FONASBA – YOUNG SHIP AGENT OR SHIPBROKER OF THE YEAR AWARD 2017

OPPORTUNITIES AND CHALLENGES FOR PORT AGENTS BY THE INCREASING DIGITAL PROGRESS OF THE MARITIME SECTOR

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Abstract

As the digitalization progresses more and more in all sectors of the economy, the maritime sector will be revolutionized as well.

The digital future creates great opportunities for growth and innovation. Digital transformation also poses challenges and raises many questions, for example: How will digitalization affect the business models of port agencies? How does the task area change? What kind of risks can occur? Are port agents able to design their job actively and therefore maneuver successfully into a digital maritime future?

This paper presents a snapshot of the evolutionary process and assesses the short-term repercussions of the port agents with a focus on Europe. Furthermore it will analyze the above mentioned opportunities and challenges for ship agents through increasing digitalization of the maritime sector in the future.
Referring to enhancing the safety, efficiency and effectiveness, digital systems like European-Single-Window and digital databases have already been implemented. Those have already changed the traditional role of port agents in regard to reporting obligations, communication with port authorities, owners and charterers. As the mentioned digital systems are aiming towards simplifying and harmonizing to the greatest extent possible, the productivity increases and jobs are threatened.

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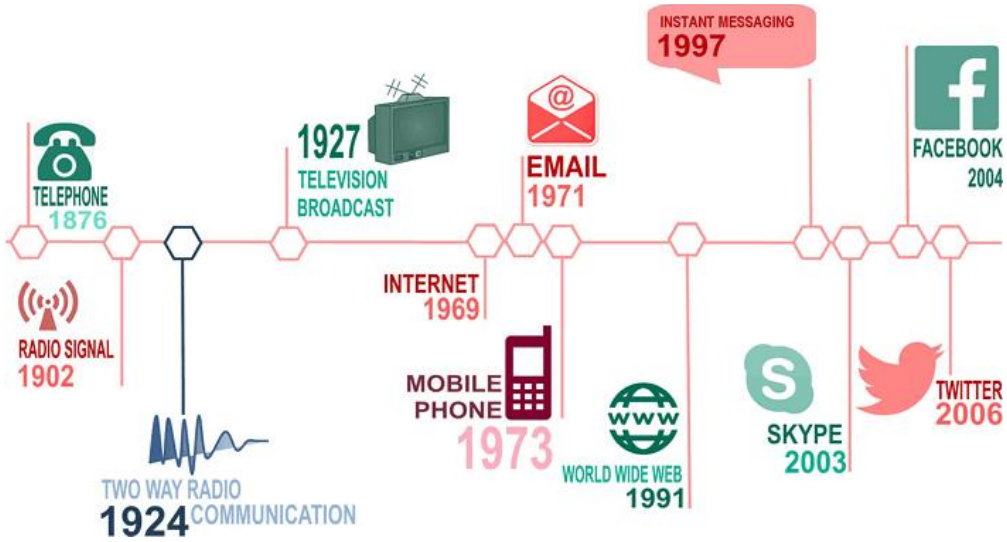
1. Foreword

Over the last few years, discussion on the shipping industry has primarily revolved around the fallout from the economic crisis. In addition to general economic challenges such as fleet utilization and the achievement of viable rates, shipping companies in Germany are also increasingly facing the impact of the digital transformation and a changing competitive environment.
The effects of the digitalization can be felt more and more clearly in many areas of life. Over the last 30 years almost all parts of our life have been affected by increasing digitalization. But what does this mean for the port agent?
We just have to take a look back to a port agent in the 1990s, who needed to go out with binoculars to spot the incoming vessel. Today's port agent opens one of several vessel tracking apps on his smartphone and can spot almost every vessel in world and has all relevant information in seconds from wherever he likes. The 90s agent communicated with telex and was not reachable for the vessel when he left the office. Today's agent is reachable for vessels or authorities twenty four hours a day, seven days a week three hundred sixty five days a year and can easily send documents via email or messaging apps like WhatsApp from his smartphone, tablet or laptop. If the 90s agent wanted to book a holiday it took hours or days to check all the travel deals and finalize the booking. Today's agent is able to do this within minutes on online platforms.
Likewise, the System environment changed on board of vessels and therefore also changed the duties and requirements. This leads us to question what we can expect from a digital workplace and how we need to improve in order to flourish our business in the future.

