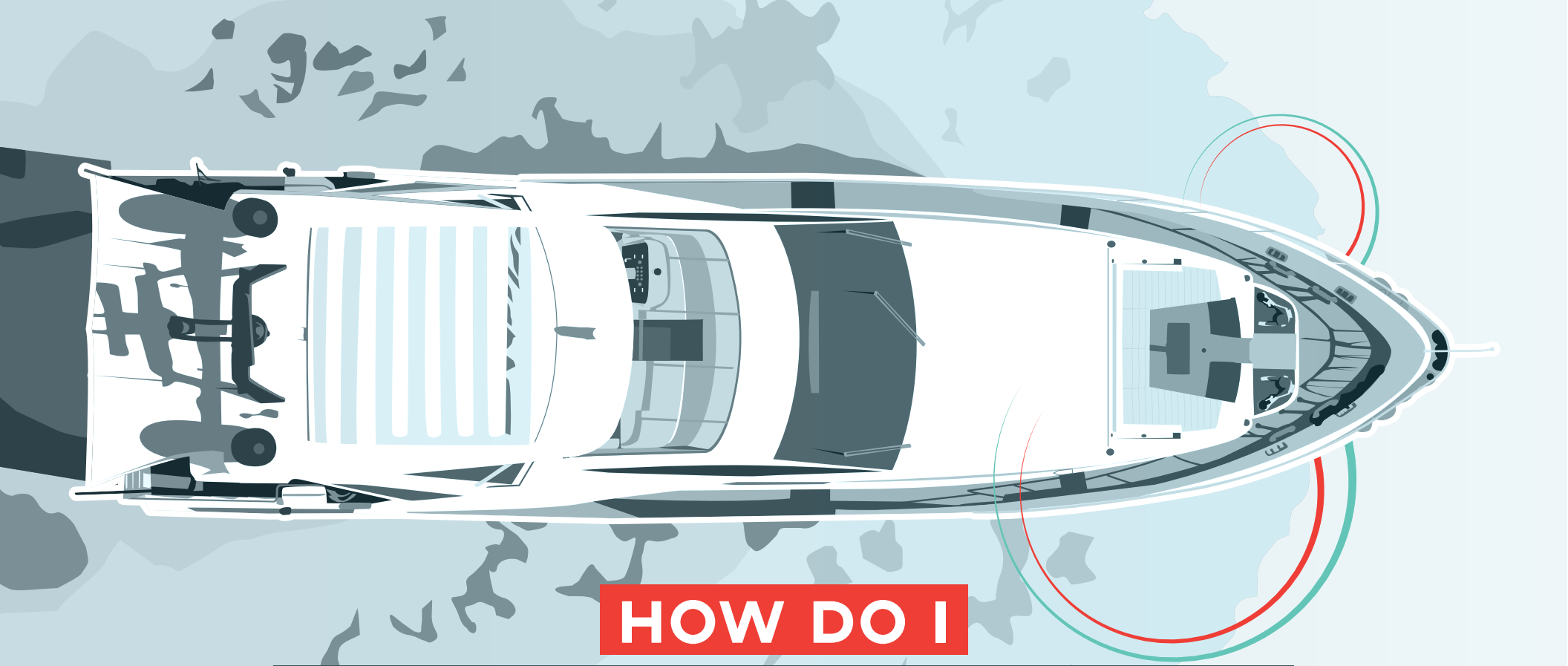

HOW DO I JUSTIFY A DIGITAL TRANSFORMATION?

BUILDING A BUSINESS CASE FOR CLOUD-BASED SAAS SOLUTIONS

A MARINE INDUSTRY GUIDE

Introduction

Shipbuilding has never been a simple undertaking, and that's true now more than ever. Requirements in the industry are growing more complex, new technologies are being introduced, and external partners are increasing in number, making it even more challenging to deliver projects on time and on budget. At the same time, doing so has never been more important. Today's shipbuilders must satisfy quality requirements, meet industry standards, and hit deadlines to remain competitive and navigate a volatile global economy. Those with inefficient communication or data-sharing practices put deadlines at risk and increase the likelihood of delivery delays and associated penalties.

