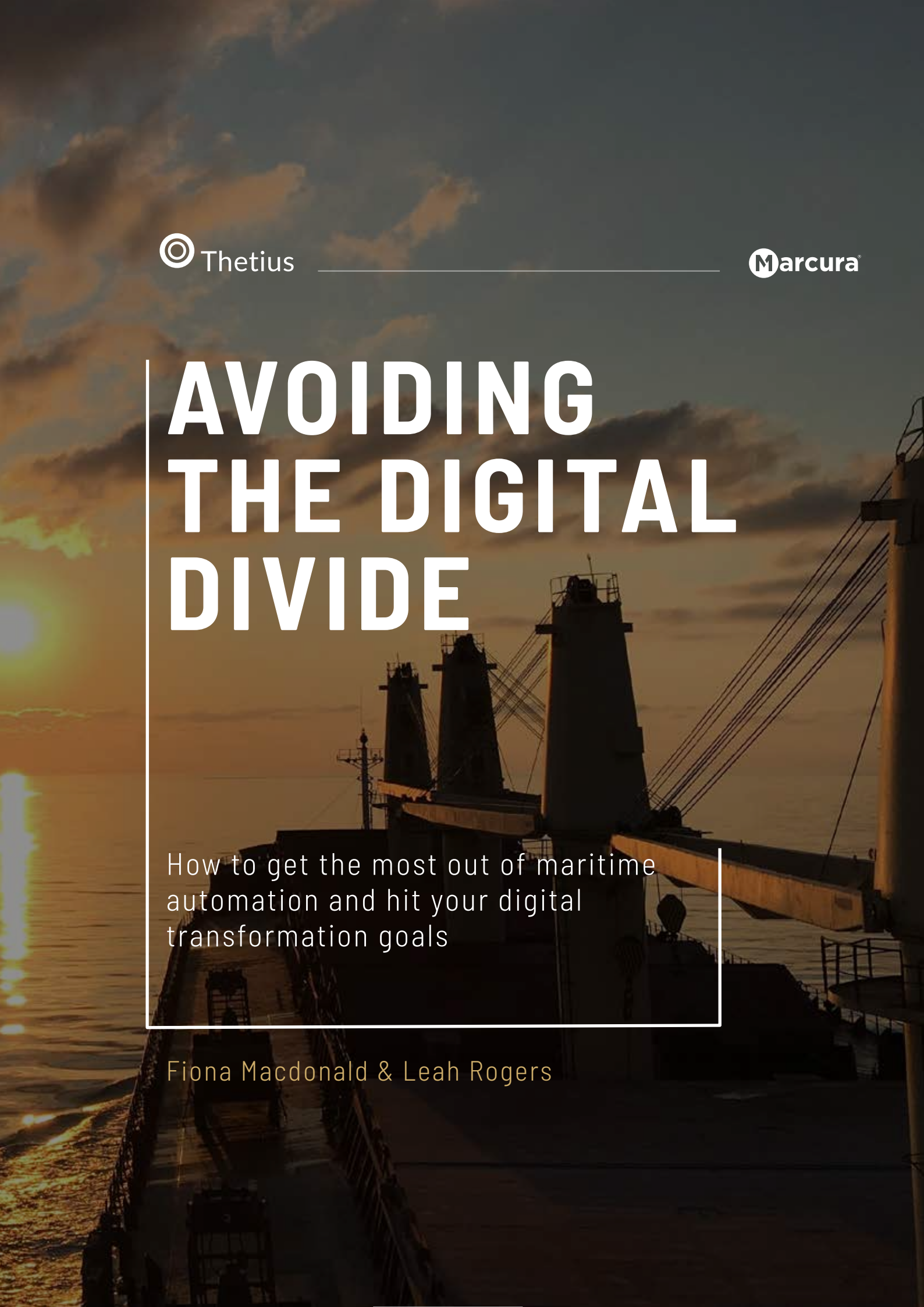

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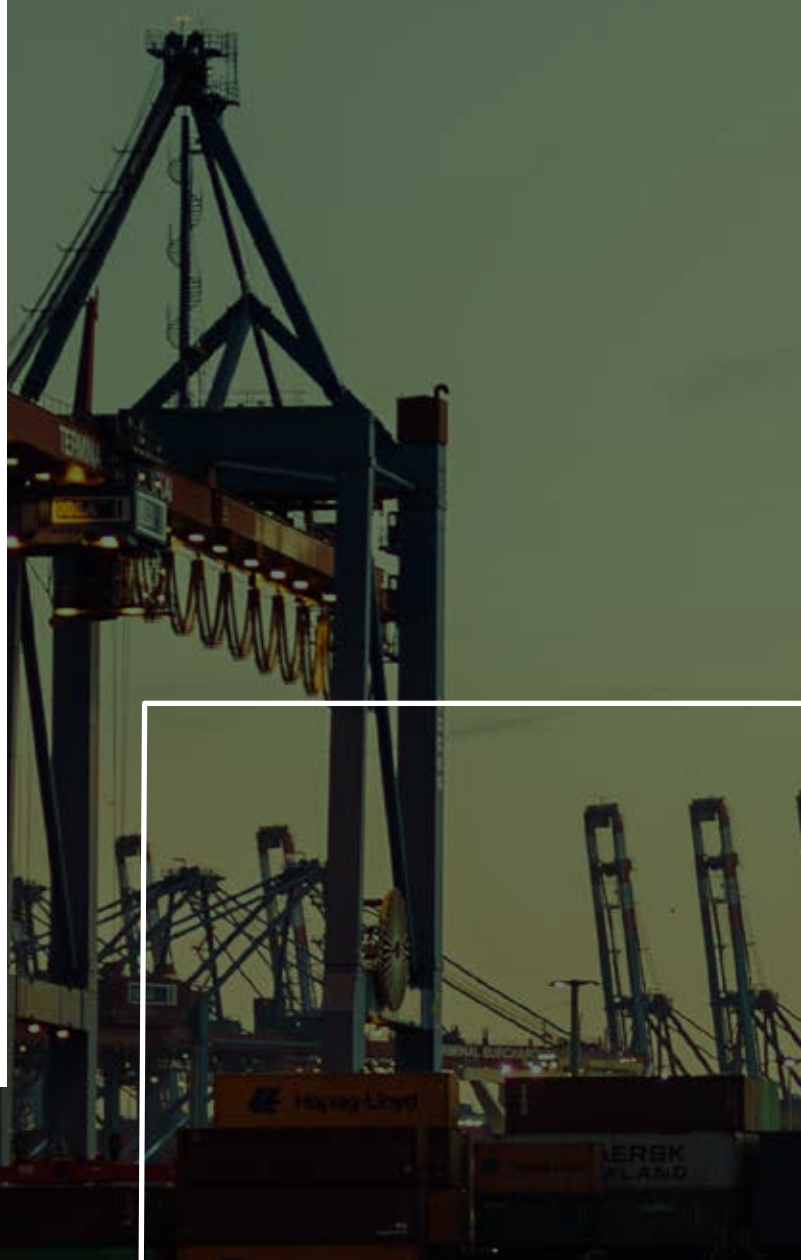
# AVOIDING THE DIGITAL DIVIDE

How to get the most out of maritime automation and hit your digital transformation goals

Fiona Macdonald & Leah Rogers

# CONTENTS





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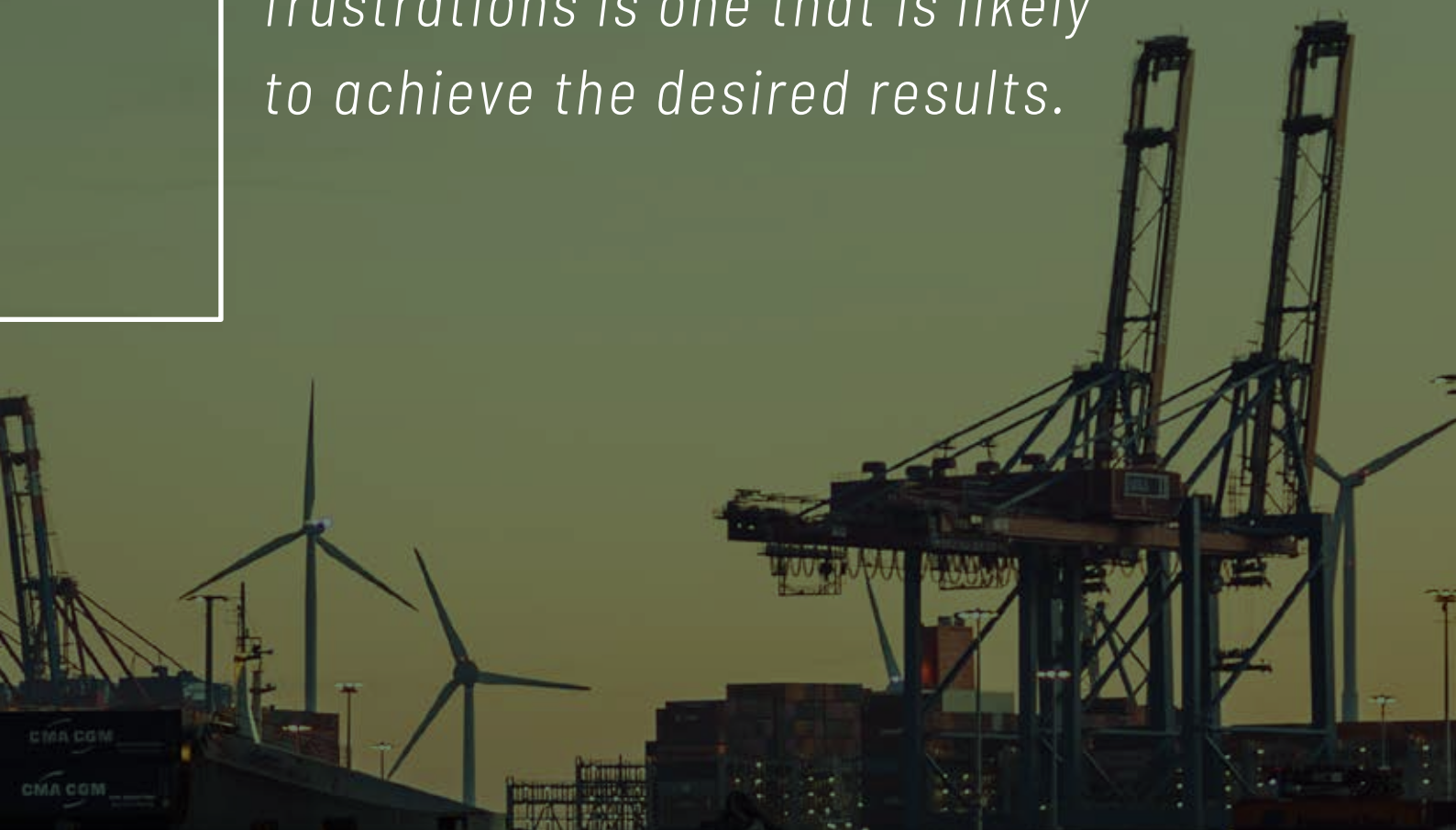
Marcura

*Matching people, processes and technology in automation projects is critical to their success. A strategy that pinpoints your pain points and uses automation to target the most pressing user frustrations is one that is likely to achieve the desired results.*



# FOREWORD

## BY HANS-CHRISTIAN MORDHORST

CHIEF COMMERCIAL OFFICER, MARCURA

*In our recent survey, the evaluation of the benefits of automation came in only a tiny degree below those of digital transformation (84% vs 80%).*

Is process automation the less glamorous relation to the highly fashionable digital transformation?

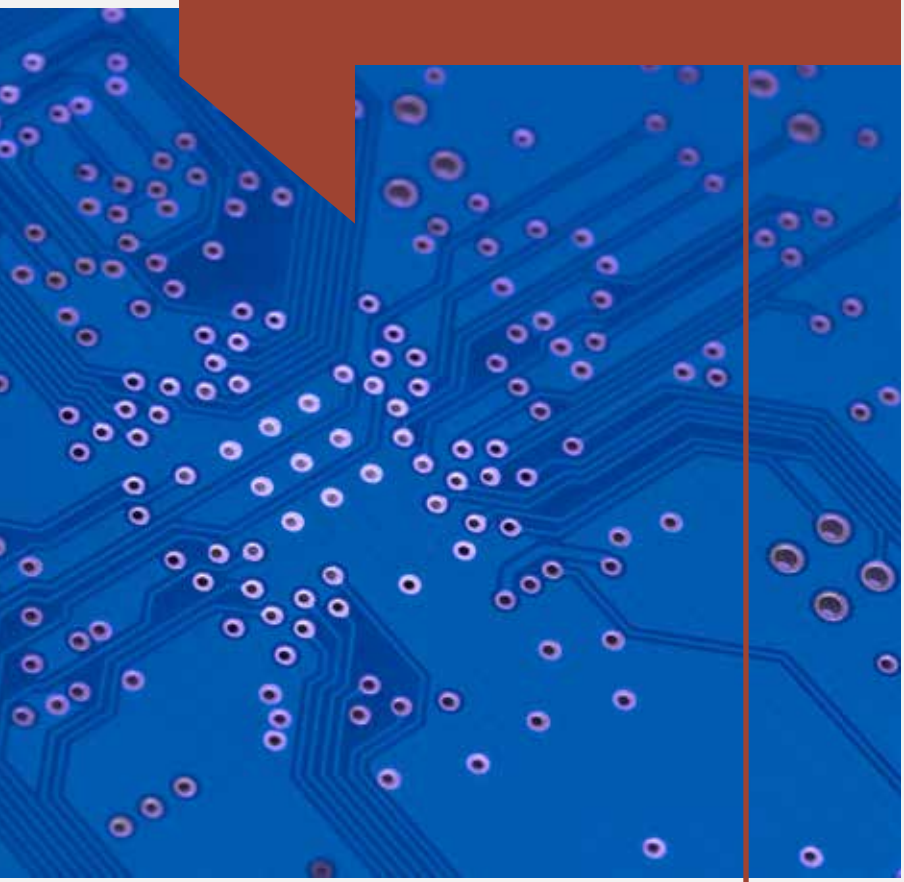
### WE DON'T BELIEVE SO!

And, actually, nor do you. In our recent survey, the evaluation of the benefits of automation came in only a tiny degree below those of digital transformation (84% vs 80%).

And of course, both evaluations are high ratings.

This is borne out in the research the Thetius team has done in putting this report together – I particularly like the graphic on page 27 which quantifies various benefits seen after automation and digital change.

So if we're convinced about the solid benefits of automation are there any remaining processes to be automated in maritime? Or has all the hard work been done already?



*So, our take on the report is: don't forget the humble business and process automation projects in your backlog. They may be humble but they are also relatively simple, easy-to-implement, low risk and high reward.*

Far from it, say the respondents to our maritime survey: Their opinion is that only 46% of processes in their companies have already been automated.

Combine these two (automation still to be done + high levels of benefits) and it's no surprise that in a recent Gartner survey of 226 CFOs, they concluded:

"Digital acceleration was the top spending priority for CFOs over the next 12 months, with 98% of respondents saying they will protect digital investments and of those, 66% stating they plan to increase their investments in the category. Automating back-office workflows is key to achieving efficiency gains across a number of areas."

We're delighted to be supporting this study from Thetius.

We've been automating maritime processes since 2001, when we launched DA-Desk, which digitises and automates disbursement accounting, doing away with 100% of the paperwork and the vast majority of the tedious manual processes associated with DAs.

Over twenty years on, now we have 8 maritime solutions all of which automate, digitise and transform processes in each of their business areas.

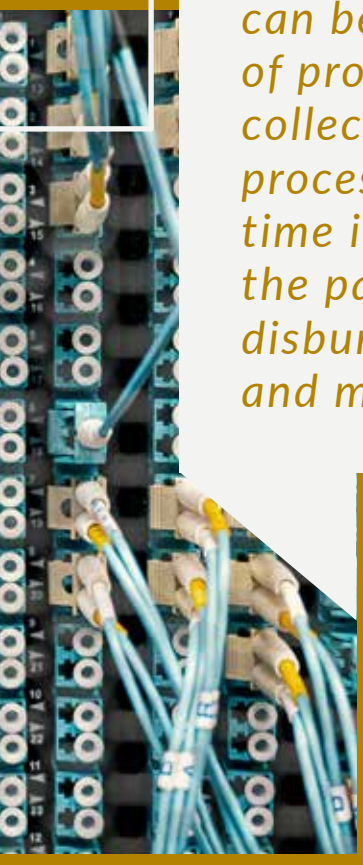
For example, PortLog digitises Statements of Facts, enabling them to be analysed with significant resulting financial benefits – for more information please read the case study on page 30.

