Dutch Digitisation Strategy 2.0
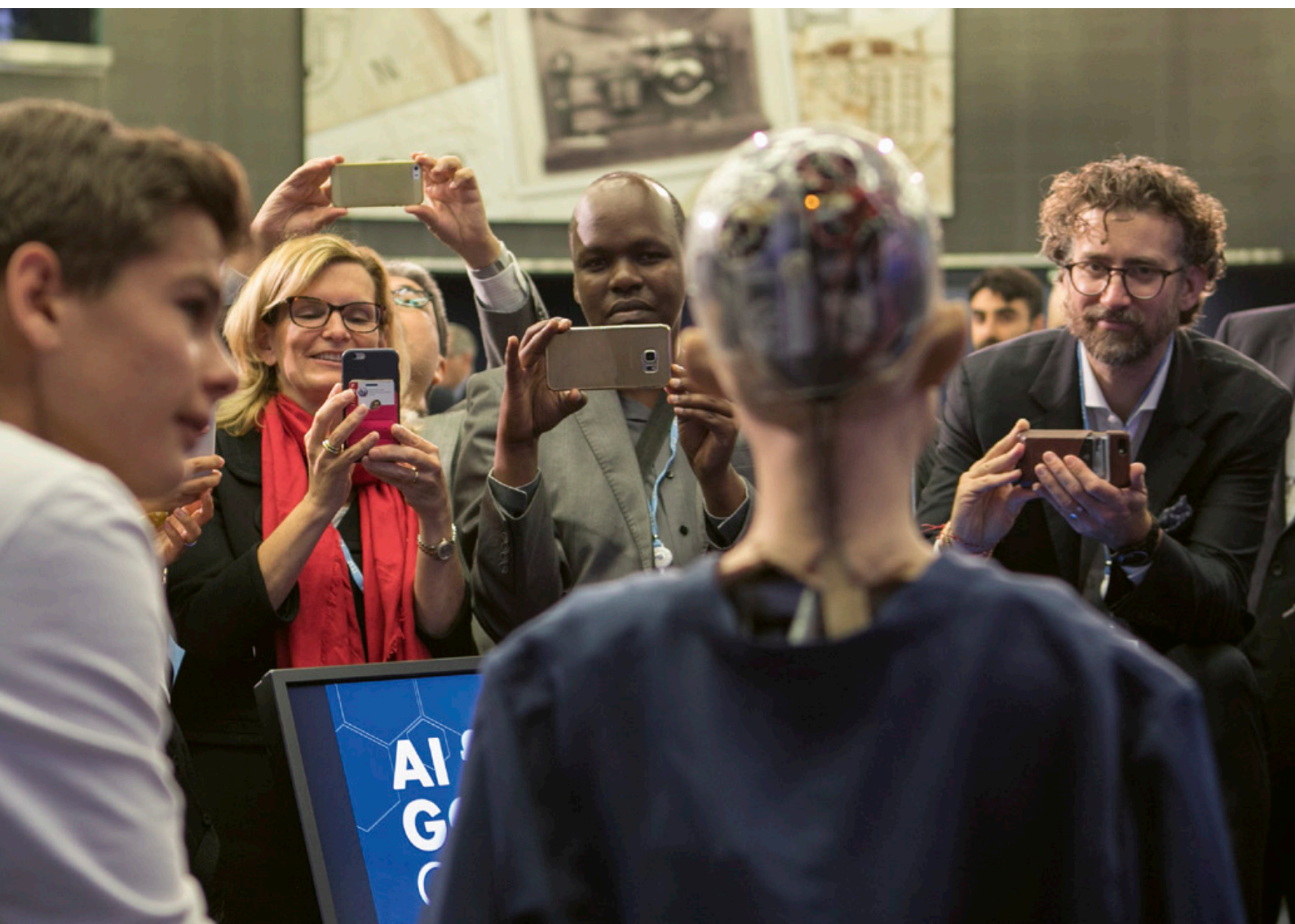
Dutch Digitisation Strategy 2.0

It's possible here. It's happening here.

