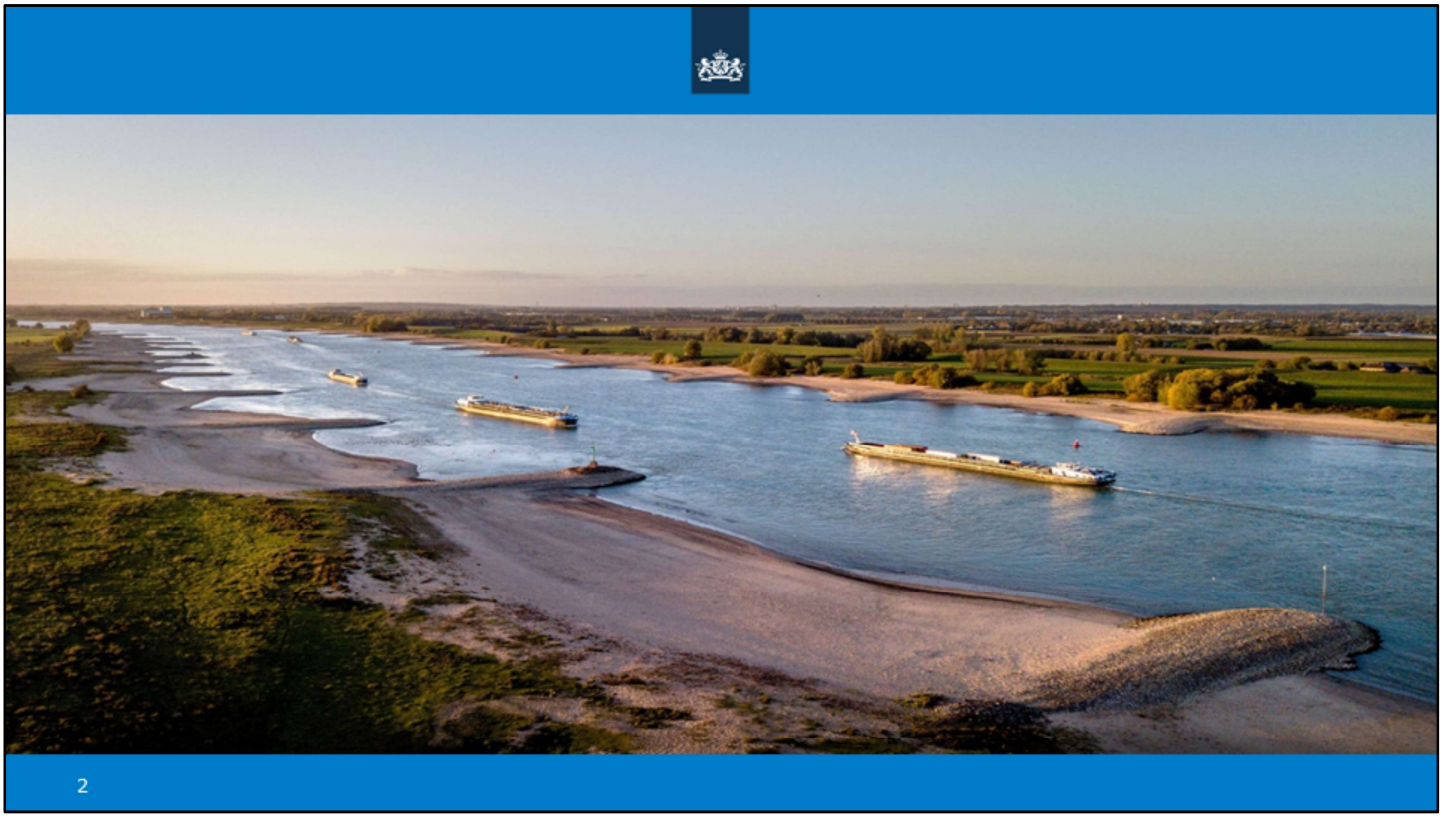
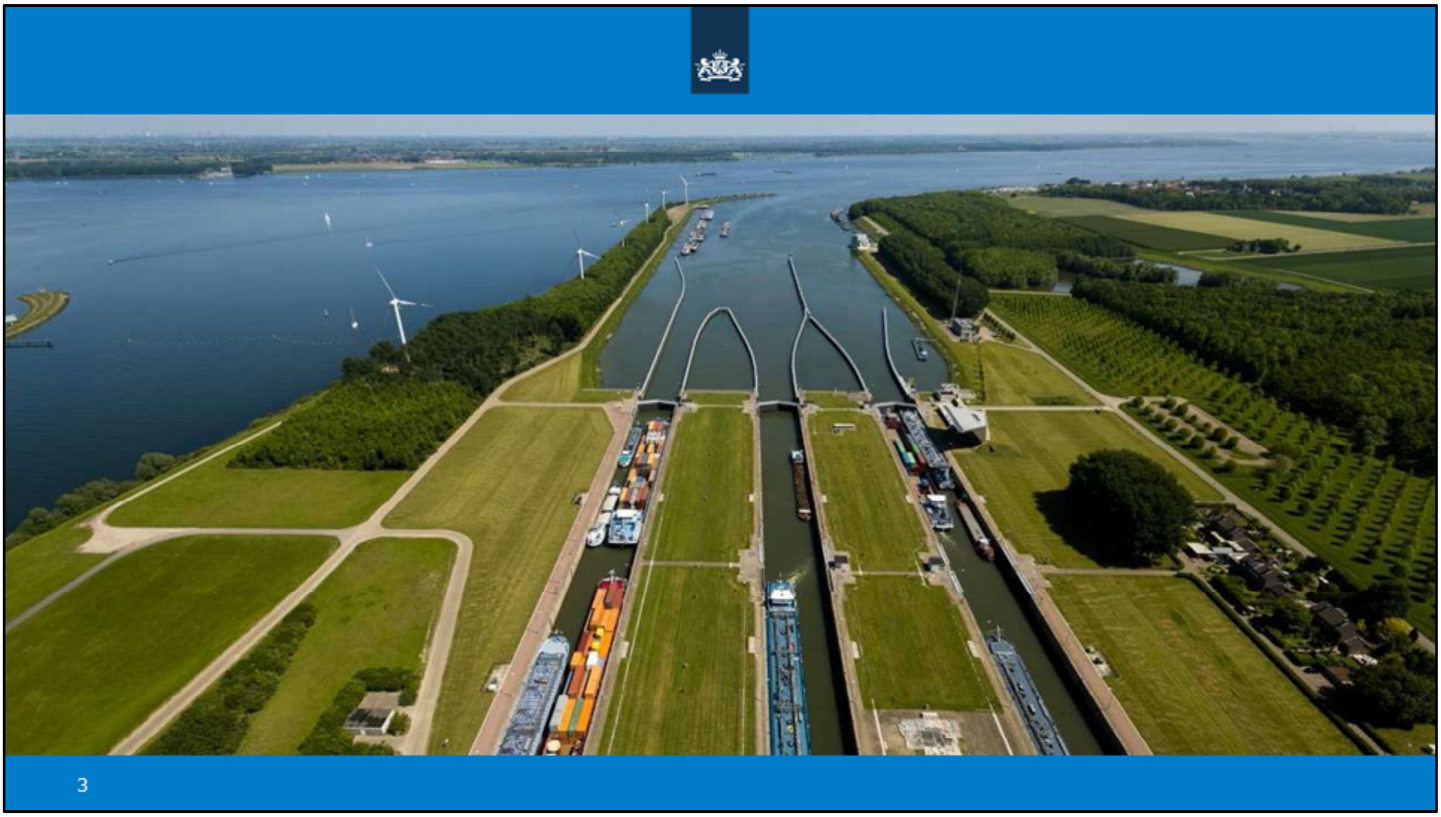
The **Smart Shipping program** is a program of the Ministry of the Dutch Ministry of Infrastructure and Water management. Since the Ministry foresees a lot of potential in these developments with respect to her policy goals, and wants to facilitate these developments.