Traditional design and data management approaches do not provide the efficiency or traceability shipbuilders need to manage complexity and mitigate risk in today's environment. These methods, which often rely on disconnected documents, spreadsheets, and emails, can make it difficult for stakeholders at every stage of the ship lifecycle to find, update, and share information. Stakeholders may then act on outdated or inaccurate data, increasing the likelihood of errors that affect everything from design to manufacturing. These errors lead to delays, quality issues, and lower margins, which can put entire organizations at risk.

In contrast to traditional tools, product lifecycle management (PLM) solutions provide shipbuilders with a centralized, connected, easy-to-access design and data management system that maintains a single source of truth across the ship lifecycle. This allows shipbuilders to manage critical changes more efficiently and ensure that stakeholders throughout the supply chain can collaborate more easily. As a result, shipbuilders can keep quality high while shortening design and development cycles and reducing costs. Such advantages can be the difference between success and failure in today's ultra-competitive, increasingly complex, and ever-evolving shipbuilding industry.

This eBook is one of a series focusing on the challenges facing shipbuilding companies and how PLM solutions can address them.

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HOW DO I

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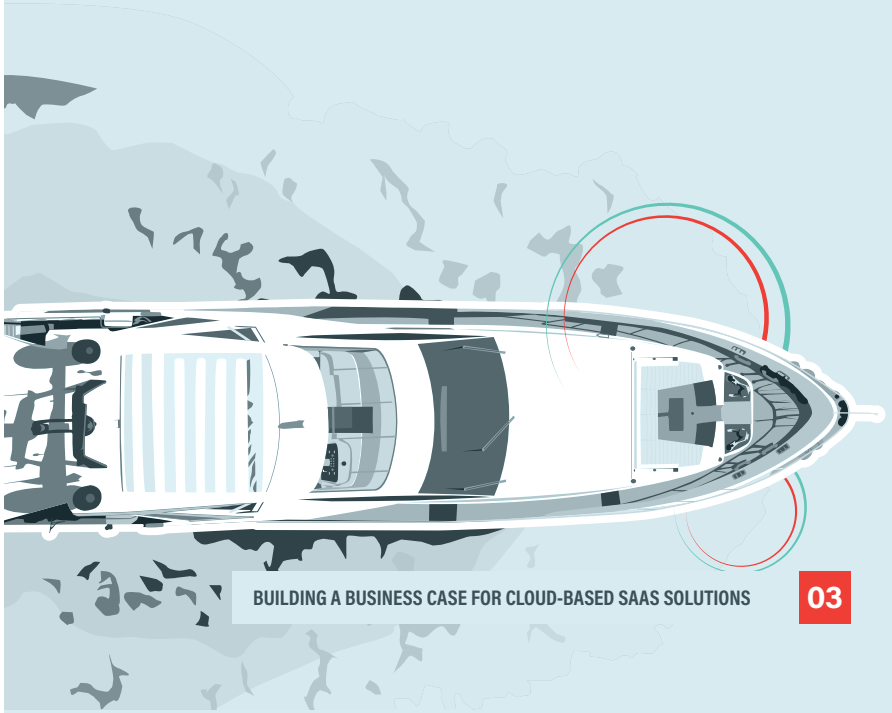