2. The development of Communication Technology

Even before the emergence of technology, communication was at the forefront of relationship building and business development. The changes in communication technology over the last four decades have been revolutionary.
Today, newer advancements like texting and messaging apps have spurred even more efficiency within workplace communication. We have come a long way since the days of written letters and memos.

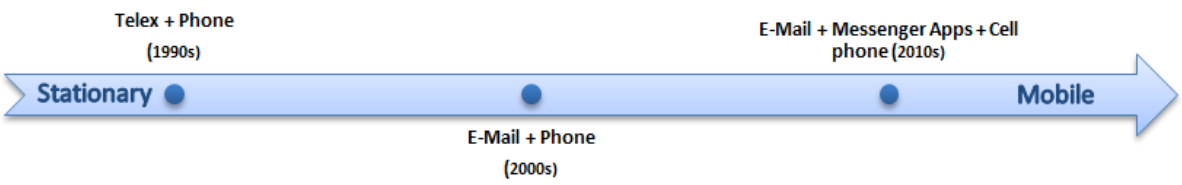


Source: Web Marketing - Global IT srls (www.global-it.it/cosa-facciamo/web-marketing)

2.1 How different communication technologies change the way of working

In the 1990s the Telex service (TELegraph EXchange) was, next to the telephone, the major communication channel and could be used for real time one-on-one communication with someone on the other side of the world, or it could be used to send a previously drafted message. Telex Machines are tele printers, which can send and receive text based messages using the telegraph service. Messages sent by a Telex machine are known as Telex messages. Telex service was one of the most popular methods for communicating with ships while at sea and maybe considered as the precursor to email communication. In its heydays, a Telex machine was used for the transmission of regular messages to the ships, preparing and sending reports before, during and after a ship's operation (f.e.: Arrival reports, Container Load Lists, Cargo operations reports et al.)

At the beginning of the new millennium E-mails made more and more inroads on the communication between vessels, charterers, owners and agents. It was a key factor in changing the way work was done.
The email allowed businesses to have more instantaneous connections to people all over the world. Additionally, the ability to create a written record of processes, logistics and decisions was very beneficial to organizations. Emails revolutionized the way business is done and has resulted in a more efficient and dynamic workplace. It completely replace the fax machine and Telex service.
Since 1999 when texting gained momentum with cell phone users, it has transformed human behavior and has become a primary form of communication. It has influenced the workplace as well, and while it is widely known as a casual form of communication, the concept of texting is still seen as professional. In companies that provide corporate cell phones, texting is an even more legitimate form of communication. Aside from the standard SMS text messages, companies like WhatsApp and Skype have emerged in recent years to offer ways for smartphone users to connect.
When the smartphone revolution gained momentum in the late 2000s they quickly became substitutions for digital cameras and even PCs and laptops. Although employees could connect to one another through email and instant messaging services like Microsoft Lync on their PCs, smartphones are the primary technology being used. With this change came the need to mobilize communications. Messaging apps like WhatsApp or Skype allow for more collaboration such as file sharing and more productivity in a culture that is more fast-paced than ever. With remote working on the rise, messaging apps allow teams to work seamlessly and effectively.
Today, with millions of apps available, the possibilities of what smartphones can do are almost limitless. There are apps for messaging, videoconference calls, vessel tracking apps and organizations are even creating their own apps for employees to do business. The workplace has changed dramatically with the influence of the smartphone, and with the flexibility of these smart mobile devices, people are more productive.