When we talk about Smart Shipping we refer to all innovations regarding the **accommodation of far reaching automated sailing** on seas and inland waterways. Smart shipping does not necessarily mean autonomous, neither does it necessarily mean unmanned.

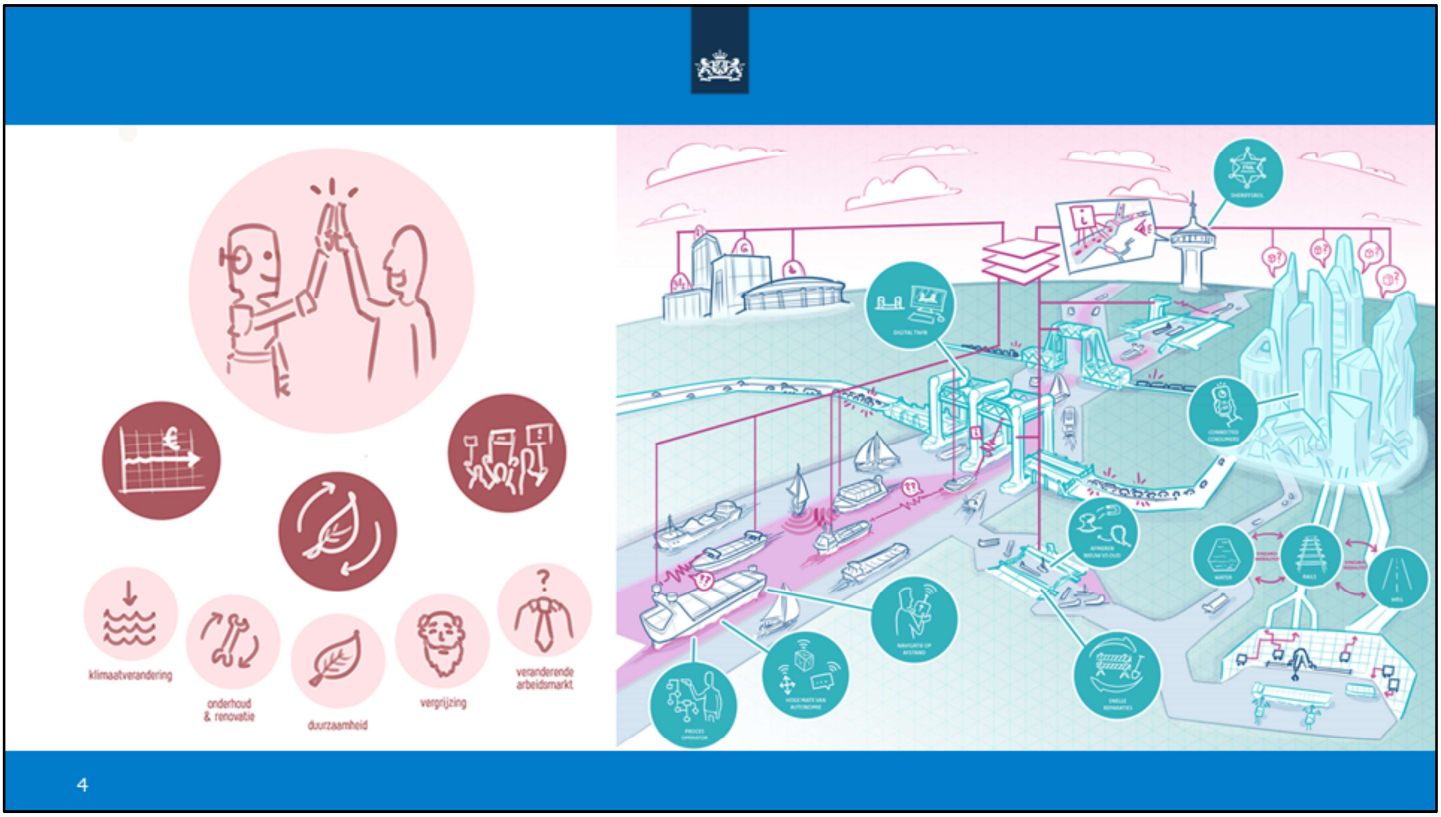
Also important: Smart Shipping is not a **goal** in itself, but a method to reach other the goals. For our Ministry these goals are: safety, sustainability and also competitiveness of the sector.



When I joined the program Smart Shipping last year, a study was carried out to figure out how Smart Shipping will **influence the work of Rijkswaterstaat**. Rijkswaterstaat, as you will probably know, is responsible for maintaining the waterway infrastructure and nautical services on these waterways in the Netherlands.