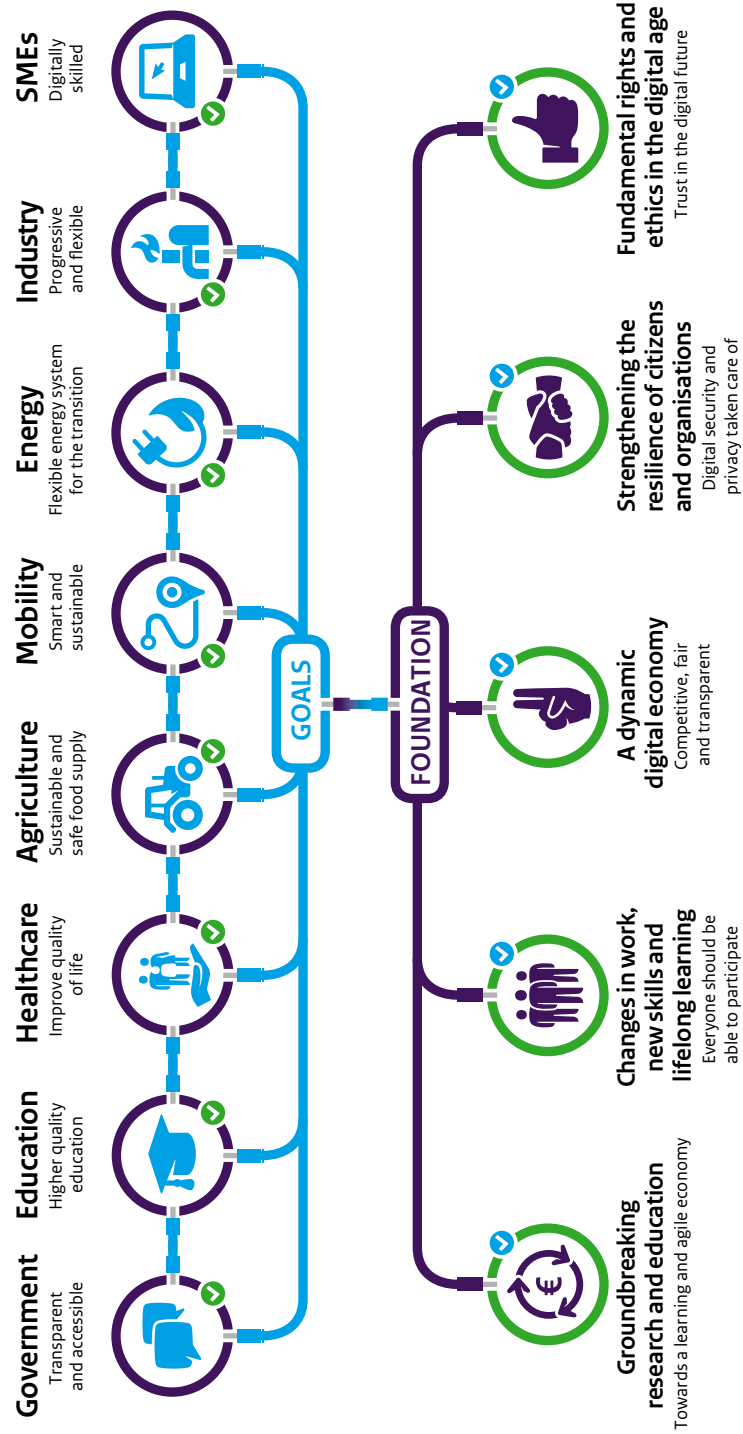# Contents

Cover photo:
'Human' robot Sophia addresses the audience. Sophia was designed to
continually improve her interactions as she learns from interactions with
humans. Source: Wikipedia.

Dutch Digitisation Strategy

GOALS

Government — Transparent and accessible

Education — Higher quality education

Healthcare — Improve quality of life

Agriculture — Sustainable and safe food supply

Mobility — Smart and sustainable

Energy — Flexible energy system for the transition

Industry — Progressive and flexible

SMEs — Digitally skilled

FOUNDATION

Groundbreaking research and education — Towards a learning and agile economy

Changes in work, new skills and lifelong learning — Everyone should be able to participate

A dynamic digital economy — Competitive, fair and transparent

Strengthening the resilience of citizens and organisations — Digital security and privacy taken care of

Fundamental rights and ethics in the digital age — Trust in the digital future

Ch. 1. Introduction to Digital Netherlands

European countries, with a focus on the Netherlands[1], marking the country's digital 'awakening'. There is now widespread awareness of the fundamental impact of digitisation on society, the economy and government. It is also becoming increasingly clear that the resulting opportunities in terms of welfare and well-being come with their own set of challenges.

