



Prepared for the future of work

Follow-up on the Danish Disruption Council



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Preface

We have done well for ourselves in Denmark. Over the course of generations, we have built a country that gives citizens and companies the opportunity to live out their potential in a well-functioning society.

The fact that our country is prosperous is no accident. For many years, we have been good at seizing the opportunities provided through technological advances and globalisation, and thereby improving life for the ordinary Dane. That is how it must be in the future as well.

And that is why we must prepare Denmark for what the future will bring. We must exploit the opportunities that robots, artificial intelligence and new business models provide while making sure that no one in Denmark is left behind as we move forward into the future.

We must carry on with the unique Danish tradition where solutions to major societal challenges are found in close cooperation between elected representatives, social partners, companies, civil society, experts and citizens.

The Danish Disruption Council also reflects this approach.

The Council has set a common goal for Denmark to remain one of the wealthiest countries in the world and to ensure that Danes get the prosperity and security that they have every right to expect. At the same time, we have set a goal that everyone in Denmark must successfully step into the future. Everyone should have a real prospect of being able to live a good life and a future with many opportunities.

Over the past two years, the Danish Disruption Council has visited every region of the country. It has validated our belief that in Denmark, we have all the necessary preconditions to make the future even better than the present.

We would like to thank everyone who has contributed to the work of the Danish Disruption Council and supported this initiative. Once more, Denmark has shown that we are strongest when we work together in partnership to find a solution.

The Danish Government



The Government's and Danish Disruption Council's objectives for the future Denmark

We live in a time of great changes, which presents us with new opportunities as well as new challenges. It is important that we tackle these changes in a way that keeps Denmark and individual Danes in a strong position in the future.

The work of the Danish Disruption Council has two overarching ambitions for Denmark:

- 1. Denmark must continue to be one of the wealthiest countries in the world.** Danes must have the prosperity and security that they rightfully expect, and the public services must adapt according to societal changes and be marked by quality.
- 2. We must make everyone the winners of the future.** We must not become divided into those who benefit from change and those who are left behind because of it. Everyone should have a real prospect of being able to live a good life.

These two ambitions have been the framework around a total of eight meetings in the Danish Disruption Council.

Based on analytical work and input from external guests and speakers, the Council has discussed the best course for Denmark to navigate into the future.

Throughout our country's history, we have been good at taking advantage of new opportunities.

The members of the Danish Disruption Council agree that Denmark faces the challenges of the future from a strong foundation. We must safeguard the things that make our society great, but we must also exercise prudence and prepare to seize the opportunities that exist so that all Danes can benefit from what the future holds in store.

We must carry on with the unique Danish tradition where solutions to major societal challenges are found in close cooperation between elected representatives, social partners, companies, civil society, experts and citizens.

The Danish Disruption Council and the three most recent tripartite agreements on more apprenticeships, strengthened adult and continuing training, and integration of refugees to the labour market are good examples of that.

The tripartite negotiations are based on a tradition that goes back more than a century, where the Government and the social partners have continually come together to take joint responsibility for balanced, responsible solutions to labour market challenges.

In general, the Danish Disruption Council has not found that the technological changes will mean that Denmark will have to move in a whole new direction. We have a solid foundation to build on and a safe and secure society with public services that benefits our citizens and businesses.

However, the Council seeks to hone in on certain areas and raise ambitions in light of the challenges and new opportunities that the future will bring.

By being ahead of technological developments, citizens and businesses will benefit even more from the possibilities of the future. This requires that we have an ambition to be global leaders in education, research, entrepreneurship and innovation.

Our businesses and the public sector are far ahead in terms of digitalisation. That is something we can benefit from; we can lead the way globally for responsible use of data and new technologies that contribute to growth and prosperity.

Specifically, the Danish Disruption Council has identified four themes where a special commitment will be needed to achieve the goals of navigating successfully into the future with everyone on board:

- **A prosperous welfare state with only small social divisions**
- **Future education in a digital world**
- **Competitive companies that are digital frontrunners**
- **A robust, safe and flexible labour market**

Within these four themes, the Council has formulated 15 objectives for the direction in which Denmark should progress. These are not necessarily new. However, they are crucial points to focus on in the coming years.

The members of the Danish Disruption Council are in agreement that follow-up efforts should be enacted on the basis of the Council's work.

As a way of following up on the Danish Disruption Council's work, the Government will produce an annual review concerning the objectives. A selection of measurement points in the annual publication *Report on Growth and Competitiveness (Redegørelse om vækst og konkurrenceevne)* will form the basis for this review.

A prosperous welfare state with only small social divisions

Denmark is one of the wealthiest countries in the world with few social divisions between people. That is worth preserving. Therefore, Denmark must remain an open country that trades with the whole world and attracts qualified foreign labour, talent and investments from abroad under decent working conditions. We must strive to maintain an open society with few divisions between people, strong social cohesion and equal opportunities for all in the future.

Free trade is a cornerstone for a small, open economy such as Denmark's. It has made Denmark a wealthier place and given Danes greater freedom in their choice of goods and services. In some countries, there is a resistance to free trade among the population. Among other reasons, this may be attributed to the fact that the benefits on a global scale have not been felt by everyone, and accordingly, this has resulted in society becoming more divided in some countries. The benefits of globalisation are therefore not clear enough in those countries.

The Council and Government have discussed the importance of free trade for Denmark and how we can help ensure that Denmark continues to prosper economically without compromising the fact that all Danes must enjoy equal opportunities.

The Council and Government agree upon the following objectives:

- **A prosperous country:** Denmark must be among the most prosperous countries in the OECD.
 - **An open country:** Denmark must remain an open country that is among the leading participants in global trade and which does business with the whole world on fair terms.
 - **Equal opportunities for all:** Denmark must remain a safe and secure country with few divisions between people, strong social cohesion and equal opportunities for all.
-

Future education in a digital world

A good start in life is crucial to children's opportunities in the education system, in the labour market and as citizens in the Danish society. A good education which results in a professional qualification is important to succeed in a world where needs are rapidly evolving, not least due to the emergence of new technology.



RoboDays in Odense invites young people aged 13-16 on a Robot Camp. Here they can build, program, and test drive their own advanced robots.

Danish children and young people must become ever more proficient in reading, mathematics, science, etc. At the same time, they must be curious, possess social and creative skills and acquire new digital skills and technological literacy. This is a prerequisite if we are to have more people complete an education that prepares them for the future.

The availability of a qualified and well-educated labour force is a key framework condition for Danish businesses and the public sector. Therefore, study programmes must be of a high standard from an international perspective and correspond to the needs of the labour market. All study programmes must evolve in line with the needs of Danish society and businesses. This also means that new technology should continually

be incorporated into the study programmes and that the education system must be suitably flexible.

High-quality research will be necessary for Denmark to seize the many possibilities that technological advancements will bring and to find the answers to future challenges, and we will have to become even better at converting new knowledge into tangible societal benefits.

The Council and Government have discussed what competences will be in demand in the future: How do we strengthen the core competences in the population while also educating our populace at a high international level? And how can we structure the education system so that it is capable of adapting to new and evolving needs?

The Council and Government agree upon the following objectives:

- **A good start in life:** Danish children should develop good language skills and self-esteem from an early age. They must become even better at reading, mathematics and science while also developing strong social and creative skills. The ambition is that no child leaves the municipal primary and lower secondary school (the Danish Folkeskole) without basic skills in these areas.
 - **Every young person should be part of society:** All young people should either be enrolled in some form of study programme or have a permanent labour market attachment. Ensuring that all young people have good opportunities for education and employment is a shared responsibility.
 - **High quality education:** All study programmes must be of a high quality from an international perspective and teach skills and competences that correspond to the needs of the labour market. This applies to vocational education and training (VET) as well as higher education. There should be a focus on supplementing the classical skills with skills and competences in technology and digitalisation. Additionally, there should be good opportunities for transitioning between education/training and employment.
 - **World-class research:** The quality of Danish research should be at the highest international level, and the research should produce benefits for study programmes as well as society in general.
-

Competitive companies that are digital frontrunners

Danish businesses and a well-functioning public sector constitute the foundation for growth and prosperity in Denmark. We must ensure that companies and entrepreneurs are strongly positioned in terms of international competitiveness. They must be supported by good framework conditions such as fair competition, a well-functioning public administration, good infrastructure, a well-educated labour force and access to foreign talent.

Danish businesses must not have unnecessary burdens and regulations imposed upon them, and enforcement should be uniform throughout the EU. The businesses of tomorrow will be founded by the entrepreneurs of today, and they must be given good conditions to build and grow their companies.

Denmark has a good digital starting point, and we are still the most digitalised country in the EU when it comes to citizens' and businesses' daily use of digital technologies.

Developments on the digital front have also resulted in the generation of massive amounts of data. This offers considerable potential for new business models, yet it is crucial that we help ensure that companies utilise this data potential in an ethically defensible and responsible manner. Cooperation between the public sector and businesses may serve as a catalyst for innovation and digital transition.

Danish companies are increasingly recruiting labour from abroad. It is important that businesses have access to the qualified labour and talent they need. Otherwise, we face the risk of Danish companies having to turn down orders or relocate their headquarters to other countries. Of course, the use of foreign labour must be under decent working conditions, and we must maintain a strong focus on helping unemployed Danes find work.

Among other issues, the Council and Government have discussed how to facilitate growth opportunities for companies and entrepreneurs and how to handle the issues that arise with the need for recruiting foreign labour and international talent.

The Council and Government agree upon the following objectives:

- **Competitive businesses:** Danish businesses must have competitive growth conditions so that they can, for example, attract foreign investments. The public sector must support businesses, including through world-class research.
- **Efficient and strong competition on fair terms:** Danish companies, including SMEs, must have the best conditions for competing effectively on fair and equal terms, also regarding the digital platforms.
- **A country with thriving entrepreneurship:** Denmark must have more high-growth businesses and favourable conditions for innovation. Therefore, we must create competitive conditions for entrepreneurs, for example by ensuring good access to venture capital.
- **Digital transition:** Companies and the public sector must be digital frontrunners that harness the benefits of digitalisation, creating a positive impact on the rest of society. We must help ensure that Danish companies exploit the potential of data – in an ethical and responsible manner.

- **International recruitment under decent working conditions:** Companies must have favourable conditions for recruiting qualified labour and talent from abroad. This recruitment must take place under the same decent working conditions that the Danish labour market is generally characterised by.

A robust, safe and flexible labour market

The Danish model and flexicurity system serve as the pillars of our labour market, ensuring among other things that a balance is struck between the companies' needs for flexibility and employees' need for security. The Danish labour market has proved itself to be secure and adaptable, resulting in great benefits for employees, businesses and the economy in general.

We should not be afraid of new business models or new ways of working. They can lead to a more flexible professional life. At the same time, they can help those who struggle to gain a foothold in the labour market find a more permanent job.

We must continually monitor these developments in close cooperation between the Government and social partners so that we can find solutions in areas where the Danish model faces challenges. This could include labour rights or updated business regulations. Of course, the labour market must be characterised by decent working conditions and good terms for employees as well as businesses. Danish tax rules must be observed.

All Danes must be equipped with the skills and competences they need to succeed in a rapidly changing labour market. Anyone who can participate in the labour market should do so, as it creates economic, social and human value.

Danes are living longer, which means we will spend more years in the labour market. It is crucial that workplaces remain healthy and safe.

A financial safety net for unemployment, an active labour market policy and flexible terms of employment are key aspects of the flexicurity system and thus crucial to a well-functioning labour market in Denmark.

The active labour market policy must help unemployed persons find work. The municipalities and unemployment insurance funds must motivate and help the unemployed find work and help ensure they strengthen their competences so that they can work in new industries with new responsibilities.

A flexible labour market and a workforce with the right skills, knowledge and competences are also crucial prerequisites to meeting the needs of the labour market of the future.

That is why Denmark must continue to provide good opportunities for well-functioning, lifelong learning. It is important for the individual to continuously develop their competences as new requirements emerge in the labour market.

The individual has a personal responsibility to take advantage of such opportunities, but it is also crucial for the public sector and private companies to support their employees' lifelong learning.

Today, around 600,000 adults in Denmark lack basic literacy skills, which presents them with challenges in a labour market where job functions are becoming ever-more complex and where literacy and digital literacy are becoming a common requirement.

The Government and social partners are jointly responsible for providing and maintaining a strong adult and continuing training system for those who can benefit from it. The ambition is still to have a world-class adult and continuing training system.

The Council and Government have discussed the future of the labour market in depth as well as how we can maintain and develop the Danish labour market model in light of the fact that new forms of employment and platform companies are gaining ground.

The Council and Government agree upon the following objectives:

- **A future-proof labour market:** The Danish labour market must remain adaptable and ready for automation, digitalisation and new forms of work.
 - **As many as possible should work:** The Danish labour market must include everyone who is able to participate in it. There is an economic, social and human value in working. The flexicurity system must remain at the core of the Danish labour market.
 - **World-class lifelong learning:** More Danes must take advantage of lifelong learning, and good opportunities must exist for upgrading one's skills and qualifications for the jobs of the future. Educational offers should be well-functioning, flexible and targeted at labour market needs.
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Members of the Disruption Council

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Simon Emil Ammitzbøll-Bille

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Minister for Employment

Sophie Løhde

Minister for Public Sector Innovation

Merete Riisager

Minister for Education

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Minister for Higher Education and Science

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Minister for Industry, Business and Financial Affairs

1. New and higher requirements for the education system of the future



Danes must be prepared for the labour market of the future, where requirements relating to competences, education and training will change. The Danish Disruption Council has discussed how the Danish education system can be improved to meet the societal needs of the future.

Education and training leads to freedom and opportunities for people, and a well-educated population contributes to growth and prosperity. Research can enable us to understand the world in which we live and tackle major societal challenges.

In an age where technology and digitalisation are becoming an integral part of the labour market, demand for the right competences has grown. Thus, we must continue to maintain a strong, high-quality education system. As a consequence of changing needs in the labour market, the education system must continue to support lifelong learning, and courses and programmes must continually be adapted.

It is on this background that the Government, among other measures, has:

- Strengthened vocational education and training (VET) programmes and taken initiatives to raise knowledge of practical skills in the Danish municipal primary and lower secondary education. The aim is to encourage more young people to enrol in VET programmes and for businesses in Denmark to get the labour they require.
- Entered into an agreement with all the political parties of the Danish Folketing on the university degree programmes of tomorrow. The agreement is intended to help ensure flexibility in the education system, a high academic level, excellent education and strong competences for the labour market of the future.
- Presented a research and innovation policy strategy in which the aim is to ensure that Denmark reaps the greatest possible benefits from its significant investments in research. It is important that knowledge generated in research environments spreads to the rest of society.
- Launched the Technology Pact (Teknologipagten), a partnership through which Danish businesses, educational institutions, etc., work together to improve Danes' technical and digital skills.

The Government has several more measures planned, including initiatives aimed at particularly talented pupils and students as well as improving digital competences in higher education.



75%

Today, just under 75 per cent of those aged 25-34 in Denmark have an education leading to a vocational/professional qualification.

A well-educated population creates a foundation for growth and prosperity...

A high educational level is an international competitive factor and important to ensuring high productivity and quality of life at the individual level. Education is accordingly good for individuals, businesses and the development of society in general.

The education level in Denmark has been rising in a stable trend in recent decades. Higher education has gone from being a path limited to the privileged few to a people’s privilege.

Today, just under 75 per cent of those aged 25-34 in Denmark have an education leading to a vocational/professional qualification. That is higher than the OECD average, and it helps ensure we are well-prepared for the changes the future holds.

... but there are also challenges

Technological advancements and globalisation may lead to certain job functions – especially those performed by early school leavers and low-skilled workers – becoming automated. At the same time, new jobs will be created as more Danes get an education.

This places higher requirements on our education system. More Danes must obtain an education leading to a vocational/professional qualification. Otherwise, they risk not being prepared for the future.

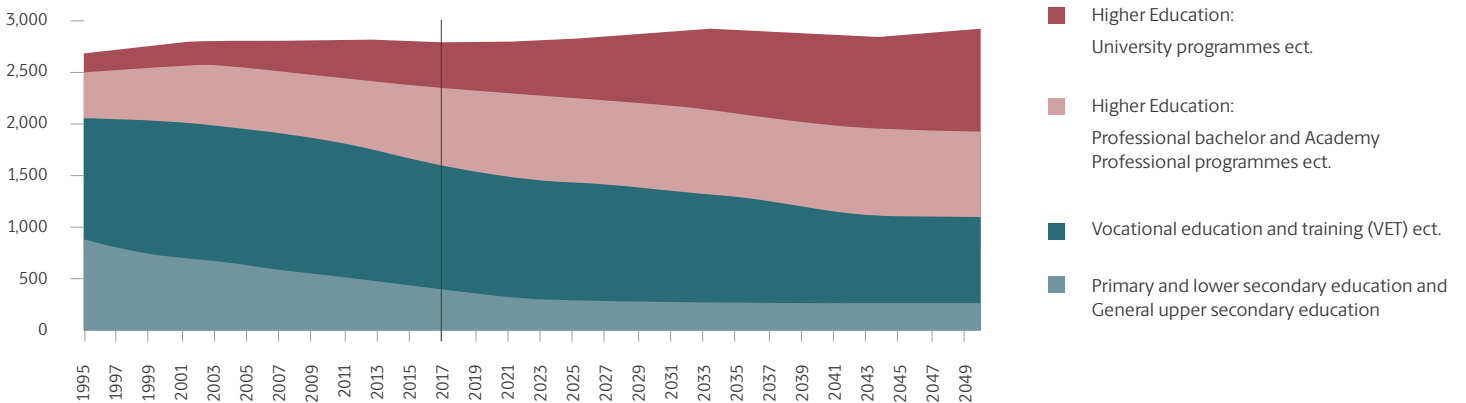
It is important that the entire education system is characterised by prudent education. Denmark needs high-quality study programmes and courses in which the students learn as much as possible. We need study programmes that are relevant to the labour market.