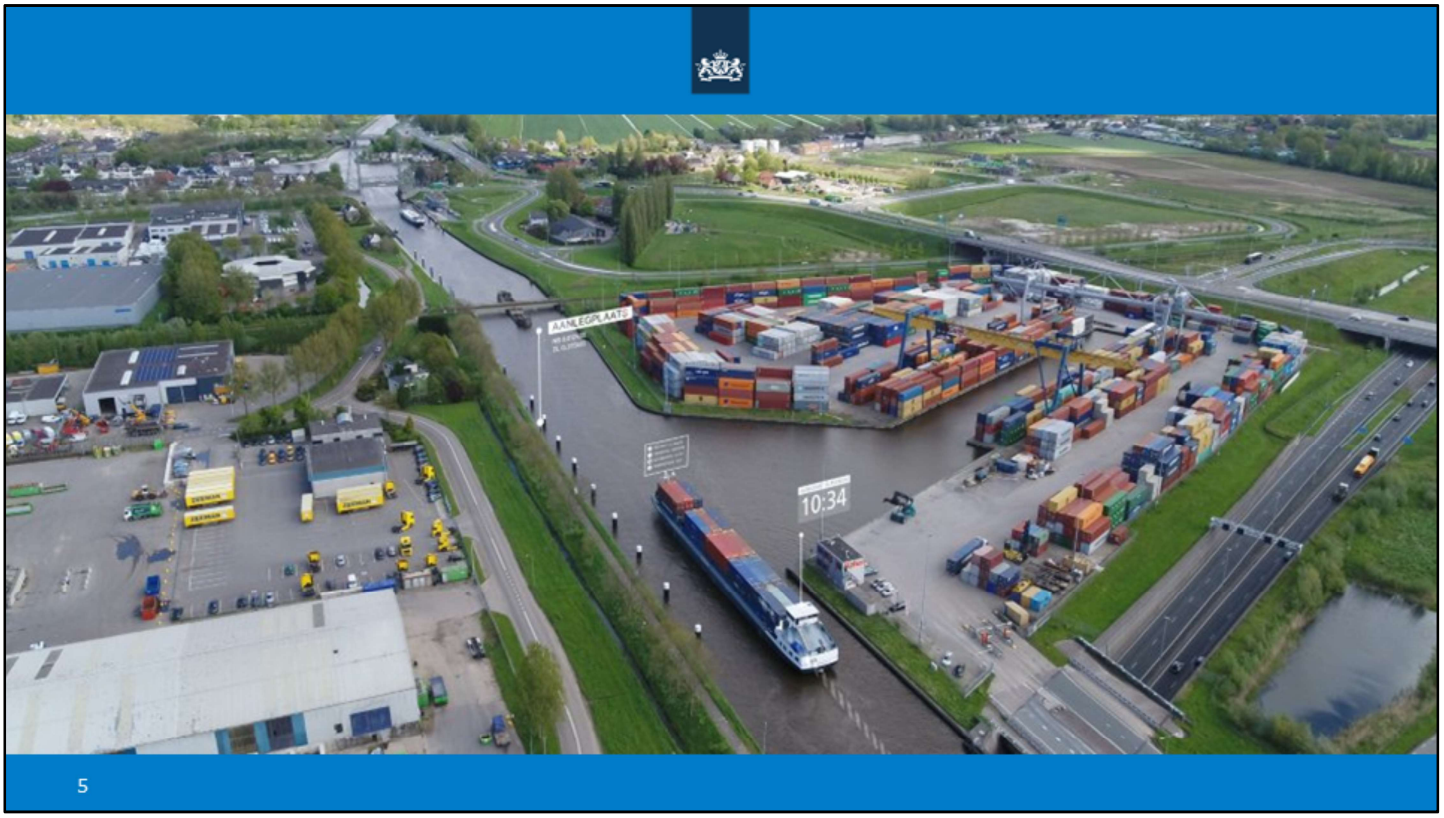
This study failed more or less. That was not too bad: my **innovation lecturer** taught me already years ago that a project only was a total mock up, if you did not learn something at all. Of course: since then all my projects were successful, and I learned a lot, you can figure that out!

Back to this effect study: it was simply carried out too soon: we saw things coming, but were at that time not able to think about **fundamental changes that will change the shipping sector dramatically**.

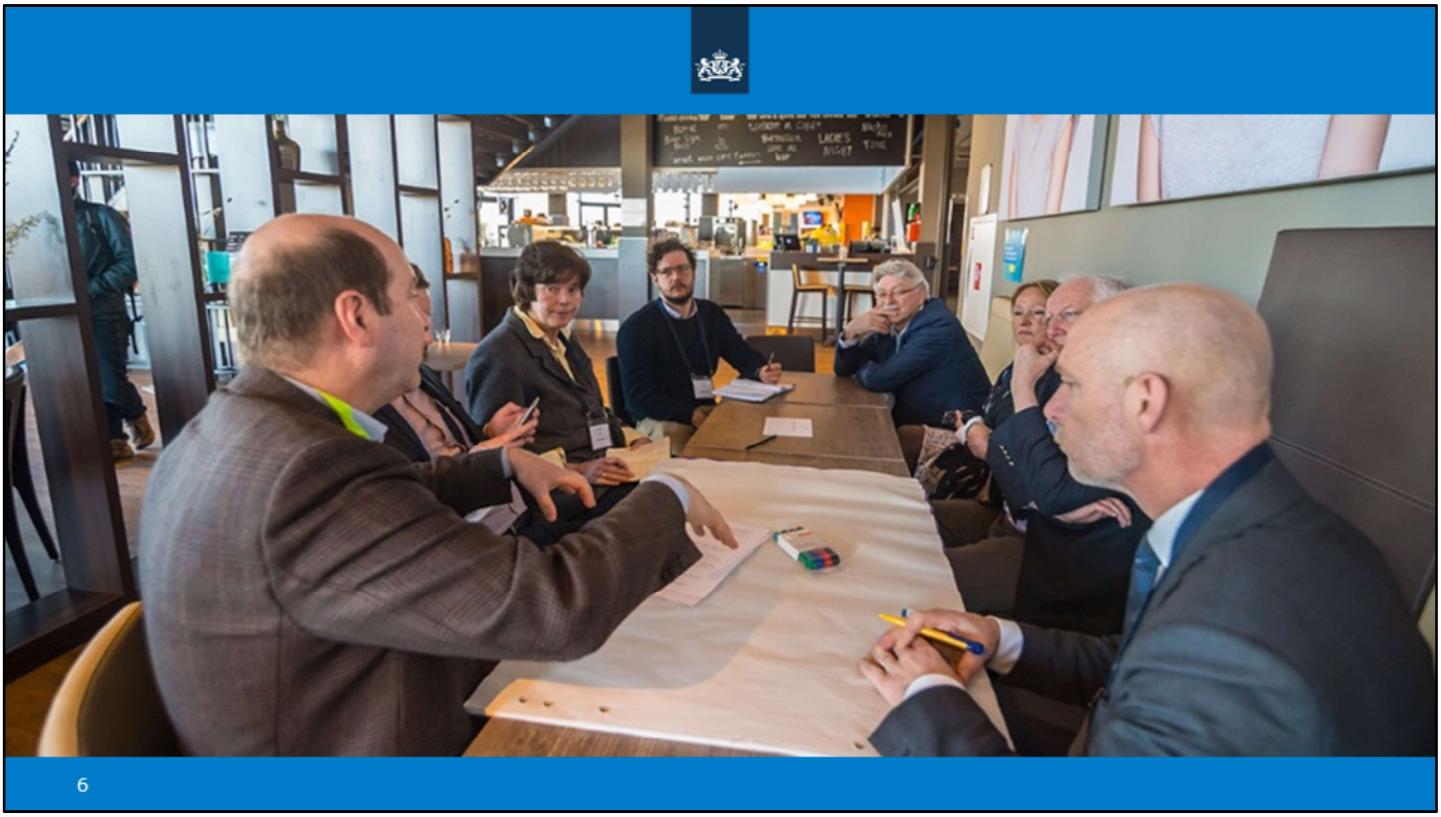


So we had to go back to the drawing board. And off we went.

One of these possible changes is that with labor costs shrinking, **smaller ships can be exploited economically feasible**. With smaller ships, shippers will be able to choose for more frequent shipments and will be able to use more origins and destinations then nowadays. In the future, a ship may be nothing more than a sailing container!