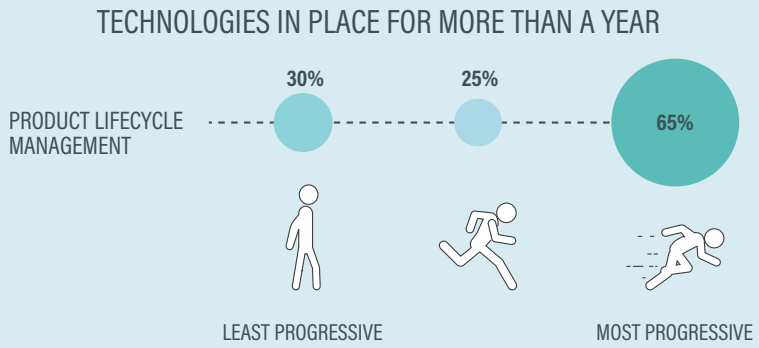
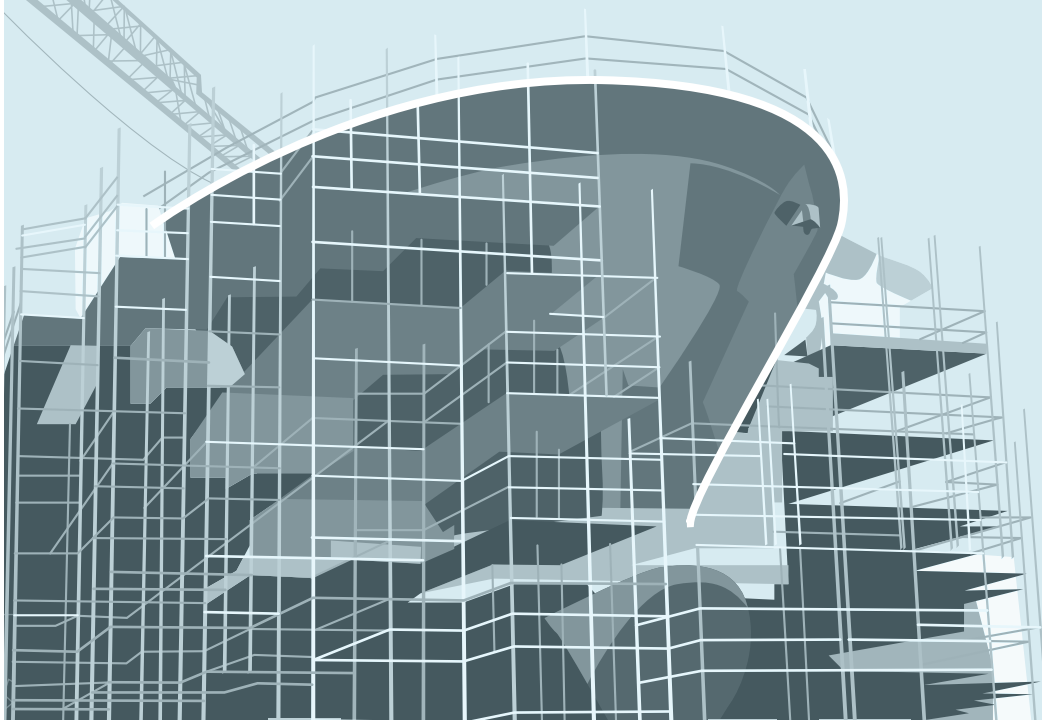


Figure 1
Some 65% of the most progressive companies have had PLM in place for more than a year to support their digital transformation (DX) initiatives.



Overview

Shipbuilding companies are adopting solutions to support the digital transformation (DX) initiatives that improve their processes and make them more competitive. This trend is particularly evident in product development, where many of these companies are turning to product lifecycle management (PLM). PLM enables companies to manage processes and information across the product lifecycle.

Adopting a PLM solution opens many avenues to value. Such solutions enable shipbuilding companies to efficiently:

- manage product design data and bills of materials (BOM);
- keep data up to date;
- implement change management;
- accelerate design release;
- enable collaboration across engineering disciplines; and
- facilitate efficient communication with external stakeholders including partners, suppliers, consultants, and more.

The increased availability of cloud-based software-as-a-service (SaaS) PLM solutions is also driving shipbuilding companies that have already adopted PLM to invest in upgrading or switching solutions.

However, it can be difficult for decision-makers to fully understand the benefits of a cloud-based SaaS PLM. This eBook demystifies cloud-based SaaS PLM, showcases its advantages, and answers questions managers often have.