So, our take on the report is: don't forget the humble business and process automation projects in your backlog. They may be humble but they are also relatively simple, easy-to-implement, low risk and high reward.

**Hans-Christian Mordhorst**

# EXECUTIVE SUMMARY

The automation of processes plays a significant role in the way businesses and organisations conduct everyday tasks and procedures. Long and laborious exercises are being streamlined with the integration of bots and other intelligent systems that facilitate business and operational agility.



*Process automation forms a key part of shipping's digital transformation and can be applied to an array of processes such as data collection, key document processing, estimating time in port and port costs, the payment of crew, disbursement accounting, and many other tasks.*

Process automation forms a key part of shipping's digital transformation and can be applied to an array of processes such as data collection, key document processing, estimating time in port and port costs, the payment of crew, disbursement accounting, and many other tasks. Automating these time-consuming processes significantly reduces manual overheads and enables people to focus on more meaningful and valuable tasks. By digitalising and/or automating these processes, the industry can benefit from safer, compliant, and more environmentally and financially efficient operations.

However, it is important to note that while automation can provide substantial support in helping a company to reach its goals, there is no one-size-fits-all solution. Those looking to automate must understand what, why and how to avoid buying into solutions that are not fit for purpose. Not only will this be costly, but there's a heightened risk of generating feelings of frustration towards such technologies and thereby exacerbating any existing hesitancy towards uptake.

This research conducted by Thetius has uncovered that in the maritime industry, ineffective process automation projects can be largely attributed to poor strategy, leadership, and a failure to prioritise people. It must be remembered that automation is designed to augment the capabilities of the human, and not replace them. A lack of clarity and transparency in many process automation projects still exists, leading to confusion around what automation truly means, especially when added to the mix of other buzzwords like digitalisation, digitisation, and digital transformation. There is often a blurred line between the expectations of automation and the reality of it, creating a roadblock to the benefits

*Many organisations are still implementing digital and automation projects in silos, largely due to a lack of alignment between departments and industry wide fragmentation.*

achieved. Companies overestimate what automation can achieve and when they do not obtain the desired results, they are left disappointed and frustrated.

Many organisations are still implementing digital and automation projects in silos, largely due to a lack of alignment between departments and industry wide fragmentation. Collaboration between solution providers, shipping and logistics companies, and most importantly, the very people that will be expected to work with new technologies, is key to their successful integration.

Matching people, processes and technology in automation projects is critical to their success. A strategy that pinpoints your pain points and uses automation to target the most pressing user frustrations is one that is likely to achieve the desired results. Industry-wide collaboration and data sharing will improve knowledge around automation, widen learning opportunities, and ultimately combine human intelligence with machine capabilities to create the most value.

# INTRODUCTION

Automation is being increasingly deployed by businesses and organisations across the globe to streamline processes, improve workflow efficiency, reduce error, free up human resources, and boost productivity. Worldwide today, 73% of organisations are using automation technologies.[1]

In the last few years, the maritime industry has seen a surge in the uptake of process automation platforms designed to augment human capabilities both at sea and on shore. According to data from Thetius IQ, the number of contracts awarded for process automation solutions increased 300% from 2020 to 2021.[2]

This has somewhat been boosted by the global pandemic, spurring industries to make use of digital tools and technologies to connect remotely and carry on with business as usual. The efficiency of manual and repetitive tasks such as email and payroll management, disbursement accounting, spare parts procurement, predictive maintenance and many other vital procedures, have been boosted as a result of automation.

*Classification society DNV has predicted that shipowners could reduce operating costs by around 30% by implementing digital systems and processes.*

A recent Gartner report[3] predicted that 2023 will continue to bring significant changes in the way digital technologies, including process automation, are applied. A growth in data availability is expected to continue accelerating the pace of automation, with 94% of CEOs admitting they would like to maintain or accelerate digital transformation post COVID.[4] Classification society DNV has predicted that shipowners could reduce operating costs by around 30% by implementing digital systems and processes.[5]

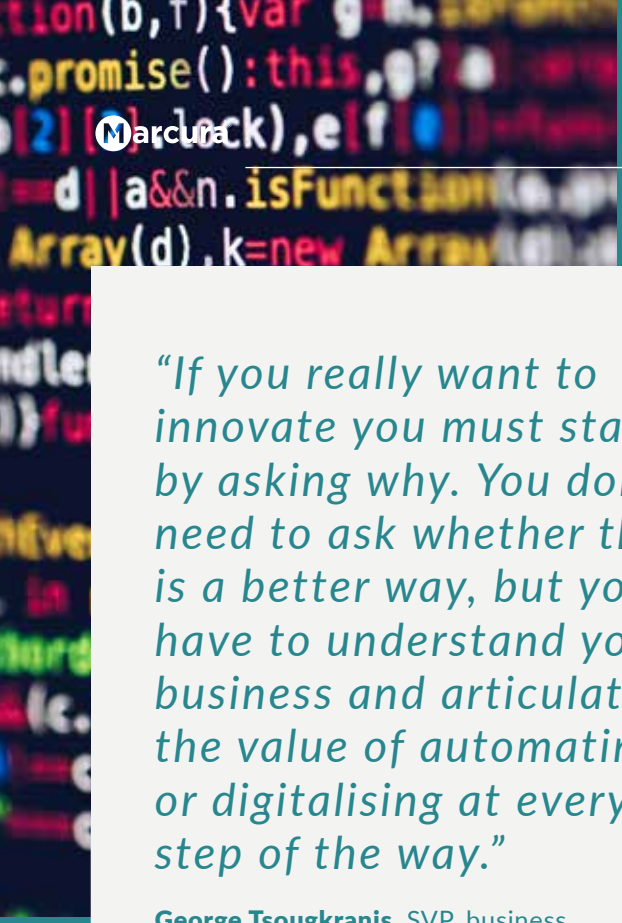
1 Deloitte (2020) Automation with intelligence pursuing organisation-wide reimagination. Retrieved from https://www2.deloitte.com/mt/en/pages/rpa-and-ai/articles/intelligent-automation-2020-survey-results.html

2 Thetius IQ (2023), Process automation dataset, Retrieved from https://iq.thetius.com/market-sector?recordId=recgr0JdQ0qHqibKS

3 Gartner (2022) Your detailed guide to the 2023 gartner top 10 strategic technology trends. Retrieved from https://www.gartner.com/en/information-technology/insights/top-technology-trends

4 Gartner (2022) Your detailed guide to the 2023 gartner top 10 strategic technology trends. Retrieved from https://www.gartner.com/en/information-technology/insights/top-technology-trends

5 Seatrade Maritime News (2018) Shipowners can realise 30% opex savings from digitalisation. Retrieved from https://www.seatrade-maritime.com/asia/shipowners-can-realise-30-opex-savings-digitalisation-dnv-gl-chief



*"If you really want to innovate you must start by asking why. You don't need to ask whether there is a better way, but you do have to understand your business and articulate the value of automating or digitalising at every step of the way."*

**George Tsougkranis,** SVP, business & operational transformation at DA-Desk (part of the Marcura group).

With so many technologies on the market today, it is critical for companies to determine which technologies will provide the most value for their transformation plans, and as Gartner notes, to avoid implementing all technologies at once.

One of the most interesting use cases of digitisation and automation in the maritime industry is the collection and transcription of Statement of Fact (SoF) documents. These documents are an essential part of the port call process but thanks to their manual collation, lack of standardisation, and risk of human error, are often a barrier to efficient and reliable port call operations. Today there are several platforms that can automate port call management processes to improve estimates on port turnaround times, port costs, and other information on port restrictions, eliminating the need to rely on inefficient guess work. This is one area this research explores further in *How is process automation used in the industry today?*

Other administrative tasks like managing charter party processes and checking for non-compliance can benefit from digitalisation and automation, driving collaboration and reducing the risk of error. By moving such processes to the cloud, all relevant stakeholders can access the same information, which is automatically updated, ensuring all parties are working from the same document and to the same requirements.

As the capabilities of digital technologies and automation tools continue to grow, it is likely that we will see an increasing reliance on them, not just in the maritime sector but across all industries. But there remain several unanswered questions around automation:

1. Why automate?
2. What to automate?
3. How to automate?
4. What is the role of the human in automation?
5. How do we match human intelligence and machines to create the most value?

Knowing the answers to these questions is absolutely critical to successful and scalable automation and ultimately, digital transformation. The Thetius research team spoke with shipowners and operators, charterers, technology suppliers, and vessel captains, to better understand what process automation truly means, its role in shipping's digital transformation, the current applications in the maritime market, and how people and technology can work in harmony to reap the rewards offered by automation.

# DISSECTING DIGITALISATION, AUTOMATION AND DIGITAL TRANSFORMATION

The maritime industry has been a vital component of global trade for centuries, connecting nations and enabling the movement of goods and people across oceans. But like every other sector, the digital revolution has impacted the industry, which has transformed how business is conducted globally.

The rapid pace of technological advancements has brought about a wave of digital transformation in the maritime industry, disrupting traditional business models and creating new opportunities for innovation and growth.

From automated ports and vessels to real-time tracking, predictive maintenance, transforming business processes and data collection and utilisation, digital technologies are reshaping the industry's landscape and presenting new challenges and opportunities for stakeholders. In this era of digital transformation, the maritime industry must adapt to the changing technological landscape to remain competitive, efficient, and sustainable in the global marketplace. For companies to fully embrace the advantages of the digital revolution, it is important to understand the differences between digitisation, digitalisation and digital transformation and what they can offer your business.

*Digitisation has revolutionised the way we store, retrieve, and share information in our technologically advanced society.*

## DIGITISATION

Digitisation has revolutionised the way we store, retrieve, and share information in our technologically advanced society. By transforming analogue information or data into digital format, digitisation enables us to efficiently manage vast amounts of data, resulting in faster and more accurate analysis. Whether capturing images, recording sounds or transcribing text, digitisation allows us to convert a wide range of information into a digital form that can be processed and analysed using computers and digital devices.

One example of digitisation is the process of scanning paper documents and converting them into digital files. This transformation of a physical entity into a digital one not only makes the documents more accessible but also helps to preserve them for further use. With digitisation's far-reaching implications and increasing prevalence across industries, it has become an essential aspect of modern-day operations that simply cannot be overlooked.

fast-paced and ever-changing marketplace. In the context of shipboard operations, digitalisation can play a critical role in ensuring the safe and efficient movement of goods and people across the seas. For example, a shipping company might use an inventory management system to automatically track and reorder critical supplies, such as fuel, spare parts, and provisions, to ensure that the ship is always properly equipped and prepared for any eventuality.

*Digitalisation refers to the extensive use of digital technology to automate and optimise various aspects of business operations.*

## DIGITALISATION

Digitisation and digitalisation are two terms most of us have heard, yet there is often confusion around their meanings and differences. Now that we have an understanding of digitisation, it's important that we clearly understand digitalisation and its differences. Digitalisation refers to the extensive use of digital technology to automate and optimise various aspects of business operations. This involves implementing software systems and tools designed to streamline and simplify business processes, such as managing inventory, customer service, and marketing campaigns.

By leveraging digital technology, businesses can improve their overall efficiency, reduce costs, and enhance their ability to compete in today's

## DIGITAL TRANSFORMATION

While "automation" and "digital transformation" are often used interchangeably, they are distinct concepts with distinct objectives. Automation refers to the deployment of technology to streamline processes, enhance transparency and reporting capabilities, and increase efficiency. Digital transformation, on the other hand, encompasses a broader set of objectives, including not just process optimisation but also creating new value for customers and transforming organisational culture.

According to Gartner, digital transformation entails making existing processes more efficient, unlocking new revenue streams and business models, and avoiding disruption.[6] This encompasses a wider range of objectives than merely meeting customer expectations, constantly evolving with emerging technologies. In other words, digital transformation requires more than simply deploying new technologies: it demands a complete rethink around how technology, people, and processes are integrated to effect change in business performance. Unlike a single IT project, digital transformation encompasses multiple projects that alter all aspects of the organisation to become digital-first.

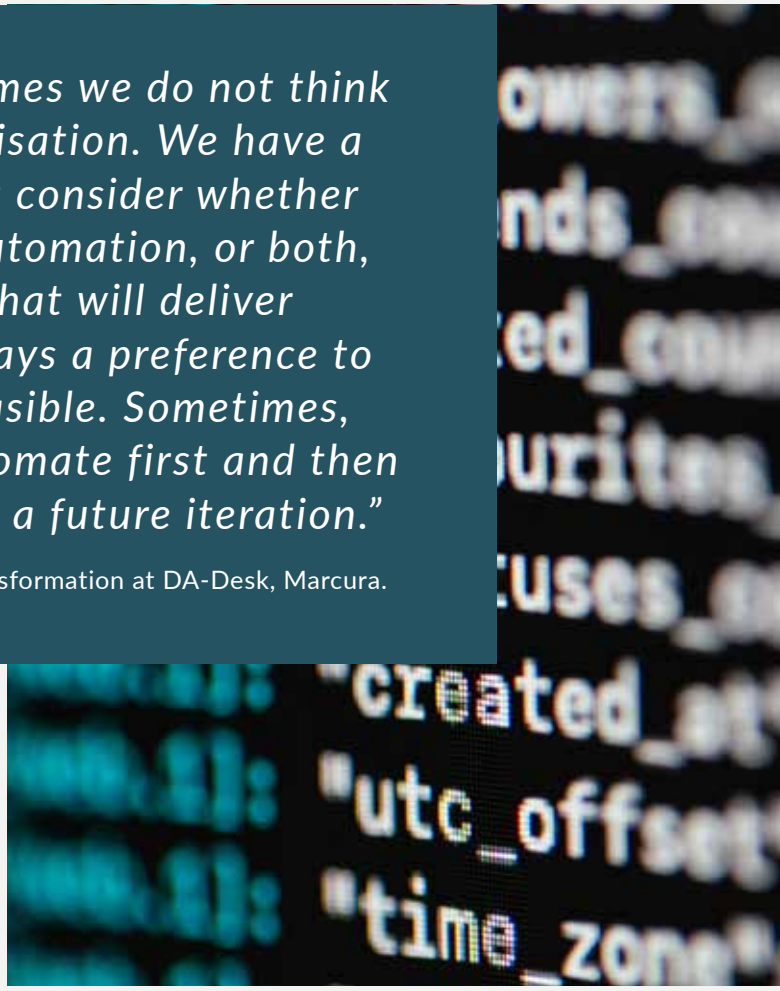
*"The difference between digitalisation and digital transformation is scale. Digitalisation tends to be applied to individual processes: leveraging systems and technology to make something better. Digital transformation tends to involve many pieces of digitalisation, but most importantly, it also includes the human factor as well. Changing the mindset of people, up-skilling employees, radically changing the way that they operate, the way that they do business. This is an end to end transformation in an entire business unit or industry, not just an upgrade in the processes."*

**George Tsougkranis,** SVP, business & operational transformation at DA-Desk.

6 Gartner (2015) Digital business or automation – is there a difference? Retrieved from https://www.gartner.com/smarterwithgartner/digitalization-or-automation-is-there-a-difference

*"The truth is that most of the times we do not think about automation versus digitalisation. We have a process to improve and we don't consider whether we will apply digitalisation or automation, or both, we just start exploring options that will deliver value. If you ask me, there's always a preference to digitalise, but it's not always feasible. Sometimes, you will have to start small, automate first and then maybe you can fully digitalise in a future iteration."*

**George Tsougkranis,** SVP, business & operational transformation at DA-Desk, Marcura.




A company can start to digitally transform its business by renovating or replacing legacy systems, shifting customer services to mobile or multiple channels, integrating with third parties, leveraging data analytics capabilities, and implementing automation. A company that takes small but proactive steps when it comes to digitally transforming its business processes will better position itself to adapt and evolve to meet customers' changing needs.

While automation is a critical enabler of digital transformation, it can be relatively straightforward to implement. Day-to-day workflows can be automated while employee and customer forms can be digitised to rapidly reduce pain points and improve business efficiency without requiring huge investment or structural change.