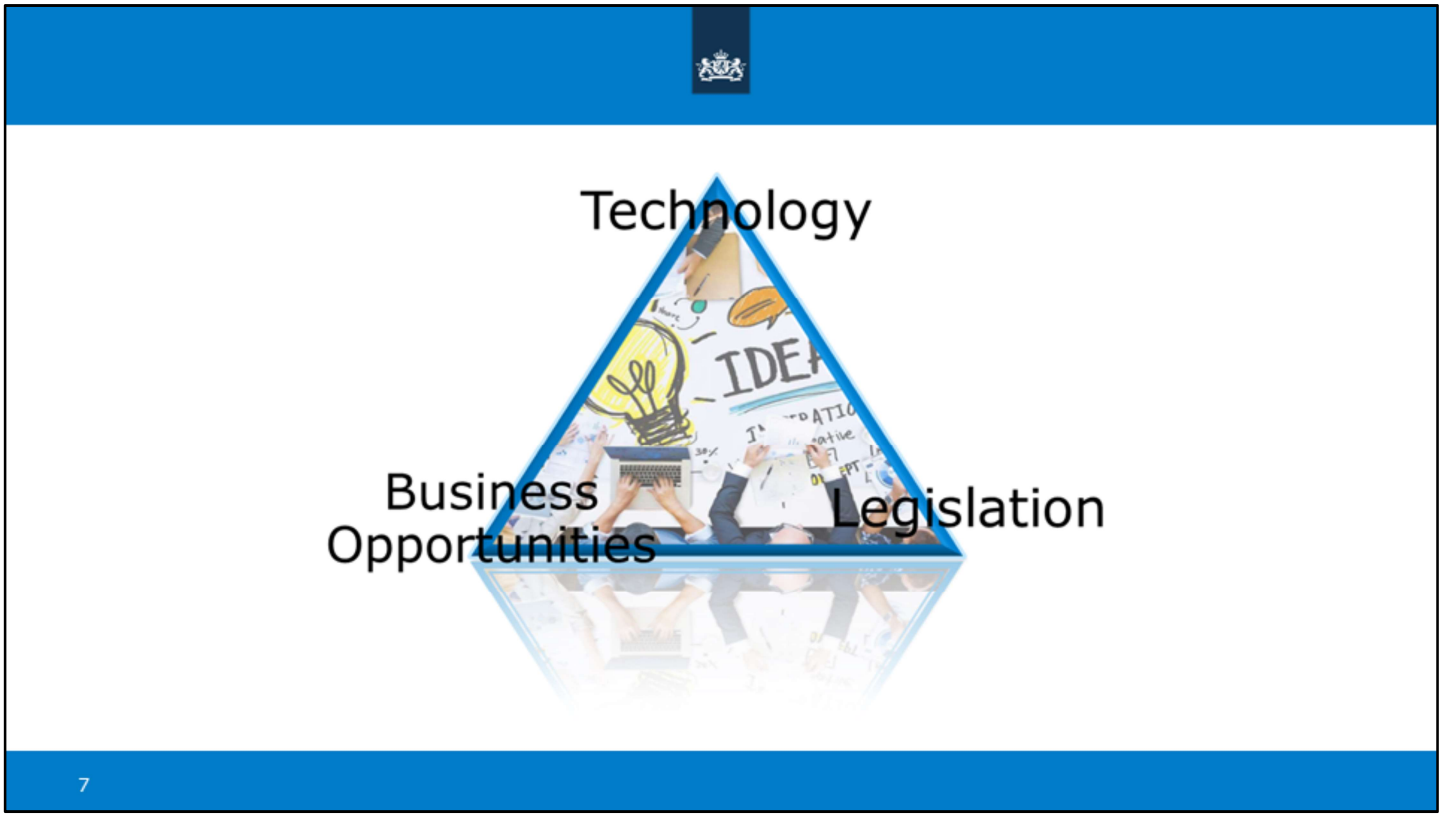


For the Netherlands, this will be thrilling because we do have an **extraordinary infrastructure of inland waterways**, but nowadays mainly the large rivers and canals can be used economical feasible. It will be exciting to use these little waterways again, relieving our overcrowded road infrastructure. New techniques will mean new business concepts and new players form outside the current shipping ecosystem as well.



We have to recognize the **possibilities** and make it work that way that the policy goals we have (sustainable, safe and strengthen the competitive power of the shipping sector) will be served best.

It became quite clear that public and private parties **will need each other** in the coming years to shape the future and to make innovations work.

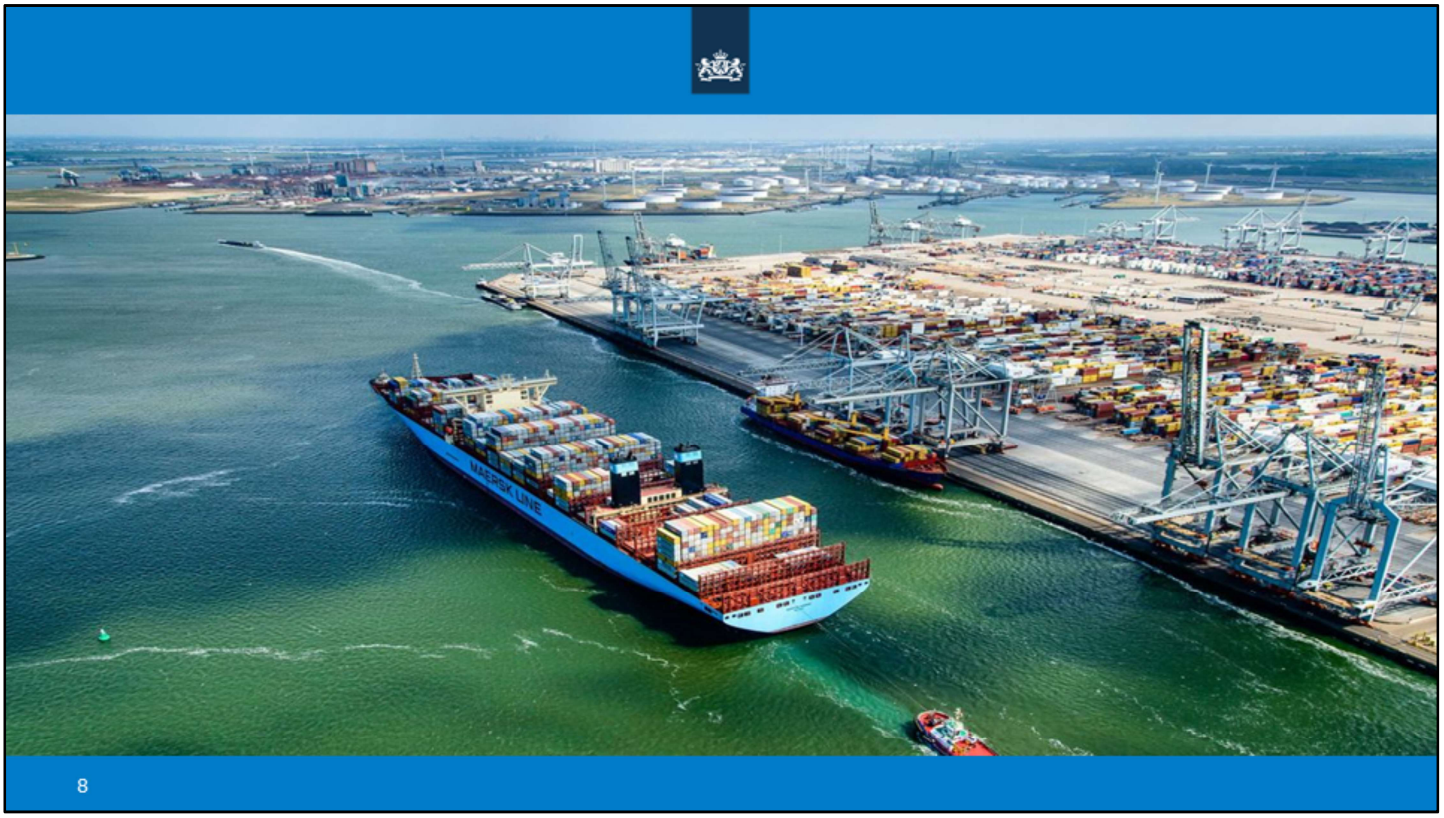


We started to use this model, making it obvious for successful implementation of smart shipping techniques in the real word, **we need three things**:

1. We need the **technical skills for the innovation**, of course;
2. We need **a business driver**: at least someone must have benefit for the implementation, but in most cases more people or organizations will earn the benefits;
3. And of course: it must be **allowed** to be used as well.