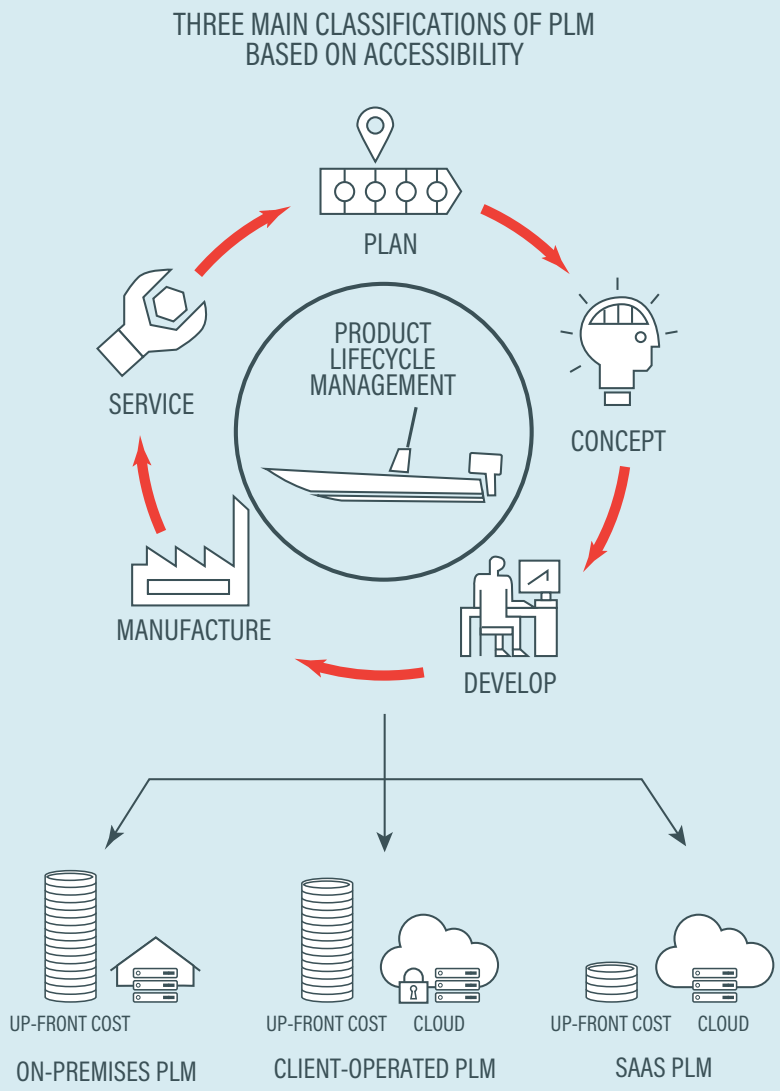
Accessibility of PLM Solutions

To identify the best PLM option, it's helpful to get acquainted with the different types of solutions available today. PLM solutions are classified as on-premises, cloud, or SaaS, based on their accessibility.

The accessibility of a given PLM solution determines its suitability for an operation. In an on-premises model, the customer installs, operates, and manages the solution on systems located right inside the premises. In the case of a client-operated cloud model, the customer installs, operates, and manages the PLM solution, but the data center is operated by a cloud provider. The third option is a SaaS PLM solution, where the solution provider installs, maintains, and updates the PLM solution on cloud data centers. This means the customer has no responsibility to install, manage, and update the PLM solution. They only deal with the PLM service provider, who acts as a single point of contact for all issues concerning the customer's PLM needs.

Of these three classifications, the on-premises model has been the most popular with customers. But many shipbuilders are seriously considering SaaS PLM due to its inherent cost benefits. SaaS PLM is growing in popularity because companies that opt for this PLM model typically only pay an annual fee. This results in a lower up-front startup cost compared to on-premises and client-operated cloud models.

Figure 2
The three main classifications of PLM based on their accessibility.



Understand Investment Implications

Costs are one of the biggest decision drivers for manufacturers. Managers evaluating PLM solutions need to understand the financial implications of each model. SaaS PLM solutions are available on monthly or annual subscriptions. Companies using on-premises and client-operated cloud models, on the other hand, must make an upfront purchase of a perpetual license to use the PLM solution.

In a SaaS PLM model, the up-front investment is far lower because a company is only paying for the initial time—usually one year, but sometimes one month. The up-front cost is lower compared to solutions with perpetual licenses, but the annual cost is higher. Companies using on-premises and client-operated cloud models incur a significantly higher initial cost when they purchase the PLM license. They also pay an annual maintenance fee, which provides access to the latest release of the PLM solution and technical support. The maintenance fee is included in the SaaS model, but is a separate cost in the on-premises and client-operated cloud models.

For many companies, the SaaS subscription model is a better option due to lower up-front costs. The SaaS model also offers greater flexibility, as it does not require a long-term commitment to a PLM solution. For example, manufacturers are often unsure whether they will use all the advanced functionalities in a PLM solution, but they can't completely rule them out before they've tried them. SaaS PLM solutions allow companies to access these modules without making a long-term commitment.