The number of people aged 25-69 with a higher education has grown from approximately 600,000 to more than 1.1 million since 1995, an increase of around 80 per cent.

With the current application trends, it is expected that the number of Danes with a higher education will rise to just under 1.6 million by 2040 – i.e. a further increase of 40 per cent. At the same time, the number of Danes with a vocational education is expected to fall from today’s figure of approximately 1.1 million to approximately 850,000 by 2040.

Fewer Danes with low level of educations and more higher education graduates

1,000 persons



Note: The graph illustrates the development in the Danish population’s highest level of educational attainment. The projection is based on demographic development distributed by gender, age and background and educational level on the basis of historical trends of study-related patterns. Unknowns are not included.

Source: Ministry of Higher Education and Research calculations based on DREAM’s education projection 2017.

➔ Challenge 1

Too many Danes are not getting an education

It is important to ensure that young people are given the necessary knowledge to choose the right education so that they leave primary and lower secondary education on the right path.

Historically, a high educational level has helped make Denmark richer while also reducing inequality. The more people who undergo education, the bigger the proportion of the population that reaps the benefits of the growth in prosperity brought by technological advancements and globalisation.



With the *Agreement on better paths to education and work*, educational opportunities have been improved for young people under the age of 25 who lack a post-compulsory education thanks to a new preparatory basic education. This initiative is intended to prepare this group for a post-compulsory education or job. However, there are still young people who never undergo education. Just under 20 per cent of Danes aged 25-34 do not have a post-compulsory education. Furthermore, close to 600,000 adult Danes have inadequate literacy skills. They struggle to enter the labour market and are more likely to be unemployed.

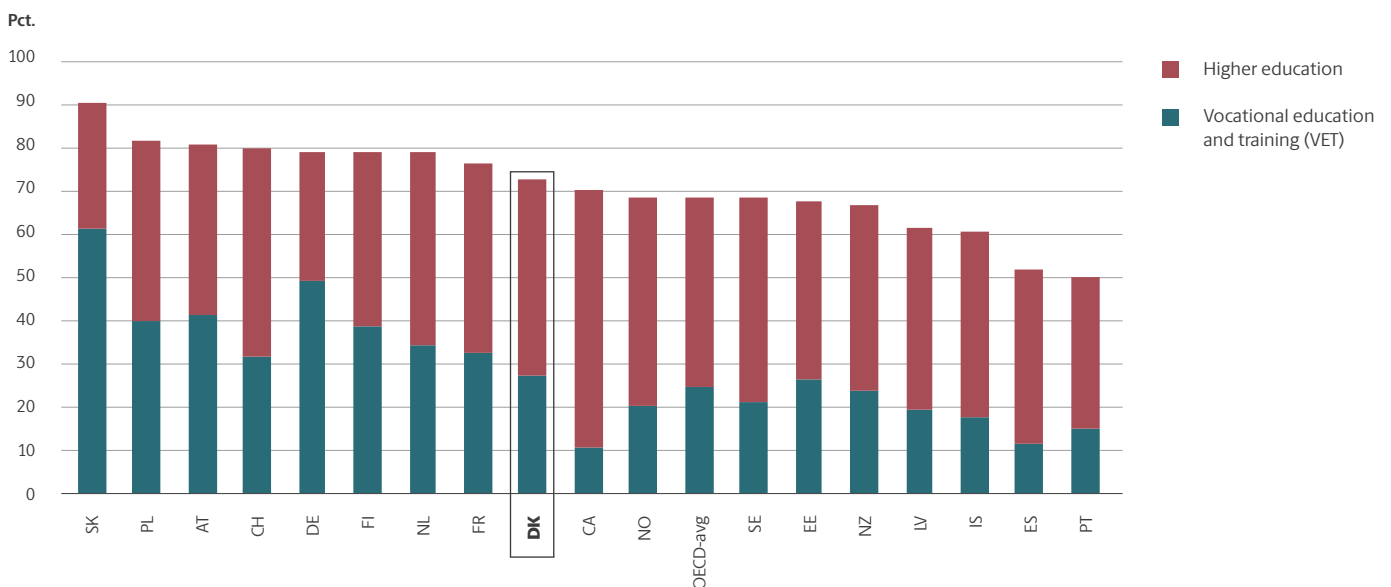
Making the wrong educational choices after primary and lower secondary education also increases the risk of dropping out and starting afresh with a new education. It is important to ensure that young people are given the necessary knowledge to choose the right education so that they leave primary and lower secondary education on the right path.



600,000

Close to 600,000 adult Danes have inadequate literacy skills.

Many people in Denmark have an education leading to a vocational/professional qualification



Note: The graphs indicate the educational level of the population in selected OECD countries in 2016. The graphs are calculated as a percentage of 25-34 year-olds. Note that there may be methodological or definitional differences between each country's measurements.

Source: OECD's database (stats.oecd.org) is based on data from the Labour Force Survey.



➔ **Challenge 2**

Too few Danes enrol in vocational education and training (VET) programmes

It is important that the number of skilled workers matches the needs of employers in Denmark, both in the coming years and in the longer term. Therefore, we must encourage more young people to apply for and complete VET programmes.

The proportion of pupils who choose to pursue VET right after primary and lower secondary school has dropped from around 30 per cent in 2000 to 20 per cent in 2018. At the same time, drop-out rates in VET programmes are still too high. This means that in the future, there may be a shortage of skilled labour for Danish companies and society.

In some sectors and parts of the country, companies are already finding it difficult to recruit new employees.

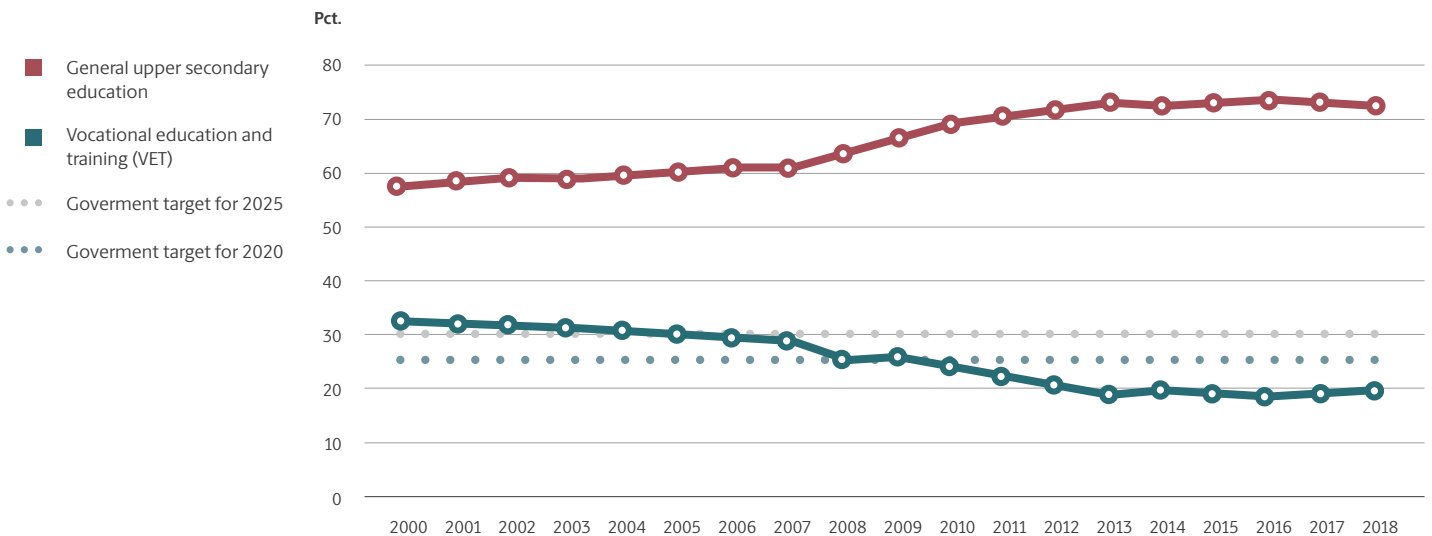
Efforts to reverse this development have begun to show promising signs. Drop-out rates have fallen, and applications to VET programmes are rising. There is still some way to go before we reach the Government’s target of at least 25 per cent of young people choosing to pursue VET right after primary and lower secondary school by 2020 and 30 per cent by 2025.



20%

The proportion of pupils who choose to pursue VET right after primary and lower secondary school has dropped from around 30 per cent in 2000 to 20 per cent in 2018.

As more young Danes enrol in upper secondary education, fewer choose VET



Source: Danish Ministry of Education, own calculations.

➔ Challenge 3

Prudent education for the labour market of the future

As a society, we must make the most of our investments in education. Accordingly, we must ensure that our education system matches the needs of the labour market. As evermore Danes obtain a higher education degree, a greater number of highly-educated people are expected to find work in the private sector. If more highly-educated Danes find work in the private sector, this will in turn also contribute to high productivity.

number of people than in the past. In per cent terms, however, the increase will roughly be in line with the trend since the 1990s.

Many study programmes and courses lead to good job opportunities. However, there are some fields where there are too many Danes who struggle to find a job after completing their studies. It is crucial that we encourage young people to pursue studies in fields where labour is in demand. That is why it is important for the country to have a sensible mix of higher education programmes and courses. At the same time, students must acquire the competences that will be in demand in the labour market of the future.

Prudent education is also about improving the quality of education; students must learn as much as possible over the course of their studies, regardless of whether they are on their way to becoming architects, carpenters, teachers or business economists.



55%

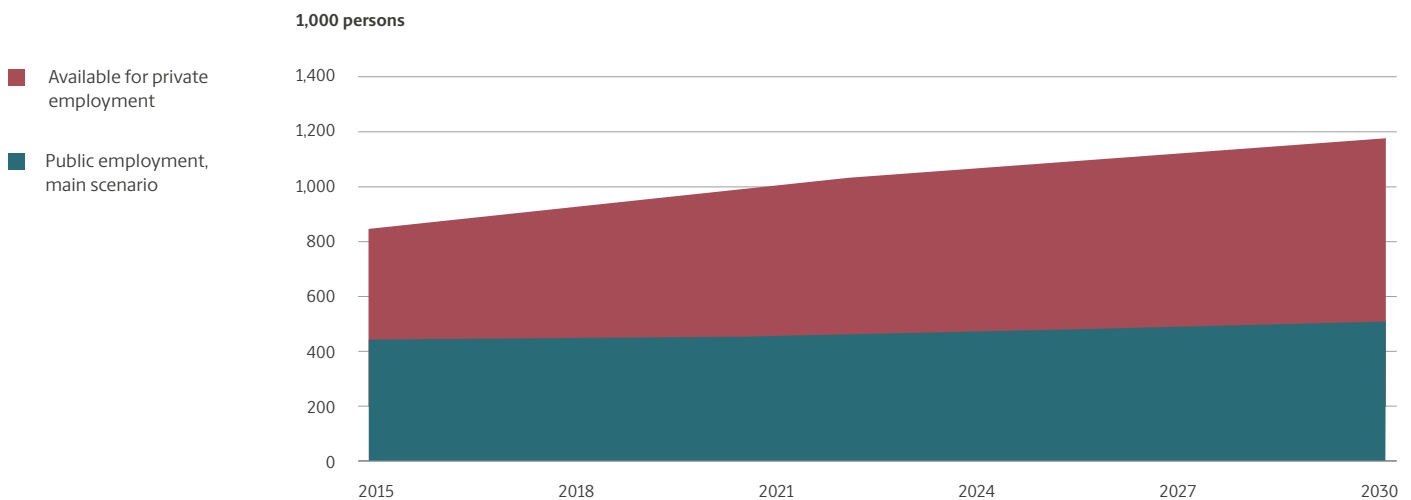
In 2015, roughly 45 per cent of those with higher education degrees found work in the private sector. This proportion is expected to rise to 55 per cent by 2030.

The current trend is that a growing proportion of this group will be available for employment in the private sector. In 2015, roughly 45 per cent of those with higher education degrees found work in the private sector. This proportion is expected to rise to 55 per cent by 2030. Put differently, approximately 80 per cent of the extra graduates from higher education programmes will be available for employment in the private sector in the years leading up to 2030.

The increase is greatest among university graduates, where the number working in the private sector will nearly double in 15 years, from approximately 150,000 in 2015 to 280,000 in 2030. This constitutes a significantly larger increase in the



More people with a higher education must find jobs in private companies



Note: People with a higher education available to private companies have been calculated as the difference between the estimated supply and the projected employment numbers, and thus it does not take unemployment into account. The projection of the educational composition in the public sector is a scenario projection that does not factor in supply and is accordingly subject to considerable uncertainty. It is not an actual forecast per se.

Source: Danish Ministry of Higher Education and Research and Danish Ministry of Finance, based on register data from Statistics Denmark.

→ Challenge 4

The digitalised labour market of the future requires new competences

Based on historical experience, technological advancements since the 1980s have resulted in a rising need for highly skilled labour. It is expected that in the future, a smaller proportion of tasks performed by highly educated persons will be automated compared to the tasks performed by those with lower levels of education.

The conclusion of an analysis conducted by McKinsey on behalf of the Danish Disruption Council is that the potential of automation of job functions is *less* for those tasks that require the *highest* levels of education.

The analysis also shows that employees in every profession will be affected by automation. Accordingly, it is anticipated that people of every educational level will have to continually learn new skills over the course of their working life (see Chapter 3).

This places new requirements for flexibility in the education system.

Digital skills are expected to be in higher demand in every sector. Denmark will therefore be in need of programmers, mathematicians, etc., in the coming years if the country is to realise its automation potential. In the future, transversal competences such as cooperation, creativity, social skills, adaptability and the ability to learn new things will also be in higher demand.

Students' academic core competence and especially cognitive abilities such as critical thinking and problem-solving are among those skills that are difficult to automate.



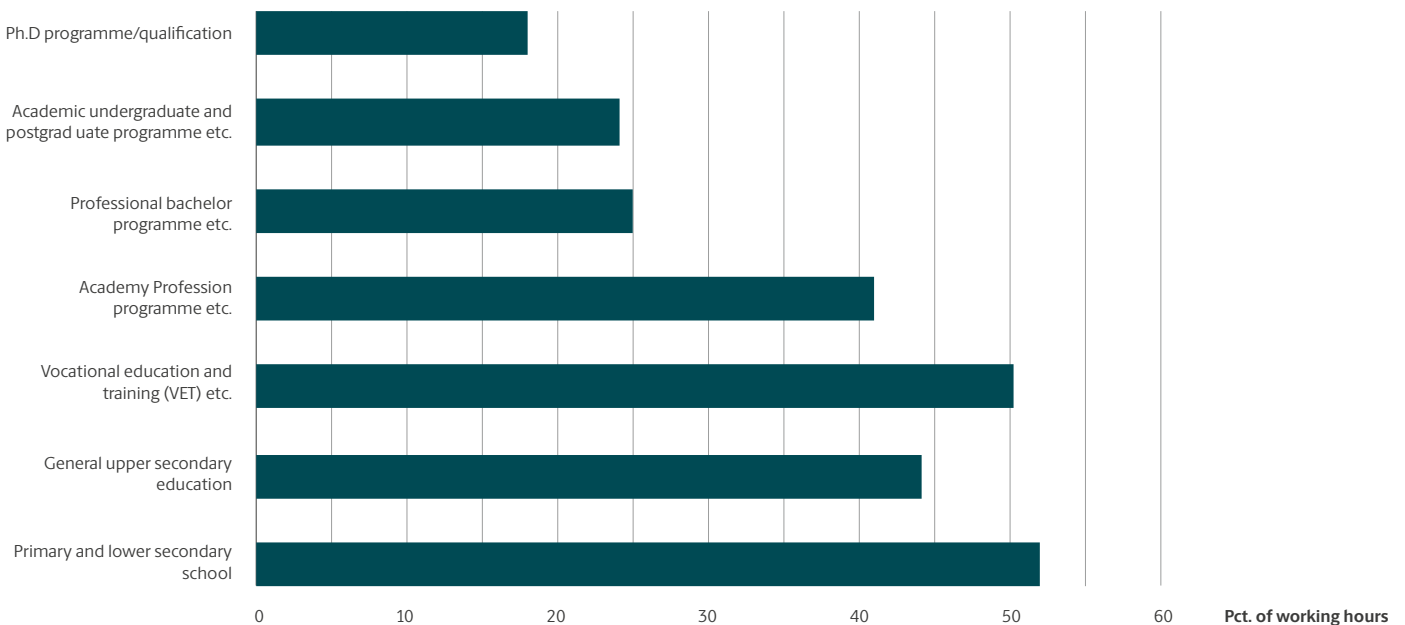
Every profession will be affected by automation.

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Digital skills are expected to be in higher demand in every sector.