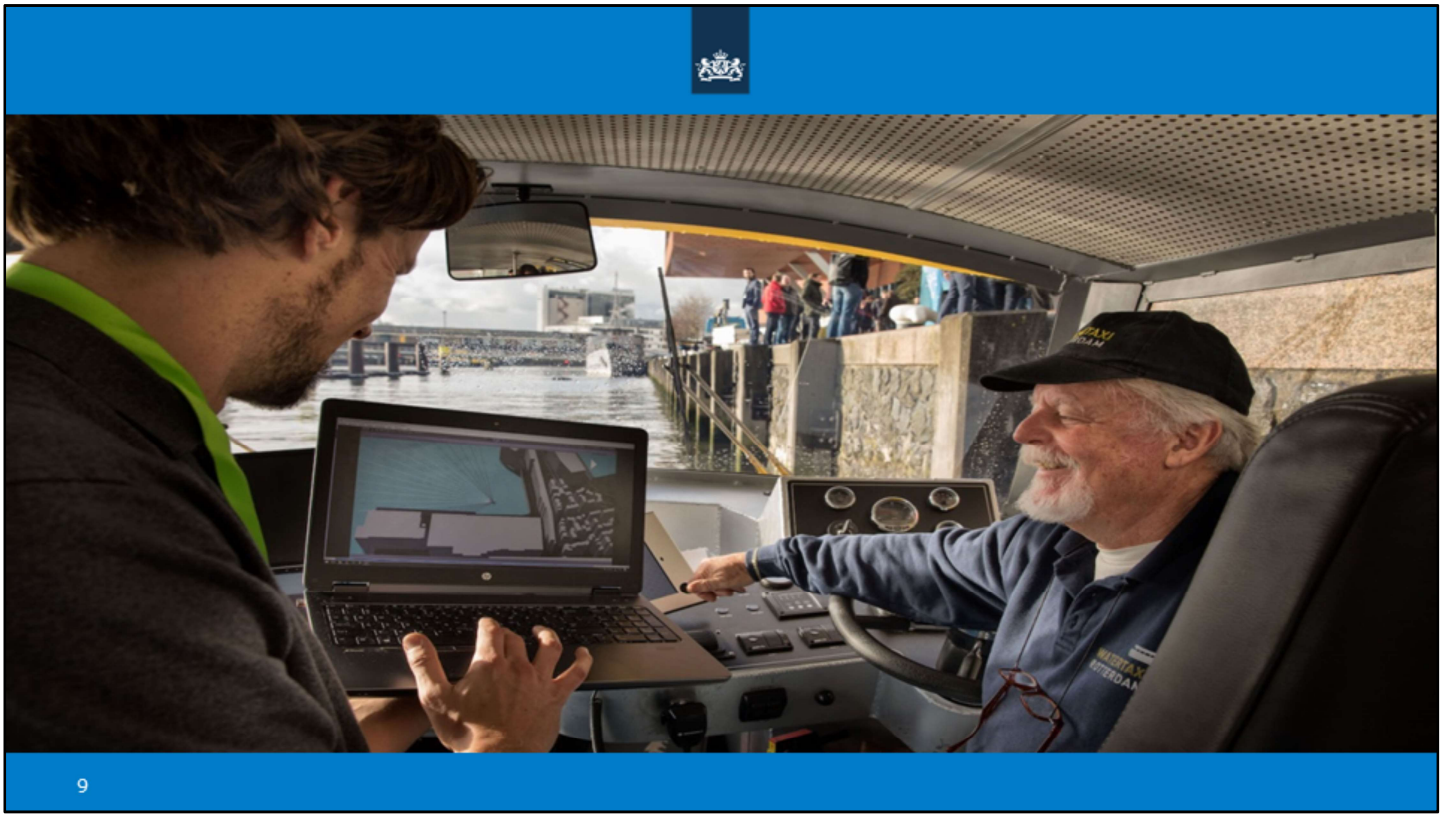
Following the same order, this makes it quite clear that for implementing these innovations, you will need:

1. **knowledge institutes** to help to deliver the knowledge and to teach people and make them ready for these new techniques;
2. **businesses**, since they will have to invest in their equipment and organizations;
3. and **governments**: they make laws that make it possible to use these innovations, or make laws that make these innovations feasible. And sometimes law making can make innovations obligatory as well. Think of new types of engines meeting sustainability levels required by laws.



I must stress here that implementing the technique alone is only a small challenge with respect to the challenge that comes along with it. The real big challenge is the **social economic impact** it will have on society, especially the shipping sector and the people that work on it.

Since on this congress much talking will be on sea shipping, I will try to balance this a little to give another example regarding inland shipping. I will illustrate the importance of the social economic impact of Smart Shipping regarding inland shipping in the low countries. With **45 percent of all ton kilometers** carried out by inland shipping: this sector is vital for the Dutch economy, but also for the hinterland.