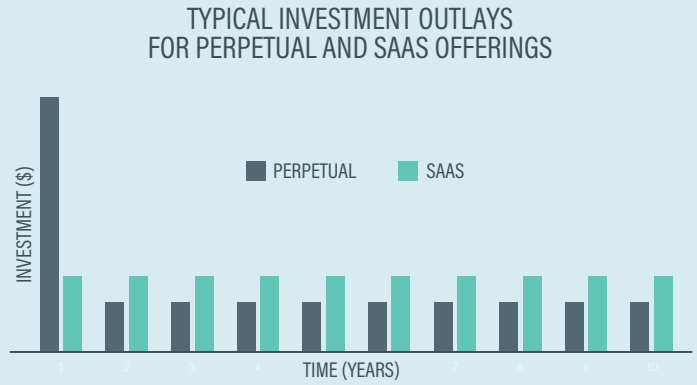


Figure 3
A perpetual on-premises or cloud-operated payment and usage model carries a high initial cost, but the annual costs are lower than those of the SaaS model for the same solution.

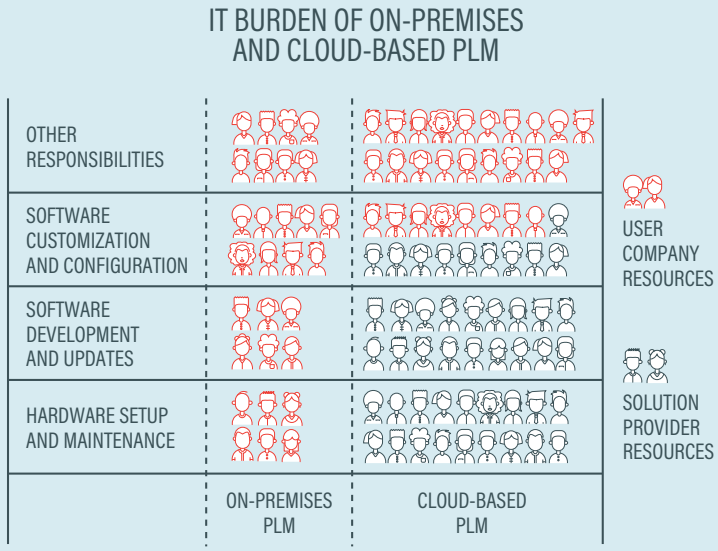


Figure 4
This shows that using a cloud-based solution allows companies to shift their IT resources to other responsibilities while relying on solution providers for resources and expertise.

Shift the IT Burden

Initial investments are not the only costs that shipbuilding companies need to be aware of. These companies must also consider IT costs. Ensuring that a PLM solution functions properly can be capital-intensive, especially without dedicated IT staff. However, companies can reduce these costs by eliminating the burden around managing the hardware infrastructure, deployment, software updates, data integrity, and data security. This section will discuss how to shift the IT burden.

A SaaS PLM solution provider manages the hardware, solution tuning, and networking infrastructure. Customers, as a result, do not have to devote precious resources to managing those functions. The solution provider is also responsible for developing solutions to any issues that arise and keeping the software up to date. And thanks to instantaneous deployment, customers can use the SaaS PLM solution from day one.

On the other hand, when using on-premises or client-operated cloud PLM solutions, companies have to account for the time it takes to deploy the solution once it is acquired. In these situations, the customer's IT staff must manage important PLM operational tasks on their own. These responsibilities can quickly overload IT teams, who may not have set up the PLM for optimal performance in the first place. Based on IT resources, initial deployment time can stretch over many days, if not weeks. As a result, customers often do not immediately benefit from an on-premises or client-operated PLM solution.

Start Small, Scale Smart

The SaaS PLM solution offers more advantages than on-premises or client-operated cloud alternatives. The chief advantage is flexibility. Shipbuilding companies have the flexibility to try out features without having to commit to a perpetual license. These companies are also able to easily add and remove users and can test out new PLM functionalities with ease.

Product development teams are constantly expanding and shrinking. SaaS PLM models allow shipbuilders the flexibility to account for this. If a company needs to expand the team temporarily—adding contractors, consultants, or suppliers—these companies can add more users without any permanent commitment. Once the need is fulfilled, the customer can easily remove the users and only pay for active users. With perpetually licensed PLM solutions, companies have to pay the large, up-front cost for each license. This means that temporary expansion or removal of users is not a cost-effective option.