2.2 The way from paper work to tailored agency software solutions

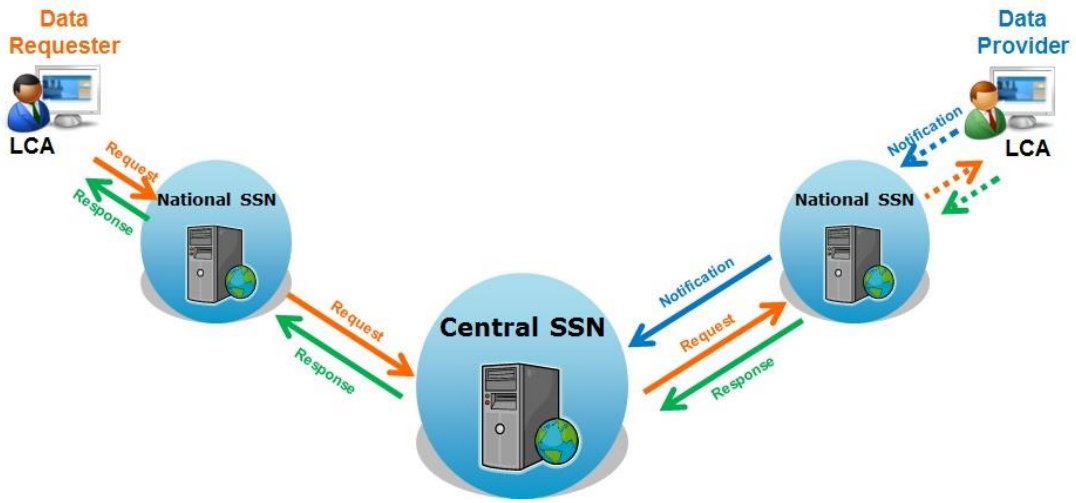
During the last 50 years our offices and workflows changed a lot. All documents had to be filled manually and any made mistake was a major problem. Office utensils were only a calculator, books, pen and paper. Nowadays, there are several software providers like GAT Ship or Softship, which offers intelligent software solutions for all kinds of ship agencies, Charterers and Owners. This software is designed to make the shipping business more efficient and smart and give the port agencies complete visibility over a port call. This software combines all aspects of a port call from the Dashboard Furthermore, this software enables agents to create documents like SOF, NOR or cargo manifest within few minutes. In the past agents had to go through different tariffs manually in order to create a Proforma D/A. Nowadays, agents have the possibility to deposit all relevant tariffs in the system and it will calculate a proforma D/A within seconds. These possibilities save a lot of time and enable agents to work faster and more efficiently.

3. SafeSeaNet

SafeSeaNet is a vessel traffic monitoring and information system, established by Directive 2002/59/EC. This is one of several directives aimed at preventing accidents at sea an in addition to prevent marine pollution after the loss of MT ERIKA off the French coast in 1999. The system enables the EU Member States, plus Iceland and Norway, to exchange information on vessel traffic and cargo movements. It was mainly set up to enhance the maritime safety and security, environment protection and efficiency of maritime traffic and transport. Furthermore it aims to improve the response of authorities to incidents, accidents or potentially dangerous situations at sea. The system became fully operational in 2009. One year later a graphical interface was added which allows information to be displayed on nautical charts. This has the benefit that users quickly get an overview of activities in their areas of interest.

The main information elements that are contained in the system and made available to users are as follows: [1]

- Archived historical ship positions (over several years)
- Additional information from AIS-based ship reports (e.g. identification name/numbers, flag, dimensions, course, speed, dimensions, destination and ship type)
- Estimated / actual times of arrival / departure
- Details of hazardous goods carried on board
- Information on safety-related incidents affecting ships
- Information on pollution-related incidents affecting ships
- Details of waste carried on board/to be offloaded (from June 2015)
- Ship security-related information (from June 2015)
- Information on the location of remaining single hulled tankers
- Information on the location of ships that have been banned from EU ports
- Digital map layers (containing information on depths, navigation aids, traffic separation schemes, anchorages, AIS station locations, etc.)