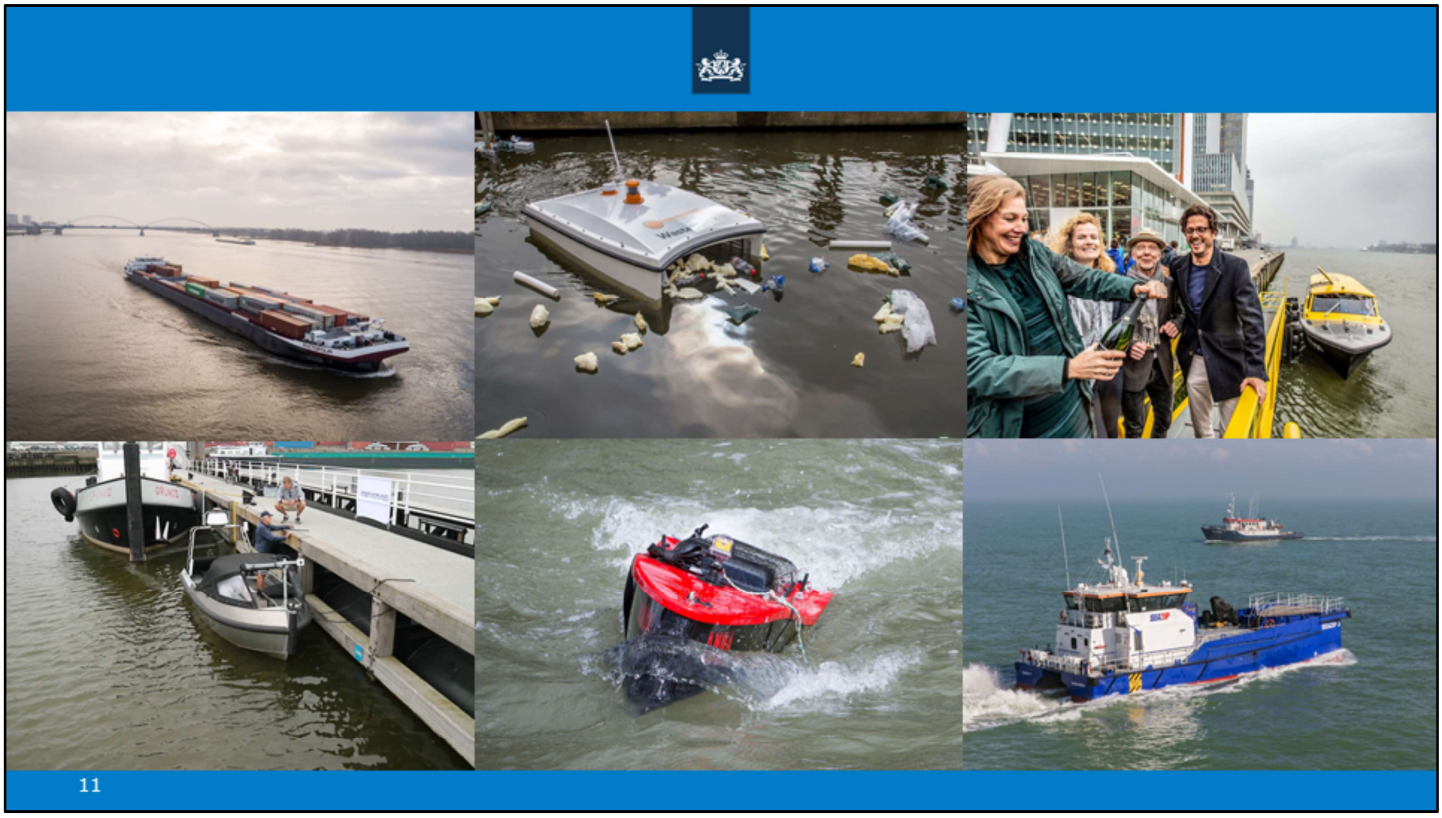


We see that the inland shipping sector is rather **traditional**. A lot of the ships are fairly old. So are the skippers and the shipper, in moste cases these are the same people. With retirement within reach, these shippers will not feel the drive to innovate and to invest, and I cannot blame them for that. So we will need **innovative players** in that sector.

It was quite obvious that when it comes to the changes we will need, **close cooperation between the public and the private sector is essentia**l for success.

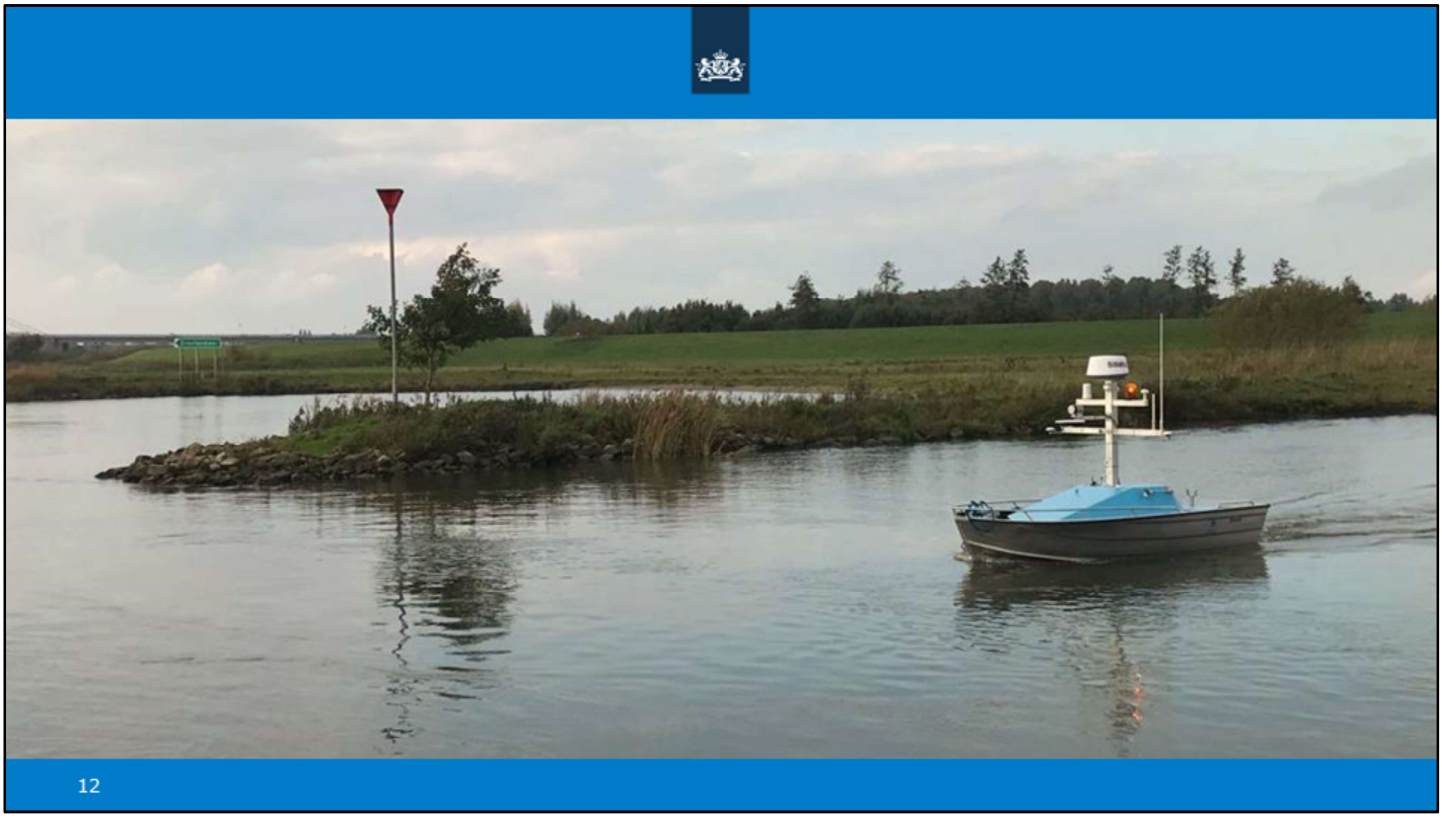
Therefore my Ministry has asked Maritime by Holland, a joint initiative for 17,200 companies powering the maritime sector in the Netherlands, to facilitate a **Dutch public private cooperation** on the field of Smart Shipping. This National Forum is expected to become effective in the beginning of next year. Main goal of the Dutch National Forum on Smart Shipping will be to stimulate Smart Shipping in the Netherlands.

Together these public and private parties, authorities, commercial organizations as well as research institutions, will draw up **a road map for the introduction of Smart Shipping on Dutch waters**. The road map shows expected developments towards automated shipping, for the ships as well as for the infrastructure it uses. And it will address what is needed to get these developments going. It will also address the logistic chain from which shipping is only one of the elements. With a national research agenda, further research is then initiated and results are shared.