Automation potential is the lowest for the tasks that require the highest levels of education



Note: McKinsey estimates the automation potential based on work activities that can be automated by using technology that is already known today.

Source: McKinsey (2017). A future that works. The impact of automation in Denmark. Exhibit 10.

What the Government has done

The Government's ambition is for study programs in Denmark to be of a high standard and to educate students in line with the competence demands of the Danish labour market, both today and in the future.

The Government has regularly taken important steps to strengthen the entire education system. The Danish Disruption Council has also regularly contributed to several of the political agreements and initiatives that have been launched in recent years.

Reform of the preparatory area: Agreement on better paths to education and work

More young people must be given better opportunities to move forward in life after primary and lower secondary school. In October 2017, the Government and a large majority in the Danish Folketing passed a reform of the preparatory education area to enhance efforts aimed at young people who are not ready for post-compulsory education after their primary and lower secondary school.

The agreement established a new preparatory basic education for young people under the age of 25 without a post-compulsory education. The new education will help ensure that more young people acquire the competences, clarity and motivation they need to complete a post-compulsory education or enter the labour market.

At the same time, greater expectations have been placed on municipalities to offer interconnected youth interventions.

The agreement *From primary and lower secondary education to skilled worker – VET for the future*

With a view to boosting enrolment and completion rates for VET programmes, the Government has concluded the agreement *From primary and lower secondary education to skilled worker – VET for the future* together with a large majority of the Danish Folketing's parties. The agreement contains a total of DKK 2.3 billion worth of initiatives to be implemented over the next four years.

Overall, the agreement makes it easier for students to choose the post-compulsory education track that is most appropriate to them and thereby get more young people to pursue VET. In that way, the agreement helps future-proof Danish businesses and society in general.

Science Strategy

Science and technology are essential to Denmark's continued growth and prosperity. With a view to improving science education in primary and lower secondary school and in post-compulsory education, the Government presented a new strategy at the 6th meeting of the Danish Disruption Council.



The natural sciences help us understand the world and how to change it for the better. Scientific understanding is formative and paves the way for a lot of interesting jobs. Children and young people need to be made more aware of that.

That is why we are now launching a strategy that will strengthen the position of science across the board in our education system and in our society. My hope is that the strategy can help ensure that the food chain for science jobs will become bigger and stronger.

Minister of Education Merete Riisager



DKK 2.3 billion

The agreement *From primary and lower secondary education to skilled worker – VET for the future* contains a total of DKK 2.3 billion worth of initiatives to be implemented over the next four years.

Visit at Holbæk City School in connection with the launch of the Science Strategy

As a prelude to the 6th meeting of the Danish Disruption Council, the Government launched a national Science Strategy in March 2018. The strategy was presented at Holbæk City School by the Danish Minister of Education, Merete Riisager, together with the Danish Prime Minister, Lars Løkke Rasmussen and Esben Østergaard, CTO of Universal Robots and member of the Council.

By the time they complete their study programmes, Danish students should be highly knowledgeable and able to handle – as well as initiate – change. The picture shows students at the program “MSc in Engineering – Robot Systems” at the University of Southern Denmark.



The purpose of the Science Strategy is to get more children and young people to take an interest in the natural sciences and encourage more young Danes to take scientific subjects in upper secondary education or through VET. This not only makes individual Danes more knowledgeable about the sciences, but also benefits society as a whole. The strategy is also meant to help ensure that Danish educational programmes/courses and companies work even closer together and thereby give students an insight into practical applications of science.

New objectives for higher education programmes

Higher education programmes must be of a high standard and help promote growth and employment. With a view to creating a common direction for higher education programmes, the Government presented the following three objectives in March 2018:

1. High academic level and significant learning outcomes that foster motivation, knowledge and critical thinking.
2. Close links between the higher education programmes and society's current and future competence needs.
3. A well-educated population with many years in the labour market.

The Danish Disruption Council has contributed to the Government's work on the new objectives for the higher education programmes. The objectives are intended to guide the development of higher education programmes in Denmark and help ensure that they are oriented towards the labour market of the future.

Agreement on more flexible university degree programmes

By the time they complete their degree programmes, Danish students should be highly knowledgeable and able to handle – as well as initiate – change. That is why the Government established a Committee on improving university degree programmes in April 2017. The committee was tasked with investigating how university degree programmes could best be structured in the future. The Danish Disruption Council has regularly provided input to the committee's work and the Government's subsequent efforts based on the committee's recommendations.

In December 2018, the Government and every party in the Danish Folketing signed an agreement that would set the direction for the university degree programmes of the future. The focus

should be on flexibility, a high academic level, excellent teaching and strong competences for the future.

The agreement includes the following:

- Extension of bachelor graduates' legal right to a postgraduate programme to three years, giving bachelor graduates better opportunities to enter the labour market and resume university studies at a later point.
- Option for universities to offer one-year academic master's programmes/courses in the ordinary education system with a view to creating faster and more flexible routes to employment.
- Better opportunities to study part-time (several 4-year part time master's programmes).
- Removal of bonuses for those starting early with their studies.

The agreement gives university students more flexible study programmes and more options to structure their education according to their needs.

Research and innovation policy strategy A Denmark ready for the future

Danish research must be of a high international quality and provide the greatest possible benefits to education and society. Therefore, the Government has launched a research and innovation policy strategy. The strategy is intended to ensure that Denmark reaps the greatest possible benefits from sizeable investments in research and innovation and that knowledge spreads from research environments to the rest of society to a greater extent.

The strategy, which was discussed in the Danish Disruption Council prior to its launch, focuses on research quality, technological research, cooperation between knowledge institutions and companies, etc.



The focus should be on flexibility, a high academic level, excellent teaching and strong competences for the future.





Future generations must be proficient IT users, and they must be able to understand, develop and analyse IT so that they can help shape the future of society.

Improved technological literacy in the Danish primary and lower secondary education compulsory curriculum

Future generations must be proficient IT users, and they must be able to understand, develop and analyse IT so that they can help shape the future of society. This development already starts in the Danish primary and lower secondary education.

That is why the Government has launched a pilot programme for the period 2018-2021 which will test different models for how to improve technological literacy in the Danish primary and lower secondary education. Based on the findings from this programme, the Government will assess whether a need exists for improving technological literacy in the Danish primary and lower secondary education.

The Danish Disruption Council discussed the framework for the pilot programme ahead of its announcement.

The Technology Pact

With a view to strengthening Danes' technical and digital skills, the Government has launched the Technology Pact, the aim of which is to raise awareness about the so-called STEM competences.

The pact is a partnership between Danish businesses, educational institutions and other relevant actors. The entire education system should facilitate the development of STEM competences and in so doing help meet Danish businesses' needs.

The goal of the Technology Pact is to increase the proportion of Danes pursuing STEM-related study programmes – both through VET and higher education – by 20 per cent by 2028. This will equate to 10,000 more Danes with STEM degrees.

At the same time, more Danes must make use of their existing STEM competences in their jobs. The goal is two-fold in that regard: First, upgrading the skills and qualifications of the labour force, and second, to reduce recruitment problems in STEM fields. These agendas are linked, as adult and continuing education and training of the labour force can in the short run help alleviate businesses' demand for STEM competences.

The Government has implemented a number of further initiatives in addition to the above:

- A tripartite agreement on adequate and qualified labour and more apprenticeships (2016)
- Strategy for improving foreign language skills in the education system (2017)
- Pilot scheme with 4-year part-time master's degree programmes (erhvervskandidatuddannelse) (2018)

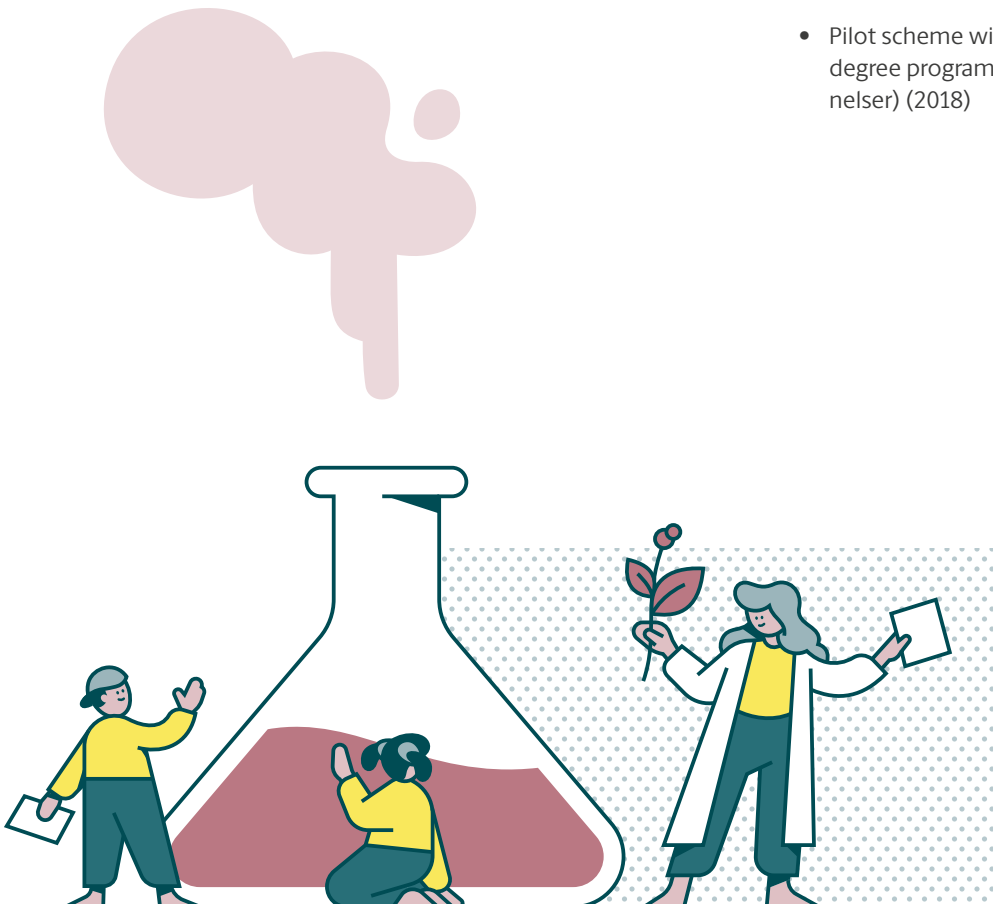


STEM is a common acronym for Science, Technology, Engineering and Mathematics.



20%

The goal of the Technology Pact is to increase the proportion of Danes pursuing STEM-related study programmes – both through VET and higher education – by 20 per cent by 2028.



New initiatives based on the Danish Disruption Council's work

Based on the deliberations of the Council, the Government will implement further initiatives to prepare our education system for the labour market of the future.



Among other things, funds will be allocated to ambitious courses and programmes where the most talented students can be challenged.

All pupils and students must be challenged

In order for our most talented and motivated pupils and students to achieve their potential, the entire Danish education system – from primary and lower secondary education to higher education programmes – must be involved in the effort.

Therefore, the Government has proposed to strengthen and focus efforts aimed at the most talented and motivated pupils in primary and lower secondary school and post-compulsory education. Funds will be allocated to establish a national 'talent unit' which will prepare, support and facilitate a consolidated talent strategy. Among other things, the unit will be responsible for developing a digital universe for the most talented and motivated pupils to share knowledge and build networks.

At the same time, it is important that the academic level of our higher education programmes is high – also in an international context. The Government will therefore give the most talented and motivated students better opportunities to grow across higher education. Among other things, funds will be allocated to ambitious courses and programmes as well as summer schools, such as

programmes in which the students receive guidance from educators, researchers and businesspeople associated with global elite institutions and innovative companies. In addition, higher education institutions must be given more freedom to develop efforts in relation to talented students.

Improving digital competences in higher education programmes

The higher education system must help ensure that all students acquire digital competences to a greater extent than is the case today. A number of educational institutions are already in the process of integrating digital competences and technological literacy into their study programmes. However, these initiatives are scattered, and in many cases the efforts are driven by digital enthusiasts. In other words, there is a need for a more concerted effort.

As a result of the discussions of the Danish Disruption Council, the Government will allocate funds to support a strengthening of digital competences in higher education programmes. A specific focus will be on developing the digital competences of educators. The initiative will be executed on a solid basis of knowledge relating to how higher educational institutions work on linking digital competences to the academic core competences of individual programmes.

Additional initiatives to improve technological literacy

In extension of the Danish Disruption Council's discussions, the Government will implement three sub-initiatives to complement the pilot programme on improving technological literacy in

The effort in relation to talented pupils and students must be promoted in primary and lower secondary education and general upper secondary education.



the Danish primary and lower secondary education. The purpose is to establish country-wide and regional competence networks that can support primary and lower secondary educations that wish to work with improving technological literacy.

In addition, the initiative is intended to support learning environments (including vocational colleges and universities), promote a broad anchoring of technological literacy and develop the competences of primary and lower secondary education teachers and educators at vocational colleges.

Competition (Grand Challenge): Solving tomorrow's big challenges

The Government will establish a Danish competition (Grand Challenge) aimed at motivating researchers, companies and organisations across all fields to develop research-based, innovative solutions that can help solve some of tomorrow's big challenges. The Government will reward the best solutions with a prize.

National competence panel for higher education programmes.

Many job functions are expected to become automated or undergo change in the future as a consequence of technological advancements. At the same time, workers will face changing competence requirements.

We need more knowledge about how society's

competence needs will change, as well as what these new needs will mean for higher education programmes. The Government has accordingly decided to establish a national competence panel which will advise the Minister of Higher Education and Science as well as higher educational institutions about changes in labour market demands.

National awards for excellence in teaching

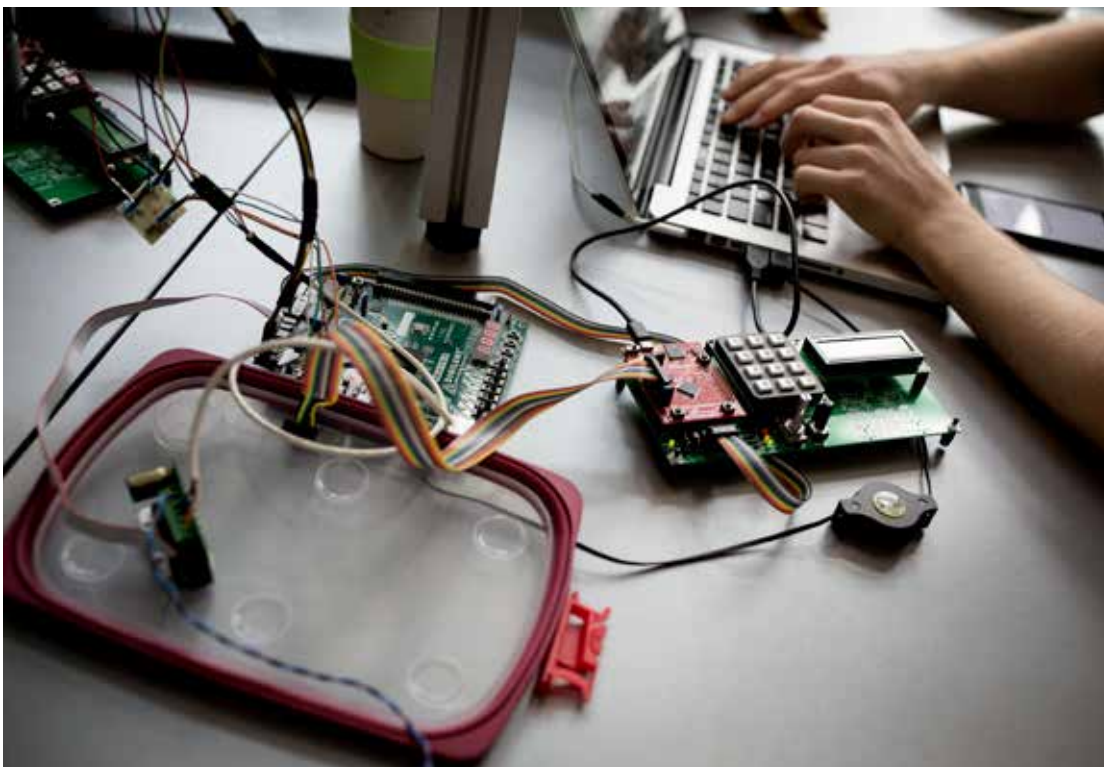
One of the Government's goals is for skilled teachers to exist at all educational levels. While a long-standing tradition has been to recognise and promote good research, education is not prioritised as highly today. Talented and inspiring teachers must be recognised and rewarded for their efforts so that education obtains the same high status as research at universities. The Government therefore proposes to establish national awards for excellence in teaching in higher education programmes, similar to the awards that exist in the world of research.

New 'taximeter' and subsidy system for post-compulsory education

The current taximeter and subsidy system provides an incentive to increase activities. The taximeter system thus encourages a focus on increased activity and does not in itself encourage a focus on quality. The Government will therefore introduce a new taximeter and subsidy system aimed at encouraging high quality, geographical proximity and appropriate geographical coverage, faster educational track changes, etc.



The Government will establish a Danish competition (Grand Challenge) aimed at motivating researchers, companies and organisations across all fields to develop research-based, innovative solutions.



Technological literacy must be improved in the primary and lower secondary education.

