# Whitepaper
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CHANGE IS THE NEW NORMAL

# How do you manage your knowledge assets?

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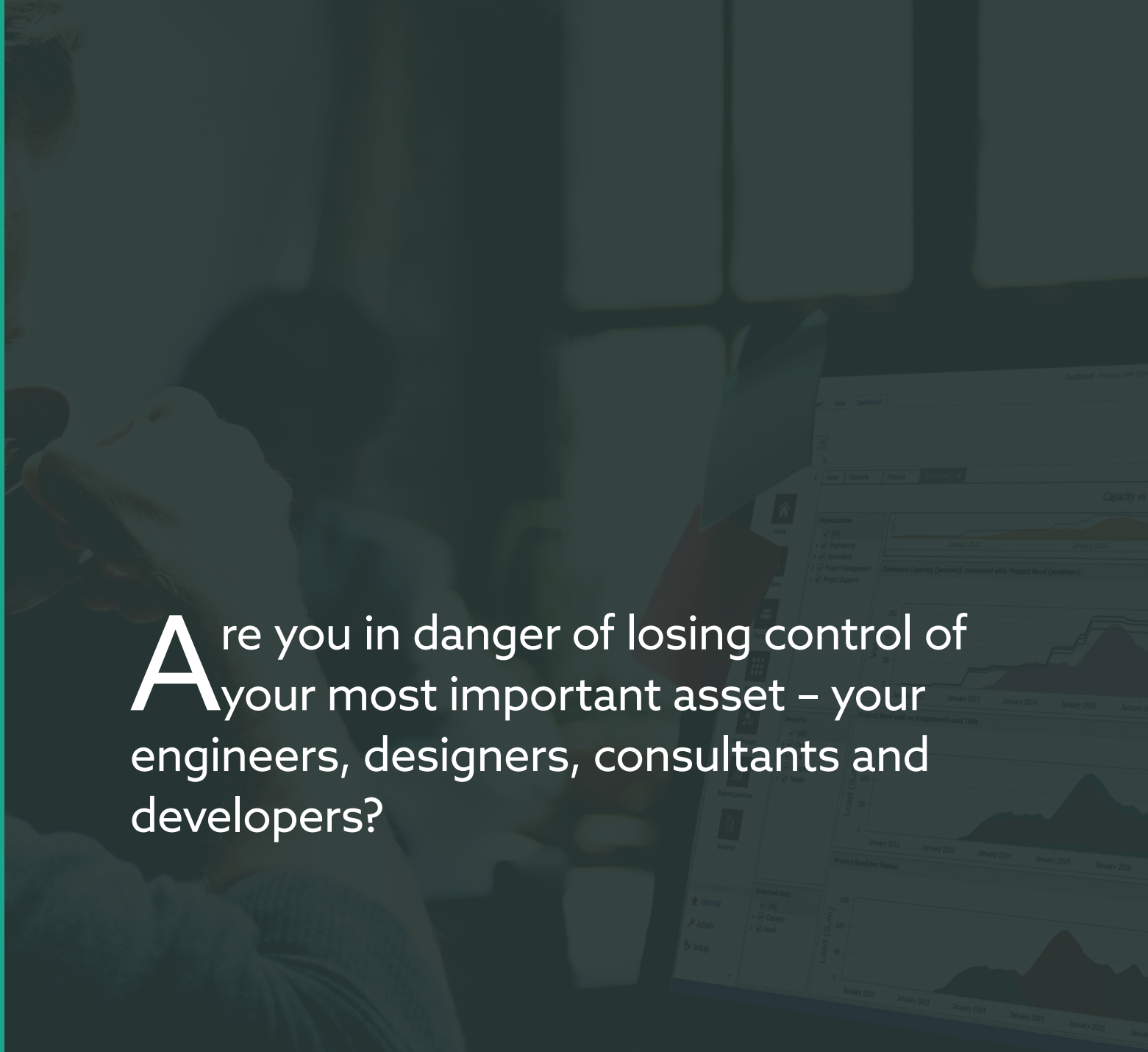

# Are you in danger of losing control of your most important asset – your engineers, designers, consultants and developers?


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CHANGE IS THE NEW NORMAL

# How do you manage your knowledge assets?

During cycles of rapid economic change, engineering companies face higher risks than many other types of firms. Factory inventory can be stored. Machines can be put on hold. Equipment can be stacked. But you cannot stack your knowledge workers in a warehouse and hope you have the right people at hand when you need them.

Businesses that provide knowledge-intensive professional services, such as engineering and design work, must ensure that their personnel is always being used as efficiently as possible. Being able to predict not only how many but also what kinds of knowledge workers you will need during any given business cycle is crucial to the survival and growth of an engineering firm. Being able to react appropriately and efficiently to rapid changes in customer demand requires transparency and control to maintain your profit margins.

Despite rapid advances in technology-aided design, many studies have shown that productivity rates for engineers have significantly decreased during the past two decades. As just one example, Statoil ran an internal study and learned that brownfield projects had undergone a 100% increase in engineering man-hours per ton from 1993 to 2011 and that greenfield projects had experienced an increase of 20-50% in engineering man-hours per barrel of oil from 2003 to 2013.