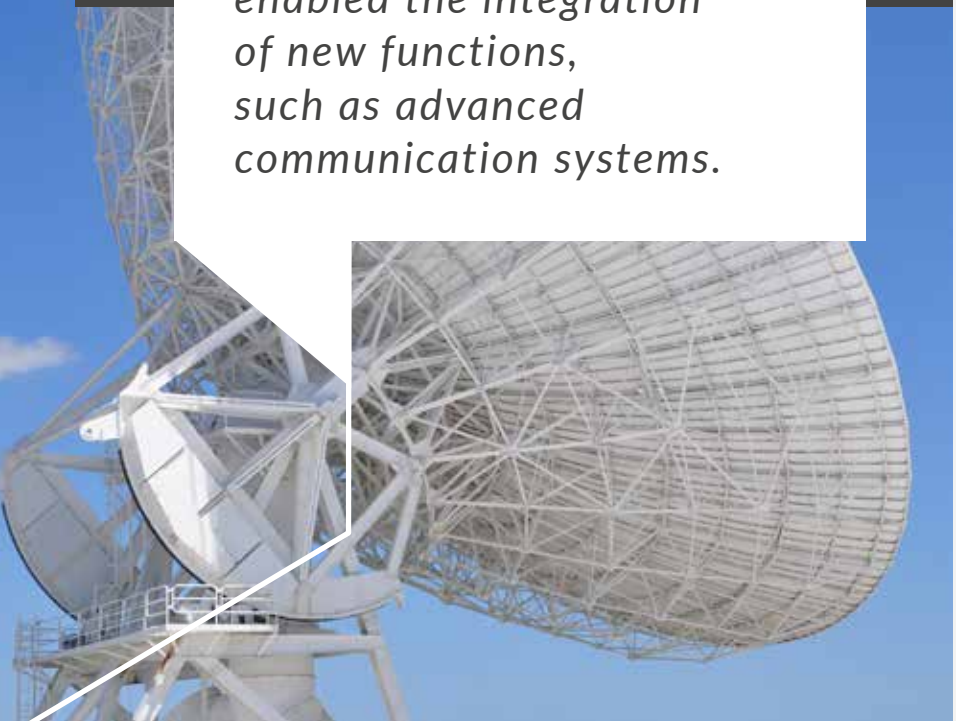
However, to reap the full benefits of automation, it must align with the company's broader business strategy. This requires an understanding of what automation is and how it can be leveraged to drive innovation, enhance customer experiences, and create new business models.

CASE STUDY 1

# OTG AUTOMATES DATA INTEGRATION

To stay competitive in the fast-paced digital world, The Ocean Technologies Group (OTG) has embraced digitalisation and intelligent process automation (IPA). OTG partnered with SnapLogic, a software integration firm specialising in IPA, to automate its data integration process. With the help of advanced AI-based technology, data now flows seamlessly between all of OTG's platforms, making it easily accessible to all relevant stakeholders. This automation has increased efficiency and accuracy in operations and enabled the integration of new functions, such as advanced communication systems. As a result, OTG can leverage digital technologies to their fullest potential and provide an enhanced customer experience.

*This automation has increased efficiency and accuracy in operations and enabled the integration of new functions, such as advanced communication systems.*



## WHAT IS PROCESS AUTOMATION?

The maritime industry has a rich history dating back to at least the 3rd century BC.[7] It has become a crucial part of global trade, with over 90% of goods transported by sea.[8] Despite its importance, many processes in shipping and logistics rely on basic software and manual tasks, leaving room for error and inefficiency. To address these challenges, process automation is being adopted.

Process automation streamlines various tasks in shipping and logistics, including port call spend management, pre- and post-fixture processes, payments, cost checking, document handling and administration, operations, information reception, pickup, packaging, transport, delivery, planning, procurement, inventory management, freight management, distribution, customer service, billing, and data analysis. The goal is to reduce costs, improve customer satisfaction, and streamline the complex logistics process. The technology can be difficult to comprehend, but a great place to start is understanding the term process automation.

7 Samatrans (accessed Jan 2023) History of maritime transport. Retrieved from https://samatrans.ir/en/history-of-maritime-transport/

8 OECD (accessed Jan 2023) Ocean shipping and shipbuilding. Retrieved from https://www.oecd.org/ocean/topics/ocean-shipping/#:~:text=The%20main%20transport%20mode%20for,comes%20with%20opportunities%20and%20challenges

## DEFINING PROCESS AUTOMATION

A process is a series of actions that follow a set of rules, organised in a specific way in order to achieve a particular result.[9] In computing, a process is a program in execution, a running instance of an application complete with memory and system resources. Whether analogue or digital, this applies equally to organisations too. Processes can operate independently and be isolated from other processes, but they can also interact with and depend on each other.

Automation is a term that has been widely used in the technical domain. It refers to designing and implementing systems, processes, or machines to operate automatically.[10]

In line with this definition, the technical world could define a more comprehensive explanation of automation as using technology to monitor and control the production and delivery of products and services. This definition encapsulates technology integration with the process of product creation and delivery.

*Automation is a term that has been widely used in the technical domain. It refers to designing and implementing systems, processes, or machines to operate automatically.*

When the two are combined we have process automation. This is a technology-driven approach aimed at streamlining complex processes that businesses encounter by incorporating three essential functions: process automation, information centralisation, and reduced human input requirements. The implementation of process improvement software has several objectives, including eliminating bottlenecks, decreasing errors and data loss, enhancing transparency, inter-departmental communication, and processing speed.[11]

An example of process automation could be as simple as the automatic logging of new sales into an accounting system, and as complex as automating the management of services a vessel requires when it enters and leaves port. These types of automation should reduce the potential for human error, increase operational efficiency, enhance the overall quality of service, decrease costs, and streamline underlying business processes. The implementation of this requires the integration of software tools, human involvement, and established processes across multiple organisations to create a fully functioning workflow.

9 Oxford Dictionary (accessed Jan 2023). Retrieved from https://dictionary.cambridge.org/dictionary/english/process

10 International Society of Automation (accessed Jan 2023) Retrieved from https://www.isa.org/about-isa/what-is-automation

11 Tibco (accessed Jan 2023) What is process automation? Retrieved from https://www.tibco.com/reference-center/what-is-process-automation

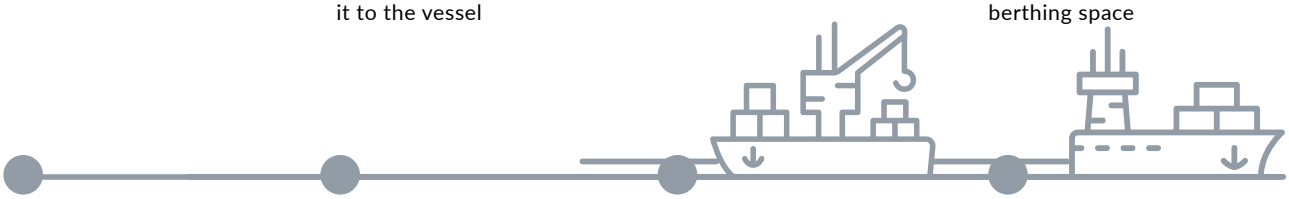
## **WORKED EXAMPLE:** HOW PROCESS AUTOMATION COULD WORK IN A PORT

**1.** Vessel sends an arrival notice to the port authority

**2.** System automatically generates a vessel entry permit and sends it to the vessel

**3.** System updates the vessel's status as "arrived" in the database

**4.** System generates a draft schedule for the vessel and allocates berthing space



**5.** System sends the draft schedule and berthing information to the vessel

**6.** System updates the vessel's status as "allocated berthing" in database

**7.** When the vessel arrives at the assigned berth the system updates the vessel's status as "berthing in progress"

**8.** System updates vessel to "berthing complete" and generates service list. Sends list to departments, updates vessel status to "awaiting services"

**9.** When all required services are complete, the system updates as "ready to depart"

## TYPES OF PROCESS AUTOMATION

The integration of process automation into organisational operations has become increasingly prevalent in the modern business landscape. With the rise of digital transformation, organisations are increasingly turning towards computer-based tools to streamline their workflows. As reported by Deloitte, the use of automation technologies has seen a substantial increase in recent years, with 73% of organisations worldwide utilising these tools in 2020, compared to just 58% in the previous year.[12]

Some of the most widely adopted automation technologies include robotic process automation (RPA), business process automation (BPA), and digital process automation (DPA). Each of these technologies has unique features and advantages, allowing organisations to choose the solution that best fits their specific needs and goals. Whether it's improving efficiency, reducing costs, or enhancing the overall quality of service, process automation is a critical component of modern business operations.

12 Deloitte (2020) Global intelligent automation study reveals dramatic acceleration in adoption of automation technologies. Retrieved from https://www2.deloitte.com/us/en/pages/about-deloitte/articles/press-releases/deloitte-intelligent-automation-study-reveals-acceleration-in-automation-adoption.html

*"Shipping is a global business, but the thing about robotic process automation right now, in my opinion, is that it doesn't yet have the capabilities to replace the knowledge workers like charterers or operators have. What that means is that you can only apply RPA to fairly limited parts of the process."*

**Bruno Deszczynski**, chief technology officer at Marcura.

## ROBOTIC PROCESS AUTOMATION (RPA)

RPA automates repetitive tasks using software bots.[13] These bots carry out data entry and calculation tasks, making them ideal for rule-based processes. The benefits of RPA include increased efficiency, reduced costs, and decreased errors, as the bots work continuously without breaks. With low-code/no-code platforms, business users can create bots with minimal IT support. It is important to note that when building RPA applications, the "rule of five"[14] should be considered. Bots tend to break when they must make more than five decisions, manipulate more than five apps, or make more than 500 clicks.

However, it is crucial to acknowledge that while RPA has been gaining traction in various industries, it still cannot make informed decisions on its own. RPA must be integrated with artificial intelligence (AI) and machine learning (ML) to maximise its benefits fully. This implies that RPA is only a small step in the overall automation journey rather than the driving force behind an organisation's digital transformation. For instance, in the shipping industry, RPA can only be applied to specific parts of a process. It can only partially replace the expertise of workers such as charterers or operators. Therefore, a more holistic approach that includes AI and ML is essential to achieve full automation and digital transformation.

## DIGITAL PROCESS AUTOMATION (DPA)

DPA is aimed at streamlining and enhancing business processes, thus improving the experience of both employees and customers.[15] Unlike RPA, which focuses on automating specific tasks, DPA addresses more complex, lengthy processes. By reducing friction in the workflow, DPA enables organisations to transform and elevate their business processes.

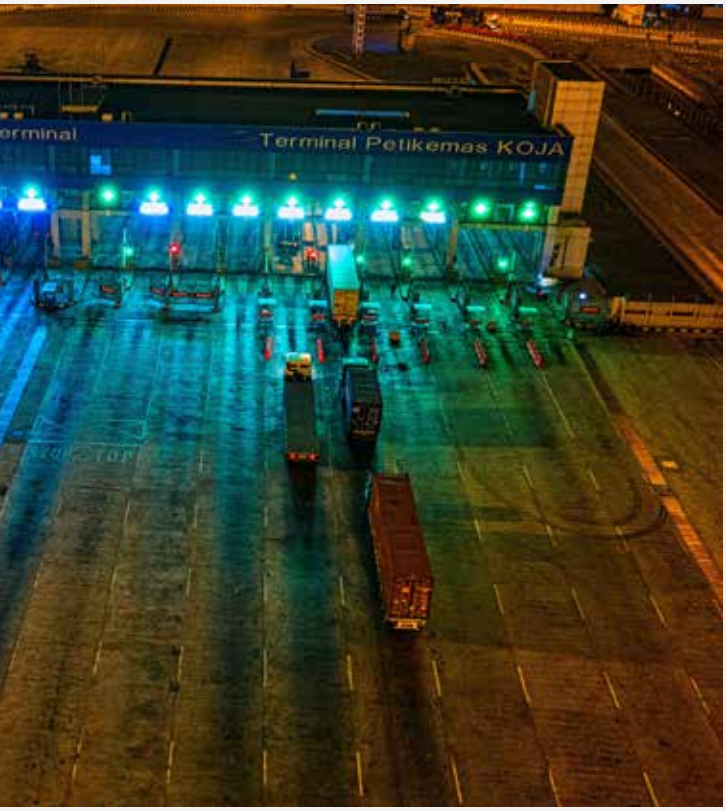
13 BluePrism (2022) RPA Trends and Predictions 2023. Retrieved from https://www.blueprism.com/resources/white-papers/rpa-automation-trends-predictions-2023/

14 TechTarget (2018) In a hot RPA market, the 'rule of five' keeps CIOs focused on use cases. Retrieved from https://www.techtarget.com/searchcio/blog/TotalCIO/In-a-hot-RPA-market-the-rule-of-five-keeps-CIOs-focused-on-use-cases

15 IBM (accessed Jan 2023). Retrieved from https://www.ibm.com/automation?utm_content=SRCWW&p1=Search&p4=43700074855269503&p5=p&gclid=CjwKCAiA85efBhBbEiwAD7oLQKDa2MZ05vgqnkpbjO0N3eEVB7h9RgKYeiHcszFtSwibvc4iSdNBSxoCWz4QAvD_BwE&gclsrc=aw.ds

## BUSINESS PROCESS AUTOMATION (BPA)

BPA streamlines organisational workflows by automatically initiating the next step in a business process once the previous one is completed. This technology automates complex and multi-step processes central to an organisation's core functions.[16] Unlike RPA, BPA takes a comprehensive approach by integrating multiple enterprise applications and systems to carry out a typical business process. BPA prioritises process optimisation before automation, removing human intervention and reducing the risk of personal workarounds or unauthorised changes. Adopting BPA is a key part of digital transformation initiatives, offering organisations improved accuracy, efficiency, and dependability of automated processes.




*The three forms of process automation can be integrated with other technologies, such as AI, to create more advanced and precise process automation tailored to a user's needs.*

## RPA, DPA & BPA: WHAT ARE THEIR SIMILARITIES AND DIFFERENCES?

RPA and DPA are cutting-edge technologies that automate tasks and processes. While RPA focuses on automating specific tasks, DPA takes a broader approach, automating entire workflows and processes to improve human-system interaction and the user experience. By combining the two technologies, repetitive and time-consuming tasks can be automated within complex processes that DPA optimises.

BPA is another type of process automation to automate multi-step business processes. BPA requires a more comprehensive analysis of business processes and typically involves more complex development than RPA, making it the responsibility of the IT department to deploy and manage. RPA, on the other hand, can be deployed quickly and is more lightweight, with low-code/no-code platforms available that allow business users to create bots to automate parts of their work.

16 SnapLogic (accessed Jan 2023) The ultimate guide to business process automation. Retrieved from https://www.snaplogic.com/resources/ebooks/ultimate-guide-to-business-process-automation

The three forms of process automation can be integrated with other technologies, such as AI, to create more advanced and precise process automation tailored to a user's needs. All three technologies, when used together, can support an enterprise's digital transformation efforts, making processes more efficient, accurate, and reliable.

*The maritime industry is a highly intricate and multifarious domain comprising numerous markets and operations that necessitate seamless integration.*

## INTEGRATION OF MULTIPLE PROCESS AUTOMATION TYPES

The maritime industry is a highly intricate and multifarious domain comprising numerous markets and operations that require seamless integration. To meet the particular needs of an organisation, the employment of conventional forms of automation such as RPA, BPA and DPA may not always suffice. In such cases, a bespoke automation programme might be required, incorporating advanced technologies like AI, big data, or ML, and integrating multiple forms of automation. This is where the concept of intelligent process automation (IPA) comes into play.

IPA is an innovative approach to automating business processes that capitalise on the full potential of modern technologies to foster innovation and optimise business processes. As an interdisciplinary field, IPA leverages technologies such as AI, ML, RPA, and natural language processing (NLP) to automate tasks more intelligently and efficiently.

For instance, AI algorithms enable organisations to analyse vast amounts of data, make predictions, and engage in data-driven decision-making, leading to the automation of tasks that were previously too complex for conventional methods. On the other hand, ML algorithms enable organisations to learn from data continuously, leading to improved prediction accuracy over time. Meanwhile, RPA automates manual, repetitive, and time-consuming tasks, freeing up human workers to focus on more strategic work. Furthermore, NLP enhances an organisation's ability to interact with customers and employees in a more natural and conversational way, leading to more intuitive and seamless communication.