New and higher requirements for education and training in the future

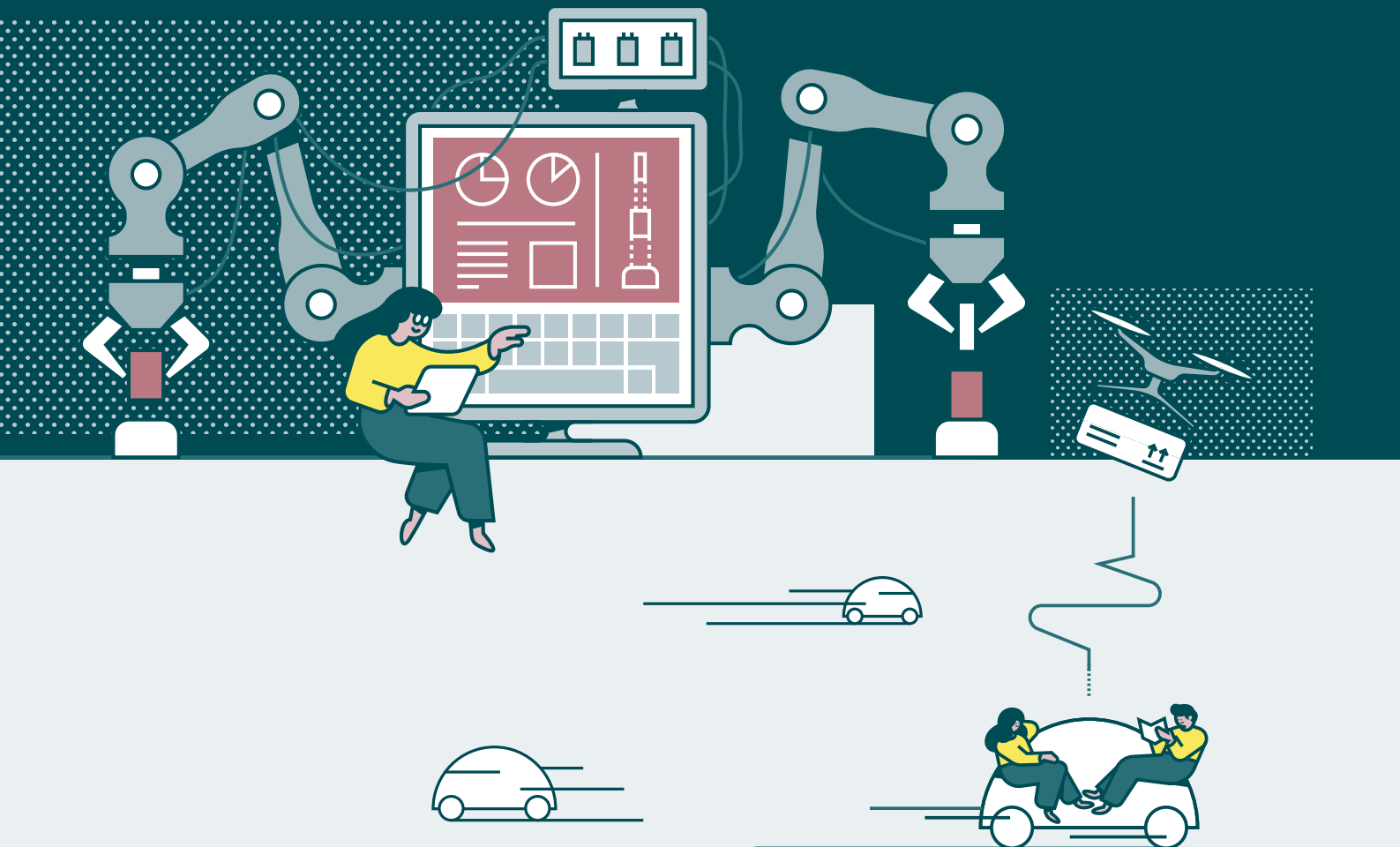
Based on the Danish Disruption Council's discussions, among other things, the Government has taken a number of initiatives:

- Agreement on better paths to education and work
- The agreement From primary and lower secondary education to skilled worker – VET for the future
- National Science Strategy
- New objectives for higher education programmes
- Agreement on more flexible university degree programmes
- Research and innovation policy strategy
- Pilot programme on technological literacy in the Danish primary and lower secondary education
- The Technology Pact
- Tripartite agreement on adequate and qualified labour and more apprenticeships
- Strategy for improving foreign language skills in the education system
- Pilot scheme with 4-year part-time master's degree programmes (erhvervskandidatuddannelser)

New initiatives:

- Initiatives targeted at particularly talented and motivated pupils and students
- Improving digital competences in higher education programmes
- Additional initiatives to improve technological literacy
- Competition (Grand Challenge): Solving tomorrow's big challenges
- National competence panel for higher education programmes
- National awards for excellence in teaching
- New 'taximeter' and subsidy system for post-compulsory education

2. Productive and responsible companies in a digital world



Denmark needs a competitive and digital business community. The Danish Disruption Council has discussed how companies can reap the full benefits of the digital transition.

The business community makes up the foundation for economic growth and greater prosperity for all Danes. Greater prosperity, in turn, lays the foundation for our welfare state.

A central subject in the Danish Disruption Council's discussions has been how companies can reap the full benefits of the digital transition and continue to create well-paid jobs in Denmark.

At the same time, we must maintain and encourage innovation and entrepreneurship in areas where data can be used in an ethically responsible manner.

It is on this background that the Government, among other measures, has:

- Presented the *Strategy for Denmark's digital growth*. This was subsequently followed up with a political agreement on initiatives regarding Denmark's digital growth so that new technologies can be used to create growth and increase prosperity for the Danes.
- Strengthened the entrepreneurship and equity culture in Denmark with a political agreement on business and entrepreneurial initiatives.
- Presented the *Strategy for growth through the sharing economy*. The Government has also made a broad political agreement on better conditions for growth and correct taxation in the sharing and platform economy.

In addition, the Government will follow up on the recommendations from the Expert Group on Data Ethics, strengthen competition supervision with online platforms and present a national strategy for artificial intelligence.



As is the case in the rest of the world, Denmark faces a digital transition of its business community and society that is occurring at a faster-than-ever pace.

If we go about it the right way, we can use this technological development to create more growth and prosperity so that Denmark will be among the wealthiest countries in the world in the future as well.

Technological developments create opportunities for Danish companies...

The technological and digital transition holds many new opportunities for individuals, companies and society in general.

New technology can lead to less physically demanding jobs. It can result in more flexible transport services through the sharing economy, more personalised services offered by companies and a better health care system as robots take over heavy lifting or repetitive tasks once performed by humans.

Investments relating to digital transition can make companies more efficient and innovative and thereby boost their competitiveness and profitability. Digitalisation can give companies the opportunity to reach more customers and target their communication to consumer needs.

For the Danish society, digitalisation holds the potential to increase our productivity and prosperity, making us all wealthier.

... but there are also challenges

In Denmark, we have been successful at adopting and embracing the first wave of digitalisation. Our society is the most digitalised country in Europe in terms of eGovernment, the public’s use of the internet and companies’ use of a variety of technologies.

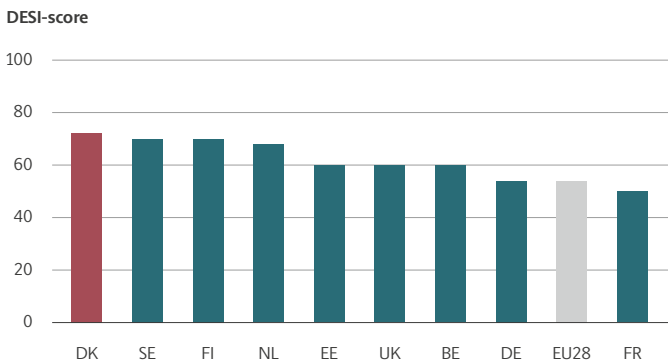
However, employing the latest technologies can be challenging for smaller companies. Danish companies are at the forefront of using cloud computing technology, but Danish SMEs lag behind the top performing companies in areas such as sensor technology and Big Data¹.

As the volume of data in our society grows, we must ensure that the data of citizens continues to be processed responsibly and ethically, not least because it is a precondition for maintaining trust in digital solutions.



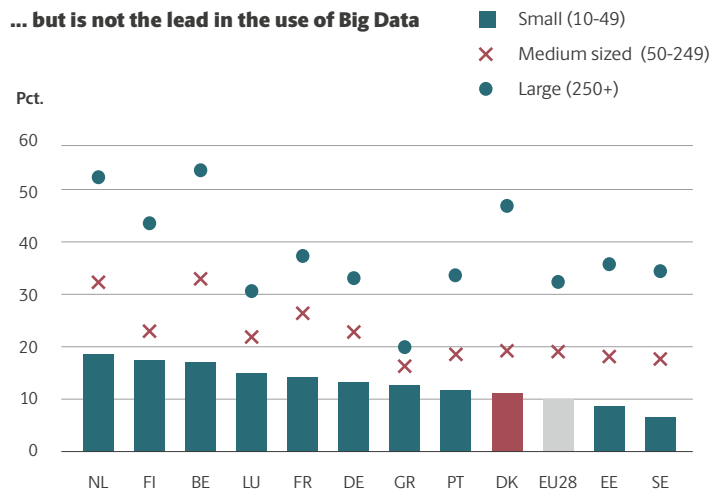
Danish companies are at the forefront of using cloud computing technology, but Danish SMEs lag behind the top performing companies in areas such as sensor technology and Big Data.

Denmark is no. 1 in the first wave of digitalisation...



Note: The graph shows a selection of EU member states based on 2018 data.
Source: Eurostat.

... but is not the lead in the use of Big Data



Note: The graph shows a selection of EU member states based on 2018 data.
Source: Eurostat and internal calculations.

¹ **Source:** OECD Economic Survey Denmark and OECD: ICT Access and Usage by Business.

➔ Challenge 1

Danish companies risk falling behind internationally

We are good at using digital solutions in Denmark. However, many countries are rapidly adopting new technologies, and Denmark must keep up.

That is why it is important that Danish companies, both large and small, continue to invest in the commercial application of various technologies, including new ones such as Artificial intelligence and Internet of Thing. Otherwise, Denmark will run the risk of lagging behind other countries and missing out on future opportunities.

New technologies

There are a number of new technologies, some of which we will cover in the following.

Artificial intelligence (AI) and machine learning are often used in connection with machines that are capable of “getting smarter”. The possibilities are far-reaching and include the performance of tasks that are not purely routine, e.g. recognition of hidden and complex patterns and relationships in data.

Internet of Things (IoT) relates to the potential for machines, devices, etc. to communicate with one another and automatically exchange data between them. This could, for instance, enable a washing machine to request repair on its own.

Big Data analysis entails the processing of huge amounts of data from sensors in companies' products, geolocation, social media, other internet activity, etc.

➔ Challenge 2

Uncertainty about data ethics can compromise trust in digital solutions

The Danes have a high degree of trust in how our data is used.

In recent years, however, there have been several examples from abroad, where large companies have not managed data in an ethically responsible manner. This compromises our trust in how companies use our data, and such trust is crucial for us to make the most of digital solutions.

Accordingly, the ethical aspect of how our data is used has become increasingly important.

However, we lack a common understanding of what ethical use of data entails for the companies and how to promote more responsible use of technology and data. This is not only the case in Denmark, but also globally.

Public authorities as well as private companies must work with data in an ethically responsible manner to help ensure that Danes retain trust in digital and technological solutions.



Denmark should take the lead in the work with data ethics so that we end up with a competitive and digital private sector that is ready for the technological challenges of the future.

It requires good framework for companies, if responsible use of data shall become a selling point.

Minister for Industry, Business and Financial Affairs Rasmus Jarlov

→ Challenge 3

Platform and sharing companies requires new legislative standards



The hospitality and transport sector are only some of many industries that are undergoing change as new platforms and sharing economy services gain ground.

Digital advancements have made a number of new business models not just attractive but also possible. e.g. sharing economy services for renting homes and cars. The hospitality and transport sector are only some of many industries that are undergoing change as new platforms and sharing economy services gain ground.

The sharing economy brings many benefits with it; as consumers, we get access to a greater variety of products and services that meet a growing demand for flexibility. However, these developments may also pose a challenge to the ways in which our laws and regulations have been designed.

Therefore, Danish legislation must make it easier for companies to try out new business models. Accordingly, regulation and the authorities' enforcement of rules must give companies opportunities to utilise new technologies and digital business models, and better opportunities must exist for trying out new technology within the legal frameworks.

→ Challenge 4

Digital platforms with very high market shares can pose a threat to competition

Some digital platforms on the Internet have very high market shares. For example, Amazon has a market share of around 30 per cent of German e-commerce, while nearly all internet search queries are carried out through Google in many countries. In its home country, the United States, Amazon holds a market share of roughly 50 per cent of all e-commerce.

These giant digital platforms are still growing and becoming ever-more global. This makes it possible for them to sell products cheaper with better service and more choices for the consumer.

However, these digital platforms can abuse their position, e.g. by making it expensive for other companies to sell their products on the platforms. This can result in unfair competition between the big platforms and smaller companies.

A platform with a very high market share can also use its position to charge more for its products and services than when there are several actors in the market and competition is higher. These large platforms' opportunities for collecting data can also allow them to target their products to consumers.

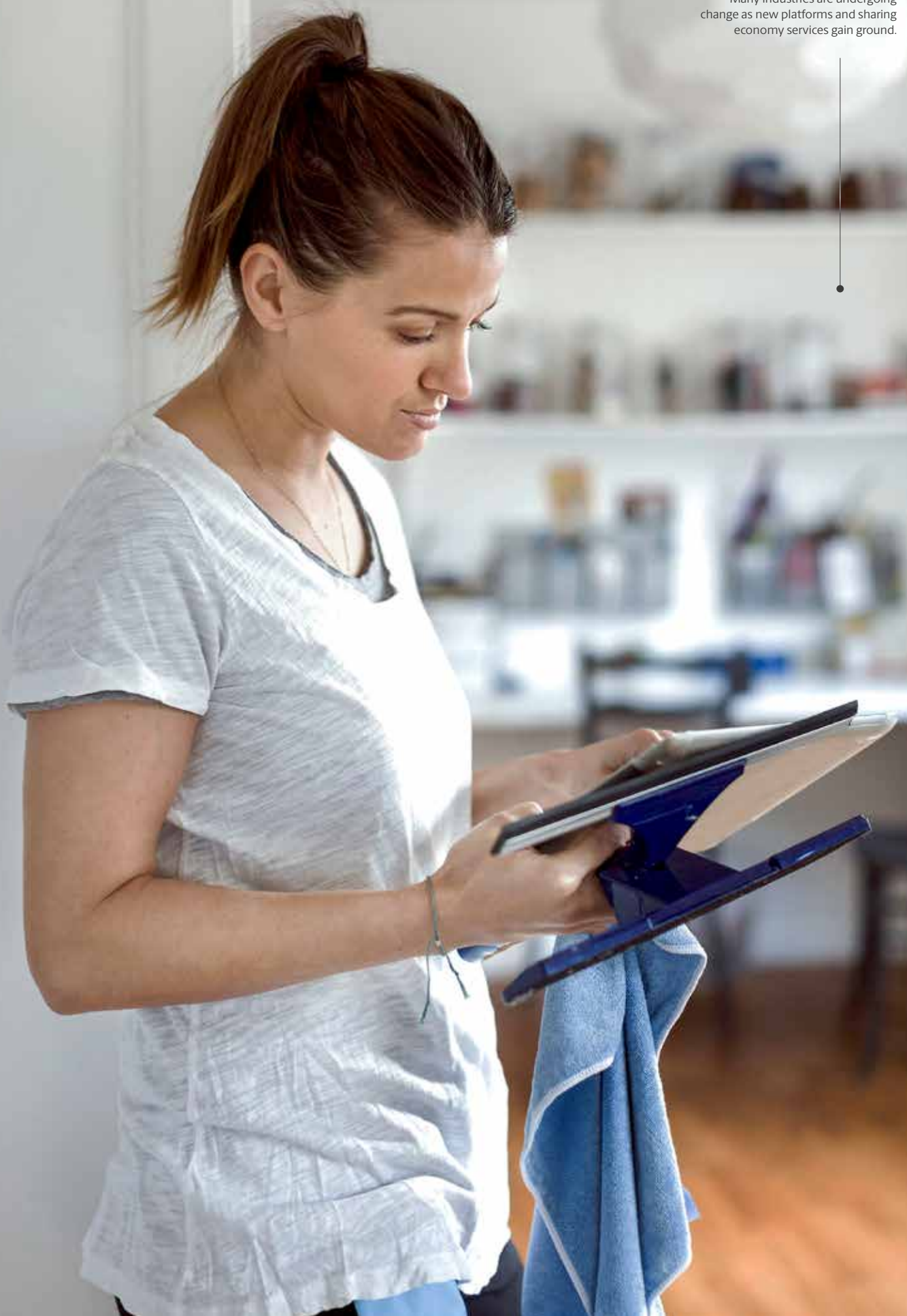


30%

Some digital platforms on the Internet have very high market shares. For example, Amazon has a market share of around 30 per cent of German e-commerce.



Many industries are undergoing change as new platforms and sharing economy services gain ground.



→ Challenge 5

Lack of talent may weaken companies' growth

As digital and technological advancements continue, companies will need employees with new skills. There is especially a rising demand for employees with technical and digital skills: The so-called STEM skills.