Declining productivity figures combined with volatile customer demand can create a devastating situation for Engineering, Procurement and Construction (EPC) companies looking to maintain and grow their margins and market share.

References

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# Is it possible to balance control and availability of knowledge assets against major fluctuations in customer need?

During the past 24 months, Promineo executives have met and interviewed Senior Level Management at 44 EPC companies spread across the globe.

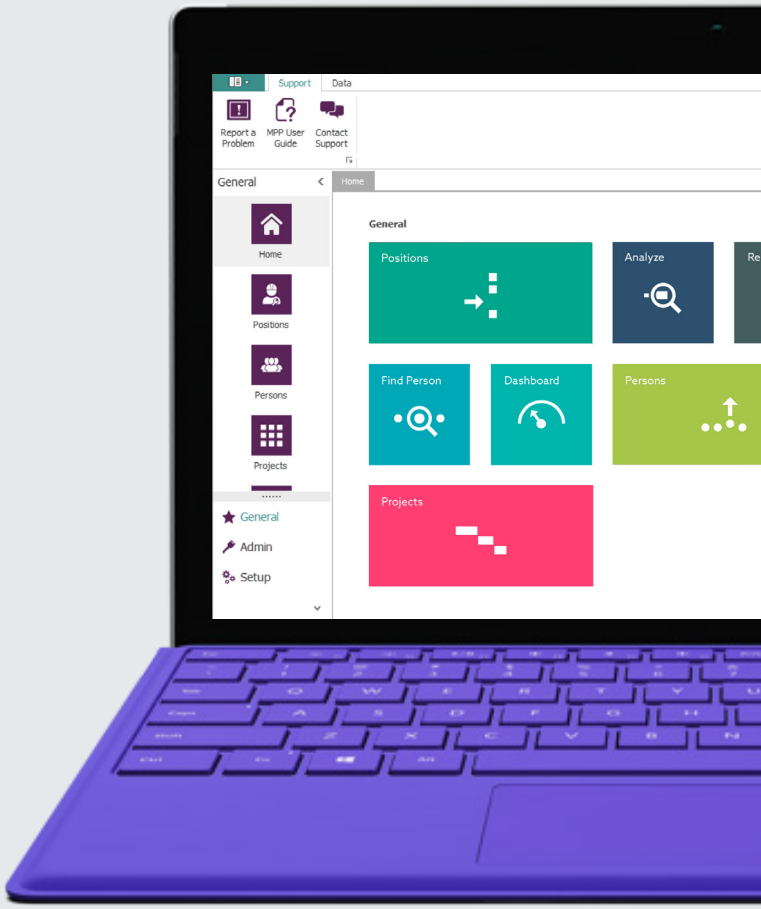
These firms ranged in size from 300 to over 6,500 employees. We were interested to see how different firms are addressing this "knowledge asset risk and control" function in today's macro-economic environment.

Unsurprisingly, all 44 companies have developed processes to make sure the hiring and deployment of personnel is "demand-driven" according to their customers' needs. But, beyond simple headcount, control functions began to show cracks.
A majority of the companies we interviewed cited problems such as "inability to monitor and adjust the mix of senior and junior engineers on the ground" and "a lack of transparency that could allow our engineers to work across multiple projects".

"We overhired and overspent on personnel. Now we have to figure out which knowledge assets we wish to keep and who needs to go. Finding the right strategy is crucial for us."

TRANSPARENCY AND FLEXIBILITY ISSUES WITH THEIR CURRENT CONTROL SYSTEMS LED MORE THAN ONE COMPANY TO REPORT OVERHIRING PROBLEMS

# Does software selection matter?




Personnel and project management requires tools. We found that of the companies interviewed, 68% currently used traditional spreadsheets (specifically Excel), 20% had invested in internally designed software systems and 12% used a Commercial Off-The-Shelf (COTS) product for managing their workforce.

When we discussed what worked and what did not, it became apparent that a lack of information or low-quality information were directly related to the tools that were being used. A few interviewees claimed that inadequate software was the key cause for losing control of their personnel resources.

# Experiences with **Excel**

Most companies initially turn to Excel and use traditional spreadsheets to manage their personnel resources. A simple solution like this can work very well for a small company. But, as the firm grows, the amount of data and the number of people using the management tool often increases exponentially in both size and complexity.

At this point, Excel users find their workflows impractical because of Excel's limitations as a true database and a collaborative multi-user tool.

"Essentially we are working with old data every time we make a personnel decision. Frankly, we are not even sure how accurate the data is."

"We have built these spreadsheets over so many times – I suspect most people just cut and paste the same information over and over again. It is hard to base future scenario planning on the numbers we have. But Excel is what we have to work with now."