Collaboration will be key to the success of the Dutch digital transition. In view of these facts, the government moved to launch the Dutch Digitisation Strategy[2] in June of 2018. This represents the first Cabinet-wide effort to formulate ambitions and targets in the area of digitisation.

The government's ambitions are threefold. Firstly, we aim to become Europe's digital leader, establishing the Netherlands as a pioneer and testing ground for responsible digital innovation. This will enable us to optimally harness the potential to stimulate economic growth and address societal challenges that digitisation offers.

Secondly, we aim to be broadly inclusive in terms of both the labour market and society. This will require efforts in the area of basic digital skills, digital inclusion, sustainable employability and lifelong learning, as well as the required retraining to safeguard the necessary skills and jobs of tomorrow.

Finally, our digital economy, government and society must be built on trust: we must safeguard privacy, monitor digital security and carefully apply new technologies on the basis of clear data sharing agreements. In our view, these key aspects form the digital 'crash barriers' for the ongoing digital transformation process.

A joint approach

This overarching strategy has sparked a new dynamic. Where individual ministries and industries previously worked along separate tracks, we now have a joint agenda to help us make the most of the social and economic potential of digitisation. This extends to mobility, care, agriculture, education, the SME sector and government itself. Public and private partners are working together to strengthen the foundations for our transition, with a focus on aspects such as digital skills, cyber security and fair competition.

Joining forces with other government agencies, entrepreneurs, scientists and social organisations allows us to effectively address issues and cut across the boundaries of individual industries and ministries. This type of collaboration and bridge-building will be crucial moving forward. In terms of sheer potential and impact, digitisation fails to respect familiar boundaries, cutting through countries, industries and organisations at increasingly rapid pace. The House of Representatives has also acknowledged these fundamental developments, as reflected in the recent motion by Verhoeven et al.[3]

This integrated joint approach is all the more relevant in light of current geopolitical developments. According to government projections, the EU may fall behind on the development of key technologies such as AI.[4] Cyber security and economic espionage are another source of concern in areas such as 5G development. Technology is increasingly interwoven with our economic security. Effectively addressing these developments will require vigorous efforts to strengthen our competitiveness. Digitisation will play a key role in this process, which should be based on a clear commitment to safety, basic rights and public values.

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[1] 2019 saw the Netherlands climb to third place in the Digital Economy and Society Index (DESI), the ranking for European digital economies
[2] Parliamentary Paper 26 643, No 541

[3] Parliamentary Paper 26643, No. 611
[4] Parliamentary Papers 30821 and 21501, No. 20

Ch. 2.   Achievements over the past year

The government launched numerous digitisation initiatives over the past year. Examples include the Dutch Cyber Security Agenda (*Nederlandse Cybersecurity Agenda*, NCSA); Digital Connectivity Action Plan (*Actieplan digitale connectiviteit*); NL DIGIbeter (digital public agenda), NL DIGITAAL (data agenda government), SME Action Plan and Digital Inclusion Action Plan (*Actieplan digitale inclusie*). The enclosed report (appendix 1) offers a broad overview of the latest developments and ongoing initiatives.

Key results

Smart Industry field labs and hubs
- Education and research help entrepreneurs innovate
- Experimentation with digital technology
- Participation in innovation projects
- Assistance in finding suitable funding
- 550 businesses active at 41 field labs
- 5 hubs for regional cooperation

ICT purchasing cooperation
- Primary and secondary education
- Secure and reliable internet at schools
- User-friendly digital teaching materials in the classroom
- Digital literacy amongst pupils and teachers
- Launch of 'Sivon', a purchasing cooperation, with 83 participating school boards
- Ministry of Education, Culture and Science will invest €10 million a year through 2023

Personal Health Environment (PHE)
- As of 2020, all Dutch citizens will be able to access their own care information within a PHE of their choosing
- Guaranteed reliability and security thanks to the MedMij framework of agreements and standards
- As of 1 October 2019, citizens will be reimbursed for their PHE subject to compliance with MedMij
- The Ministry of Health, Welfare and Sport invests VWS €10 million per year in MedMij and PHE usage, with a further amount of around €400 million earmarked for implementation