IPA's impact on organisational operations is vast, as it enables the automation of a wider range of tasks and processes, leading to significant improvements in efficiency and accuracy. This impact is already being felt across several industries, including finance, healthcare, retail, and customer service, among others.

Moreover, IPA represents a new paradigm in business process automation, offering organisations the opportunity to leverage the power of AI and automation to gain a competitive edge and deliver value to their customers. By automating tasks in a more intelligent and efficient manner, IPA has the potential to revolutionise the way organisations operate and shape the future of business.

# MAIN PROCESS AUTOMATION TYPES

## BUSINESS PROCESS AUTOMATION

- BPA is a way to use technology to automate repetitive, manual tasks in business processes.
- BPA can help to increase efficiency and productivity by reducing the time and resources required for routine tasks.
- BPA can also help to reduce errors and improve accuracy by automating tasks that are prone to human error.
- BPA can be applied to a wide range of business processes, from simple data entry tasks to more complex workflows that involve multiple systems and stakeholders.
- BPA can be implemented using a variety of technologies, including RPA, DPA, IPA, and WPA, depending on the complexity of the process being automated.
- BPA can help businesses to save time, reduce costs, and improve the overall quality of their products and services by streamlining their operations and freeing up resources for more strategic activities.

## ROBOTIC PROCESS AUTOMATION

- RPA is a type of BPA that uses software "robots" to automate repetitive, rules-based tasks.
- RPA robots can mimic the actions of human workers, such as typing, clicking, and copying data between applications.
- RPA can be used to automate a wide range of tasks, including data entry, invoice processing, customer service, and more.
- RPA is typically used for tasks that are highly repetitive and require little to no decision-making.
- RPA can help to increase efficiency and productivity by reducing the time and resources required for routine tasks.
- RPA can also help to reduce errors and improve accuracy by automating tasks that are prone to human error.
- RPA can be integrated with other technologies, such as machine learning and natural language processing, to enable more advanced forms of automation.

## DIGITAL PROCESS AUTOMATION

- DPA is a more advanced form of BPA that uses digital tools and technologies to automate complex, end-to-end business processes.
- DPA focuses on automating processes that involve multiple systems, stakeholders, and decision points.
- DPA can help to improve efficiency and productivity by reducing the time and resources required to complete complex processes.
- DPA can also help to improve the quality of outputs by standardising processes and reducing the risk of errors.
- DPA uses a combination of technologies, including RPA, machine learning, and analytics, to automate and optimise processes.
- DPA can be applied to a wide range of business processes, from customer onboarding to supply chain management.
- DPA can help businesses to gain a competitive edge by enabling them to deliver products and services faster, with higher quality, and at lower cost.

# ADDTIONAL AUTOMATION TECHNOLOGIES

## INTELLIGENT PROCESS AUTOMATION

- IPA combines RPA and AI technologies to automate processes that involve unstructured data and decision-making.
- IPA can process unstructured data, such as images, audio, and text, using techniques such as natural language processing and computer vision.
- IPA can help to automate decision-making by analysing data and making recommendations based on predefined rules or machine learning algorithms.
- IPA can be used for a wide range of processes, including fraud detection, insurance claims processing, and customer service.
- IPA can improve the accuracy and speed of decision-making by reducing the time and resources required to process large amounts of data.
- IPA can help businesses to gain a competitive edge by enabling them to make faster and more informed decisions, with higher accuracy and lower risk.

## LOW-CODE NO CODE PROCESS AUTOMATION

- Low-code and no-code process automation tools allow non-technical users to build and deploy automation workflows without writing code.
- Low-code tools provide a visual interface for building automation workflows using pre-built components and drag-and-drop functionality.
- No-code tools allow users to create automation workflows using a combination of pre-built templates and simple configuration options.
- Low-code and no-code tools can be used to automate a wide range of tasks, from simple data entry to more complex business processes.
- Low-code and no-code tools can help to reduce the time and cost required to develop and deploy automation workflows, as they require less coding expertise and can be built more quickly than traditional software applications.
- Low-code and no-code tools can help to democratise automation, making it accessible to a wider range of users and departments within an organisation.
- Low-code and no-code tools can help to promote collaboration between business and IT teams, as they allow non-technical user§ to participate in the automation development process.

## WORKFLOW PROCESS AUTOMATION

- WPA is a type of BPA that focuses on automating the flow of tasks and information between people and systems.
- WPA is used to streamline complex workflows that involve multiple steps and stakeholders.
- WPA can help to improve efficiency and productivity by reducing the time and resources required to complete tasks.
- WPA can also help to improve the quality of outputs by standardising processes and reducing the risk of errors.
- WPA uses a combination of technologies, including RPA, machine learning, and analytics, to automate and optimise workflows.
- WPA can be used for a wide range of processes, from HR onboarding to IT ticketing.
- WPA can help businesses to gain a competitive edge by enabling them to deliver products and services faster, with higher quality, and at lower cost.

## IT PROCESS AUTOMATION

- ITPA uses automation to streamline and optimise IT operations and infrastructure management.
- ITPA automates routine IT tasks, such as server maintenance, patch management, and backups, freeing up IT staff to focus on more strategic initiatives.
- ITPA can help to improve efficiency and productivity by reducing the time and resources required to complete IT tasks.
- ITPA can also help to improve the quality of IT services by standardising processes and reducing the risk of errors.
- ITPA uses a combination of technologies, including RPA, machine learning, and analytics, to automate and optimise IT processes.
- ITPA can be used for a wide range of IT processes, from incident management to capacity planning.
- ITPA can help businesses to reduce downtime and improve service availability by automating and optimising IT processes.

## HOW THEY ARE RELATED AND HOW THEY DIFFER

- Business process automation (BPA) is a broad term that refers to the use of technology to automate routine business processes.
- Robotic process automation (RPA) is a type of BPA that uses software "robots" to automate repetitive, rules-based tasks.
- Digital process automation (DPA) is a more advanced form of BPA that uses digital tools and technologies to automate complex, end-to-end business processes.
- Intelligent process automation (IPA) combines RPA and AI technologies to automate processes that involve unstructured data and decision-making.
- Low-code and no-code process automation tools allow non-technical users to build and deploy automation workflows without writing code.
- Workflow process automation (WPA) is a type of BPA that focuses on automating the flow of tasks and information between people and systems.
- IT process automation (ITPA) uses automation to streamline and optimise IT operations and infrastructure management.
- While these types of process automation share some similarities, they also have some key differences:
- RPA is focused on automating repetitive, rules-based tasks, while DPA and IPA are designed to automate more complex and end-to-end business processes.
- DPA and IPA use more advanced technologies like AI to automate decision-making, while RPA is typically more focused on automating routine tasks.
- Low-code and no-code tools are designed to make automation more accessible to non-technical users, while other types of process automation may require more technical expertise.
- WPA is focused specifically on automating workflows, while other types of process automation may be more broadly focused on automating different types of tasks and processes.
- ITPA is focused specifically on automating IT tasks and processes, while other types of process automation may be used for a broader range of business processes.

# WHY IMPLEMENT PROCESS AUTOMATION?

The practice of process automation (PA) has a long history, dating back to the textile industry, where machines were first used to perform labour-intensive tasks like weaving and spinning. Nowadays, automation is widely adopted across various industries, with information technology as the primary enabler of automation in businesses. This has led to the development of different forms of process automation.

Despite its widespread usage, many companies, particularly those in the maritime industry, still need help coordinating business processes and applications. This results in increased costs, prolonged cycle time, inconsistent quality, and reduced agility.

To address these challenges, PA can play a vital role in increasing efficiency and reducing business costs. By automating tedious tasks, streamlining processes, and improving customer service, PA can increase accuracy, reduce errors in data entry, and minimise the time needed to complete a task.

In the maritime industry, PA can be applied to document management, compliance monitoring, financing, and scheduling. For example, optical character recognition (OCR) technology can automate data extraction from shipping documents, reducing the need for manual data entry and minimising errors.[17] However, implementing PA in a way that supports human decision-making is crucial.

*By automating tedious tasks, streamlining processes, and improving customer service, PA can increase accuracy, reduce errors in data entry, and minimise the time needed to complete a task.*

This requires a thorough analysis of technology and user needs, and a strategy that outlines the goals and objectives of the automation efforts.

PA is not designed to replace workers, but to make workflows more efficient. By automating repetitive tasks, PA can save time and resources, enabling employees to concentrate on high-value activities and ensure consistency and compliance. A wealth of research over the years has explored the benefits of PA, providing insights into its potential impact on businesses.

According to research completed by McKinsey, nearly half of all business activities can be automated, subject to it falling into one or more of the categories listed on the following page.[18] But despite the many proven benefits of process automation, many companies are reluctant to incorporate it as they are not fully aware of which parts of their business can and should be automated, and why.

17 IBM (accessed Feb 2023) What Is Optical Character Recognition (OCR)? Retrieved from https://www.ibm.com/cloud/blog/optical-character-recognition

18 McKinsey (2017) A future that works: Automation, employment, and productivity Retrieved from https://www.mckinsey.com/~/media/mckinsey/featured%20insights/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works-Executive-summary.ashx

## PROCESSES SUITABLE FOR AUTOMATION

- It's simple and repetitive
- It's time sensitive
- It's primarily paper based
- It required an audit trail
- It's heavily research based
- It's typically error prone
- It involves multiple people
- Delivers significant value to the business
- It's performed on a frequent basis

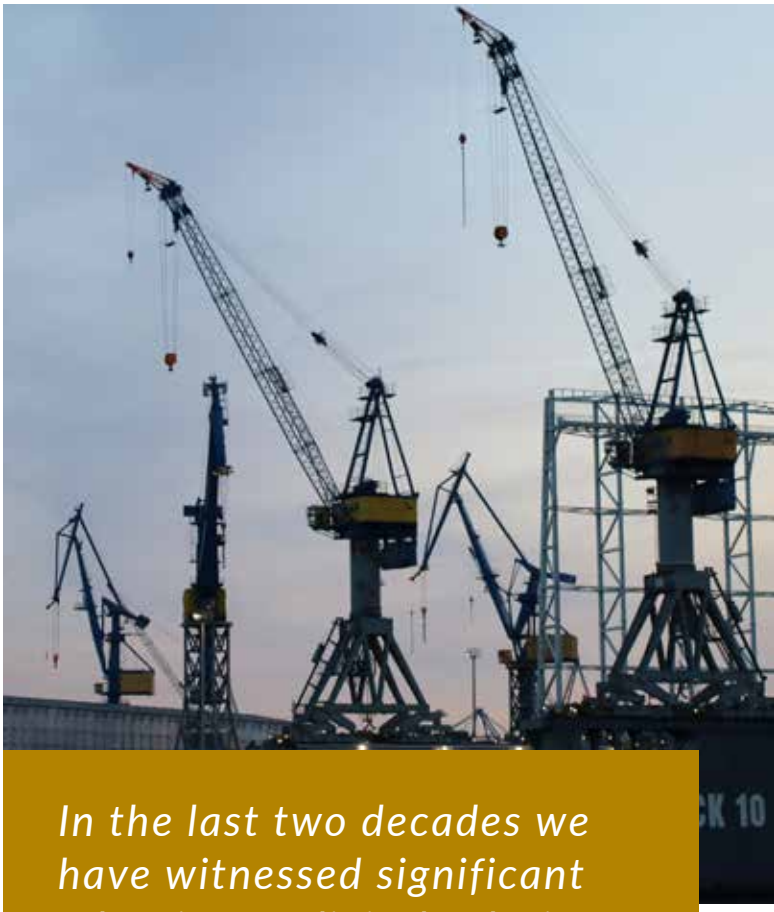
## AUTOMATION BLOCKERS

Interviews conducted for this research brought to light a number of reasons why automation projects are not implemented or fail to progress. Some of these reasons include:

- Processes are working fine and additional products are not seen as essential at the present time. One interviewee said, “We are working with skeleton staff at the moment and are managing things for now so this is really not the right time for a discussion on DA-Desk”
- Senior management is distracted
- Business is seemingly affected due to the global situation
- The company is too small at the moment. Plans to grow are in place but the implementation of automation will be discussed when that happens
- With regards to disbursement accounting, some believe this should be managed in-house and not given to a third party
- The fleet is in decline and thus no interest at present to automate
- There is no buy-in from users
- There is no buy-in from management
- The current processes are under control and there is no interest to change this
- The company is currently engaged in other numerous projects and the decision to automate is postponed to a later time
- The company is happy with the status quo

# HOW IS PROCESS AUTOMATION USED IN THE INDUSTRY TODAY?

Process automation is becoming increasingly popular amongst businesses worldwide, with 73% of organisations adopting some form of automated technologies.[19]



However, it is reported that 31% of companies still rely heavily on paper-based processes.[20] In the past, the maritime industry has received criticism for being slow to embrace advances in technology, but in the last two decades we have witnessed significant adoption of digital solutions that have revolutionised the way shipping companies operate, enabling them to increase efficiency, reduce costs and improve safety.

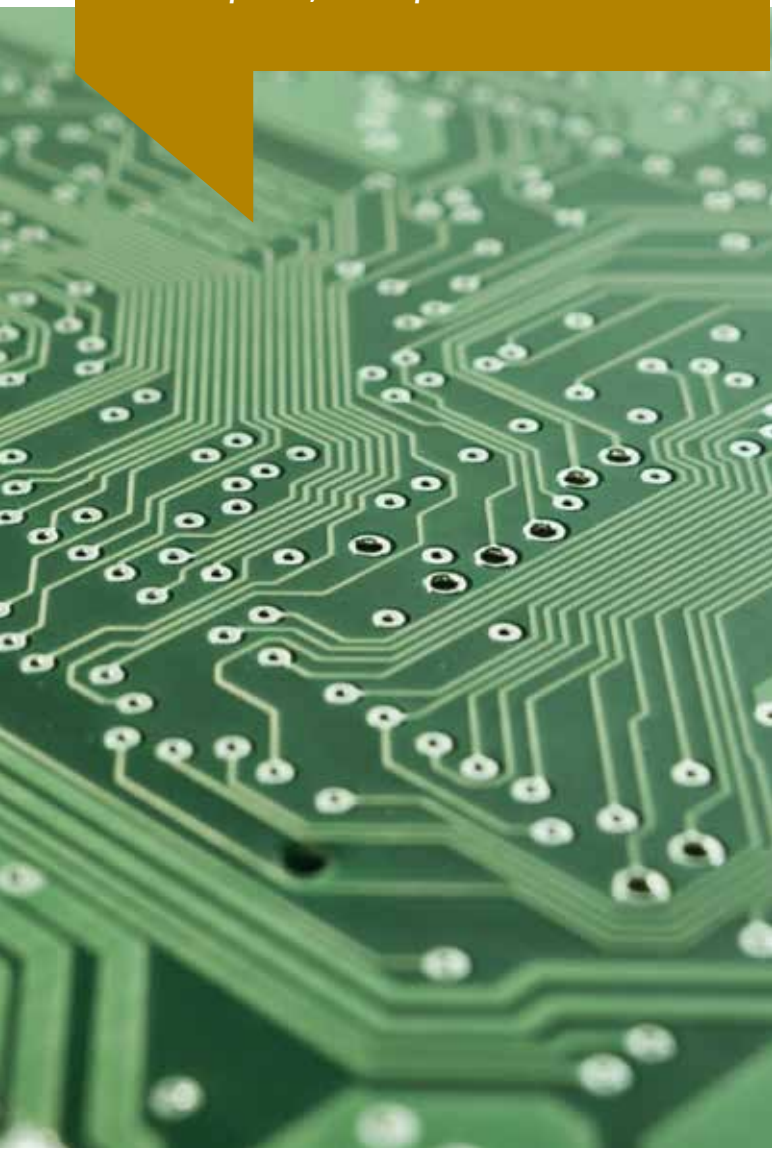
In January 2023, the Danish Maritime Authority introduced a Digital Ship Register, marking a significant departure from the traditional paper-based ship registration and trading method. The digital platform boasts a roster of over 6,000 ships and leverages process automation to enhance the efficiency and security of ship registration procedures. The shift to a digital register aims to eliminate the possibility of human error in manual data recording and streamline the workflow involved.