[1] *http://www.emsa.europa.eu/ssn-main.html*

3.1 Automatic Identification System (AIS)

AIS is an automatic tracking system used on ships and by Vessel Traffic Service (VTS) facilities for identifying and locating vessels by electronically exchanging data with other nearby ships, AIS base stations and satellites. It is an open-sourced system that relies on VHF broadcasts on open frequencies. Since 2002, AIS has been a mandatory installation for international voyaging ships with a gross tonnage of at least 300 tons and all passenger ships, regardless of size. Because it has been found useful to the maritime industry, even leisure crafts and fishing boats are now often equipped with AIS. With an estimated number of over 300,000 installations, AIS is currently an important and widely used technology and solution in smart transportation. It aids in traffic monitoring, collision avoidance, search-and-rescue (SAR) operations, accident investigation, and navigation. The number of AIS-equipped vessels may be higher because they are not required to register with online service providers.

3.2 AIS Threats

AIS data can be manipulated in various ways. Identity fraud can be accomplished by a vessel or hacker transmitting fake or stolen IMO (International Maritime Organization) information identifying the AIS transmissions as a vessel. Another form of data manipulation is vessels obscuring their final destination in their AIS transmissions.
Ship spoofing for example is the process that involves the crafting of a valid but nonexistent vessel by assigning static information such as ship name, identifiers (MMSI and call sign), flag, ship type, manufacturer, and even dimensions like ship status, position, speed, course, and destination to the fictitious ship. This kind of attack provides an array of malicious attack scenarios, like making it appear that a particular vessel is with the jurisdiction of an adversarial nation. Ship spoofing could cause issues for automated systems identifying data and making inferences based on collected information from AIS.

4. Digitalization of reporting formalities - Directive 2010/65/EU

On 20th October 2010, the European Parliament and the Council adopted Directive 2010/65/EU on reporting formalities for ships arriving in and/or departing from ports of the Member States. This directive is more commonly known as the Reporting Formalities Directive (RFD). This Directive is designed to achieve harmonization and simplification of reporting formalities in all European ports, based on the mandatory electronic data exchange of relevant information between the maritime transport sector and authorities. According to EU Directive 2010/65/EU Member States should deepen the cooperation between the competent authorities, such as their customs, border control, public health and transport authorities in order to continue to simplify and harmonize reporting formalities within the Union and make the most efficient use of electronic data transmission and information exchange systems, with a view to the simultaneous elimination of barriers to maritime transport and the achievement of a European maritime transport space without barriers. Parties involved in trade and transport should be able to lodge standardized information and documents via an electronic single window to fulfill reporting formalities. Individual data elements should only be submitted once.

4.1 Single Window Concept

The concept of Single Window was introduced by United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) to enhance the efficient exchange of information between trade and government. The efficiency with which information can be submitted is becoming a key factor in the competitiveness of companies involved in cross border activities. According to UNECE (Economic Commission for Europe) Single Window is a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfil all import, export, and transit-related regulatory requirements. In practical terms a single window environment provides entrance for submission and handling of all data and documents related to the release and clearance of an international transaction. If information is electronic then individual data elements need only be submitted once.

"A single window is defined as a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit related-related regulatory requirements."[2]

[2] *The United Nations Economic Commission for Europe Recommendation on Establishing a Single Window (Recommendation 33, ECE/TRADE/352) , (http://www.unece.org/cefact/recommendations/rec33/rec33_ecetrd352_e.pdf)*