The Government has therefore established the so-called Technology Pact with the goal of 20 per cent more Danes possessing STEM skills within 10 years (see Chapter 1).

If Danish companies are unable to recruit employees with the necessary talents – in Denmark or internationally – they will be unable to adapt quickly enough to new requirements and technologies.



→ Challenge 6

Lack of access to capital can hamper the business community

At the same time, venture capital is typically necessary for innovative and new companies with high growth potential.

There are fewer venture investments in Denmark than in Sweden and Finland, and venture investments in Denmark are only at just around the OECD average. This is in spite of the fact that Denmark is more innovative than many other OECD countries.

Venture investments are especially important when it comes to start-ups being able to successfully attract more capital and expertise.

There are many good examples of small Danish companies that are well advanced in terms of finding commercial applications for the very latest technological advancements. Smaller companies are often characterised by their adaptability, and a lot of innovation occurs in cooperation between small tech companies and large established companies.

We run the risk that companies choose to relocate from Denmark and move those jobs abroad if they do not have access to the talent and capital they need here.



Entrepreneurship is the most important source of new jobs in Denmark and internationally and is therefore a good foundation for growth.

There is a shortage of venture capital from private Danish investors available to new Danish start-ups.

Denmark is the country where it is least attractive to own shares and make capital available for investment, as we have the highest marginal capital gains taxation in Europe.



Venture investments are high-risk investments in start-ups with high growth potential, where the investor typically gains ownership of the company in the form of shares.

Report from the Government's Entrepreneurship Panel, discussed at the second meeting of the Danish Disruption Council

What the Government has done

The Government is continuously working on improving conditions for Danish companies. The Danish Disruption Council has provided input to the Government on several political agreements and proposals.

Political agreement on initiatives for Denmark's digital growth

Digitalisation is changing things for the better for companies, individuals and society in general.

The Danish Disruption Council has discussed the best ways for companies to develop and use new business models and how to improve the framework conditions within which they operate. This will be done through agile regulation with five mandatory principles for business-oriented legislation, a strong digital growth environment and access to talent and capital. It is crucial that Danish companies continue to remain competitive in an increasingly digital world.

The Government has, based on the deliberations in the Council, reached an *Agreement on initiatives for Denmark's digital growth* where just under DKK 1 billion until 2025 has been allocated in funding. This agreement will help ensure that companies can exploit new technologies to create growth and increase prosperity for the benefit of the individual and society in general.

With the agreement, a number of initiatives will be implemented in six areas to strengthen the foundations for future growth:

1. A digital hub for a strengthened growth environment
2. A digital enhancement for small and medium-sized enterprises
3. Digital skills for all, including the Technology Pact and Test Programme for improved technological literacy
4. Data as a growth driver in trade and industry
5. Agile regulation of trade and industry – five mandatory principles
6. Strengthened cyber security in companies



The Government presents their Strategy for Denmark's digital growth.

The strategy Consumer in a digital world

The new digital economy has resulted in the emergence of new possibilities and challenges for consumers and companies. It is important that consumer policy matches the requirements of the new conditions so that consumers still enjoy a high level of protection and are able to make wise purchasing decisions easily.

The Danish Disruption Council has discussed competition and consumer conditions in a digital world. In May 2018, the Government launched a consumer policy strategy based on the discussions in the Council.

The consumer policy strategy consists of 24 concrete initiatives. These initiatives give consumers a better framework to use their own data to gain access to better products while also facilitating access to simple and secure online shopping.

Political agreement on sharing and platform economy, including a cooperation agreement with Airbnb

The sharing and platform economy is growing rapidly, providing new business opportunities for companies.

The Danish Disruption Council has discussed how we can best handle new business models in the Danish labour market in relation to the sharing and platform economy.

The Government has launched the *Strategy for growth through the sharing economy*, and in May 2018, the Government also entered into a broad political agreement on better conditions for growth and correct taxation in the sharing and platform economy which allocates just under DKK 1 billion in funding until 2025 towards the strategy.

The agreement provides a clear framework for Danish companies and individuals to participate in the sharing and platform economy in Denmark. This applies in particular to new rules for short-term rental of private homes. The agreement entails a relaxation of taxation rules for renting out summerhouses, year-round homes, cars and boats through sharing economy platforms or rental agencies.

The agreement also includes a separate agreement with Airbnb so that users' rental income is automatically reported to Danish tax authorities.

Political agreement on business and entrepreneurial initiatives

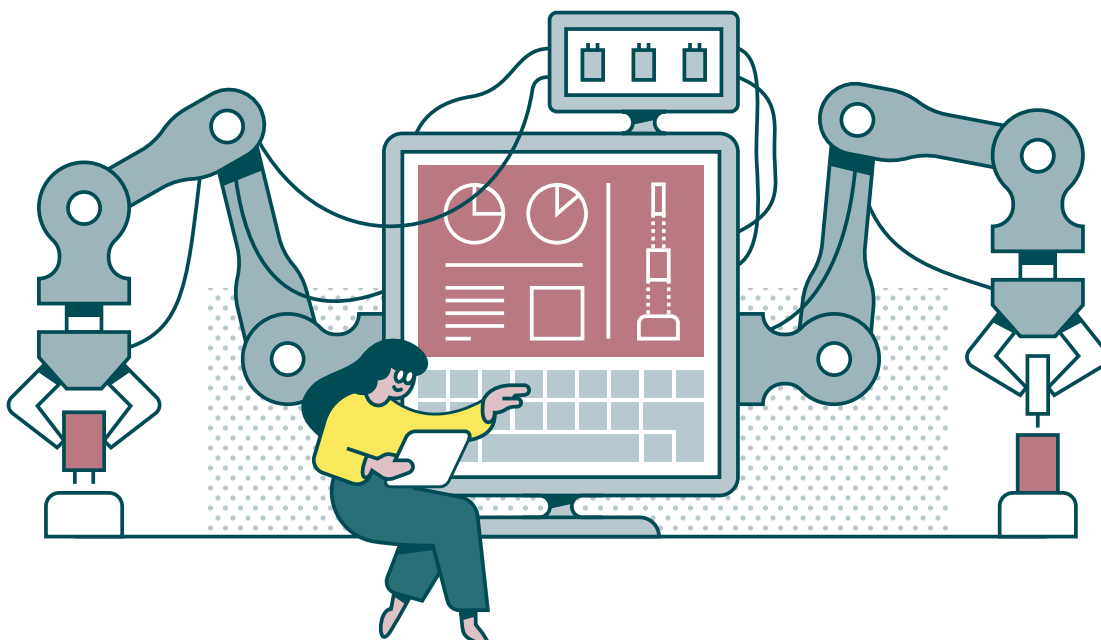
Competitive framework conditions improve Danish companies' opportunities to create growth and prosperity for the benefit of Danes and Danish society.

The Danish Disruption Council has discussed the recommendations of the Government's Digital Growth Panel and Entrepreneurship Panel. The Danish Disruption Council provided input to the agreement on business and entrepreneurship initiatives that the government entered in November 2017.

The agreement – reached between the Government and a broad parliamentary majority – allocates DKK 14.7 billion in funding until 2025 to contribute to strengthening companies' growth opportunities. In addition, the agreement has improved conditions for international researchers while also strengthening the equity and investment culture in Denmark. For example, the agreement has led to the creation of so-called Equity Savings Account (aktiesparekonto), the introduction of an investor tax deduction and better opportunities to remunerate employees with employee shares.



The agreement includes a separate agreement with Airbnb so that users' rental income is automatically reported to Danish tax authorities.



New initiatives for competitive growth conditions

The framework conditions for companies must remain competitive at all times. That is why the Government is closely monitoring developments in conditions in the countries that matter most to Danish companies. This applies to corporate taxation, investment and equity culture and ensuring that companies have access to employees with the right skills. At the same time, we must continuously focus on exploiting the possibilities offered by new technologies – but also be conscious of the challenges they may bring.

Following the discussions of the Danish Disruption Council, three new initiatives will be launched.

Ethical and sustainable use of data in companies

Data is increasingly gaining more prominence in companies' business models and holds considerable potential, but for the individual and society, it is important that companies work with data in an ethical and responsible manner.

The Government has set up the Expert Group on Data Ethics as a part of the deliberations in the Danish Disruption Council. The group has examined how to help ensure that companies use data responsibly with a focus on making it a competitive factor for Danish companies.

Christiane Vejlo, Chairman of the Expert Group on Data Ethics, presents their recommendations on data ethics for Rasmus Jarlov, Minister for Industry, Business and Financial Affairs.





The Government establishes a Data Ethics Council, which contribute to an informed debate on data ethics.

Following the expert group's recommendations, the Government intends to launch a number of initiatives:

1. The establishment of a Data Ethics Council
2. Declaration of companies' data ethics policies
3. Support for the establishment of an ethical data label
4. Implementation of a national data ethics knowledge boost
5. Establish a dynamic toolbox for data ethics
6. Denmark must be a frontrunner in data ethics
7. Monitor the development of new innovative companies with business ideas relating to ethical use of data
8. Investigate the possibility of a strengthened focus on data ethics in public procurement

The establishment of a Data Ethics Council should be seen in the context of the ambition to offer world-class Digital Service in connection with the so-called 'Public Sector Reform' (Sammenhængs-reformen), which includes an initiative to set up a Data Ethics Council for the public sector and for companies.

The Council's aim will be to facilitate companies' responsible use of data and contribute to Denmark taking the lead and making its mark on the international debate on data ethics.

Follow-up on the Council's discussion on competition conditions and tech giants

The Danish Disruption Council has discussed the extent to which online platforms impact competition conditions in Denmark. It is crucial to support fair competition and consumer conditions.

The Government therefore intends to strengthen the Danish Competition and Consumer Authority's supervision in relation to digital platforms in Denmark. The strengthening of the authority will help smaller, Danish companies operate in the digital market. These efforts will be aimed at making it easier for the companies to assess whether the big platforms' terms of business, conditions, pricing, etc., constitute an abuse of their dominant position. In addition, there will be carried out analyses of the behaviour of giant digital platforms that harm competition, weaken growth conditions for micro-enterprises and SMEs and harm consumers.

In the EU, the Government will work to ensure that national and European competition authorities are given the possibility to more quickly take action against anti-competitive behaviour from big platforms so that the authorities can more quickly and easily stop anti-competitive behaviour and foster increased transparency and right of access for B2B customers to their own customer and sales data from those platforms that they must do business with to be present in the market.

National strategy for artificial intelligence

Artificial intelligence (AI) can improve how existing tasks are performed and create the foundation for new business models. For example, AI could help physicians identify cancer, facilitate children's learning and optimise companies' operations. Accordingly, the Government's ambition is for Denmark to take the lead on a responsible development and application of AI.

The Government will launch a national strategy for artificial intelligence. The strategy will cut across the public and private sectors and set a common direction for ongoing and future initiatives relating to AI. Ethical considerations must be taken into account when using AI, accessing data, launching pilot projects and investing in AI.



The Government therefore intends to strengthen the Danish Competition and Consumer Authority's supervision in relation to the largest global digital platforms in Denmark.

Productive and responsible businesses in a digital world

Based on the Danish Disruption Council's discussions, among other things, the Government has taken a number of initiatives:

- Reached a political agreement on initiatives for Denmark's digital growth, such as:
 - The establishment of a digital hub to promote Denmark's digital growth environment
 - Establishment of a Technology Pact
 - Agile regulation that facilitates new business models
 - A digital enhancement of Danish SMEs
- Reached a political agreement on business and entrepreneurial initiatives
- Entered into an agreement on better conditions for growth and correct taxation in the sharing and platform economy
- Presented a consumer policy strategy with a digital perspective

New initiatives :

- Follow-up on recommendations on data ethics
- Follow-up on the Council's discussion on competition conditions and tech giants
- National strategy for artificial intelligence

3. A modern and flexible labour market



It is crucial to ensure that Denmark has a modern and flexible labour market. The Danish Disruption Council has discussed what will be needed to ensure maximum participation in a labour market with changing requirements and new forms of employment.

The Danish labour market must be future-proofed for the benefit of individuals, companies and society in general. Following discussions in the Danish Disruption Council, the Government has enacted a number of initiatives aimed at preparing the Danish labour market for technological developments and new business models.

The tripartite agreement on adult and continuing training for example, will help ensure that Danes regularly upgrade their qualifications as labour market requirements change. All Danes get the opportunity to strengthen their skills while companies get access to qualified labour, thereby contributing to growth and prosperity in Denmark.

It is on this background that the Government, among other measures, has:

- Entered into a tripartite agreement on adult and continuing training.
- Implemented efforts for qualified labour and assistance to unemployed Danes.
- Entered into an agreement on a simpler employment system.
- Entered into an agreement on a new unemployment benefit system for the labour market of the future.
- Entered into an agreement on a social tax exemption pilot scheme.

Following dialogue in the Danish Disruption Council, the platform company Hilfr (via the The Confederation of Danish Industry) has entered into a collective agreement with the trade union 3F.

The Government will also ensure more flexible access to the labour market for the most disadvantaged unemployed persons, and better work environment data will strengthen preventive efforts.

Denmark’s flexible labour market makes us ready for change...

In many ways, the Danish labour market is unique from an international perspective. Since 1899, the social partners have chosen to cooperate and regularly enter into collective agreements on wages and working conditions.

With the Danish model and flexicurity system, we have built an adaptable labour market with high job turnover, benefiting employers and employees alike.

In the last 50 years, the number of people employed in industry and agriculture has declined significantly. Today, more people work in private services or in the public sector. These tremendous changes have happened alongside an increase in the total employment rates. Never have so many people been employed in Denmark as is the case today.



In the last 50 years, the number of people employed in industry and agriculture has declined significantly. Today, more people work in private services or in the public sector.

... but there are also challenges

Historically, we Danes have embraced new technologies, found ways to benefit from change and improved our standard of living. We must continue to do so in the future.

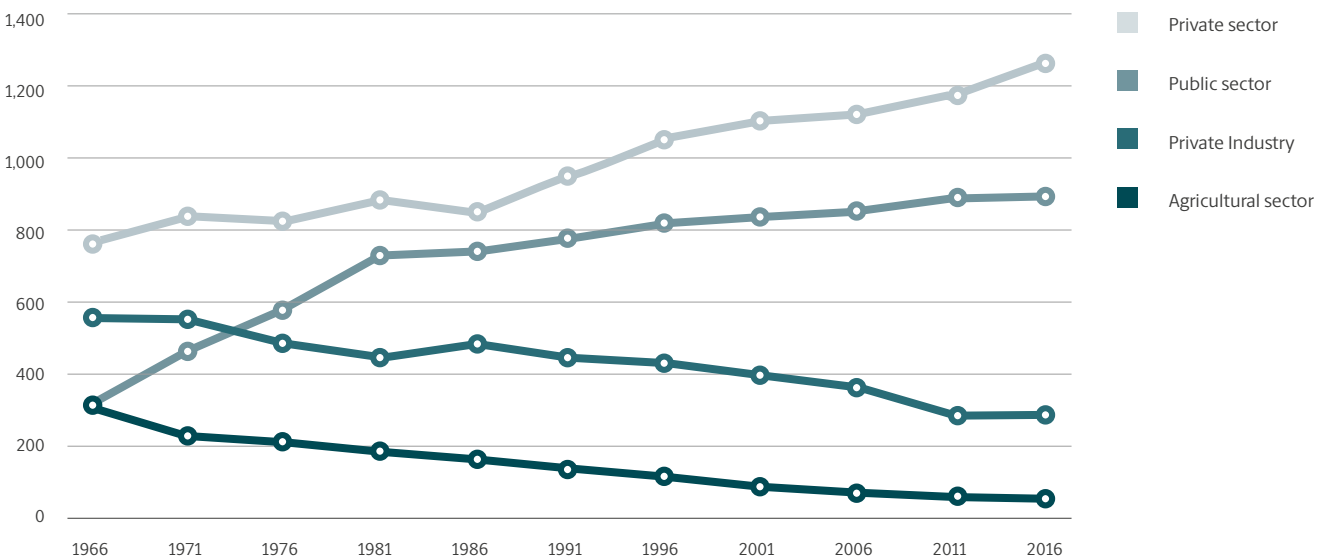
Technological advancements will continue to entail new requirements for competences (see Chapter 1). Accordingly, it is crucial that good opportunities exist for lifelong learning so that each Dane can develop competences as new requirements arise in the labour market.

Additionally, it is important that Danes take a positive view on the opportunities provided through new business models and forms of employment resulting from technological advances. For example, the sharing and platform economy offer new opportunities for businesses and consumers (see Chapter 2).

We must find solutions in areas where the labour market and the Danish model are facing challenges. It is important that the labour market is also characterised by proper conditions in the future as well.

Danes have transitioned to other industries in step with developments

1,000 persons



Note: Private sector is defined as the industries of commerce and transport, information and communication, finance and insurance, real-estate, etc., housing and business services. Public covers public administration, education and health care.

Source: The Statistics Bank, Statistics Denmark.

Robots will retain jobs

As part of the preparations for the seventh meeting of the Danish Disruption Council, Minister for Employment Troels Lund Poulsen and the Council members Lizette Risgaard (President of the Danish Confederation of Trade Unions), Jacob Holbraad (CEO at the Danish Employers Confederation), Vibeke Svendsen (CEO and partner at Envotherm) and André Rogaczewski (CEO and partner at Netcompany) visited the company Linak, which produces pistons for height-adjustable tables and hospital beds.

