further developed the GRP so that it is now also suitable for the construction and installation industry.



New developments

Recently, a number of developments were delivered and will be made available in the new release. These include the following developments:

“Unavailable” plant

Currently, the GRP allows employees to be registered as being “unavailable” in the case of illness or holiday. This new development enables planners to register plant items as being “unavailable” as well. For example, plant items that are being serviced or repaired.

GRP views

In the GRP the planning screen was in essence displayed in accordance with a default view showing employees, subcontractors, plant items and resource groups. As a result of the new development, planners can choose how and where they want resources to be displayed. For this purpose, we provide a number of default views, but personal views can be created as well.

Using multiple screens

When using the web client, the GRP can be applied to multiple screens which subsequently allows for integral cooperation. The work orders created can be dragged across various different browsers/screens. This enables planners to apply scheduled and unscheduled work on multiple screens, which allows for more efficient planning.

GRP and the Civil Construction App

Resource request work orders can be sent to the field service (4PS Civil Construction App). The status of these work orders is presented by means of different colors.

Development 4PS Warehouse App

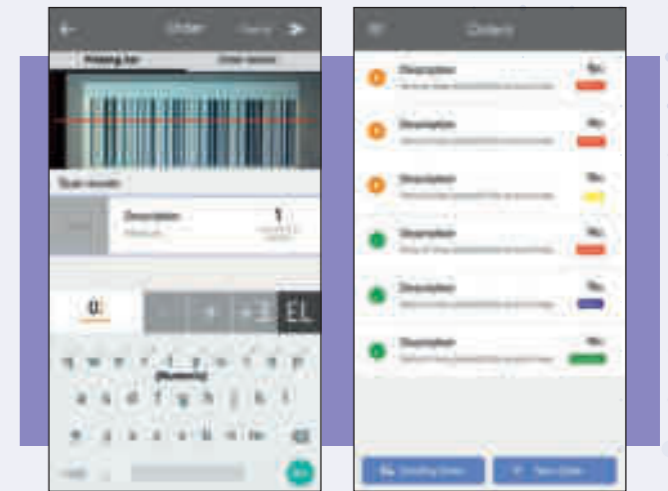
We are currently working on the development of the 4PS Warehouse App which enables warehouse managers to easily scan items for various purposes. These wireframes provide you with an impression of the look and feel of the application.

Delivery | For delivery, items are released to a project or a service order. The realization of a project/assignment for a service order requires items. These items are supplied from the warehouse and are provided by the warehouse manager.

Return | Items that are left over and are no longer used for the project or service can be returned. The warehouse employee scans the items in order for them to be returned to stock.

Inventory | During the inventory process, the number of items actually on stock is recorded. This process helps determine actual inventory and whether the numbers are in line with those in the system.

Transfer | Items can be transferred from location A to location B as well. This process can be applied when certain items are available at location A, but no longer in stock at location B. These items can be mutually exchanged and processed.



Scan screen

Order overview

Purchase Proposal | A purchase proposal is used when there are no or too few items available on the location in question. These items must be purchased in order to provide projects, service orders or customers with the necessary materials.

Sales | In addition, items can be sold to customers directly from the warehouse. In this case, customers collect these items from the counter in the warehouse. The supply of these items can be processed by means of a sales order and sales invoice.

Sales Return | If the customer has received items they do not require, or has received the wrong items, these can be returned. The return of these items is processed in 4PS Construct by way of a return order and a credit memo.

Update: 4PS Field Service App

An increasing number of companies in the construction, civil engineering and installation sector are using the 4PS Field Service App. Please find an update on some of the realized and scheduled developments below.

Security

From a security point of view it may be useful to ensure the application can only be used on devices known to the management organization. The 4PS Field Service App is now equipped with this option: 4PS Construct registers the device when the app is first used. In this way, the management organization can be sure the app is used only on the device managed by the company, rather than on a personal appliance.

Incremental basic data retrieval and pushing basic data

When a large quantity of basic data is used (e.g. items), which is subject to change, it is preferable that only these modifications are sent to the Field Service App. This has now been achieved. Furthermore, we are able to initiate this process from the back-office.

Generic user management

Generic user management where all users are managed in one location will be introduced for all apps. In the future, users can be divided into groups and their corresponding permissions. This will result more straightforward and uniform user management.



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