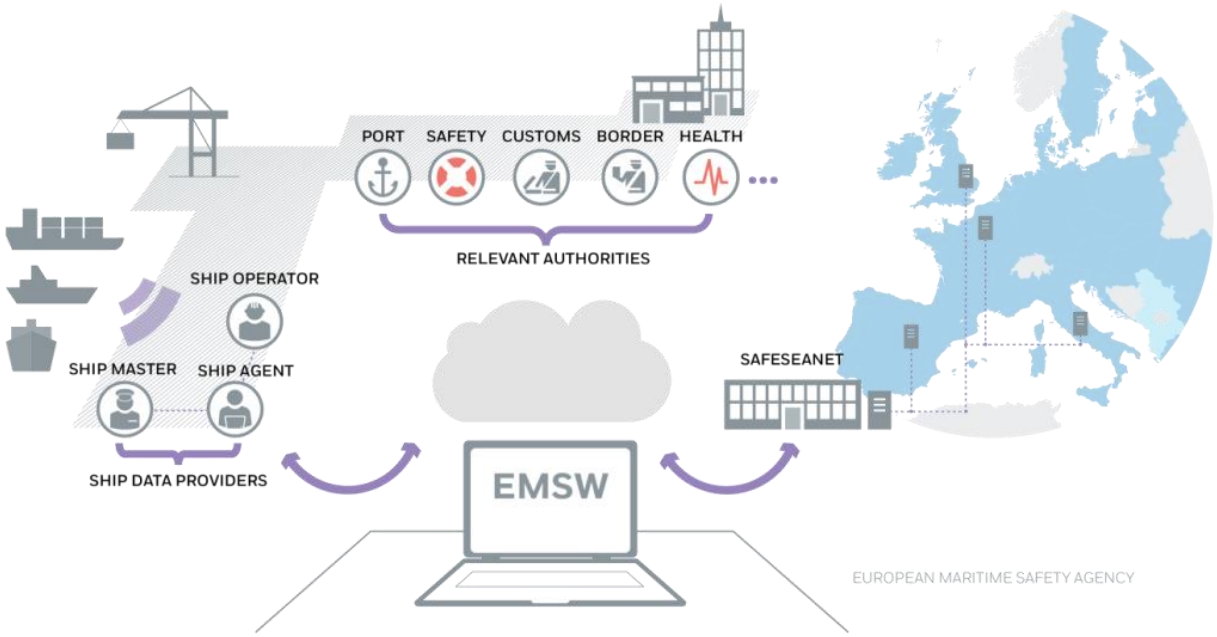
4.2 European Maritime Single Windows (MSW)

Maritime transport administrative procedures are complex, time-consuming and even today, are often done on paper. Maritime Single Windows encompass policies and solutions for simplification and facilitation of ship reporting formalities. In Europe, due to the strategic importance of creating a plain field for all modes of transport across Member States, the Maritime Single Window has been given a prominent position.

EU Maritime Single Windows have been associated primarily with two interrelated policies:

- **Directive 2002/59/EC** for vessel traffic monitoring (the "VTMIS Directive") aimed to improve safety and environmental protection in European seas
- **Directive 2010/65/EU** for ships arriving in and/or departing from ports of the Member States (Reporting Formalities Directive -RFD), describing the actions that Member States should implement to make efficient use of electronic data transmission and information exchange systems

The implementation of a simplified and harmonized European Single Window is currently only partly achieved and is still a prototype.



4.3 National-Single-Window in Germany

In Germany the Federal Ministry of Transport and Digital Infrastructure is responsible for the deployment and management of the German National-Single-Window (NSW). A high level steering group comprising members of the Federal State has been established to provide technical expertise. The Central Command for Maritime Emergencies is responsible for running the daily NSW platform operations as well as providing IT support for the authorities connected to it. Germany has adopted a mixed approach in developing its NSW system. Two submission options are available to ships calling German ports; they can either submit reporting formalities through a centralized German NSW web application - which only offers a graphical user interface - or through a port communication system (PCS), which accepts many more methods of transmission, such as the upload of PDF and Excel files or the use of a system-to-system interface. The centralized NSW is by definition harmonized and has the same interface regardless of the port, however it only offers a manual graphical user interface (GUI), therefore data providers with long passenger or cargo list often prefer to report in the PCS.
The PCS's in Germany cover more ports at the same time. Although independent from one another, the German PCS's have been rationalized and harmonized at national level in terms of content. However, differences still remain among the forms due to local legislation.