At Linak's facilities on the island of Als, the company has gradually introduced robotics technology without having to lay off employees. In fact, the use of technology has helped ensure that the company is able to retain the 1,150 jobs in Guderup instead of moving them abroad to countries that typically have lower wage levels.

The robotics technology has entailed that job duties have changed within the company, which has required the employees to acquire new competences. At Linak, they have found it especially challenging to recruit the necessary number of mechanical and electrical engineers.



Historically, the rollout of new technologies has proved to be a major benefit for Danish society. Automation has made us richer without taking away Danish jobs.

If we go about it the right way, the adoption of new technologies can continue creating growth and prosperity throughout the country. Among other things, the key is to ensure that Danes have the qualifications that will be needed in the future.

Minister for Employment Troels Lund Poulsen



40%

An analysis from McKinsey shows that 40 per cent of the total hours worked in the Danish labour market can be automated via current technologies up to the year 2055.

➔ Challenge 1

Requirements for transition and lifelong learning

Technology is advancing at a rate that will require rapid transformations in the labour market. McKinsey has carried out an analysis on behalf of the Danish Disruption Council. The analysis shows that 40 per cent of the total hours worked in the Danish labour market can be automated via current technologies up to the year 2055 (see Chapter 1).

The analysis also shows that employees in all professions will be affected by automation, including doctors, marketers and legal professionals. Therefore, it will also be the vast majority of people in the labour market who will have to learn new skills over the course of their working life.

Here, the Danish adult and continuing training system plays an important role. The system provides good opportunities for adults to upgrade their skills throughout life or change track as labour market requirements change.

Studies by the OECD also indicate that 7-10 per cent of employed people are at a high risk of experiencing significant changes as a result of automation.

However, there are very few jobs that can be fully automated. The greatest effect is expected to be revised job descriptions rather than a rise in unemployment. New technologies will also lead to new types of jobs, and automation will free up time.

In other words, more robots will not mean fewer people in the labour market. On the contrary; new technologies will contribute to growth and prosperity in society, creating new products, services and jobs in the process.

The Danish labour market is well-prepared to cope with this transition to new technologies. However, there is a group of around 250,000-300,000 employees whose job functions may become automated to a large extent. This group will often attempt to find work within the same or other industries that will undergo a similarly high degree of automation. This includes people working as bus or truck drivers and warehouse workers, for example.

With the help of lifelong learning, these job groups must be given even better prospects to succeed in a changing labour market.

Lifelong learning does not only benefit individuals. Being able to recruit employees with competences that match shifting labour market needs is a major factor in the competitiveness of companies.

250,000-300,000 workers particularly at risk due to automation

Number of at-risk workers in thousands

0 10 20 30 40 50

Operator and transport workers

(Share of the job group, pct.)

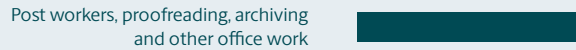
90%



Office workers

(Share of the job group, pct.)

8%



Service workers

(Share of the job group, pct.)

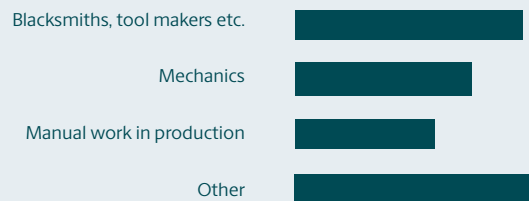
24%



Trademmen

(Share of the job group, pct.)

42%



0 10 20 30 40 50

Note: In order to assess whether some professions are particularly vulnerable, the automation potential has been combined with the ability to transition into new jobs in other areas of the labour market. Using the mobility index, it is evident that 10-15% of the labour force may be in a relatively precarious position: More than 60% of their tasks can be automated, and their ability to transition to jobs with lower automation potential is limited. Most of these jobs are found in the private sector, e.g. warehouse workers, operators and certain categories of office workers. Analyses also indicate that there are certain 'escape routes' for some of the groups. For example, in recent years one group of office workers have transitioned to positions within everything from the health care sector to economics and finance.

Source: Statistics Denmark, OECD, Ministry of Employment, McKinsey analysis.

→ Challenge 2

The sharing economy and digital platforms are challenging the Danish model

Platform companies such as Airbnb, GoMore and Hilfr offer new possibilities for business and citizens.

The platforms cover a growing demand for flexible services that companies, self-employed professionals and consumers are seeking out in a wide range of areas, from cleaning services to transport and web design. Services become easily accessible through a platform which efficiently matches labour to demand. Moreover, there can be environmental benefits to utilising society's resources more efficiently.



1 out of 5 Danes participate in sharing economy activities.

Facts about the sharing and platform economy

1 out of 5 Danes participate in sharing economy activities. The majority of these are consumers, meaning they do not themselves offer sharing economy (peer-to-peer) services.

The sharing economy is most common within the accommodation and transport sectors. For example, Danes use platforms such as Airbnb for private accommodation rental and GoMore for private car rental and carpooling. In terms of purchasing private transport and private car rental and carpooling, Danes use such services less than the EU average.

Almost 1.5 per cent of the Danish work force (approximately 42,000 Danes) have tried working through a labour platform. Nearly half of them are either unemployed or students when they are not working through those platforms. In other words, it is only a relatively small portion of the population that is active on digital labour platforms. In the UK, for example, an estimated 11 per cent are active on digital labour platforms.

For individuals offering their labour, it can lead to a more flexible working life. And for those who struggle to gain a foothold in the labour market, platform work can serve as a stepping stone to more permanent employment.

However, the emergence of platform work challenges the conception we have of the traditional labour market. What implications will these digital platforms have on the Danish labour market and the Danish model? How will they affect workers' working conditions when it is unclear whether they are in an actual employment relationship or not? And what will be the consequence of more Danes moving towards a less strictly defined employment relationship?

Labour platforms in brief

Platforms through which services such as cleaning, shopping and minor handiwork tasks are bought and sold are defined as *labour platforms*. Digital platforms in the sharing economy through which assets such as homes, cars or boats are rented (out) are defined as *capital platforms*.

The vendors on digital labour platforms are typically not protected by the standard employee rights (the cleaning platform Hilfr being an exception) that employees covered by collective agreements have. These vendors are instead responsible for saving up money for holidays, sick leave and pensions, as well as taking out industrial injury insurance policies and the like.

It is essential that developments in this area are closely monitored and that we help ensure that the Government and social partners find solutions in areas where the Danish model faces challenges.

These new forms of employment come with new opportunities that should be taken advantage of – while at the same time, however, we must maintain and build a labour market that can exist within the framework of the Danish model in terms of taxation and proper conditions.



→ Challenge 3

We run the risk of seeing greater social divisions unless everyone takes part in progress



Denmark must continue to be an equal society that does not divide into those who benefit and those who are left behind as a result of globalisation and new technology.

In the international debates, it is often argued that technological development and globalisation can entail that certain groups will benefit more from increases in prosperity. However, that has not been the case in Denmark.

In several countries, such as the US, inequalities between the highest-paid and lowest-paid workers have increased in recent years. Denmark must continue to be an equal society that does not divide into those who benefit and those who are left behind as a result of globalisation and new technology. It is a balance that we must maintain.

The Danish model and flexicurity system has proved itself as a stable shield against the changes and challenges faced by the labour market in the past. It has benefited Denmark and all Danes.

Ensuring that everyone who can contribute to the labour market does in fact do so results in benefits for individuals as well as society in general. The Government will continually – and in close cooperation with the social partners – strive to ensure that the Danish labour market remains adaptable, flexible and offers many job openings.

The Danish economy has continually adapted to technological change

Historical experiences indicate that technological advances primarily create opportunities for increased prosperity. Further automation of labour means that every individual in the labour market will become more productive. The adoption of new technologies in the last 50 years has contributed to a productivity-driven doubling of GDP per capita. The employment rate has historically followed a growing labour supply.

The loss of jobs due to automation can be partially offset by some companies increasing their production rather than dismissing employees as well as through the emergence of new jobs directly related to automation. Finally, it will also be offset by increased prosperity, which will generate greater demand and thus also employment in other industries.

McKinsey for the Danish Disruption Council, 2017

What the Government has done

As part of the work of the Danish Disruption Council, the Government has continually taken important steps towards creating a modern and flexible labour market.

Tripartite agreement on adult and continuing training

Good opportunities must exist for continually upgrading one's qualifications as labour market requirements change. The Danish Disruption Council has discussed the recommendations from the Expert Group on adult and continuing training.

In October 2017, the Government entered into a tripartite agreement with the social partners on an improved and more flexible adult and continuing training system. The agreement includes the following:

- DKK 400 million to a transition fund that will allow skilled and low/semi-skilled workers to pursue continuing and further education on their own initiative or pursue a new vocation altogether.
- Better opportunities for literacy and numeracy education, new courses in IT and English and a new DKK 100 million funding pool for raising awareness about the opportunities that exist for lifelong learning.
- DKK 420 million for improved quality of adult vocational training.
- An increased financial incentive to participate in continuing education via an increase of the special allowance for participation in vocationally oriented adult and continuing training (VEU) from 80 per cent to 100 per cent of the highest unemployment benefits as well as state educational support for adults (SVU) from 80 to 100 per cent of the highest unemployment benefits for students taking courses in basic literacy and numeracy.

With this agreement, public and private enterprises will get better access to qualified labour. At the same time, it creates better conditions for the labour force to adapt to the changes taking place in the labour market.



DKK 400 million

DKK 400 million to a transition fund that will allow skilled and low/semi-skilled workers to pursue continuing and further education on their own initiative or pursue a new vocation altogether.

The Danish model has proved itself as a stable shield against the challenges faced by the labour market in the past. The picture is from Universal Robots.



Efforts for qualified labour and assistance to unemployed Danes

Companies are increasingly struggling with a demand for labour, and recruitment challenges are at the highest level in 10 years. That is why it is important to facilitate access to qualified labour and tackle the issue of unemployed persons with low qualifications.

In November 2017, the Government signed a broad political agreement on initiatives to address recruitment challenges with the Danish People's Party, the Social Democratic Party and Social Liberal Party. The agreement allocates DKK 92 million to a number of interventions, including strengthening efforts relating to unemployed persons who lack basic literacy and numeracy skills as well as upgrading of skills and qualifications for major infrastructure and construction projects.

Furthermore, in November 2018 the Government entered into an agreement with the Social Democratic Party, Danish People's Party, Social Liberal Party and Socialist People's Party to allocate DKK 100 million to a number of initiatives aimed at upgrading the skills and qualifications of unemployed persons and thereby increasing the supply of qualified labour for companies.

The funds will be allocated to initiatives such as improving job centre services and helping companies with labour shortage, as well as investing more resources into combating unemployment.

The parties also agree on continuing negotiations on further initiatives to strengthen efforts to upgrade the skills and qualifications of unemployed persons.

Agreement on a simpler employment system

The Government is concerned with ensuring that the employment system is capable of effectively helping unemployed persons find work and that companies can get the labour they need.

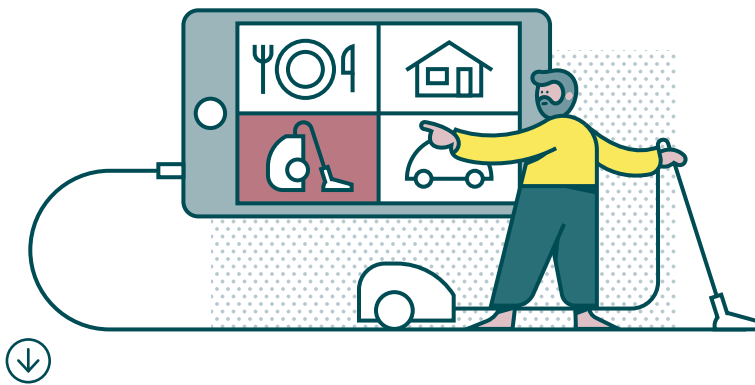
Therefore, in August 2018 the Government entered into a political agreement that simplifies the employment system with the Social Democratic Party, Danish People's Party, Social Liberal Party and Socialist People's Party. The agreement entails a simplification of the employment system so that citizens get to deal with fair requirements and understandable rules.

This frees up important resources in the municipalities and unemployment insurance funds, which can then be reallocated to effectively help unemployed persons find work and get off public benefits, boosting labour market participation. With the new and simplified employment system, the job centres and unemployment insurance funds must spend more time on what truly matters: ensuring that we have a well-functioning labour market with low unemployment, among other means through focused outreach to businesses.

This agreement also helps ensure that individual unemployed persons will find that their interactions with the job centre and unemployment insurance fund will be more meaningful.



The agreement entails a simplification of the employment system so that citizens get to deal with fair requirements and understandable rules.



The agreement harmonises the rules for the self-employed and atypical workers to a great extent with the rules for employees. Thus, the agreement provides greater security for everyone regardless of their form of employment.

Agreement on a new unemployment benefit system for the labour market of the future

The platform companies and their users have experienced uncertainty concerning the extent to which income from platform work is considered income in the unemployment benefit system and the social assistance system in relation to earning rights. The Danish Disruption Council has had an ongoing discussion about the Danish flexicurity model and how it can be applied to new forms of employment.

The Government entered into an agreement with the Social Democratic Party and Danish People's Party in May 2017 on a new unemployment benefit system for self-employed persons and atypical workers.

The agreement harmonises the rules for the self-employed and atypical workers to a great extent with the rules for employees. Thus, the agreement provides greater security for everyone regardless of their form of employment. This constitutes an important step for preparing Denmark for the labour market of the future, which will be characterised by a diversity of permanent employees, freelancers, platform workers and partially self-employed individuals.

The new unemployment benefit rules, which entered into force in autumn 2018, represent a renewal of the flexicurity model by adapting unemployment benefits to new forms of employment and income.

Agreement on a social tax exemption pilot scheme

The Government has entered into an agreement with the Social Democratic Party, Danish People's Party, the Alternative, Social Liberal Party and Socialist People's Party on allocating funds for a pilot scheme on giving socially vulnerable citizens a social tax exemption.

The pilot scheme gives these citizens the opportunity to earn an annual tax-free income of up to DKK 20,000. The aim is to improve this target group's opportunities to participate in Danish society through work.

Denmark's first collective agreement with a platform company

Following dialogue in the Danish Disruption Council, the trade union 3F and the cleaning services platform Hilfr have entered into Denmark's first platform collective agreement, which grants users of the platform employee rights and ensures their incomes are automatically reported to the Danish taxation authority, SKAT.

The collective agreement demonstrates that good employment conditions can be established through digital platforms and within the Danish collective bargaining model. In the short term, the agreement affects Hilfr and those working through the platform. In the long term, the agreement may pave the way for similar collective agreements.

New initiatives

Partnership to ensure more flexible labour market access for the most disadvantaged of the unemployed

Based on the deliberations of the Council, the Government intends to launch a partnership to ensure closer cooperation between job centres, temporary work agencies and platform companies that have entered into a collective agreement or offer conditions resembling those of a collective agreement.

For the most vulnerable unemployed persons, temporary employment provides opportunities to try new work-related tasks and acquire competences that are in demand in the labour market. There is a need for creating different paths into the labour market for the unemployed who have been outside the labour market for long periods. The ambition is for every able worker to be part of the labour market. This benefits the individual and society.

Better work environment data to strengthen preventive efforts

The area of work environment lacks qualified data, and there is considerable potential in working more systematically in terms of collecting and processing work environment data.

Therefore, the Government will provide data on businesses' working environment in a publicly accessible database that will allow everyone to access that data.

This gives individual businesses the opportunity to compare themselves with other businesses.

A modern and flexible labour market

Based on the Danish Disruption Council's discussions, the Government has taken a number of initiatives:

- Tripartite agreement on adult and continuing training
- Efforts for qualified labour and assistance to unemployed Danes
- Agreement on a simpler employment system
- Agreement on a new unemployment benefit system for the labour market of the future
- Agreement on a social tax exemption pilot scheme

New initiatives:

- More flexible labour market access for the most disadvantaged unemployed
- Better work environment data to strengthen preventive efforts

4. Globalisation, foreign labour and free trade



Danish businesses must have access to the labour they need. That is why they must also be able to recruit qualified labour from abroad. At the same time, Denmark must continue working to promote trade through the EU and WTO.

Denmark is one of the richest countries in the world. We have equal opportunities, great social cohesion and limited divisions between people. We must ensure that this does not change in the future.

This is why Denmark must continue to be an open country that attracts talent and investments from abroad and engages in trade with the whole world.

The Danish Disruption Council and the Government have discussed the importance of globalisation, foreign labour and free trade for Denmark to become a wealthier country. And ensure that all Danes will have equal opportunities in the future.

It is on this background that the Government, among other measures, has:

- Continuously strengthened the effort for proper conditions in the labour market, such as launching a number of initiatives to ensure proper conditions in the transport sector.
- Worked to reduce tariffs and promote common standards and rules to make trade easier through the EU and WTO. This will also be a priority in the future.

The Government has also presented a reform proposal, that will be turned into a legislative proposal with specific initiatives, in order to make it easier and less bureaucratic for Danish businesses to attract and employ foreign labour. Of course, this must take place under proper conditions.



Trade with other countries has increased significantly since the 1980s, and both imports and exports have risen faster than the GDP.

Denmark greatly benefits from globalisation...