QUOTE FROM COMPANIES' EXPERIENCES WITH EXCEL

# Experiences with **Internally Developed Systems**

Developing a management tool internally can be a great way to get exactly the information your stakeholders need to see to run the business profitably. Such a system can be a perfect match for the processes, workflows and IT infrastructure being used at the time of design and development. However, a typical characteristic of internally developed systems is that they are considered complete once the software is released. Additional development is only undertaken when it is absolutely necessary for the software to remain operational, for example due to a new version of an operating system or some other change in the IT environment. Consequently, internally developed tools never get the benefit of continuous, proactive improvement.

"Our system was custom-built for our workflow and it worked great for us in the past. What we are facing now is a need for more flexibility and even more accuracy with the numbers, so we are going to have to invest in a big overhaul to bring it up to date so that we can manage our human capital risks effectively"

QUOTE FROM COMPANIES' EXPERIENCES WITH INTERNALLY DEVELOPED SYSTEMS

# Experiences with **Commercial Off-The-Shelf Systems**

The engineering firms that had moved beyond Excel and internally developed systems had deployed Commercial Off-The-Shelf Systems (COTS) that are specifically developed to control the need and availability of their knowledge assets.

We found several engineering firms that have begun to look toward the COTS marketplace to make that radical leap towards a balanced control of their knowledge assets.

"The whole organization accepts that the information in the COTS tool is accurate and correct. All staffing decisions are made based on this information, and it has been a great help for us during these times of change."

QUOTE FROM COMPANIES' EXPERIENCES WITH COTS

# Why Change to COTS?

As every manager knows, any system is only as good as the information that comes out of it. In fact, all 39 interviewed companies that were not using a COTS identified "a lack of verifiable data quality throughout the organization" as a critical risk in managing their knowledge assets Most companies also reported that they were unable to use the information stored in their current solutions as a "foundation for making strategic right-sizing decisions".

There are many factors that can affect the accuracy and functionality of a personnel management system.

"We have begun to use our manpower utilization and planning metrics in our business unit scoreboards. It has been tremendously helpful in making sure we are receiving the full value of the investment we have made in our knowledge workers."

ONCE SENIOR MANAGEMENT COMMITS TO THIS LEVEL OF KNOWLEDGE ASSET CONTROL, THE METRICS AND ACCOUNTABILITY CAN BECOME POWERFUL MANAGEMENT TOOLS.

# Benefits of COTS
# **Timely metrics and accountability**

One fundamental challenge for controlling personnel needs and availability is that EVERY solution requires accurate information entered in a timely manner by a large number of people, all with different managers and daily priorities. Also, the usability of the solution may be a deterring factor. If a program is difficult to use, no one will use it. As a result, lack data that you can count on to make the right business decisions.

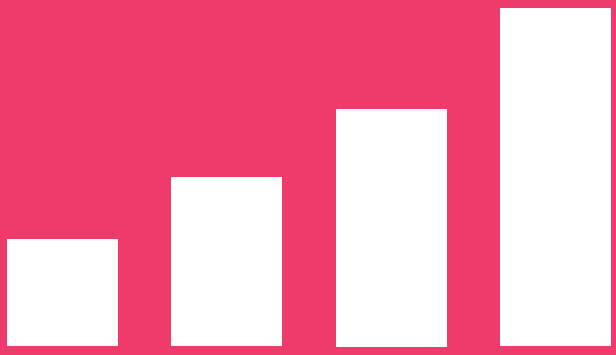
COTS developers have been working on these problems for over 10 years. Today, you can find systems that are designed to work intuitively with engineering workflows and projects.

Once senior management commits to this level of knowledge asset control, the metrics and accountability can become powerful management tools.

# Benefits of COTS
# **Avoiding (potentially incorrect) duplication of master data**

You can now also find off-the-shelf software that can utilize master data where it exists. For example, the data required to define personnel availability is typically kept and maintained within an existing HR system in the form of a personnel register.

Most medium-size and large companies maintain data hubs for publishing master data from a single source to other systems.



# Benefits of COTS
# **Including the sales pipeline for long-term planning**

Business Acquisitions must be a part of manpower planning to achieve success. If an organization is unable to see how a specific business outlook affects the organization, it is impossible to really plan manpower.

A service company must understand how future projects fits in with the current project portfolio, down to the kind of engineers required. What-if scenarios and analyses are required to understand the business impact of future work.

# Benefits of COTS
# **Reliable forecasting**

Accurate forecasting provides the kind of information managers need to make sound decisions. It can help them ensure that they have the right number and types of people in the right places at the right times, doing things that bring value to both the organization and the employees.

# Summary

When a service provider that is dependent on knowledge workers meets rapid change in demand, the control of personnel need versus availability is at risk. Loss of such control leads to reduced productivity and decreased profit margins. Companies investing in solutions for managing knowledge assets will outcompete their rivals during times of change. Rapid change is increasingly becoming a constant in most businesses. A service provider's success or failure depends on the ability to control knowledge asset demand versus availability. This paper verifies that Commercial Off-The-Shelf (COTS) solutions provide the highest business value for the management and control over knowledge assets.

# About the Author

**Leif Arild Åsheim is the CEO of Promineo, an international provider of software for Project Management and Resource Planning.**

Leif Arild Åsheim has accumulated international experience from large capital investment projects and held senior management positions within professional service and software companies for the past 20 years.