The following table indicates how each reporting formality is transferred to which authority:

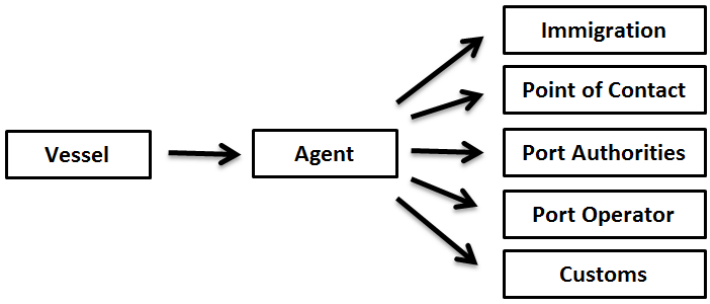
Reporting formality	Process
FAL form 1 – General Declaration	Submitted via NSW/PCS through GUI or Excel form to NSW
FAL form 2 – Cargo Declaration	Submitted via NSW/PCS through GUI or Excel form to NSW
FAL form 3 – Ship's Store Declaration	Forwarded to customs - hard copy retained on board for customs/police inspection.
FAL form 4 – Crew's Effect Declaration	Forwarded to customs - hard copy retained on board for customs/police inspection.
FAL form 5 – Crew List	Submitted via NSW/PCS through GUI or Excel form to NSW and forwarded to German Immigration.
FAL form 6 – Passenger List	Submitted via NSW/PCS through GUI or Excel form to NSW and forwarded to German Immigration.
FAL form 7 – Dangerous Goods	Submitted via NSW/PCS through GUI or Excel form to NSW and forwarded to Competent Authorities' systems.
Maritime Declaration of Health	Submitted via NSW/PCS through GUI or Excel form to NSW
Part A no. 4 Notification of waste	Submitted via NSW/PCS through GUI or Excel form to NSW
Part A no 5 Notification of security	Submitted via NSW/PCS through GUI or Excel form to NSW
Part A no. 6 Entry Summary Declaration	Submitted via NSW/PCS through GUI or Excel form to NSW
Part C 72h PSC Pre-arrival notification	Submitted via NSW/PCS through GUI or Excel form to NSW
Part C Arrival/departure notification	Submitted via NSW/PCS through GUI or Excel form to NSW
Part C Ship-to-Ship transfer reporting	Submitted via NSW/PCS through GUI or Excel form to NSW

4.4 Implementation of Reporting Formalities Directive (RFD)

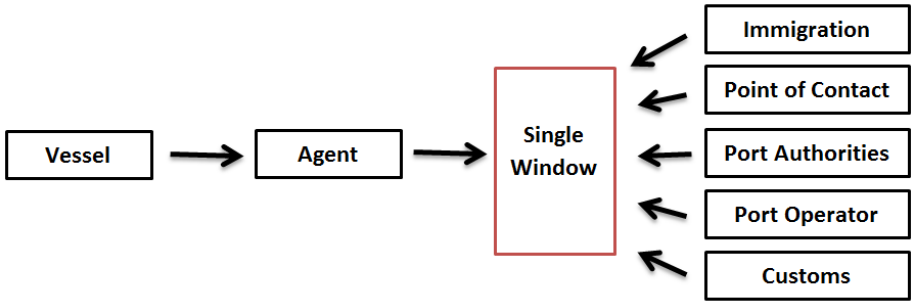
Reporting once has been only partially achieved as not all authorities are yet connected to the NSW and customs, police and other authorities still require hard copies or forms to be forwarded by email. Furthermore the reporting formalities were not rationalized - in some cases new formalities were introduced.
Likewise, the standardization of formalities at national level has already only been partially achieved. The reason for that is the existence of different PCS's and different processes that are present in different ports across Germany. While there are national standards set in Germany on the information and data that should be required, the digital format and data structure are different for Excel forms required by different PCS's. Therefore procedures haven't been simplified yet.

4.5 Work flow of reporting - then and now

The work flow of reporting changed through the implementation of the reporting formalities directive. Before the of RFD introduction, agents gathered the all relevant information required by national and local laws (f.e. FAL forms) and distributes data to all involved parties separately. These forms were sent from the vessel in different formats (pdf, .doc, .xsl) and were forwarding by email.