International trade plays a major role in a small, open economy such as Denmark's. Trade with other countries has increased significantly since the 1980s, and both imports and exports have risen faster than the GDP. Much like other advanced economies, Denmark has specialised in knowledge-intensive industries and services to a great extent.

International trade partnerships result in great benefits for Denmark. The EU internal market has had a major impact on economic activity in Denmark. Being an EU member state has had a positive effect on the development of private consumption, real wages, exports and investments. The benefits of the internal market extend far beyond what economic globalisation itself has contributed to.

The growth in international trade has resulted in significant productivity gains. Companies have benefited greatly from new technology and scientific advances we have been able to import from abroad. The increased liberalisation of trade has opened up new export markets.

These are important factors in explaining why Denmark is one of the wealthiest countries in the world today.

It has also been beneficial for the Danish consumers, who have the freedom to choose between a variety of different and cheaper products. The lower prices have also resulted in a higher real wage and stronger purchasing power for Danes.

... and we must continue our successful economic transition

Globalisation has put demands on the development of the Danish labour market. Many jobs have changed, and many people have had to change to different jobs. Overall, this transition has been successful for Denmark. In general, all Danes have benefited from the growing prosperity.

The flexible Danish labour market has, together with an increasingly well-educated population, contributed to this successful transition (*see also chapters 1 and 3*). We must continue that development.

This will require us tackling a number of challenges.



International trade plays a major role in a small, open economy such as Denmark's.

➔ Challenge 1

A reduced productivity growth rate can put our position as one of the world's richest countries at risk

For a number of years, productivity increases have been modest when compared with previous periods. This is a challenge, as a high level of productivity is a prerequisite for maintaining a high level of prosperity.

However, one should keep in mind that Denmark started at a high level, which is why it may be difficult to maintain the pace of productivity increases. A similar trend can be observed in other wealthy countries, where productivity gains have slowed in recent decades.

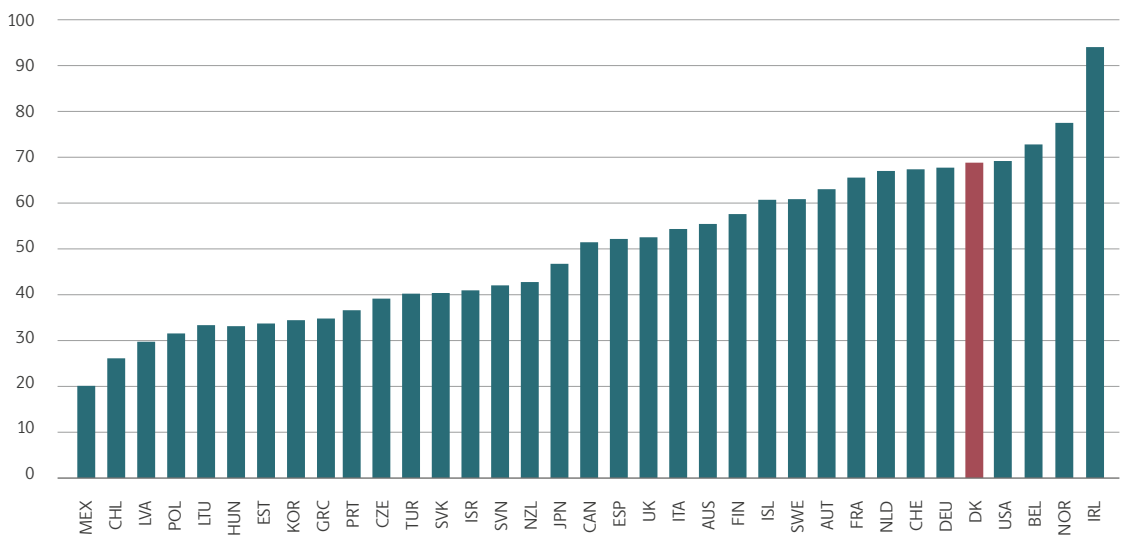


Denmark is among the wealthiest countries in the world per capita. This can be attributed to the fact that we have a high level of productivity.

Denmark is among the wealthiest countries in the world per capita. This can be attributed to the fact that we have a high level of productivity. However, there are also areas in which we can do better.

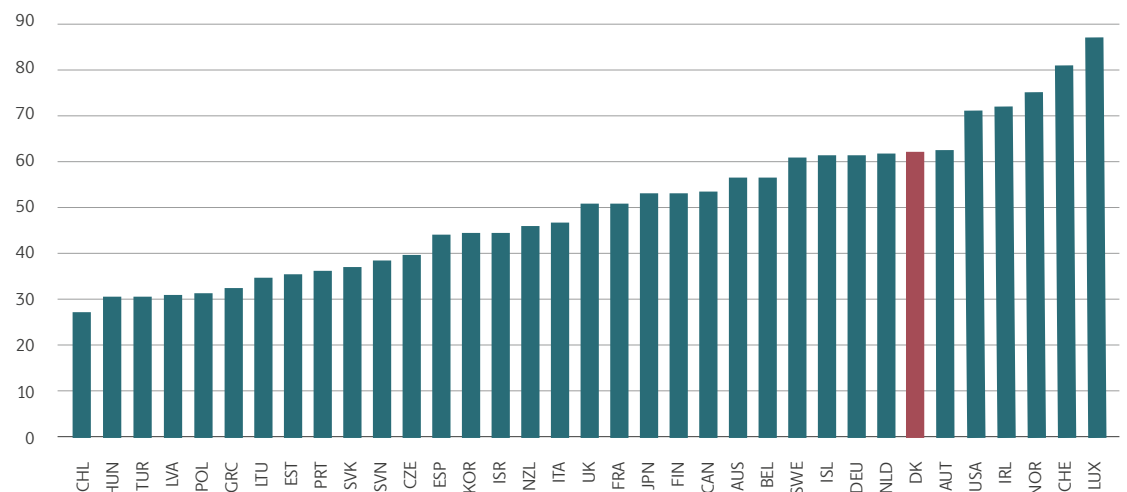
Denmark has a high level of productivity...

GDP pr. working hour (USD)



... and a high level of welfare

1,000 USD measured in GNI pr. capita



Note: Both graphs show the calculations for 2016. It should be noted that the calculations of working hours – which form the basis of the top graph – are based on calculation methodologies that differ between countries, which is why the data should be interpreted with caution. The bottom graph shows GNI per capita adjusted for purchasing power (2016-PPP, USD).

Source: OECD and internal calculations.

→ Challenge 2

A lack of qualified, foreign labour inhibits prosperity growth



Foreign workers who come to Denmark must work under proper, regulated conditions.

The EU internal market, which provides free movement of workers, has given Danish companies access to employees and the competences needed. It is an important factor for the ability of Danish companies to succeed internationally.

However, international competition for qualified labour has increased, among other reasons due to favourable market conditions in countries close to Denmark. Wage differences between EU member states have begun to even out, making it more difficult to recruit European labour.

Therefore, many companies increasingly need to bring in qualified labour from beyond Europe's borders. Otherwise, there is a risk that Danish companies will fall behind their competitors in the global markets.

It is also important for the economy that Denmark is an attractive location for international companies. They bring knowledge into the country while also boosting productivity. When international companies locate their operations in Denmark access to the right labour is of great importance. That is why the ability to bring in qualified labour from outside Europe is an important factor for foreign companies when determining whether to establish operations in Denmark.

Some may be concerned that foreign labour will lead to rising unemployment among Danes. However, a review of the available research on the topic shows that labour migration has a very limited effect on wages and unemployment for the rest of the population, and that the effect is not clear-cut².

In all cases, foreign workers who come to Denmark must work under proper, regulated conditions.

Foreign labour benefits Denmark

Being able to attract foreign labour results in significant benefits for businesses. At the same time, foreign labour contributes to the public finances, potentially leading to higher welfare and lower taxes. Foreign workers recruited via the Pay Limit Scheme are estimated to make a net contribution of almost DKK 1.5 billion a year to the public finances.

Research shows that migrant labour has a very modest effect on wages and unemployment. A literature review discussed in the Danish Disruption Council found that immigration has a slightly positive effect on the total average wage development for other employees. Unemployment is largely unaffected.

Another study shows that it is especially wage and tax issues that deter some foreign job seekers from seeking employment in Denmark, but the softer values such as work-life balance compensate for this.



² Literature review on the effects of foreign labour by Mette Foged, Linea Hasager and Vasil Iliyanov Yassenov. In 2017, the Danish Economic Councils found that the other employees' average wages increase due to labour migration, while a recent study by Kraka/ Deloitte found that the effect for those most affected by labour migration is negative.

➔ Challenge 3

Rising protectionism challenges a small open economy such as Denmark's

Trade between countries is crucial in order to increase both productivity and prosperity. In recent years, international trade has grown more slowly than GDP.

Increased protectionism constitutes a future risk to the development of international trade. Most recently, the US has lowered their free trade ambitions in favour of the introduction of protectionist measures that have led to retaliatory measures from trading partners. There is a growing concern about China's trade practices in a number of areas. The approach by US and China puts pressure on the international trading system enshrined in the WTO.

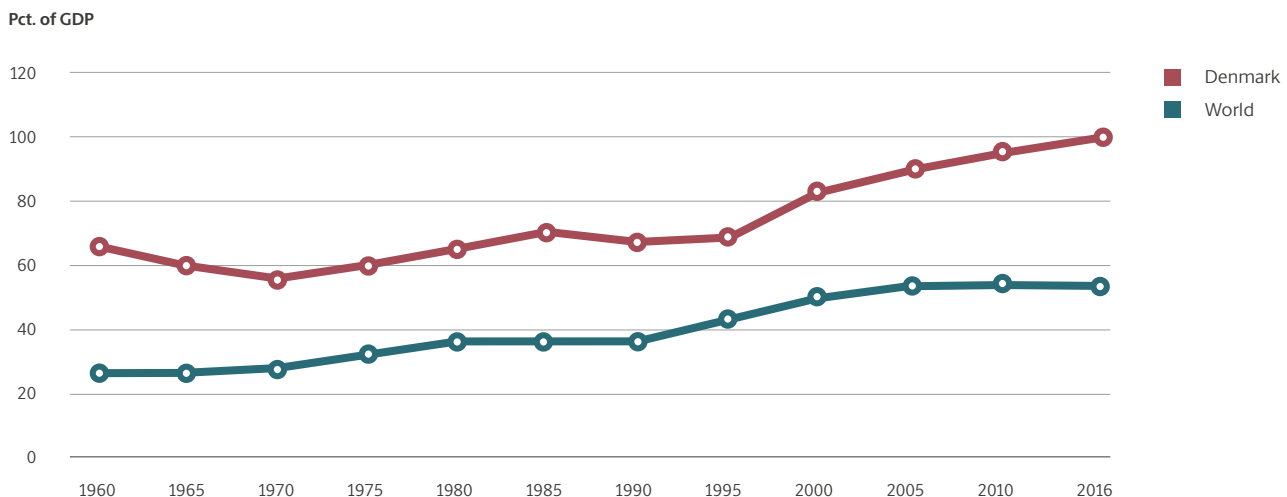
The outcome of the Brexit negotiations constitutes another potential challenge to free trade. Even though the British Government has negotiated a withdrawal agreement with the EU, it has yet to be

approved by the British Parliament. If the process ends with a failure to reach an agreement (*no deal scenario*), trade between the EU and UK will shift to WTO terms and thus result in higher trade barriers.

This growing protectionist tendency and increased trade barriers can constitute a serious threat to Danish exports in the future. Productivity in Denmark may be adversely affected by countries trading less with one another.



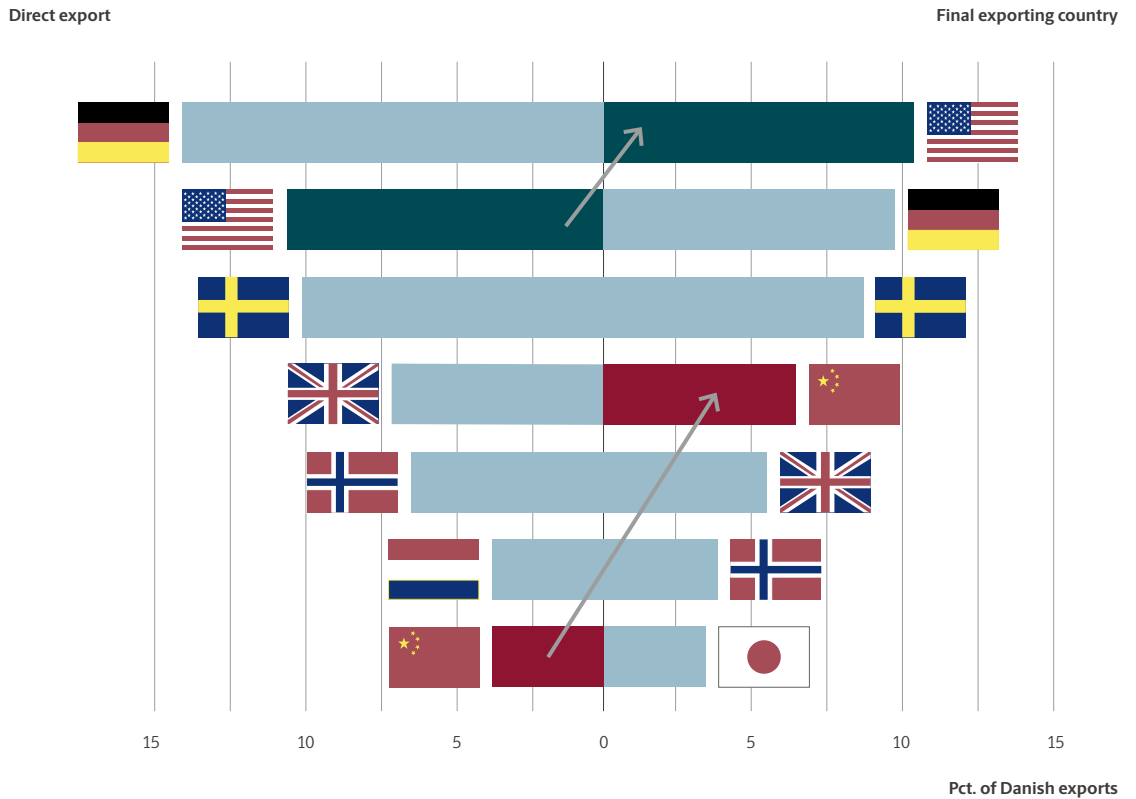
International trade has risen steadily since the 1960s



Note: The graph shows the sum of imports and exports of goods and services as a share of GDP.

Source: World Bank and internal calculations.

Denmark’s 7 biggest export markets



Note: Shares of Danish export of goods and services in 2015. Direct exports have been calculated from the balance of payments, and end-use has been calculated as Danish value added of foreign end-use based on TIVA data.
Source: Statistics Denmark and the OECD.

Approx 100%

International trade plays a major role in the Danish economy. In total, Danish foreign trade amounts to around 100 per cent of GDP.

Globalisation has made Danes wealthier

International trade plays a major role in the Danish economy. In total, Danish foreign trade amounts to around 100 per cent of GDP. Denmark mainly trades with other high-income countries.

Denmark benefits significantly from globalisation. Specialisation and use of technology from other countries results in productivity gains for companies in Denmark. At the same time, these companies enjoy the opportunity to enter an increasing number of export markets.

The Danish economy is highly integrated with the global economy (see the graph for Denmark’s biggest export markets). Danish export depends more on global markets than figures on direct export indicate at first glance. A significant portion of Denmark’s direct exports consists of semi-manufactured goods that are exported on to other countries. Thus, Denmark is more dependent on the US and China when one examines where Danish goods are actually sold to end consumers around the world

(see right side of the graph) instead of looking solely at direct exports (left part of the graph).

Growth in international trade provides more opportunities to increase export, but also makes us more dependent on developments in the global economy. A trade war – for instance between the US, China and Europe – may have a major impact on the Danish economy and Danish prosperity.

Danish consumers benefit greatly from having more goods and services to choose from at lower prices. Lower consumer prices of several types of goods results in higher real wages for Danes. This is true of both low- and high-wage earners as many everyday products, for example, are imported from abroad.

Globalisation requires development in the Danish labour market, a transition which has generally been successful. Healthy structures in the Danish labour market as well as a generally high educational level has resulted in a high employment rate. At the same time, structural unemployment has declined.



Globalisation requires development on the Danish labour market, a transition which has generally been successful.



The Minister for Employment visited the company Linak A/S at Als together with parts of the Disruption Council in connection with the 7th meeting in the Council.

What the Government has done

Denmark is well-placed to take advantage of the opportunities that technological progress and globalisation offer. Danes are well-educated, and businesses in Denmark operate under good, stable conditions. The Government aims to ensure this will also be the case in the future.



DKK 80 billion

The Government has presented a goal to increase GDP by DKK 80 billion towards 2025.

The Government's 2025 plan

The Government has an ambitious goal to increase prosperity in Denmark. In *Growth and Prosperity 2025 (Vækst og velstand 2025)*, the Government has presented a goal to increase GDP by DKK 80 billion towards 2025. The goal should be achieved partly by increasing the labour supply by 55-60,000 persons and partly by increasing productivity equivalent to DKK 35 billion.

The Government wishes to continue the direction of reforms passed over the past decade, which has formed the basis for economic progress in recent years. We must continue to maintain study programmes of a high standard, good conditions for businesses and a well-functioning labour market with a high level of participation.