SME Workplaces
- Students and lecturers (Higher vocational education (MBO)/ Higher professional education (HBO) and University Education (WO) level) assist entrepreneurs in the digitisation process
- Entrepreneurs achieve greater competitiveness thanks to big data, online sales, marketing and automation
- The Ministry of Economic Affairs and Climate Policy helps to establish 5 SME Workplaces in 2019: 3 are currently up and running, with a further 2 still being established
- A network with nationwide coverage should be completed over the course of 2020
- The Chamber of Commerce introduces entrepreneurs to local heroes in order to learn from their best practices

Talking Traffic: intelligent traffic management
- Less congestion, improved traffic safety
- Can potentially help achieve €90 million in social cost savings
- €90-million public-private investment
- 6 testing sites, 15 participating businesses and over 60 public partners
- 1.5 million app users (present), 2.5 million users (2020)
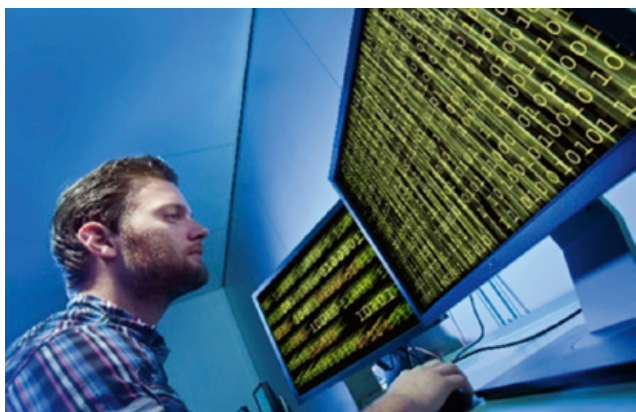
Blockchain for Good

Launch of 5 projects for citizens, businesses, institutions and government agencies in the following areas:

- Identity: smoothly functioning, reliable digital interactions
- Pensions: full insight into current pension structure at lower cost, switching to new providers made easy
- Logistics: 10 organisations are working to develop transparent, reliable and fair chains
- Education: The Netherlands is leading the development of a European facility for credential verification
- Subsidy: all expenditures meet applicable requirements; to be developed by the Ministry of Finance, RVO, ICTU and municipalities

NL DIGITAAL, data agenda government

Improving the effectiveness of data sharing between individual government agencies and between government and businesses, by:

- Effectively structuring government data and ensuring safe and responsible sharing with businesses and citizens and between individual government agencies
- Achieving greater yields from government data through real-time access, the greater availability of valuable datasets, easier and cheaper access and user support
- Applying government data to address social issues such as poverty, consumer debt, the energy transition and forms of undermining crime


Start-ups in Residence: 5 new solutions to societal issues

Ministry of the Interior and Kingdom Relations innovation budget for winning ideas on the resolution of 5 societal challenges:

- Identifying citizens with a low level of digital literacy
- Persuading home owners to transition away from natural gas
- Controlling and preventing leased land fraud
- Identifying and providing accommodation for those urgently seeking a new home
- Ensuring that the information provided to citizens by government is easier to understand

A digi-campus for digital government innovation

- Testing innovative digital government services to meet the needs of citizens and businesses more effectively
- Establishing dialogue and closer ties between existing government initiatives in the area of digital innovation
- Providing greater insight into the question behind the question, concrete solutions and new perspectives
- Collaboration between government agencies, businesses, the scientific community and citizens at the initiative of Logius/ICTU, TU Delft and Nederland ICT
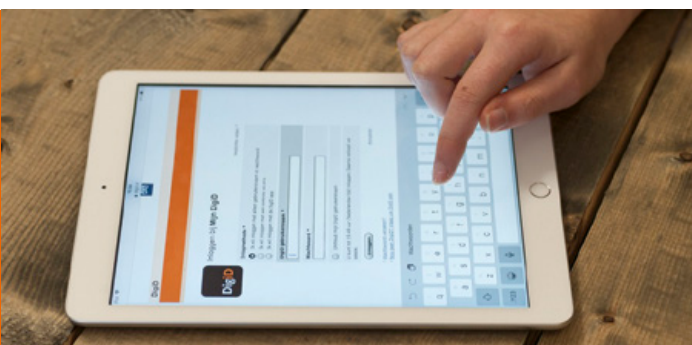
Donald Duck helps school children explore the digital world