SaaS PLM solutions offer flexibility in other areas, as well. When companies are looking at PLM solutions, they are often unsure what modules and capabilities they need. Shipbuilders have to experiment to find out their needs. This involves many days of trying out add-on capabilities, which adds costs and wastes time. With SaaS PLM, teams are able to add on functionalities for short periods of time and only pay for the extra capability when it is being used. This flexibility means that companies can start small, accessing and paying for only the capabilities that they truly need. This avoids large up-front costs for functionality that may never be used.

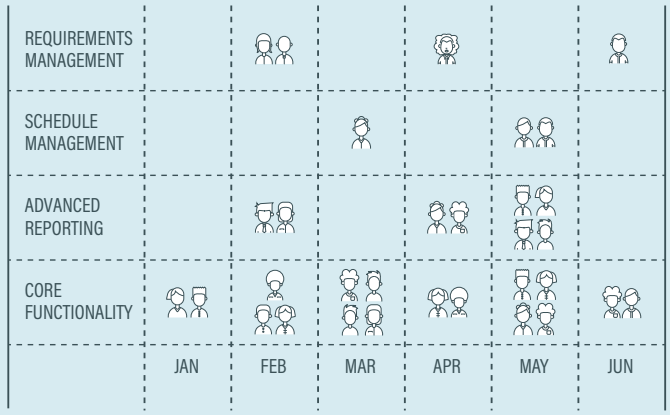


Figure 5
This figure shows usage going up and down in several areas, including advanced functionality.

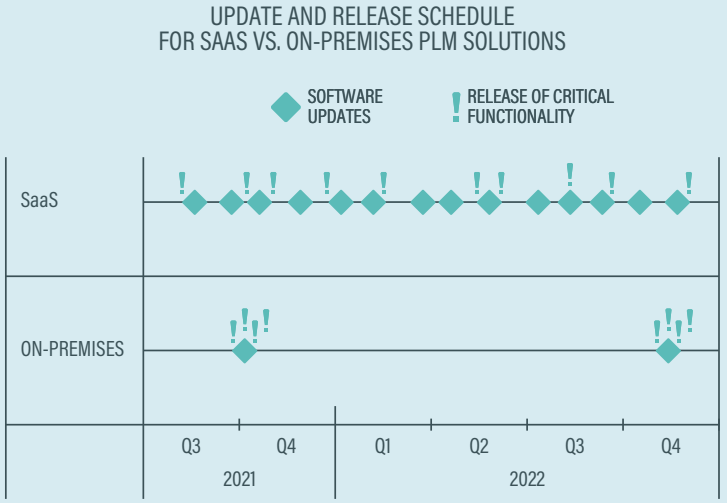


Figure 6
Cloud-based SaaS solutions receive frequent software updates, so they always have the latest critical functionality.

Stay Up to Date

PLM solution providers update their software regularly. The latest software releases often contain new capabilities and productivity-enhancing features. These features help users better manage products throughout their lifecycle. But there are differences in how PLM solutions help shipbuilding companies stay up to date.

When companies use on-premises or client-operated cloud PLM solutions, they only receive software updates from their PLM solution provider once or twice a year. Updating software is a time-consuming process. Once an update becomes available, it can take IT teams several weeks to roll out the update internally. These updates are installed during downtime in development. Migrating existing data from the old version to the newer one is not a trivial task, and requires significant time and effort.

Unlike on-premises and client-operated cloud models, SaaS PLM solutions are updated as often as every two weeks. Better yet, all updates are automatically performed by the PLM solution provider. There is little to no effort on the part of the company's IT team or the product development team. Teams do not have to worry about data migration, as no migration of legacy data is needed. This is good news for shipbuilding companies, who can access new, innovative, and productivity-related PLM functionalities as soon as possible.