*In the last two decades we have witnessed significant adoption of digital solutions that have revolutionised the way shipping companies operate, enabling them to increase efficiency, reduce costs and improve safety.*

19 Deloitte (2020) Two thirds of business leaders used automation to respond to the impact of COVID-19. Retrieved from https://www2.deloitte.com/mt/en/pages/about-deloitte/press-releases/mt-pr2020-010-global-automation-intelligence-survey.html

20 PWC (2016) Industry 4.0: Building the digital enterprise. Retrieved from https://www.pwc.com/gx/en/industries/industries-4.0/landing-page/industry-4.0-building-your-digital-enterprise-april-2016.pdf

*One company in the maritime sector that is offering an array of digital solutions to help shipping automate specific processes, drive efficiency and increase productivity is Marcura, a global digital solutions and platform provider.*



Denmark has a rich history of embracing digital transformation in its regulatory services. It implemented digital certificates for seafarers and various online self-service systems for shipping companies, staffing agencies, and educational institutions in late 2021. These online systems empower seafarers by granting them control over access to their digital certificates, applications, and qualifications, enabling them to share relevant information with their employers as desired.[21]

One company in the maritime sector that is offering an array of digital solutions to help shipping automate specific processes, drive efficiency and increase productivity is Marcura, a global digital solutions and platform provider. Encompassing a range of maritime solutions like PortLog, DA-Desk, MarTrust, Laytime-Desk and many more, Marcura aims to streamline processes in the industry to reduce manual work, increase compliance, drive down costs, and facilitate overall business intelligence. As part of our research, we spoke with several Marcura representatives to better understand how the company is tackling existing challenges and aligning with the maritime industry's digitalisation and automation goals.

21 Danish Maritime Authority (accessed Feb 2023) Go-live of the Digital Ship Register. Retrieved from https://dma.dk/ship-survey-and-registration/ship-registration-and-fees/go-live-of-the-digital-ship-register

# BENEFITS OF PROCESS AUTOMATION

**95%**
**INCREASED PRODUCTIVITY**

Companies that have implemented process automation have seen an average productivity increase of 95%[22]

**25%**
**REDUCED HOURS**

Automating repetitive tasks could reduce hours worked globally by as much as 20-25%[23]

**30%**
**MORE FINANCIAL PRODUCTIVITY**

Regarding financing, process automation can boost productivity by 30%[24]

**30%**
**REDUCTION IN COSTS**

By incorporating automation, companies could experience a 30% reduction in operational costs[25]

**$26BN**
**MARKET SIZE EXPECTATION**

It is believed that the intelligent process automation market will reach $25.9 billion in 2027 compared with 13.6 billion in 2022, growing at a CAGR of 13.8% during the forecast period[26]

*Companies that have implemented process automation have seen an average productivity increase of 95%*


22 Deloitte (2019) The robots are waiting: are you ready to reap the benefits? Retrieved from https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/consultancy/deloitte-uk-the-robots-are-waiting.pdf

23 McKinsey (2017) A future that works: automation, employment, and productivity. Executive summary. Retrieved from https://www.mckinsey.com/~/media/mckinsey/featured%20insights/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works-Executive-summary.ashx

24 McKinsey (2017) A future that works: automation, employment, and productivity. Executive summary. Retrieved from https://www.mckinsey.com/~/media/mckinsey/featured%20insights/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works-Executive-summary.ashx

25 McKinsey (2019) Automation at scale: The benefits for payers. Retrieved from https://www.mckinsey.com/industries/healthcare/our-insights/automation-at-scale-the-benefits-for-payers#/

26 Markets and Markets (accessed Feb 2023) Intelligent process automation market worth $25.9 billion by 2027. Retrieved from https://www.marketsandmarkets.com/Market-Reports/intelligent-process-automation-market-23417145.html

CASE STUDY 2

# THE VALUE OF AUTOMATING AND DIGITALISING DISBURSEMENT ACCOUNTING

Disbursements are expenses a ship's agent makes on behalf of the ship operator while the vessel is in port. Port dues, towage and pilotage fees, which represent a substantial cost for the operator, need to be paid on time and in compliance with regulatory requirements.

Traditionally, this entire process was completed manually. The ship's agent would send a paper-based invoice to the ship operator, would check the invoice before forwarding it to various departments to secure approval. Once approved, the invoice would be sent back to the accounts department to make the payment to the agent.

This is a lengthy and onerous process, requiring several steps and the involvement of numerous parties to ensure all expenses are checked and verified before a payment is initiated. Risk of inadvertent non-compliance and confusion around settlements is high as payments may be overlooked, while duplicate payments can result in overfunding to the agents.

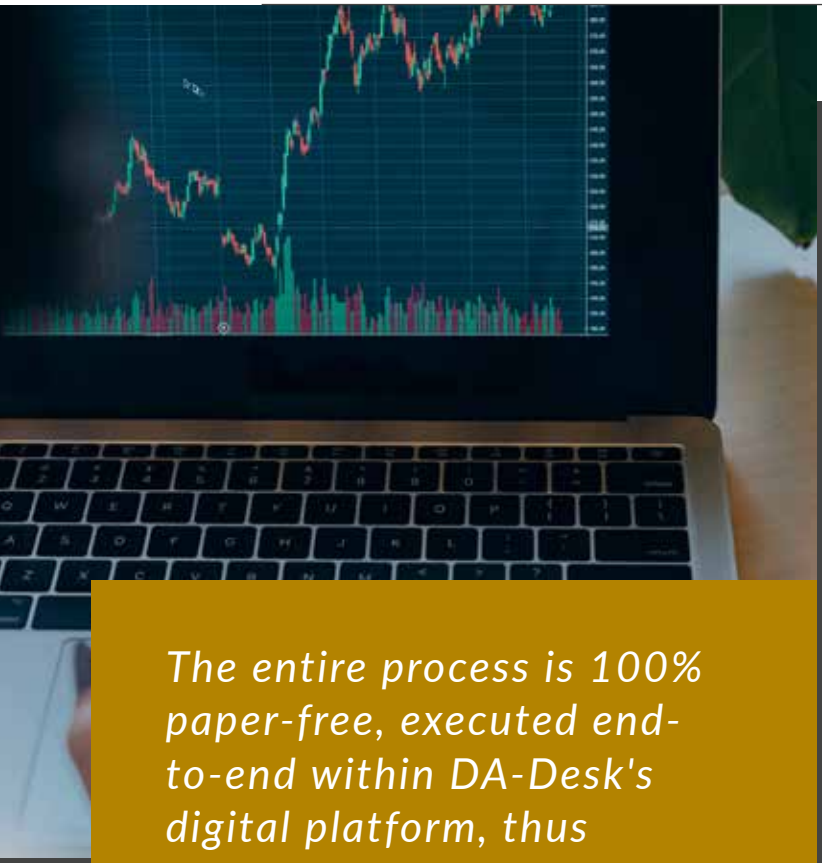
Today, this process can be made more efficient by automating and digitalising to streamline the transfer of information and better connect ship operators and ports.

The Port Spend Management platform from software and solutions provider DA-Desk automates the payments, the checking of the proforma disbursement accounts (PDAs) and final disbursement accounts (FDAs), and the approval stages during the disbursement accounting process. DA-Desk converts analogue information from pdf invoices into digital format. By doing so, the ship operator does not have to view, process, classify and archive the paper invoices, as all required information is extracted and put into an online platform stating the cost of items, what needs to be paid, and identifying cost anomalies. It then simplifies approvals.

*[Disbursements] is a lengthy and onerous process, requiring several steps and the involvement of numerous parties to ensure all expenses are verified before any payments are initiated.*

DA-Desk deploys artificial intelligence (AI)-based OCR technology to extract all the required information from the invoices, both typed and handwritten, and then allocate the cost items as per the operator's accounting profile. Automated systems identify and highlight cost discrepancies, eliminating the need for ship operators to perform these checks themselves.

The entire process is 100% paper-free, executed end-to-end within DA-Desk's digital platform, thus eliminating the need for any physical interaction or phone communication among the relevant parties. According to DA-Desk, the work of at least five different people is automated, while ensuring complete transparency and a full audit trail between DA-Desk and the customer.



*The entire process is 100% paper-free, executed end-to-end within DA-Desk's digital platform, thus eliminating the need for any physical interaction or phone communication among the relevant parties.*

A mechanism in the back-end, invisible to customers, known as DAVE (Disbursement Accounting Validation Engine) is responsible for driving part of this automation. DAVE encompasses thousands of rules that identify opportunities for cost savings or rebates from port calls for DA-Desk's customers. For example, some ports have rules whereby a vessel calling twice in the same year may not have to pay certain expenses the second time. If the ship agent is not aware of previous visits, they could still initiate a payment. Manual checking of the rule book to identify such rules and cases where costs can be saved is time consuming and prone to error. DA-Desk automates these checks, saving time and money for all parties involved in the transaction.

According to George Tsougkranis, SVP, Business & Operational Transformation at DA-Desk, the platform manages more than 200,000 port calls per year and in 2022 processed its 2 millionth port call. This provides a significant quantity of tangible data that can be used to compare ships' previous port calls and their associated costs, and thereby identify the reason for a rise or drop in cost. All of these data points are fed into DAVE to deliver additional data for the customers' benefit.

In addition, DA-Desk provides an automated cost allocation and mapping feature for all disbursement accounts. Information from agents regarding specific cost items or fees required for payment during the port call process are sent to DA-Desk, which automatically breaks these costs down and structures them in a way that enables the customer to see exactly what they need for their accounting books. DA-Desk assigns specific text-based rules to different cost items automatically.

DA-Desk also automates compliance checks for every single payment made in the disbursement process. Every party involved in a transaction, for example the ship operator, service provider, agent, the vessel, are automatically checked against DA-Desk's internal compliance system. This ensures that any issues, such as the placement of sanctions, are brought to light during the earliest stage of the transaction, helping to guard against fines and reputational risk.

As well as automation, DA-Desk uses digitalisation to translate invoices in various languages. Following the extraction of information from invoices, it is then translated and compared with the original disbursement account, without any human intervention.

CASE STUDY 2

# PORT CALLS: HOW AUTOMATION DRIVES BETTER COST MANAGEMENT AND PRE-FIXTURE EVALUATION

Port call cost management is a complex process with many logistical considerations. The time a ship stays in port is always considered when fixing new contracts. Currently, vessels spend as much as 40% of their time in port,[27] incurring significant costs. Often, vessels remain in port longer than anticipated due to unplanned downtime. Knowing how long a ship stayed in port historically for specific types of cargo and weather conditions will help to determine how long the vessel is likely to stay in port when considering the profitability of a new fixture.

To do this effectively, one of the most important documents used in recording a ship's port stay – the Statement of Facts (SoF) – needs to be digitised and then analysed.

The SoF is a physical paper-based document that chronologically lists and time stamps all the vessel's activities during its port call, and is used to support facts used demurrage and despatch calculations, for instance. Traditionally, a SoF is completed manually, often with handwritten final remarks and timings from the Master, the agent and other parties, before being emailed as a pdf attachment. Not only is this a highly inefficient way of recording and transferring information, but it is, of course, prone to human error. Moreover, each party issues their own set of documents to be acknowledged by the other party, meaning there is no standardised format for SoFs and they can differ largely between parties.

*In 2022, PortLog automated the transfer of many millions of lines of information from SoF - without human intervention*

One company, Marcura, has digitised the transcription of information within the SoF documents and analysed the data to facilitate better port call cost management and pre-fixture evaluation.

This happens through Marcura's solution PortLog, which collects the SoFs from various email attachments. PortLog then deploys OCR technology and machine learning (ML) to process the information so that it can be displayed in a standard digital format. According to Mubashshir Baig, operations manager at PortLog, 80-85% of the data is captured by the deployment of automation technologies, while the remaining 15–20% is identified by PortLog's operations team. This enables 100% of the data to be captured and ensures no information is missed.

In the back-end, PortLog's Software Automation Validation Engine (SAVE) automatically checks for 24 different rules and validates the information within the SoF document. Errors and discrepancies are automatically flagged for manual review.

27 Johnson, H and Styhre, L (2015) Increased energy efficiency in short sea shipping through decreased time in port, Transportation Research Part A: Policy and Practice, Vol 71, P167-178

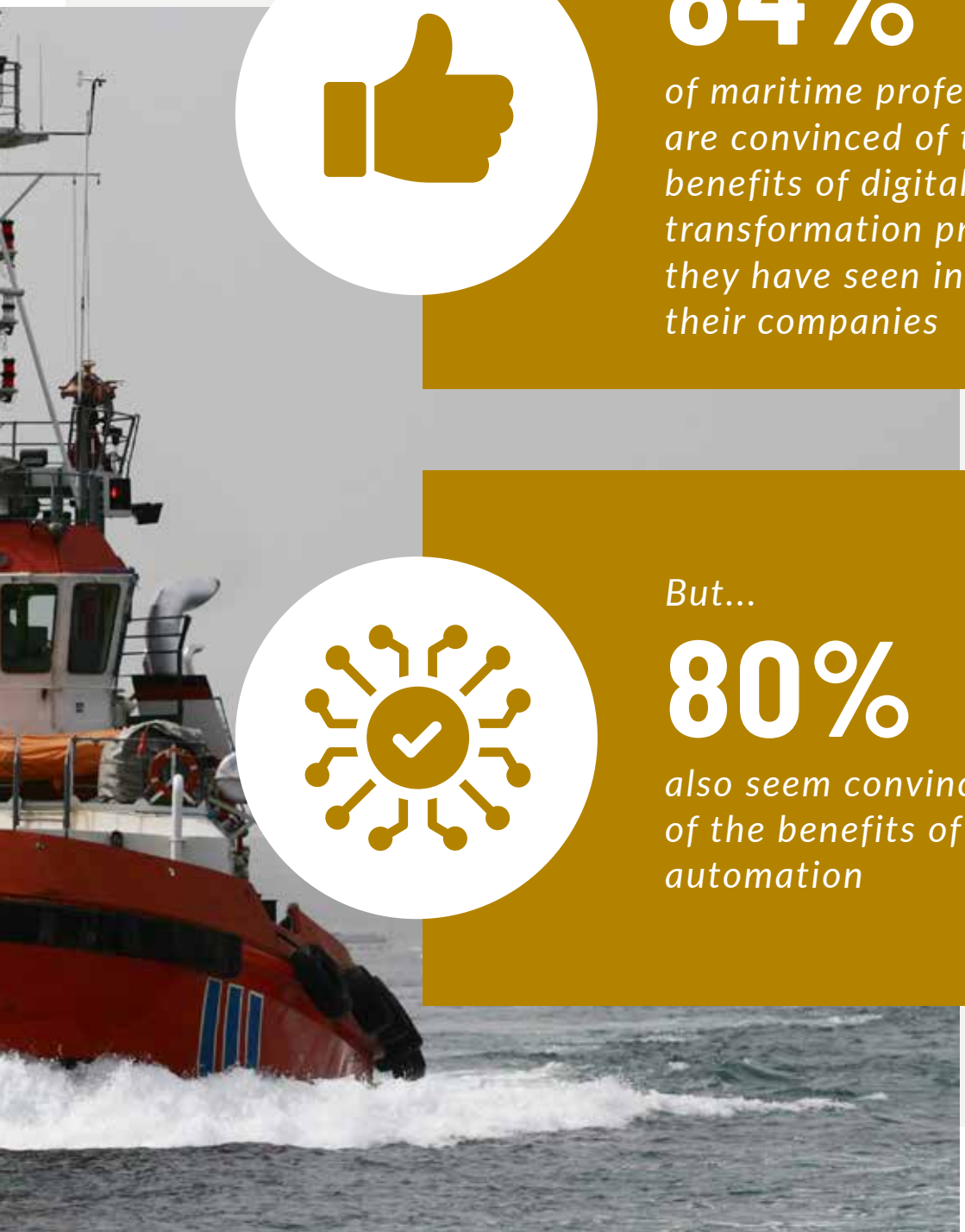
According to Baig, a SoF for a tanker, with approximately 80 events, will take around 37 minutes to complete, whereas for a bulker around 50 minutes is required. This is far quicker than the previous 2.5 hours it would typically take to manually re-type the SoF documents. Most importantly, automating this process significantly reduces the high risk of human error associated with inputting multiple figures.

To further boost the capabilities of PortLog, SoF information is combined with AIS, weather and berth-level restriction data. This is used to verify when a vessel arrived and departed the port or terminal listed in the SoF. By providing this information, PortLog offers a centralised view of all port operations, enabling ship operators and charterers to obtain accurate freight pricing for the port-stay component of a voyage at terminal level.