Supporting an increase in productivity among businesses is an important component of the Government's reform agenda. Among other ways, this goal will be achieved by ensuring Danish businesses continue to operate under good conditions that will help enable them to exploit the opportunities of globalisation and new technology.

Specifically, the Government has struck a political agreement on business and entrepreneurship initiatives amounting to a total investment of DKK 14.7 billion by 2025. Among other things, the agreement includes initiatives to support the growing sharing economy, increased digital growth among Danish businesses and a stronger entrepreneurial and investment culture to increase businesses' access to capital (*see Chapter 2*).

Proper and regulated conditions in the labour market

In Denmark, foreign citizens must work under proper and regulated conditions as a matter of course.

Therefore, the Government is strengthening efforts to ensure proper and regulated conditions in the labour market. Among other things, the Government has launched a number of initiatives in the transport sector and continued to support cooperation between authorities to ensure proper and regulated conditions.

Most recently, with the 2019 Finance Act, the Government has strengthened police efforts in the heavy truck sector and allocated funding to efforts relating to proper and regulated conditions through the Danish Working Environment Authority.

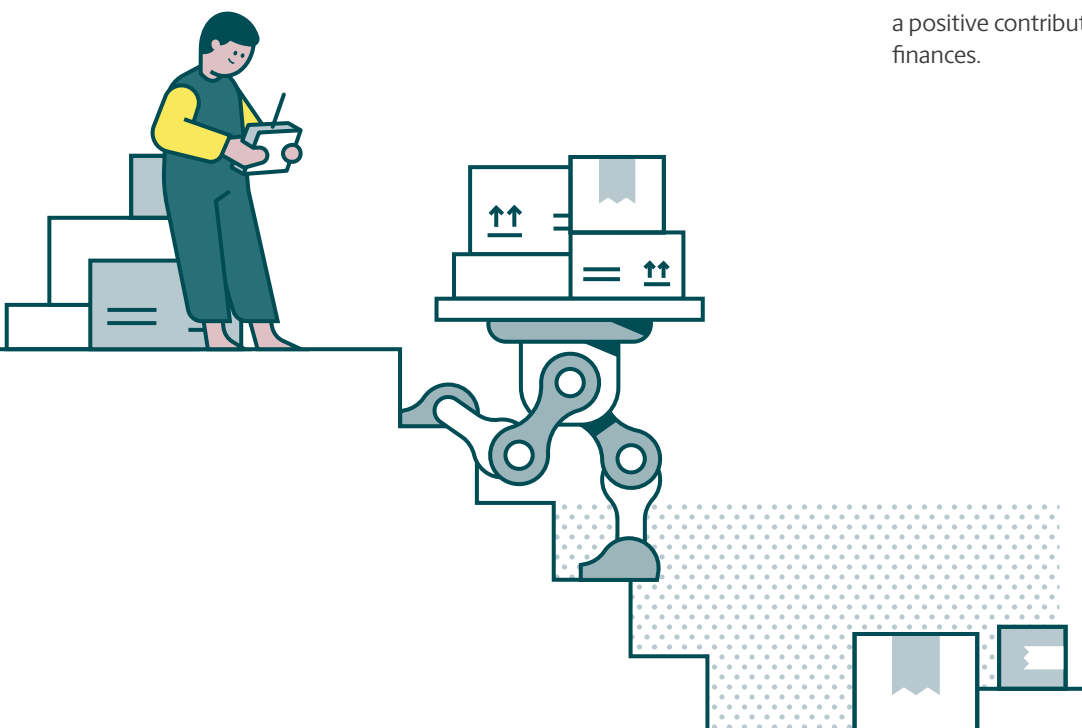
Better retention of international graduates

There lies considerable potential in retaining more international students in Denmark. When international students remain in Denmark for 10 years or more after commencing their studies, they make a positive contribution to general government finances.



DKK 14.7 billion

Specifically, the Government has struck a political agreement on business and entrepreneurship initiatives amounting to a total investment of DKK 14.7 billion by 2025.



Danish companies must have good conditions for recruiting the labour they need. The picture is from the DHL packaging center in Copenhagen.



The Government will encourage the relevant higher educational institutions to establish business and municipal partnerships to build better links between the educational institutions on the one hand and the Danish labour market on the other. Existing forms of cooperation – to the extent that they exist – will also be built upon.

The Government will support these partnerships to carry out activities aimed at recruitment of foreign graduates by companies in Denmark, for example, through the dissemination of best practice on match-making between companies and students in relation to student jobs or internships.

The Tech Ambassador

It is crucial for Denmark to position ourselves in the best way we can in relation to the rapid pace of technological development. The technological development and digitalisation are global in nature, which is why the Government has created the position of a Danish ambassador for technology and digitisation to head a new foreign policy focus area.

An open trading nation

In the EU and WTO, the Government is continuously working for trade liberalisation, reducing tariffs and creating common standards and rules that facilitate trade between countries. Both the intensity of trade and scope of foreign investments

have risen significantly over the last decades, benefiting the Danish economy in the process.

We must help ensure that Denmark retains its role as a trading nation so that we can continue trading with the whole world on fair terms.

In recent years, the EU has entered into trade agreements with several third countries, which benefits Danish exports.

The Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada entered into force provisionally in September 2017. An even more significant event for Denmark was the signing of a free trade agreement between the EU and Japan in July 2018, resulting in the removal of virtually all tariffs and a number of trade barriers. The agreement covers a free trade area covering roughly a third of the world's GDP. The EU has also recently completed negotiations for trade agreements with Singapore and Vietnam which are expected to enter into force during 2019.

In April 2018, the EU and Mexico concluded a political agreement in principle on the modernisation of the current free trade agreement. The EU is also engaged in other trade negotiations at present, including with Mercosur (a South American trade bloc which includes Brazil, Argentina, Paraguay, Uruguay, Chile, Australia and New Zealand).



We must help ensure that Denmark retains its role as a trading nation so that we can continue trading with the whole world on fair terms.



In addition to its efforts through the EU and WTO, the Government furthermore helps Danish export companies through a variety of advisory efforts. These are aimed at helping companies with internationalisation to navigate through increasingly uncertain global trade conditions. Among other initiatives, these efforts include SMV:Digital, which entails creating an e-commerce trade centre for the purpose of strengthening Danish SMEs' exports through e-commerce.

New initiatives based on the Danish Disruption Council's work

Based on the deliberations of the Council, the Government intends to implement additional initiatives:

Reform proposals and legislative proposals relating to improved recruitment of foreign labour

Danish companies must have good conditions for recruiting the foreign labour they need. They should not be hampered by unnecessary bureaucracy.

Accordingly, the Government has presented a proposal to improve recruitment of foreign labour. Parts of the proposal have been discussed with the social partners and in the Disruption Council.

The main elements of the proposal consist of the following:

- Establishing a new pay limit scheme with a lower pay limit, focusing on the countries with which Denmark has a close investment partnership.

- Modernising and expanding The Positive List so that it reflects areas of the economy where there is a shortage of labour (e.g. also in relation to skilled workers).
- Making the fast track scheme more flexible so that good companies that have their affairs in order but inadvertently commit minor mistakes are not quarantined or barred from taking advantage of the scheme.
- Eliminating the requirement in the Pay Limit Scheme that wages must be paid out to a Danish bank account, as this requirement creates major challenges for companies and their foreign employees, especially in relation to short-term postings to Denmark.

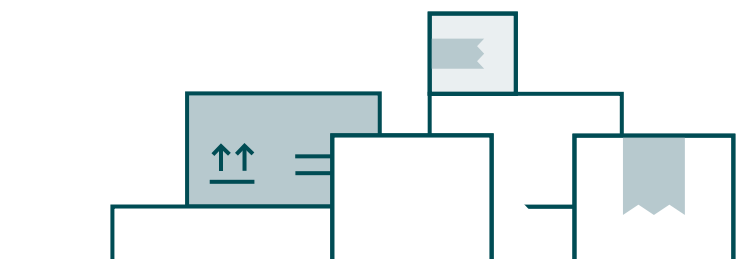
In addition to these four main proposals, the proposal also contains a number of proposed rule simplifications that are intended to help eliminate unnecessary bureaucracy.

For example, one proposal entails removing the requirement to apply for a new residence permit if an employee changes to a new position within the same company. Another concerns the standardisation and de-bureaucratisation of internship schemes in the environmental area.

In early February 2019, the Government will present a draft legislation to implement the initiatives in the reform proposal that will require legislative amendments.



In early February 2019, the Government will present a draft legislation to implement the initiatives in the reform proposal that will require legislative amendments.



Globalisation, foreign labour and free trade

Based on the Danish Disruption Council's discussions, among other things, the Government has taken a number of initiatives:

- Proper and regulated conditions in the labour market
- Better retention of international graduates
- Tech Ambassador
- An open trading nation

New initiatives:

- Reform proposals and legislative proposals relating to improved recruitment of foreign labour

Annex 1

Output from the Council

1. New and higher requirements for education and training in the future

Agreement on better paths to education and work after primary and lower secondary school

From primary and lower secondary education to skilled worker. VET agreement

- Danish primary and lower secondary education should nurture the aspirations of pupils who wish to work in the trades
- Addressing the 'automatic choice'
- The 10th grade must continue to help boost applications to VET programmes

Science Strategy

Five focus areas, including:

- Better foundational science skills for all students
- Improved teacher competences and better instruction
- Better conditions for talented students in the (natural) sciences

New objectives for higher education programmes

- High academic standards and significant learning outcomes that foster motivation, knowledge, and critical thinking
- Close links between the study programmes and society's competence needs
- A well-educated populace with many years in the labour market

Agreement on more flexible university degree programmes

- Better opportunities to work after completing undergraduate studies and subsequently returning to pursue postgraduate studies
- Option to pursue 1-year academic master's programmes/courses
- Better opportunities to study part-time
- Removal of bonuses for those starting early with their studies

Research and innovation policy strategy

- Danish research must be of the highest international standards
- Research must produce the greatest possible benefits in society

Agreement on Denmark's digital growth, including

- Pilot programme on technological literacy in Danish primary and lower secondary education
- The Technology Pact

Tripartite agreement on qualified labour and more apprenticeships

81 initiatives, including:

- Addressing recruitment challenges
- More apprenticeships – more skilled workers

Strategy for improving foreign language skills in the education system

Pilot programme: Four-year part-time master's degree programmes (erhvervskandidatuddannelser) for working students

New initiatives based on the Danish Disruption Council's work

- Initiatives targeted at particularly talented pupils and students
- Improving digital competences in higher education programmes
- Additional initiatives to improve technological literacy
- Competition (Grand Challenge): Solving tomorrow's big challenges
- National competence panel for higher education programmes
- National awards for excellence in teaching
- New 'taximeter' and subsidy scheme for post-compulsory education

2. Productive and responsible businesses

Agreement on Denmark's digital growth

14 initiatives in six areas:

- A digital hub for a strengthened growth environment
- A digital boost for small and medium-sized enterprises
- Digital competences for everyone
- Data as a growth driver for businesses
- Agile business regulation
- Enhanced IT security in companies

Consumer policy strategy

Agreement on the sharing and platform economy

10 initiatives, including:

- Cooperation agreement between SKAT and Airbnb
- New basic tax deductions for income

from the sharing economy

- Clear regulatory framework for short-term rental housing
- Sharing economy Council

Agreement on business and entrepreneurship initiatives

35 initiatives in five areas:

- Strengthened entrepreneurship and investing culture
- Cross-border package and duty reform
- Digitalisation, new business models and green transition
- Tourism and rural development package
- Competition conditions and globalisation

New initiative: Data ethics initiatives for businesses

Eight initiatives, including:

- Data Ethics Council
- Denmark as a frontrunner in data ethics
- Declaration of companies' data ethics policies

Additional new initiatives based on the Danish Disruption Council's work

- Strengthened competition oversight of digital platforms
- National strategy for artificial intelligence

3. A modern and flexible labour market

Tripartite agreement on adult and continuing training

81 initiatives, including:

- Better opportunities to transition and switch over to new programmes/courses
- Strengthening of basic skills
- Improved quality of continuing vocational training (AMU) courses

Agreement on addressing recruitment challenges

- Strengthened education and training efforts for the unemployed with the fewest skills (least qualified)

Partial agreement on qualified labour

Agreement on simplifying unemployment-related efforts

- Fewer and simpler process requirements
- Uniform rules across target groups
- More digital solutions

- Focus on municipal results through benchmarking

Agreement on a new unemployment insurance system for the labour market of the future

- A more modern and flexible unemployment insurance system
- Simpler and clearer rules
- Harmonisation of rules for employees and self-employed persons

Agreement on a social tax exemption pilot scheme

Collective agreement between 3F and the platform company Hilfr

New initiatives based on the Danish Disruption Council's work

- Partnership between job centres, temporary work agencies and platform companies
- Work environment data accessibility

4. Globalisation, foreign labour and free trade

The Government's 2025 plan

Proper and regulated conditions in the labour market

Better retention of international graduates

Tech Ambassador

Trade agreements between the EU and third countries

Reform proposals and legislative proposals: Improved recruitment of foreign labour

- New pay limit scheme for investment countries
- Modernisation and expansion of the positive list
- More flexible fast track scheme
- Elimination of the pay limit scheme's requirements for a Danish bank account

Annex 2

Financial overview

Overview of funds allocated to initiatives related to the Danish Disruption Council's work (DKK million, 2018 level)

Initiatives	2018	2019	2020	2021	2022	Ongoing
Agreement on better paths to education and work	25.4	134	181	128.1	98.6	80.3
The agreement "From primary and lower secondary education to skilled worker – VET for the future" ¹	0	383	505	655	779	736
Science Strategy ²	19.2	26.9	24.8	18.2	2.4	-
Agreement on more flexible university degree programmes	-	25	25	-	-	-
Strategy for improving foreign language skills in the education system ³	20	20	20	19.5	19.5	-
Initiatives targeted at particularly talented pupils and students	-	142.5	30.3	16.9	65.5	-
Improving digital competences in higher education programmes	-	46	10	10	10	-
Additional initiatives to improve technological literacy	-	12	11.5	6.5	-	-
Competition (Grand Challenge): Solving tomorrow's big challenges	-	0.5	0.5	28.7	-	-
National competence panel for higher education programmes	-	5	-	-	-	-
National awards for excellence in teaching	-	5	-	-	-	-
New 'taximeter' and subsidy system for post-compulsory education	-	-	60	60	60	-
Political agreement on business and entrepreneurship initiatives, including:	665	1,585	1,985	1,930	1,940	2,160
• <i>Political agreement on sharing and platform economy</i>	125	125	125	125	120	120
• <i>Political agreement on initiatives for Denmark's digital growth, including:</i>	75	125	125	125	125	75
– <i>Digital Hub Denmark – partnership for digital growth</i>	20	25	20	20	25	-
– <i>SMV:Digital – programme for digital transition and e-commerce in SMEs</i>	10	20	25	25	-	-

– <i>Technology Pact – competences for a technological and digital future</i>	15	20	20	20	20	-
– <i>Pilot programme on technological literacy in the Danish primary and lower secondary education</i>	10	21	18	19	-	-
– <i>Regulation that furthers the application of new business models</i>	4.5	6.5	6.5	6.5	-	-
Data ethics initiatives for businesses	-	5	4.7	4.1	6.2	-
Strengthened competition oversight of digital platforms	-	10	10	10	10	-
National strategy for artificial intelligence ⁴	-	7,5	7,5	7,5	7,5	-
Tripartite agreement on adult and continuing training, including:	352	472	486	479	-	-
• <i>Establishment of a transition fund</i> ⁵	103	103	103	103	-	-
• <i>Strengthening of basic skills</i>	30	44	42	44	-	-
• <i>Improvement in quality of continuing vocational training (AMU)</i>	90	110	110	110	-	-
Agreement on initiatives to address recruitment challenges ⁶	-	-	-	-	-	-
Partial agreement on ensuring the supply of qualified labour for businesses	101	3.8	6.3	4.4	-	-
Agreement on a new unemployment insurance system for the labour market of the future	5	20.2	31.9	34.1	35.2	35,2
Agreement on a social tax exemption pilot scheme	11	17	17	-	-	-
Work environment data accessibility	-	5	4	3	3	-
Proper and regulated conditions in the labour market ⁷	-	20	10	10	15	-
Better retention of international graduates	-	5	-	-	-	-
Total	1,198.6	2,950.4	3,430.5	3,425	3,051.9	3,011.5

Note: The table provides an overview of allocated funds for initiatives related to the Danish Disruption Council's work. The final amount that has gone towards each initiative may therefore vary due to adjustments, etc.

1 Costs indicated in DKK 2019 level. **2** Pilot programme on technological literacy as well as the startup initiatives under the Technology Pact fall under the Science Strategy, but are funded as part of the agreement on initiatives for Denmark's digital growth and are therefore not included in funds allocated to the Science Strategy above. **3** The Strategy for improving foreign language education is funded through the budget of the Ministry of Higher Education and Science. **4** The Government has allocated DKK 60 million for the period 2019-2022 to the strategy under the auspices of the Danish Disruption Council and the Coherence Reform (Sammenhængsreformen). **5** In relation to the Finance Act, allocation of funds to the transition fund has been budgeted for a partial (half) effect in 2018, as the scheme will only enter into force in mid-2018. In the event of major expenses, funding can be provided up to the full allocated amount. **6** DKK 92 million allocated in 2017. **7** Part of the 2019 Finance Act agreement.





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