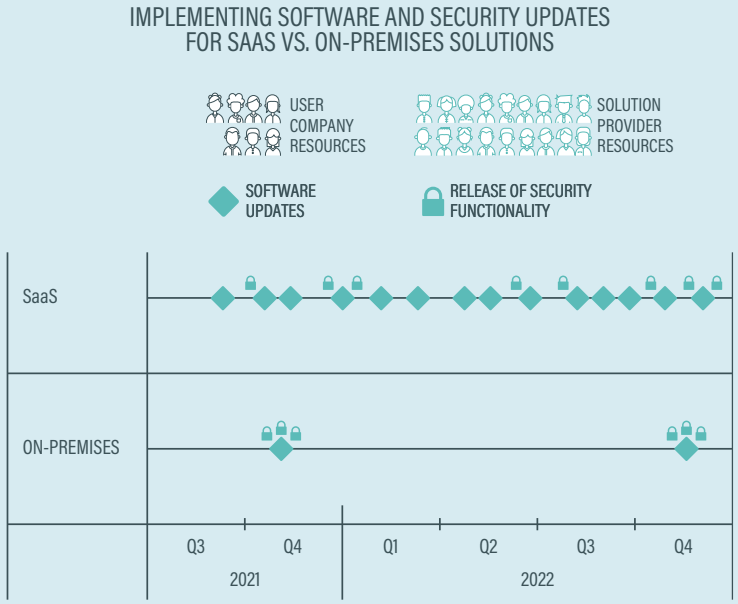


Figure 7
Cloud-based SaaS solutions get more frequent software and security updates than on-premises solutions because the solution provider has more know-how and resources than the customer.

Secure the Company's Product Data

Data is now a primary asset for companies. Cyberattacks and IP theft pose serious threats to data security—threats that progressive companies are actively working to mitigate.

Companies are 100% responsible for the security of their hardware and data when using on-premises or client-operated cloud solutions. This responsibility calls for IT staff who are well-versed in IT security. They must constantly monitor security risks and implement protocols for employees, including the product development team. They must also ensure data is backed up properly and regularly. These responsibilities can be difficult to manage for even the most well-established companies.

SaaS PLM eliminates those headaches. When a company uses a SaaS PLM solution, data security is the responsibility of the solution provider and its cloud partner. They have more resources, knowledge, and expertise in the areas of IT and data security than most customers. The PLM solution provider ensures customers have the latest security features and manages the customer's backup data. As a result, the risk of data theft and product development-crippling malware is much lower than with on-premises PLM. Customers also save money as they do not need to spend their IT budget to secure their PLM solution.

Enable More Flexibility With Remote Work

Remote work is here to stay—even in the shipbuilding industry. This new norm applies to everyone, from suppliers who need to contribute to a project to employees working from home. Yet, not all PLM solutions function the same way in a remote working environment.

On-premises PLM solutions require the client application to be installed on the remote stakeholder's computer. To further complicate matters, remote stakeholders need a virtual private network (VPN) for secure access to the on-premises solution. Configuring this access for remote stakeholders can be difficult. Not to mention, remote access requirements may quickly change due to work-in-process activities. These difficulties are also applicable to client-operated cloud PLM solutions.

Shipbuilding companies that utilize a SaaS PLM solution do not have these difficulties. New stakeholders can be invited quickly and easily, often via email. Since the client application runs on a web browser, the remote stakeholder only needs internet access to participate in product development. These stakeholders only have access to the parts of the product development process that are necessary for their jobs, reducing security risks. Overall, SaaS PLM provides quick, flexible, and easy access for remote stakeholders, who can hit the ground running from day one.