*Dry bulk shipowner and operator Pacific Basin recently rolled out PortLog to measure and analyse 260 owned and chartered vessels' turnaround times in over 600 ports across 100 countries.*

*In September 2022, a collaboration between Marcura and Veson saw PortLog integrated into Veson's IMOS Platform (VIP). This integration now allows users to access PortLog's data on port costs and port call times to further optimise their pre-fixture workflows within Veson's VIP Voyage Estimator. This provides more accurate estimates of the time and cost of the port call component of a voyage and delivers better access to estimates of the potential impact of unpaid time in port.*

# SURVEY RESULTS SNAPSHOT



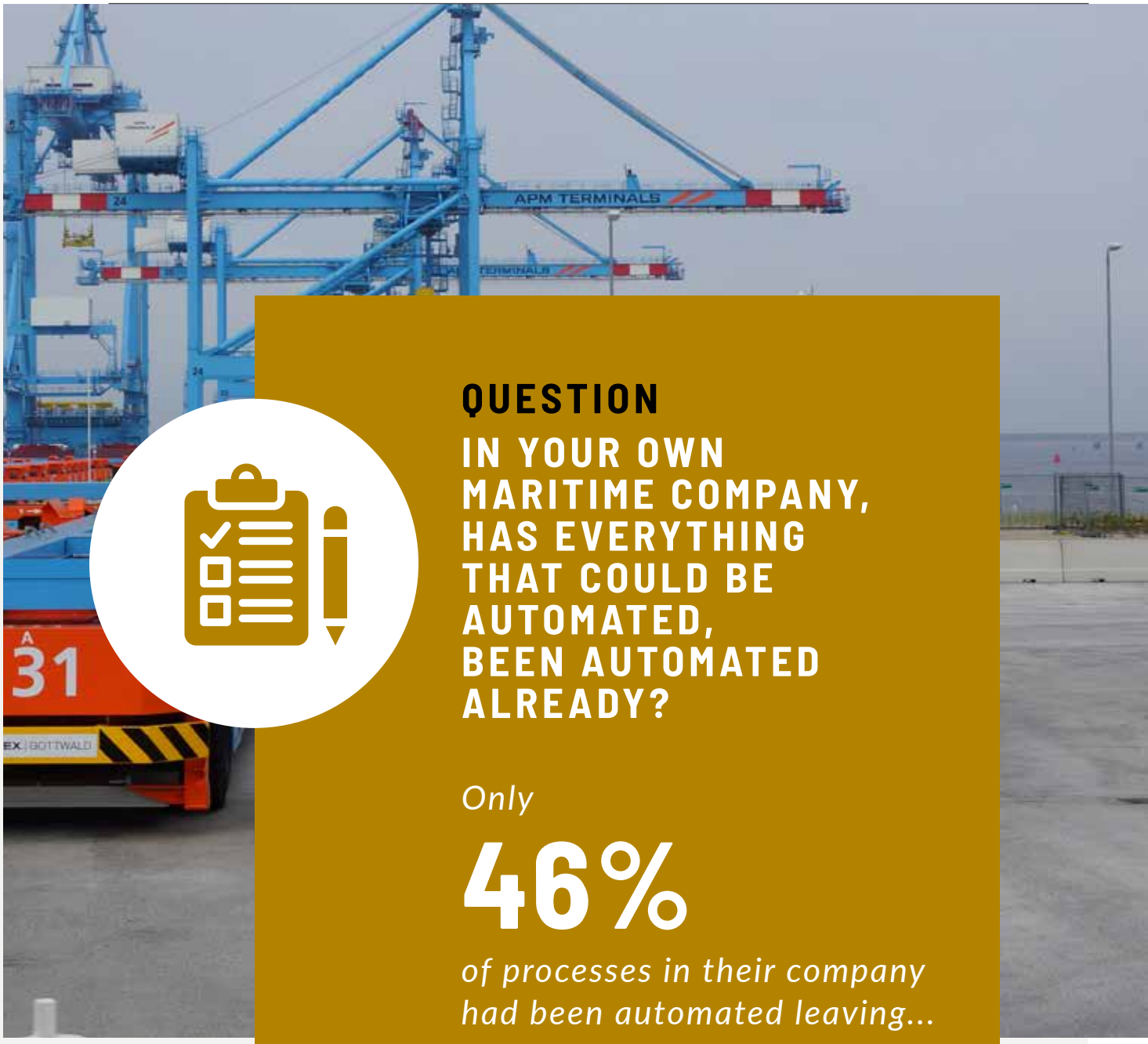
**84%**

*of maritime professionals are convinced of the benefits of digital transformation projects they have seen in their companies*

*But...*

**80%**

*also seem convinced of the benefits of automation*




## QUESTION

## IN YOUR OWN MARITIME COMPANY, HAS EVERYTHING THAT COULD BE AUTOMATED, BEEN AUTOMATED ALREADY?

*Only*

# 46%

*of processes in their company had been automated leaving...*

# 54%

*of processes yet to be automated,* ***a real opportunity.***

# HUMANS PLUS COMPUTERS

While process automation has a myriad of benefits, it is important to acknowledge its limitations and be aware that not everything can and should be automated. Human intelligence is required to analyse complex situations and make decisions.

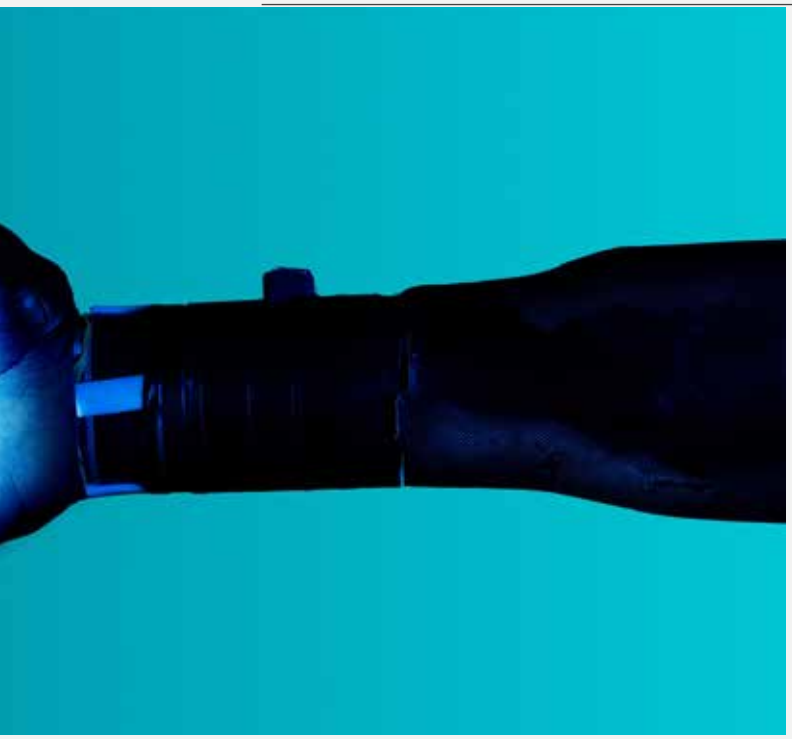
*Companies that buy into products and solutions without fully understanding their purpose, limitations and where human skills are required, can be left disappointed, frustrated, and with buyer's remorse.*

Companies that buy into products and solutions without fully understanding their purpose, limitations and where human skills are required, can be left disappointed, frustrated, and with buyer's remorse. As a result, this can accelerate existing hesitancy to adopt and engage with digital tools, including process automation.

## LIMITATIONS OF PROCESS AUTOMATION

Understanding the limitations of process automation can help to determine how, when, and where it can be applied to improve process efficiency. Some of the key limitations in automation include:

- **PROCESS TYPE AND MATURITY**
- **AVAILABLE INVESTMENT AND ROI**
- **SUPPORTING INFRASTRUCTURE**
- **ALIGNMENT OF THE BUSINESS AND IT DEPARTMENT**
- **INDUSTRY STANDARDISATION**



## PROCESS TYPE AND MATURITY

The value created by automation will in part be limited by the type and maturity of the task or process that requires automating. One example touched upon earlier is the application of bots to automate high-volume, low-variance, rule-based tasks. While they can provide enormous assistance, they are limited to automating these types of fairly repetitive tasks. More advanced processes like estimating and managing time in port or disbursement accounting will require more advanced automation platforms that may incorporate other technologies like AI.

In addition, the benefits gained from automation will depend on the maturity of the process itself. A process can be defined as immature if it lacks consistency or ownership, or has been implemented with little user engagement. Without some level of process maturity, it will be virtually impossible to pinpoint where and how automation has the potential to improve productivity.

*As with all technologies, both the immediate and future investment will play a role in the value created by process automation and the opportunities to scale.*

## COST AND ROI

As with all technologies, both the immediate and future investment will play a role in the value created by process automation and the opportunities to scale.

Basic and low-code automation is typically relatively low-cost to implement, maintain, and scale, but may be more limited in what it can achieve. More advanced automation platforms support more complex automation requests, but require a higher initial investment and greater technical support.

According to a report by Camunda,[28] three quarters of those interviewed said they do not have the budget to invest in process automation, despite acknowledging the benefits.

In some cases, companies may have the initial budget to invest in automation, but further down the line find they are financially unable to support scaling. This is often an issue when the expectations around automation are too high and there is a lack of understanding around what process automation can and cannot achieve.

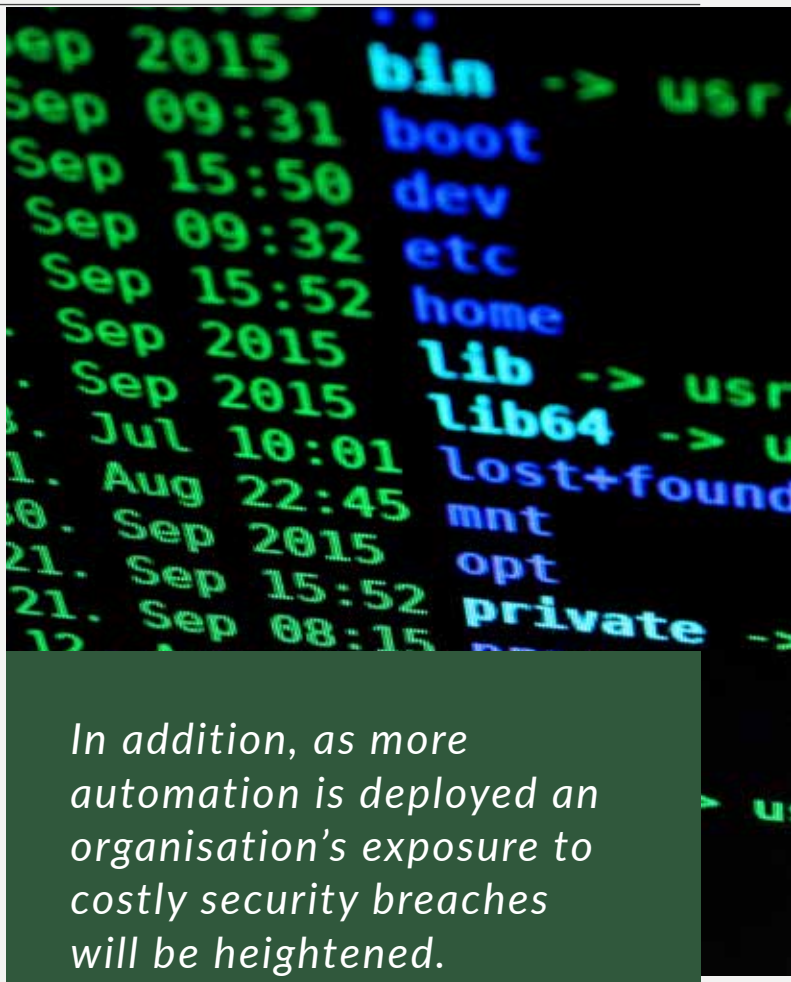
28 Camunda (2022) State of process automation report. Retrieved from https://camunda.com/wp-content/uploads/2022/01/WP-StateOfProcessAutomation2022-FIN-en.pdf

For this reason, it is imperative for the supplier of automation technology to be clear and transparent around the capabilities of their technology, and for the customer to have a clear strategy that prioritises their automation goals.

The expected and achieved return on investment (ROI) is another limiting factor in scaling process automation. A lengthy ROI may arise if the process hasn't been correctly matched with the right automation platform, if changes to the infrastructure are required, maintenance is high, or the employment of new talent is required.

While ROI is usually a significant consideration for companies when implementing any digital solution, one ship operator interviewed as part of this research noted that patience is key when it comes to achieving results. David Gooding, director, compliance risk and business process at G2 Ocean explained that in a traditional industry like shipping, taking small steps and frequent reassessment of the value of the technology is necessary. He suggests that companies should avoid honing in on the immediate results and instead look at the long-term picture to avoid automating poor processes that could be improved by other means.

Another cost to be aware of is the licensing contracts involved in process automation. These can play a role in how effectively automation tools are deployed and scaled. For example, according to the Intelligent Automation Network,[29] RPA contracts often require users to licence a certain number of bots per year. As a result, organisations end up with bots they are paying for but rarely use, or bots that are overtasked[30] and cannot handle the required workflows.




*In addition, as more automation is deployed an organisation's exposure to costly security breaches will be heightened.*

An alternative to this is for an organisation to outsource some of its processes to a third party who will manage the automation project. This can add technical expertise, make better use of current resources, and improve product quality.

In addition, as more automation is deployed an organisation's exposure to costly security breaches will be heightened. Early evaluation of the adequacy of cyber protection within the automation tool and wider infrastructure into which it will be implemented is recommended.

29 Intelligent Automation Network (2020) What is scalable RPA & intelligent automation? Retrieved from https://www.intelligentautomation.network/intelligent-automation-ia-rpa/articles/what-is-scalable-rpa-intelligent-automation

30 Forbes (2019) Overcoming the limitations of robotic process automation in the workplace. Retrieved from https://www.forbes.com/sites/forbestechcouncil/2019/08/09/overcoming-the-limitations-of-robotic-process-automation-in-the-workplace/


## SUPPORTING INFRASTRUCTURE

The existing infrastructure plays a significant role in supporting the integration and scaling of process automation. According to Sigrid Teig, commercial director at PortLog, if the infrastructure cannot support scalability, true automation cannot be achieved. If the current infrastructure cannot handle the additional requirements made by process automation, a common issue with legacy systems, the project is more likely to fail or be delayed, exacerbating any prior reluctance to engage with automation. Upgrading the infrastructure is possible, but will incur further costs.

Processes that have been automated also need to be able to adapt to changes in the infrastructure. The User Interface (UI), a core component of the IT infrastructure, is often redesigned to meet users' changing needs. RPA bots, for example, may malfunction if they cannot adapt to changes in the UI. If a few bots stop working, this can easily be managed, but if a whole automation process breaks down, the results could be catastrophic and costly.

Finding an automation platform that is easy to integrate within the existing infrastructure but also open to integrating with third party platforms will ultimately provide better access to data and information to support decision making.

Several customers we spoke with confirmed that they have found it useful to employ an external consultant to examine their infrastructure and determine if it is ready to support process automation.

*Another factor limiting the success of process automation projects is the alignment between the business and IT departments in an organisation.*

## BUSINESS-IT ALIGNMENT

Another factor limiting the success of process automation projects is the alignment between the business and IT departments in an organisation.

According to Deloitte,[31] processes are often implemented by either one of these departments, without much involvement from the other. With hundreds or thousands of automations taking place, coordination between business and IT is necessary to avoid automation silos. This exacerbates inefficiencies, increases the risk of error and prevents a unified workflow management. It also inhibits the ability to scale automation, lengthening the time to achieve a ROI.

Pairing business people and technology people and combining their goals with user research can alleviate this problem to some degree.