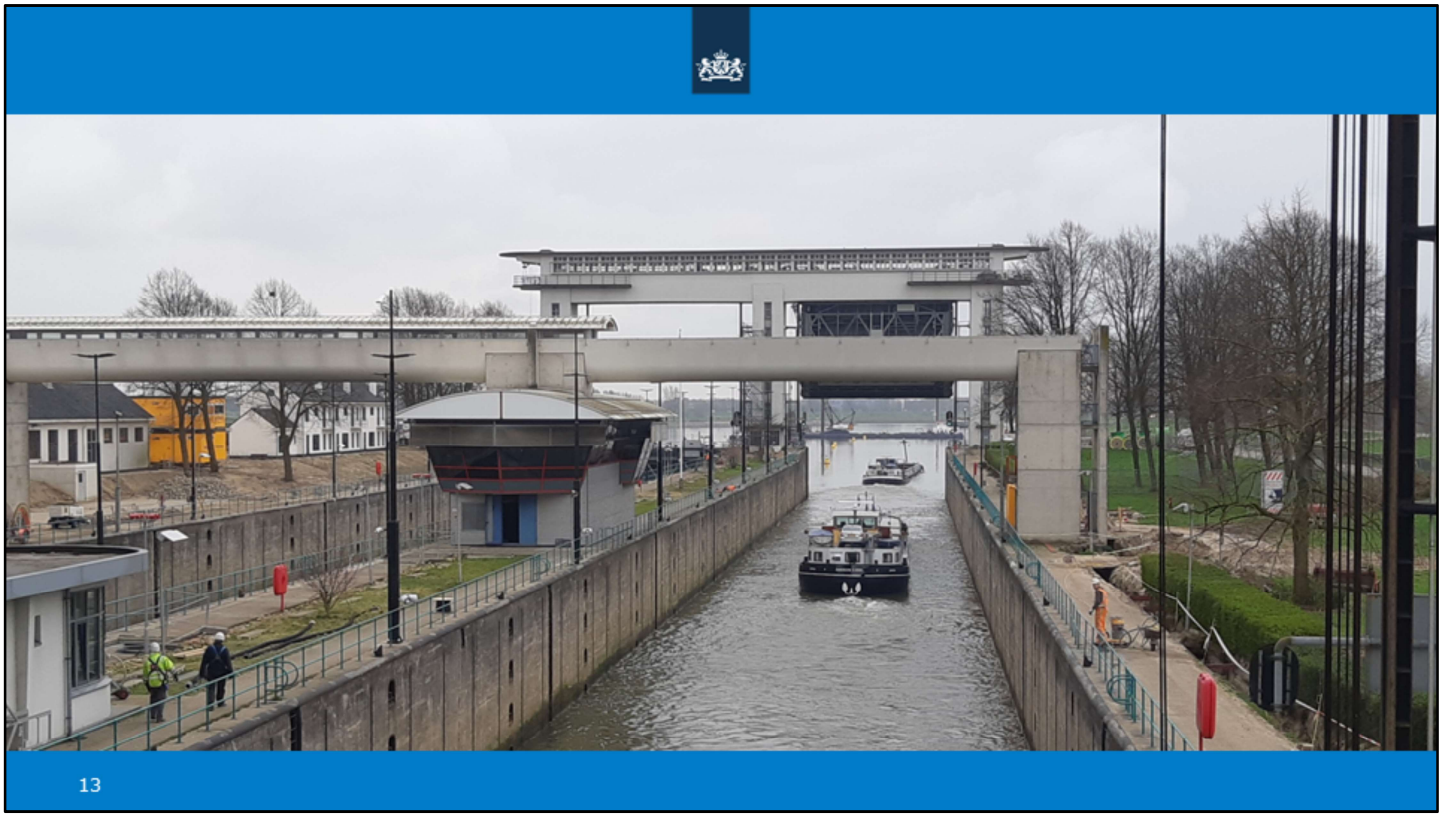


It will also be a platform that can be used for joint projects, existing and new ones. There is **quite some developing and testing** on Dutch waters actually. Examples are the Dutch Joint Industry Program, Shipping Technology, Captain AI, Aquatic Drones, Marinminds, RH Marine, AMS Roboat and Marine Institute MARIN.

Let me ad that you are welcome as well!