After the implementation of RFD and introducing of a Single Window, only one file is needed to report all relevant information. The Authorities are gathering their relevant information directly from the single window.



4.6 Implementation challenges

On 1st June 2015 the Directive 2010/65/EU came into force and with it the German National Single Window. Now, almost two years later we are able to evaluate the implementation problems occurred.

One of the main issues of the new reporting formalities is that the stated objectives of harmonization and rationalization were not achieved, due to fact that even more formalities were introduced. Furthermore requests from authorities are still different in each state and port. Currently the system is fed with much unnecessary information, which doesn't lead us to any kind of simplification. Another issue is that there is still no harmonization within the excel sheets due to different service providers and which leads to irritation and incomprehension on board. In order to really collect and work with all information in a single window it would be necessary to connect pilots and port operators as well as the missing authorities. Furthermore a responding tool should be implemented to enable smooth communication with all involved parties within the system. This would avoid double work in different systems.

In order to simplify the procedure for the master it should be established only one simple file which includes all necessary information for every port in whole Europe. This file should be continuously updated with changes instead of filling a complete excel file for every port call. For example the crew list should only be updated, if there is any crew change. It should not be forgotten that there are vessels in shortsea service which are calling different ports almost every day. Keeping a file only up to date would reduce the workload for the crew on board.

5. Changes occurred on board and ashore through increasing digitalization

During the course of this work, I carried out a survey on the vessels which are sailing under our agency. This survey participated captains and different officers…

It showed that the duties and requirements on board changed likewise through increasing digitalization. The captains remarked that the administrative work on board had increased significantly. They have to feed several of additional web applications for owners and also the effort of filling the excel files for the National Single Window takes more time than in the past. This mainly resulted from the additional information which are required since the implementation of the NSW. Furthermore it is even more work, because of the missing harmonization of reporting files in Europe. This of course affects these captains more than others due to fact they sail in short sea service and call on a new port almost every day.

Nowadays, the crew has to do E learning modules steadily while they are on board and often also need to do seminars when they are at home which is an additional burden.

This is a result of additional safety and security requirements during the years.

For agents, the most changes through the digitalization are in communication and reporting of information. The whole process has been accelerated which is positive. Thanks to the new ways of technology vessel and agent get closer together.

6. Weaknesses and threats caused by digitalization

A digital workplace needs to be connected in order to exist. Therefore, one big disadvantage of the digital process is the absolute dependence on a good working internet connection and electricity. Most of the systems are not functional without a good internet connection and prevents working offline. Unfortunately on some vessels and in some regions of this world internet connections are very bad. One potential solution for that is to implement mobile high-speed internet, which is very expensive on vessels. But furthermore the size of files and data needs to decrease.

7. Web presence and online marketing

Ten years ago it may have been a choice to jump on the online bandwagon, but now it's an absolute must to survive and thrive as a company. Having a website and participating actively on social media is essential nowadays. Internet enables company's global reach to its customers and potential customers. Utilization of new marketing possibilities enables companies to meet customers' needs or even creates same needs in fast-moving ages. Several shipping companies already implemented client tools for cargo tracking, bookings or costs calculation which brings the client even closer to the company.

8. Education – E Learning systems for employee development

Digitalisation changes the way of education in companies and on vessels equally. Employees and seafarers should be seen as business assets to be developed in order to optimize their prefessionalism through knowledge. As expierence is one of the most important capabilities for agentes and brokers working in the shipping business, it is very important to find new ways to disseminate knowledge and expirience. E Learning is a great way tor impart these contents and can be used supportively.

In earlier years companies had to contract a third party to come in and teach new employees the fundamentals of new concepts and then relying on internal employees to show how those concepts are applicable to their unique work environment, or maintaining a dedicated training staff that handles all aspects of employee education. Through disseminating training materials online, companies are able to effectively eliminate a majority of education expenses. Employees are able to access training materials whenever they want, including during down times or even while away from work.