31 Deloitte (2018) Understanding the challenge of implementing your virtual workforce. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/nl/Documents/strategy/deloitte-nl-so-understanding-challange-of-implementing-rpa.pdf

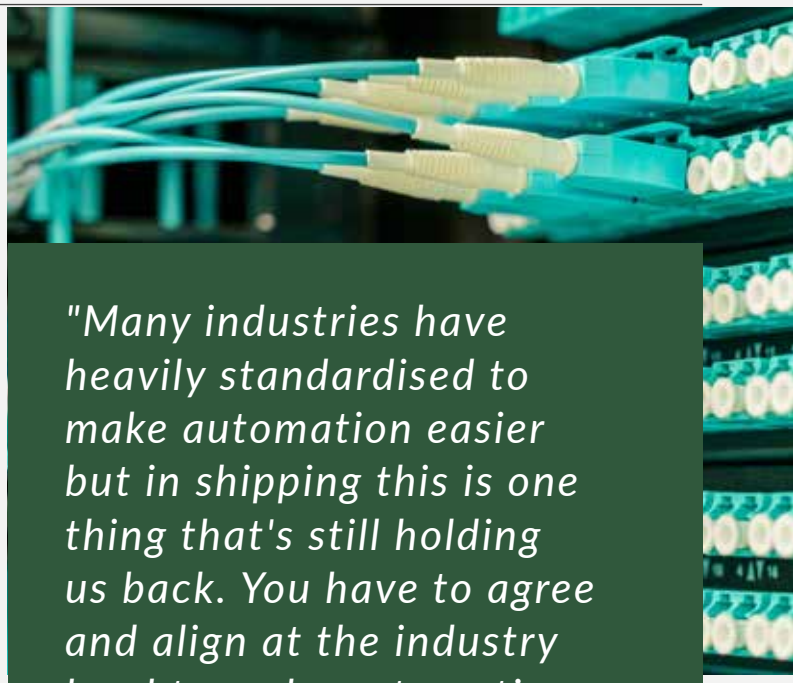
## INDUSTRY STANDARDISATION

One of the biggest pain points today in the maritime industry is its lack of standardisation. This impedes the integration and exchange of information between systems and fosters silos.

In the ports and terminals sector, automation progress is severely hindered by the lack of standardisation. APM Terminals Asia chief executive Tim Smith has previously stated that container terminals are struggling to benefit from automation.[32] IT systems and equipment used to automate processes often come from various suppliers and have their own individual technical standards, making it near impossible for them to communicate with one another. Another example touched upon earlier in this report refers to the lack of standardisation in SoF documents,[33] which plays a key role in exacerbating the current siloed approach to the industry's digital transformation.

*"Lack of standardisation means that companies need information and data that can be used across various platforms and applications,"*

**Giuseppe Turchetti,** director of PortLog Operations at Marcura.



*"Many industries have heavily standardised to make automation easier but in shipping this is one thing that's still holding us back. You have to agree and align at the industry level to make automation simpler and less costly."*

**Bruno Deszczynski,** chief technology officer at Marcura.

While standardising the industry is a huge task, and not one that can be explored within the scope of this report, Thetius' research found that solution providers can play a key role in helping stakeholders to digitalise and automate their workflows without having to first standardise their current data. Acting as intermediaries who do not insist on imposing industry standards but instead are able to work with thousands of standards that fit each individual company is one way of doing so. Hans-Christian Mordhorst, chief commercial officer (CCO) at Marcura, believes that those delivering the tools and technologies to digitalise should support end users' own unique data structures and standardise this for them as part of their offering, eliminating at least one roadblock to a company's digital transformation.

32 Informa (2019) Lack of standardisation hampering port automation Retrieved from https://informaconnect.com/lack-of-standardisation-hampering-port-automation/

33 See 'Case study: Automating the port call management process'

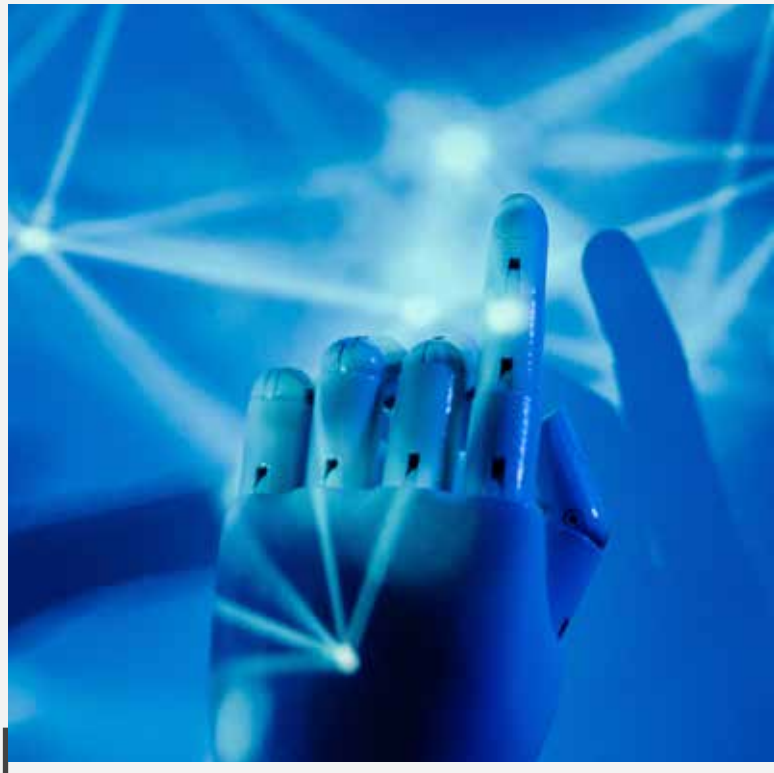
# WHY IS IT A BAD IDEA TO AUTOMATE EVERYTHING?

When automation first started being mentioned in shipping in the 1980s,[34] it was often associated with the idea of 'unmanned'. There was a train of thought that ships would be navigated by computers, with captains assisting from the shore.

We can see today that this is not the case. While automation continues to play an increasingly important role in improving efficiency and cost, it is designed to augment human capabilities and support decision making, not replace the human element. Not everything can and should be automated. Tasks that require little or no human intelligence are the perfect starting partners for automation, but entire businesses cannot be run on autopilot. From a business perspective, it is important to pinpoint where the human touch point for intervention lies.

## SUITABILITY FOR AUTOMATION

Due to their structure, some processes are just less suited to automation than others. As mentioned previously, around 50% of tasks are automatable with current technology, while the other 50% are less so.[35] Although there are many benefits to automation, processes that are very complex, have large quantities of unstructured data, are immature, or require continuous human interaction (such as decision making), will likely benefit from some automation. However, they cannot be handed over to a machine to run on autopilot.



34 Schonknecht, R (1983) Ships and shipping of tomorrow. MacGregor Publications Ltd.

35 McKinsey (2019) Winning in automation requires a focus on humans. Retrieved from https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights

CASE STUDY 4

## ADDIS ABABA PLANE CRASH

On March 10, 2019, a Boeing 737 travelling from Addis Ababa, Ethiopia to Nairobi, Kenya, crashed shortly after takeoff, killing all 149 passengers and eight crew onboard. Investigations found that the Maneuvering Characteristics Augmentation System (MCAS) was largely to blame.[36] MCAS is a piece of automation software designed to stabilise flights. It relies on sensor input to function, but can be overridden by pilots if necessary. In the 2019 crash, MCAS was relying on a single sensor, which failed. The plane started to nosedive and the pilots on board tried, without much success, to manage the situation. Various sources have reported that a lack of training in MCAS meant the pilots were unable to override it, catalysing the fatal crash.[37]

36 Aircraft Accident Investigation Report (2022) B737- MAX 8, ET-AVJ. Retrieved from https://bea.aero/fileadmin/user_upload/ET_302__B737-8MAX_ACCIDENT_FINAL_REPORT.pdf

37 Makó, S et.al (2019) 'Evaluation of MCAS system', Acta Avionica Journal. Vol XXI, 40, 1. Retrieved from https://www.researchgate.net/publication/343474935_Evaluation_of_MCAS_System

*This highlights the critical importance of choosing and using automation platforms that have centred humans at the core.*

## OVERRELIANCE AND COMPLACENCY

Automating too much can lead to overreliance and complacency. As a result, humans become detached from processes, exhibit reduced awareness, and end up trusting the system more than themselves.[38]

In shipping, the Marine Accident Investigation Branch (MAIB) has explored a number of cases where reduced situational awareness due to automation has been blamed for accidents at sea.[39] A reliance on automation and a reactive rather than proactive approach is thought to be the leading culprit of the out-of-the-loop performance problem,[40] a concept that suggests a decline in performance is a direct result of automation.

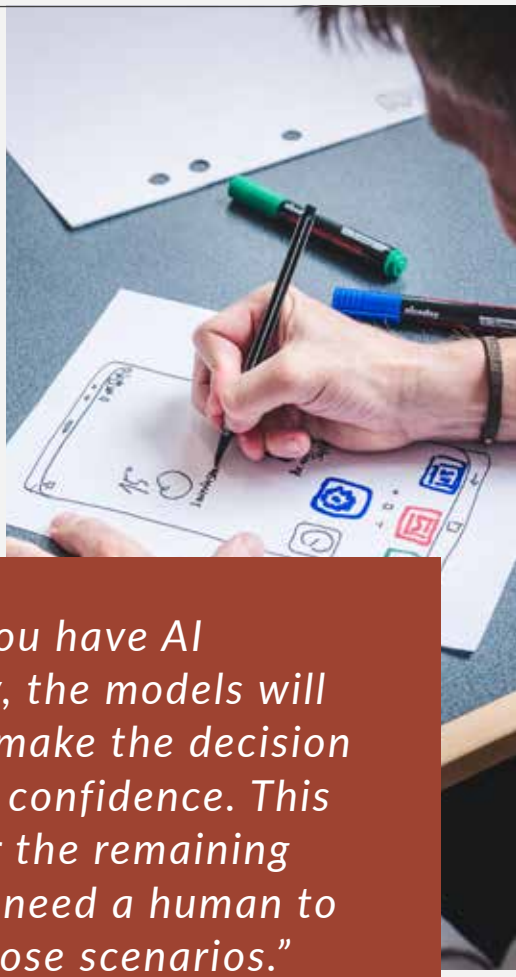
This highlights the critical importance of choosing and using automation platforms that have centred humans at the core.

38 Parasuraman R, Manzey DH (2010) Complacency and bias in human use of automation: an attentional integration. Human Factors 52(3):381–410

39 Riviera (2018) AI and automation could result in more ship accidents. Retrieved from https://www.rivieramm.com/news-content-hub/news-content-hub/ai-and-automation-could-result-in-more-ship-accidents-22750

40 Mosqueira-Rey, E., Hernández-Pereira, E., Alonso-Ríos, D. et al. (2022) Human-in-the-loop machine learning: a state of the art. Retrieved from https://doi.org/10.1007/s10462-022-10246-w

# COMBINING HUMAN INTELLIGENCE AND AUTOMATION



Regardless of the type of process automation applied, human intelligence is essential in making sense of data provided by machines, and ultimately for best decision making.

> *"Even if you have AI capability, the models will probably make the decision with 80% confidence. This means for the remaining 20%, you need a human to look at those scenarios."*
>
> Low code process automation expert.

## ALIGNING PEOPLE, PROCESSES, AND TECHNOLOGY

One of the major setbacks in process automation projects is that they do not align the goals of the human user with the goals of the automation process. Too much focus on the process with little regard to how the human user will need to adapt their skills to new ways of working can limit the potential for automation to achieve the desired results. A 2019 study by Deloitte found that 60% of executives have not yet looked into whether automation will require their workers to retrain and 44% have not looked into whether automation will change the roles and tasks their workers do and the way they do them.[41]

The colossal size of the industry and sheer volume of goods it is responsible for transporting means that at the industry-wide scale, a lack of alignment between people, processes, and technology leads to widespread fragmentation of digitisation and automation efforts. There are thousands of players involved and, according to Hans-Christian Mordhorst, chief commercial officer (CCO) at Marcura, for the industry to become more digital and automated, all of these people and companies across every geography of the world have to move forward in the same direction. But put simply, it's difficult to align so many stakeholders, which furthers fragmentation and gives the appearance that the industry is slow to embrace change.

41 Deloitte (2019) Number of organisations scaling automation doubles in 2019. Retrieved from https://www2.deloitte.com/uk/en/pages/press-releases/articles/number-of-organisations-scaling-automation-doubles-in-2019.html

*"What I've been seeing a lot is that there are a million ideas and a million things that can be done and so there's an idea that we should do them all because it will make things easier and generate more money. But if you actually listen to what is happening on the floor, it's that people have too many emails and they are losing overview. My advice is to listen to their problems. You might not agree with them, but fixing one of those problems, taking it seriously and showing that you are making an effort will make them much more receptive to any other initiative that you want to deploy."*

**Elianne de Reg,** IT business analyst at Viterra Chartering.

This research found that the maritime industry often fails to prioritise people when implementing digital technologies and other automation solutions. Many digital platforms are developed from the content perspective but not the user perspective. This means that a specific platform might hold great capabilities, but it doesn't do what the user needs it to do. Moreover, if the platform has a messy or complex UI, it will deter users from engaging with it. This decouples people from the process and ultimately leads to project failure.

*"From a user experience point of view, the maritime industry and its software suppliers are lagging behind in comparison with the finance and banking sectors. My advice to software developers is to get your UX designers involved early."*

**Elianne de Reg,** IT business analyst at Viterra Chartering.

Speaking with several ship operators and charterers, the research found that those who frequently communicate with their core technology users have a better understanding of where the pain points are and what processes will benefit the most from automation, from a human element perspective.

Moreover, the end users that have achieved the most value from their automation platforms are those that have been involved in the configuration and customisation of their solutions. For example, Viterra Chartering has actively participated in the development of its automation platforms from Marcura. Interviews conducted as part of our research confirm that Viterra's ongoing feedback to Marcura has steered the development of their solutions in a direction that aligns with the needs of the company.

In every project, there are a number of phases, and within each of these phases there will be an opportunity to automate. Looking at where the most frustration is with the user and then examining how technologies can be applied to make these processes run more smoothly is a good place to start. For example, in the aviation industry, a common pain point is dealing with customer queries around flight delays and cancellations. On February 6, 2023 alone, there were 15,567 flights delayed and 1,147 cancellations worldwide.[42] Previously, managing the communication between airline and passenger would require manual phone calls or emails, but today this is all automated. Bots send live messages to smartphones, keeping passengers informed with real-time information and reducing the pressure on airline staff to carry out these manual tasks.

*A significant part of combining humans and machines is having the right leadership in a project. Lack of leadership can generate uncertainty, and cause greater reluctance and buy-in to technologies.*

## LEADERSHIP AND TRANSPARENCY

A significant part of combining humans and machines is having the right leadership in a project. Lack of leadership can generate uncertainty, and cause greater reluctance and buy-in to technologies. Good leadership also helps to drive a culture of common understanding around the goals and objectives of the company and how automation fits into achieving this, without displacing people from their work.

The type of leadership in the organisation will also set the pace of change for automation. Slow introduction, continuous feedback (with this being fed directly back to the automation solutions provider) and a strategy that engages learning will likely result in more successful automation, according to one supplier we interviewed. A strong team that feels like it's being well led and supported will recover much more quickly if there is a mistake or a setback.