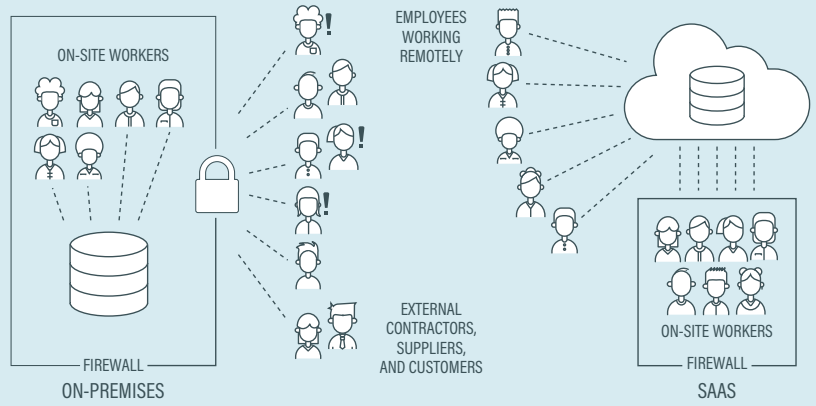
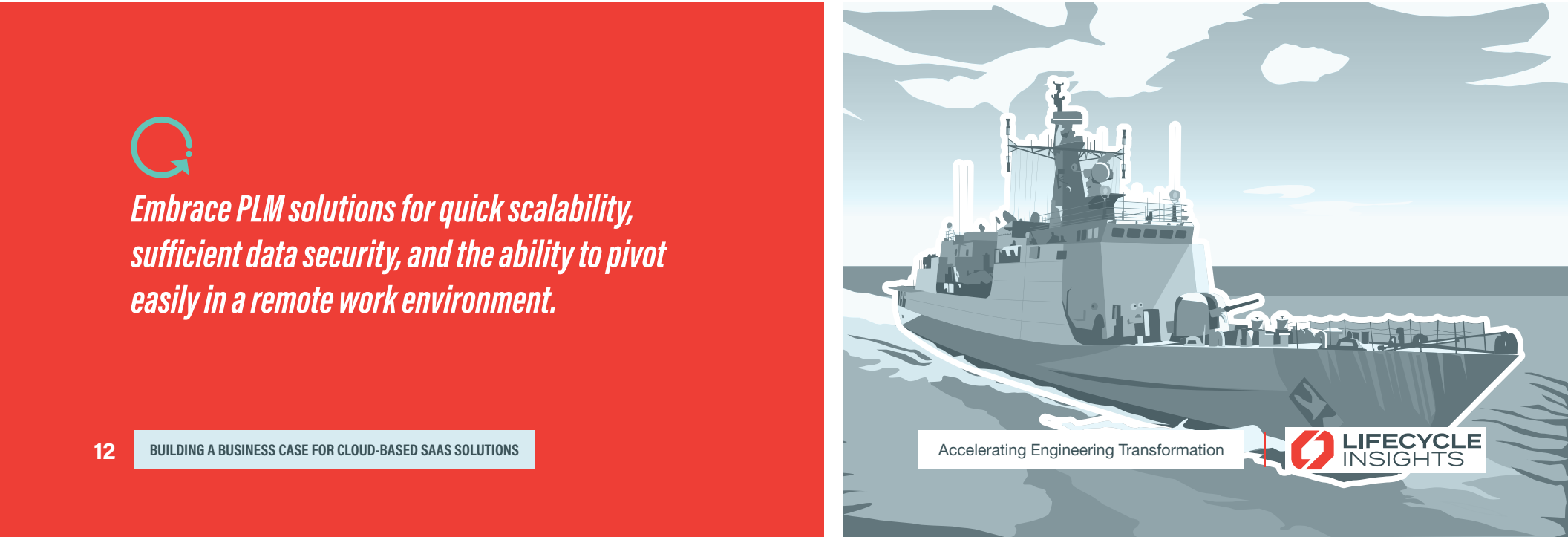


Figure 8
This figure shows the difference in terms of access for two different setups for PLM.

Recap and Conclusions

To support digital transformation initiatives, shipbuilders need to embrace PLM solutions. On-premises and client-operated cloud PLM solutions require higher up-front costs and greater IT investments. They also lack quick scalability, sufficient data security, and the ability to pivot easily in a remote work environment. Companies in the shipbuilding sector should embrace SaaS PLM solutions to address these challenges and better achieve their DX goals.

- **Accessibility of PLM solutions:** While on-premises PLM models have historically been the most popular solutions, more companies are embracing SaaS solutions due to several advantages.
- **Understand investment implications:** On-premises and client-operated cloud PLM models have higher up-front costs, while SaaS PLM models have lower up-front costs.
- **Shift the IT burden:** SaaS PLM solution providers cover most needed IT infrastructure, saving shipbuilders on IT overhead.
- **Start small, scale smart:** Shipbuilding companies can quickly scale up or scale down the number of users and software functionalities, according to changing business needs.
- **Stay up to date:** SaaS PLM solution providers keep all applications updated to ensure companies have access to the latest software functionalities and capabilities.
- **Secure product data:** Shipbuilders do not have to invest in data security, as SaaS PLM solution providers ensure product data is protected from cyberattacks.
- **Enable more flexibility with remote work:** SaaS PLM solutions enable remote workers to access applications they need for product development from anywhere with an internet connection.



Embrace PLM solutions for quick scalability, sufficient data security, and the ability to pivot easily in a remote work environment.

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