Due to better access greater flexibility in terms of the pace at which employees can complete required training modules is granted. Beside the financial benefits, there are some other advantages as well f.e. If all employees access the exact same training content presented in the exact same way, then it's easier to standardize the process. Furthermore many employees don't allow themselves to become fully immersed in person to person training sessions out of a fear of failing in front of their co-workers. E-Learning tools allow them to complete their training in anonymity.

E Learning has also been used on merchant vessels for several years now, in order to improve performance and minimize safety risks. Seafarer's offices are always moving, therefore a high flexibility is absolutely necessary.

9. The Human factor in a process of change

As already analyzed in the foreword there are a lot of differences between an agent back in the 1990s and an agent nowadays. On the national maritime conference in Germany in April 2017, the unions pledged that the human factor shall not be forgotten during the digital process.

It is true that digital progress enables shipping agencies to handle more vessels with fewer employees. That increasing productivity of course contributes that jobs in this sector are threatened. The employees have to evolve their flexibility and work speed steadily.

Furthermore, they have to have a high willingness to improve each day due to the resulting increasing demands. Nowadays, agents, as all other employees affected by digitalization, have to work according to the principle that those who cease to improve also cease to be good. Through internet and E learning employees have more possibilities to improve their knowledge and to stay up-to-date. The newly acquired freedom that agents are able to work from almost everywhere promotes the work life balance.

In conclusion, I believe the unique capabilities of each agent cannot be replaced by any digital solution or kind of centralized help desk. The basic principle of agencies is to help clients with their unique skills and experience. This leads to the simple fact that every agent that disappears is not helpful at all. The absence of any human presence on-site always means a lack of any possibility for an overall assessment of the situation and the ability to respond appropriately and without delay to unforeseen events. There will be no system which will be able to respond properly to the unexpected and to improvise and this is an important characteristic which is needed in the shipping business and the importance of which should not be underestimated.

10. Conclusion

Even in times of fast change, we should not forget our core mission and abilities, which is to meet the demands of our clients and the vessel. We're there to offer our know-how in order to optimize the shipping business. The tasks and the pressure on board have changed as well and therefore captains need assistance more than ever. Therefore we should show them solutions and make their life as easy as possible. This is adoptable for brokers working with their clients. The new possibilities through digitalization like software solution, new ways of communication and web application enable agents to get better and more efficient. In my opinion it will bring all involved parties like vessels, authorities and agents closer together and will improve our cooperation.

The world is getting smart, that's a fact, therefore we have to accept change and make the best out of it for our business. Digitalization will bring us big changes but will not destroy the business. The survey conducted revealed that, port agents are still important to guarantee a smooth port call. I think this is also adoptable for brokers. As long as there will be humans on board, there will be a need of port agents. In order to take the chances to improve our business we should start to improve ourselves. Education will be a key factor in the process of moving in a digital future. I think we have better opportunities than ever to improve and share our knowledge and experience.

Nevertheless there is still homework to do in order to simplify and further harmonize the maritime transport / reporting obligations need to continue to move closer to the goal of creating a European maritime transport space without barriers. I think the European union should not lose the sight of the desired outcome – to simplify and harmonize.

The authorities should think about which information is really necessary and not just demanded because it was like this 30 years ago. The rationalization of the required information by the authorities will reduce the work for all the vessels and agents who have to feed several systems with unnecessary data.

One big disadvantage that increases through the digitalization of everything is the internet dependency. Nowadays it is almost impossible to meet the reporting obligations without any internet connection, therefore preventive solutions for an internet breakdown needs to be establish. Furthermore improvements of security standards are necessary to avoid hacking attacks and system breakdowns.

I don't think agents have to fear the future because a removed agent is not good at all, for no one. Even if crewless maritime transportation will arise, agents in the world ports are still needed. To conclude, the changing future holds more opportunities than threats for shipping agents. Winston Churchill said "To improve is to change; to perfect is to change often" and I think suit very good on the faster changing world. Nowadays, we have much more possibilities for acquiring information than in the past. We have a lot opportunity and we should use the resources available for driving our business forward and achieving optimum growth.

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