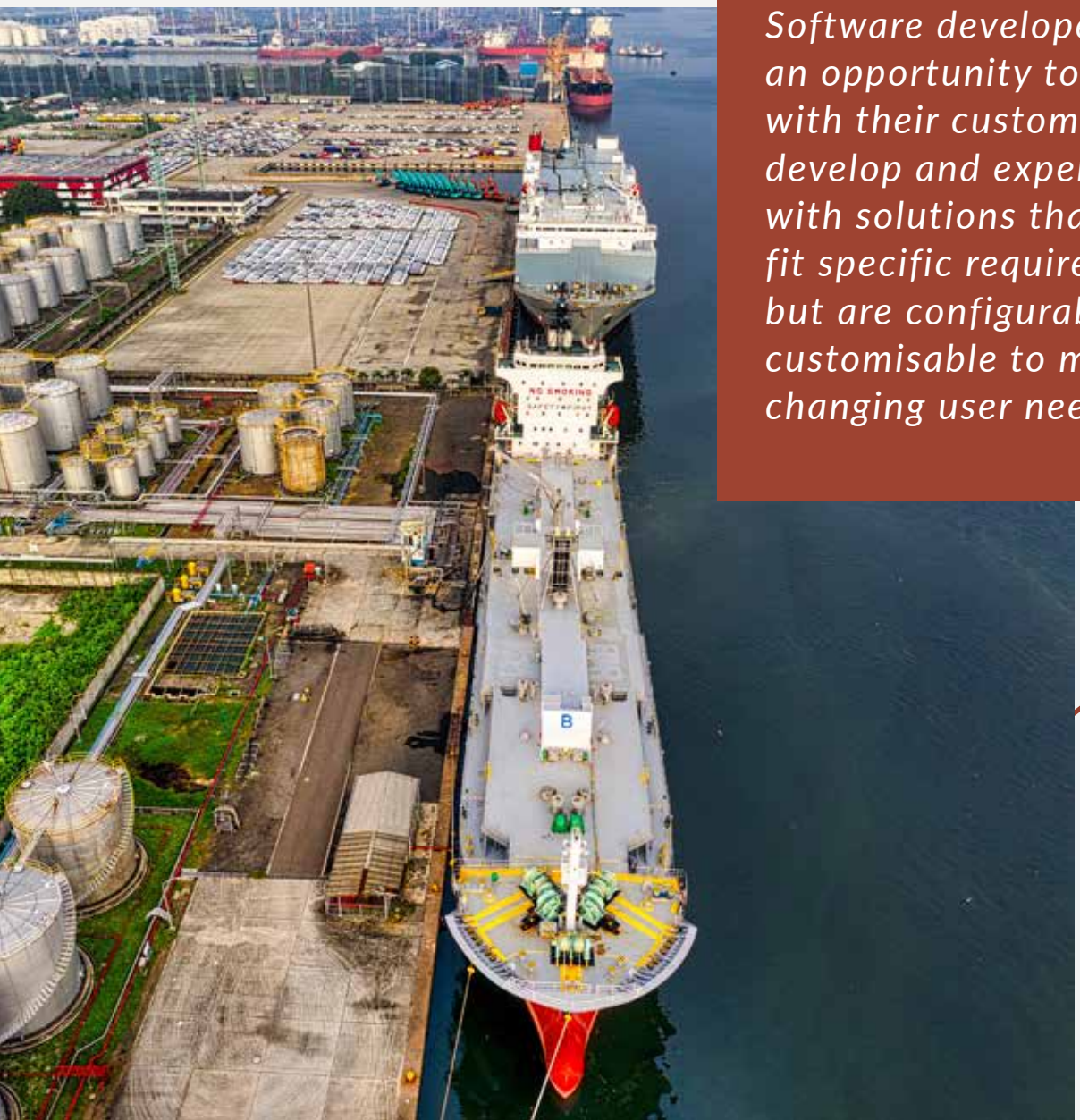
42 FlightAware.com (accessed Feb 2023) https://flightaware.com/live/cancelled/

Successful automation also requires patience. Several companies we spoke with agreed that they see industry players expecting too much too fast from their automation. This often happens when there is a lack of leadership or project ownership and those in charge do not have the clarity they require on the project goals to make it work. Multimillion dollar projects are implemented to deliver improvements, but sometimes their core purpose becomes lost in an array of buzzwords, creating a sense of uncertainty around the project's goals. The knock on effect of this is further frustration and confusion.

Making effective use of process automation requires a level of trust, not just across the organisation implementing the automation, but also between the end user and the supplier. Transparency and openness between stakeholders are the building blocks required for a trusted relationship.

Software developers have an opportunity to work with their customers to develop and experiment with solutions that not only fit specific requirements, but are configurable and customisable to meet changing user needs.

*Software developers have an opportunity to work with their customers to develop and experiment with solutions that not only fit specific requirements, but are configurable and customisable to meet changing user needs.*



# CONCLUSION

Process automation is being increasingly deployed in the maritime industry as part of wider digitalisation efforts to improve business efficiency, reduce manual labour and human error, cut back on costs, improve safety, and even reduce environmental emissions. This report has assessed the current state of process automation in the maritime industry, how and where it is limited in its application, and the current state of collaboration between humans and machines.

*It is evident from this research that process automation has brought some significant benefits to the maritime industry, despite still being in its early days.*

It is evident from this research that process automation has brought some significant benefits to the maritime industry, despite still being in its early days. Mundane repetitive tasks like email management that consume hours of manual labour have been automated. More complex processes like crew salary management, port call procedures, dry-docking, charter fixtures, procurement, disbursement accounting, to name just a few, have all been automated thanks to technologies available today. The increasing application of artificial intelligence (AI) and machine learning (ML) continue to widen the opportunities for automation.

But one of the biggest barriers that remains to even more successful process automation is a lack of strategy, which leads to overambitious, often unstructured automation. Businesses and organisations can be quick to jump on the automation train, but in doing so without a clear methodology, end up disappointed and hesitant to automate again. Moreover, a lack of industry standardisation and alignment across departments has resulted in many automation projects being implemented in silos.

Given that this is an industry built on trusted relationships, the adoption of automation is in part limited by a lack of communication, collaboration, and transparency. Where this does exist, both in and outside of the maritime industry, digital and automation projects have thrived.

*But one of the biggest barriers that remains to even more successful process automation is a lack of strategy, which leads to overambitious, often unstructured automation.*

# RECOMMENDATIONS

While process automation can deliver substantial gains in business and operational efficiency by streamlining tasks and reducing human error, it is necessary to first identify which process, and why it will benefit from automation.

Without a clear method that evaluates the most suitable processes for automation and matches them with the right platform, the benefits of automation will be limited. Successful automation requires effective marrying of people, processes, and technology, which will be bolstered by transparency, data sharing, and collaboration.


*Successful automation requires effective marrying of people, processes, and technology, which will be bolstered by transparency, data sharing, and collaboration.*

Various steps can be taken to implement successful automation. Based on the research conducted by Thetius, there are three core considerations to make when looking to automate:

1. Identify the most suitable processes for automation and find the right technology to match
2. Work with a reliable solutions provider that understands your current process, and has robust data governance and standardisation policies
3. Automate with a human-centric approach, and consider the change management process you'll need

# 01.

## IDENTIFY THE MOST SUITABLE PROCESSES FOR AUTOMATION AND FIND THE RIGHT TECHNOLOGY TO MATCH

*A thorough process analysis is a good place to start. This serves to identify any pain points or specific inefficiencies that already exist within an organisation and determine the core end goals of automation.*

While automation can replace manual efforts, improve business efficiency, and achieve cost savings of up to 30% within five years, it is important to automate with caution.[43] It is not just a matter of automating every task just because you can, but rather carefully assessing which tasks and processes will deliver the most value to your organisation as a direct result of automation.

Digitising or automating for the sake of it may provide some interesting learning experiences, but will rarely have any business benefits and will likely lead to resource waste and discourage organisations from pursuing further automation initiatives. This can place them at a disadvantage in the future compared with competitors who have successfully leveraged automation.

A thorough process analysis is a good place to start. This serves to identify any pain points or specific inefficiencies that already exist within an organisation and helps to determine the core end goals of automation. By doing so, not only does it make it easier for a company to identify the most appropriate processes for automation, but also helps them to determine the most appropriate type of automation solution for their needs.

### KEY QUESTIONS

The following questions serve as a good starting point to ask yourself in your automation journey:

#### How repeatable is the process? What is the volume and variance of the process? How many transactions are involved?

Processes performed regularly and following a standardised, repetitive format are prime candidates for automation. They are also likely to be well suited to simple workflow automation solutions, and are less likely to require more complex and costly solutions that incorporate additional technologies like AI or machine learning

43 McKinsey (2019) Automation at scale: The benefits for payers. Retrieved from https://www.mckinsey.com/~/media/McKinsey/Industries/Healthcare%20Systems%20and%20Services/Our%20Insights/Automation%20at%20scale%20The%20benefits%20for%20payers/Automation-at-scale-The-benefits-for-payers.pdf

## How stable is the process?

If the process is complex and prone to change, it is likely to be less suited to automation than more stable candidates

*If your processes are already standardised then they may be easier to automate.*

## How much standardisation is required to automate?

If your processes are already standardised then they may be easier to automate. Automating a process first without standardising it could lead to future difficulties in scaling and further unexpected costs. However, standardising messy, unstructured processes can be another costly pain point. One way is to standardise as you automate. A vendor that is happy to work with all kinds of data and information, standardised or not, and can standardise your processes for you as they automate could create additional value for you

## Are you likely to scale automation in the future?

Consider whether you are likely to scale automation efforts across your business in the future. If you are looking to achieve digital transformation, it is likely that some scaling will be required. Low-code, integratable solutions will be easier to scale than complex ones. You also need to make sure your business and IT departments are aligned if you want to successfully scale. Another important question to ask prior to automating, is whether your organisation has the right people with the right skills to manage and maintain the technology as it scales

## How much, if any, human interaction do you want or need to remain in the process once automation is applied?

A process requiring a high degree of human interaction and decision-making will need a flexible and customisable solution. BPA, for example, will be much more appropriate than RPA in this scenario

*Consider whether you are likely to scale automation efforts across your business in the future.*

## Will the automation platform need to be integrated with other systems? If so, what type?

Identifying this early on will help you to find an automation partner that supports integration with other systems

## Do your budget constraints match your goals?

Determining your budget for automation will help you to be realistic in your expectations for what automation can and cannot achieve. Overambition can lead to rapid, unstructured automation, which in turn often results in failure to achieve goals and feelings of disappointment. If your requirements are complex, difficult, or bespoke, and you have the budget, it may be beneficial to speak with a third party vendor who specialises in creating customised process automation solutions that suit your specific needs

# 02.

## WORK WITH A RELIABLE SOLUTIONS PROVIDER THAT UNDERSTANDS YOUR CURRENT PROCESS, AND HAS ROBUST DATA GOVERNANCE AND STANDARDISATION POLICIES

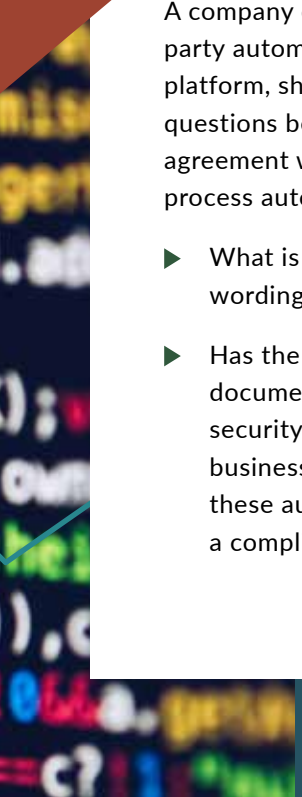
*"You need to have an early informed view on whether your data is in a state that even allows for automation to take place. Data standards in our particular industry are one of the biggest challenges to achieving digital transformation."*

**Hans-Christian Mordhorst,** chief commercial officer (CCO) at Marcura.

A company considering a third party automation vendor or platform, should ask the following questions before finalising an agreement with a vendor for a process automation project:

- What is the contractual wording of the data clauses?
- Has the vendor got well documented information security policies, GDPR and business continuity plans? Are these audited? Have they got a compliance department?
- Is the vendor willing to carry out an extensive review of our current process?
- Will the vendor work with us extensively to fully understand the risks, benefits and returns? Will they help us to get sign off from our C-Suite for the investment?
- How established and proven is the vendor? How many times have they done this automation project before for a company like ours?
- How will the vendor ensure ease of automation implementation for us? What does the vendor need from us to do so, and what will they do themselves?
- Does the vendor understand the change management we will need to carry out? How will they help us with that?
- What does their customer service look like? What are their service level agreements?
- How will the vendor help us to reduce the risks of our processes, including the associated legal, financial, transactional, regulatory and operational risks.

The incorporation of automation technology has become a game-changer for businesses seeking to streamline their processes, boost efficiency, and eliminate the risk of manual errors. Nevertheless, outsourcing an automation process must ensure that the selected vendor possesses robust data and information security policies to protect your valuable information. Your data remains your property, and it is imperative that it is safeguarded. Hence, collaborating with a trustworthy, experienced, and transparent vendor capable of providing an automation solution that aligns with your specific needs while ensuring data security is crucial.



*Automation has the potential to make data more standardised and shareable across organisations, departments, and even with logistics providers.*

Automation has the potential to make data more standardised and shareable across organisations, departments, and even with logistics providers. And, if you allow it, as an API feed to other platforms. For instance, shipping companies need access to relevant data such as inventory levels, shipping schedules, and delivery status to optimise their shipping process.

By aligning efforts and sharing knowledge, departments and organisations can work together to achieve common goals, reduce the risk of manual errors, and streamline the automation process. The input of more data into the server enhances the system's intelligence.

However, to enable data sharing, the automation server must integrate with internal and third-party solutions, and the systems must exchange data in a format that all parties can understand easily. Additionally, data must be secure and protected from unauthorised access. To ensure smooth integration and secure data sharing, companies may need to partner with technology vendors specialising in process automation and data integration. These vendors can help identify the systems and tools that can be integrated and develop and implement the necessary protocols and processes to ensure secure and efficient data sharing.

Many automation solutions permit data to be aggregated anonymously with other platform partners to provide industry benchmarks, enabling businesses to run more efficiently. During the evaluation and contracting phases, it is crucial to ask pertinent questions of your vendor to ensure that you choose a solution that aligns with your unique requirements and one that delivers the desired results that enhance your competitiveness in the global marketplace.

*"You have to agree on what the data is going to be used for and standards of interpretation. These standards are something I see less of in this sector than other sectors. I was in the metal industry before and there were a lot of initiatives going on to standardise anything right down to the naming of a specific particle that you could sell. In this industry, I have seen less of that. If you look at our voyage management system, it's very free for anyone to fill in however they like so there are no standards on what kind of data we are using and how we are interpreting the data."*

**Elianne de Reg,** IT business analyst at Viterra Chartering.

## DATA GOVERNANCE POLICY

**DATA MANAGEMENT AND PROCESSING:** Outlines procedures for data collection, storage, and processing

**DATA ACCESS AND SHARING:** Defines access and security measures for data sharing

**DATA RETENTION AND DISPOSAL:** Details storage and deletion procedures for data

**DATA SECURITY:** Outlines measures to protect sensitive data from unauthorised access

**DATA PRIVACY:** Outlines procedures for managing personal data in accordance with regulations

**METADATA MANAGEMENT:** Outlines procedures for managing metadata for efficient data management

**DATA OWNERSHIP AND STEWARDSHIP:** Outlines responsibility for data management and decision making

# 03.

## AUTOMATE WITH A HUMAN-CENTRIC APPROACH, AND CONSIDER THE CHANGE MANAGEMENT PROCESS YOU'LL NEED

*As this report has discussed, humans play a vital role in the success of process automation and digital transformation.*

As this report has discussed, humans play a vital role in the success of process automation and digital transformation.

A human-centric strategy that encourages people, processes, and technology to work in harmony is required. First and foremost, it is necessary to establish the biggest frustrations for people, and then evaluate how automation will reduce those frustrations without accidentally transferring them to another part of the business. It's no use implementing an automation project in one part of a business if it fails to recognise the knock-on effect to people working with other processes in other departments.

It is critical to automate with platforms that have been designed with the human touch at their core. Partnering with an automation solutions provider that encourages the customer to be involved in the development and configuration of process automation tools is recommended. A company that has thought about how people will use and benefit from the process in question being automated, rather than just how the platform improves a process, will be more flexible, adaptable and customisable to different user needs. These types of solutions will also compliment rather than restrict the growth and development of human skills.

*Low-code technologies mean that virtually anyone with no coding experience can manage automation processes, making it more accessible, regardless of skill set.*

When thinking about the human element in automation, it also makes sense to consider automating with low-code systems. Low-code technologies mean that virtually anyone with no coding experience can manage automation processes, making it more accessible, regardless of skill set.

It is also fundamental for an automation project to have ownership. Those working manually with certain processes for a long time will be used to their method, and so a careful and considered approach is needed when changing people's working

*"I would love to see more low-code implemented. I think it's what is needed because people have to do so many different things and with low-code a lot of training and skill is not actually necessary as long as it's doing a job that makes people's lives easier."*

**Elianne de Reg,** IT business analyst at Viterra Chartering.

habits. This includes allocating processes and responsibilities to people to reduce uncertainty and ensure clarity.

Furthermore, this requires those in charge of the change to listen to the problems and frustrations that are occurring and implement a solution to fix them based on real feedback. Implementing solutions that no one asked for will not only not improve a process, but also have the potential to generate feelings of resentment and mistrust around automation.

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