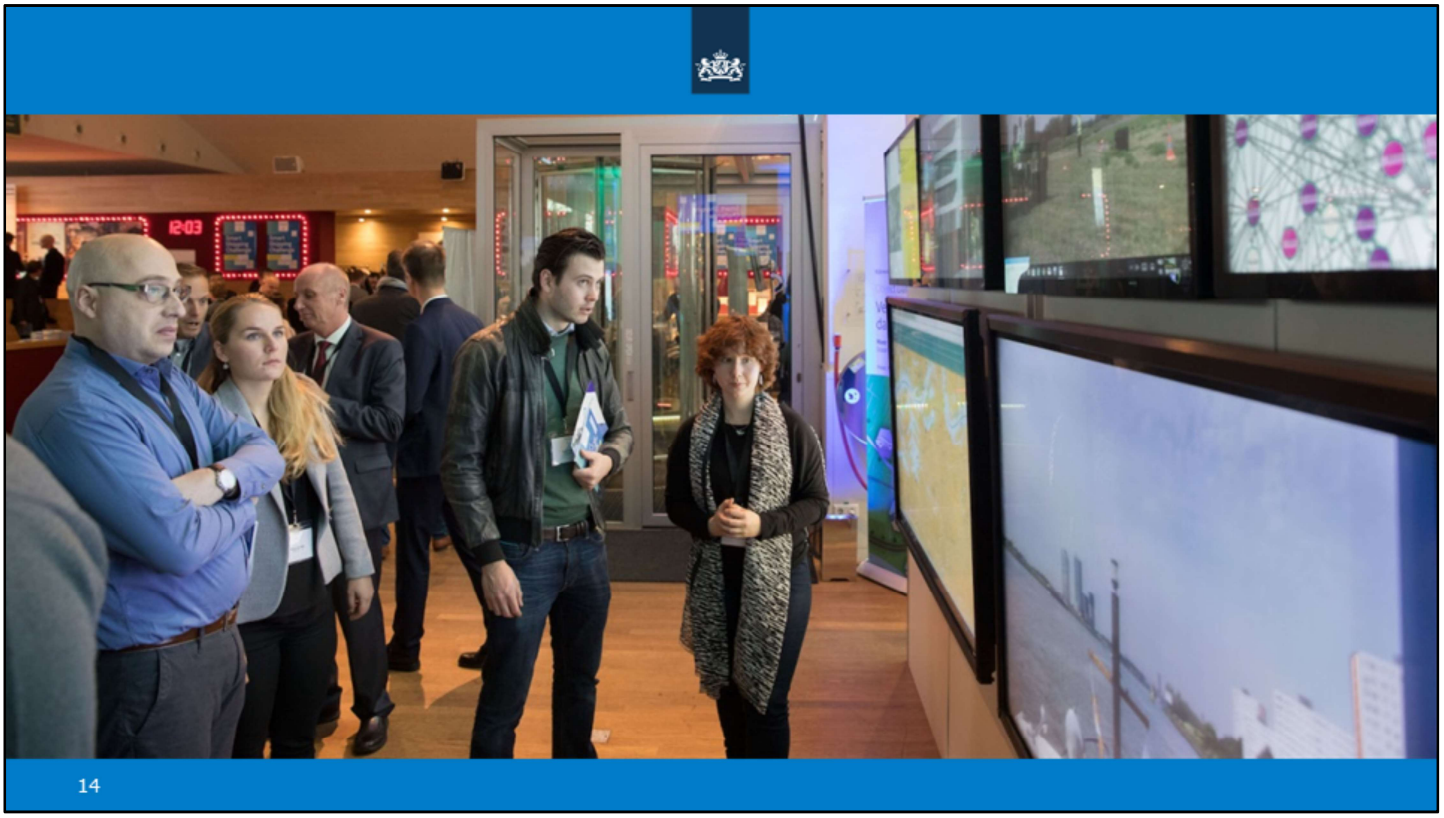


And since my Ministry is responsible for legislation: we will use the platform too for interaction with other authorities and private parties to **discuss the requirements for less staffed vessels**. Having the possibility to disembark the skipper but get new formalities that cannot be coped with would be 'out of the frying pan and into the fire'. So we will need each other. Our homework has been done: we have been investigating what legislation will have to change to make autonomous shipping possible. Now a survey is underway to see how little unmanned surface vessels can be used without negative consequences, so safe and without bordering the other traffic.



The need for cooperation also applies with respect to **changes to the fairway infrastructure and the nautical services** we deliver. A smart ship can only be effective if the interaction of these two matches. With respect to mooring, for example, a generic approach is essential.

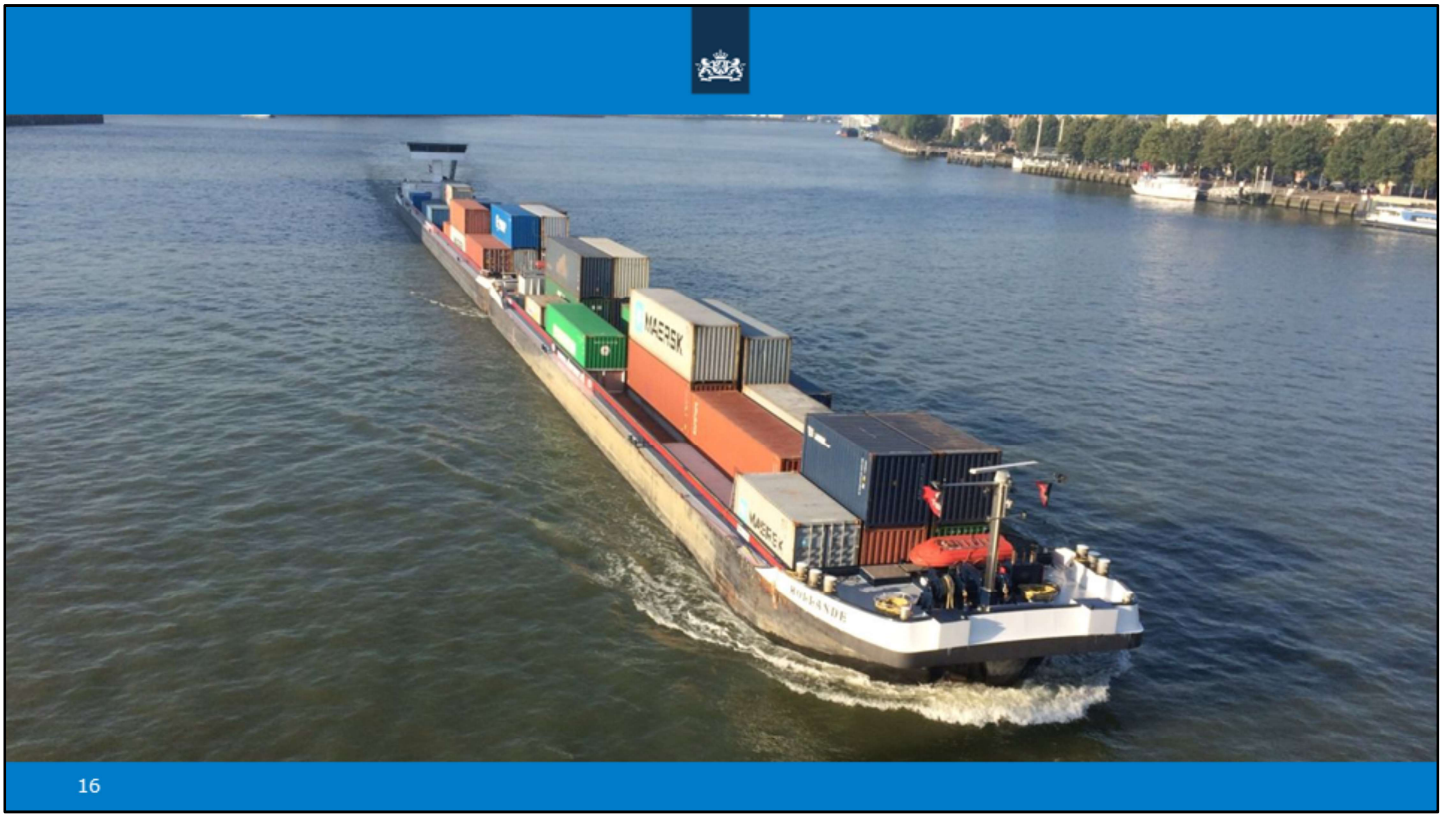
At the start of my presentation, I talked about the study carried out to determine how the work of Rijkswaterstaat will be influenced by Smart Shipping. Notwithstanding the difficulties, we found some **general conclusions worth sharing**:



1. Knowledge of future shipping concepts is not widely spread. It will be necessary to invest in this knowledge. A knowledge agenda will help;
2. Make a connection with the practice. Use the lessons you can learn. By facilitating test on our inland waterways as well as our 12 mile zone, we do stimulate testing and try to use the knowledge that arises.
3. All parties involved do share one thing: they are uncertain about future developments. By making a shared vision on the future of smart shipping and starting to take actions that are related to that roadmap, we will get focus.

This also underwrites the need for an public private partnership on Smart Shipping. My Ministry had been in the lead for this subject, given the name SMASH, but we feel that **more can be reached when we do this together**.

This brings me to the need of international standardization. Since shipping is merely an international business, **it is essential that developments in different countries will be synchronized**, for sea shipping as well as inland shipping. It will be the only way to make investments in smart shipping feasible: nation specific working methods will not only make the usability of automated tools tooling limited, but make these tools also more expensive.



I would like to use this opportunity to stress the **importance of a well-functioning market place** concerning Smart Shipping. We would not like to see a situation that ship owners have no choice any more to choose from different technical options, with other words: buying a ship must not cause a vendor lock in.

Therefore it is essential that these different functional elements are able to work together, even when they are coming from different suppliers. **Standardization of functioning, interfacing but also on legislation and infrastructure is of the greatest importance**.

We will come to a point where on a national level **discussions** will arise to choose between a country specific solution and a more global solution that may be less applicable in that case. Please realize the importance of usability outside the boundaries of your country.

That is, in my opinion, the importance of this MASS symposium: **by sharing knowledge we automatically tend to have a shared vision of the future**. Now, it is time to cooperate further to standardize working methods, functions and interfaces, to make it possible to create building.

Smarter · Safer · Sustainable

SMASH!

I do wish you a fruitful congress.