- Pupils in the final three years at 4,600 primary schools throughout the Netherlands are discovering digital innovations thanks to a special edition of Donald Duck magazine and accompanying teaching package
- The magazine's 183,000 subscribers will also be receiving the special edition
- The Ministry of the Interior and Kingdom Relations is supporting the initiative in an effort to help people consciously adapt to technological changes while retaining their personal autonomy, human dignity and privacy

The Netherlands as a living lab
Offering entrepreneurs the opportunity to innovate and experiment with digital technology

- **Almere -** Big Data Value Center
- **Amersfoort -** Fieldlab Inclusive
- **Amsterdam -** 5G Fieldlab Amsterdam/Johan Cruijff Arena (in ontwikkeling)
- **Brabant -** Data Value Center Smart Industry
- **Breda -** Fieldlab SMASH
- **Breda -** Fieldlab Zephyros
- **Delft -** 5G Fieldlab Zuid-Holland (in ontwikkeling)
- **Delft -** Fieldlab RoboHouse
- **Delft -** Fieldlab SAM|XL
- **Delft -** Fieldlab Ultra Personalized Products and Services
- **Delft -**Enschede - Fieldlab Dutch Optics Centre
- **Den Bosch -** Fieldlab SPARK
- **Den Bosch -** MKB Werkplaats, Platform Driven By Data (in oprichting)
- **Den Haag -** 5G pilots (in concept)
- **Dordrecht -** Fieldlab De Duurzaamheidsfabriek
- **Drachten -** Fieldlab Region of Smart Factories
- **Eindhoven -** 5G pilots (in ontwikkeling)
- **Eindhoven -** Fieldlab Advanced Manufacturing Logistics
- **Eindhoven -** Fieldlab Flexible Manufacturing
- **Eindhoven -** Fieldlab High Tech Software Competence Center
- **Eindhoven -** Fieldlab MultiMateriaal 3D Printen
- **Eindhoven -** Fieldlab Smart Connected Supplier Network
- **Emmen -** Fieldlab Technologies Added
- **Enschede -** Fieldlab Industrial Reality
- **Enschede -** Fieldlab Smart Welding Factory
- **Enschede -** Fieldlab ThermoPlastic Composites Nederland (TPC NL)
- **Enschede -** Fieldlab TValley
- **Gilze Rijen -** Fieldlab CAMPIONE
- **Groningen -** 5Groningen (5G)
- **Groningen -** Data federation hub
- **Groningen -** Fieldlab 5Groningen
- **Groningen -** MKB Werkplaats, marketing & sales (in oprichting)
- **Haarlem -** Fieldlab 3D Makers Zone
- **Harderwijk -** Fieldlab Industrial Robotics
- **Heerlen -** MKB Werkplaats Limburg, data (in oprichting)
- **Helmond -** 5G Automation fieldlab
- **Hengelo -** Fieldlab The Garden
- **Hoogerheide -** Fieldlab Composieten Onderhoud en Reparatie
- **Marknesse -** Fieldlab voor Automated Composites and Metal Manufacturing and Maintenance (ACM3)
- **Naaldwijk -** Fieldlab Freshteq.nl
- **Nijmegen -** Fieldlab Chip Integration Technology Centre
- **Overijssel -** Fieldlab CAMINO
- **Pernis -** KPN 5G fieldlab Pernis Rotterdam
- **Reusel -** Fieldlab Proeftuin voor Precisielandbouw
- **Roermond -** Fieldlab Robotics
- **Rotterdam -** Fieldlab BlockLab
- **Rotterdam -** Fieldlab Dutch Growth Factory
- **Rotterdam -** Fieldlab RAMLAB
- **Smart Industry hub Noord -** Region of Smart Factories
- **Smart Industry hub Noord -**West
- **Smart Industry hub Oost -** BOOST
- **Smart Industry hub West -** SMITZH
- **Smart Industry hub Zuid -** De Fabriek van de Toekomst
- **Soesterberg -** Fieldlab Smart Base
- **Twente -** IoT en AI Big Data Hub
- **Utrecht -** Fieldlab 3D Medical
- **Valthermond -** KPN 5G fieldlab landbouw Drenthe
- **Varsseveld -** Fieldlab Smart Bending Factory
- **Velsen-Noord -** Fieldlab Techport
- **Wageningen -** Data Competence Center
- **Wageningen -** Fieldlab Smart Dairy Farming 3.0
- **Ypenburg -** Fieldlab Digital Factory Composites
- **Zoetermeer -** Big Data Innovatiehub
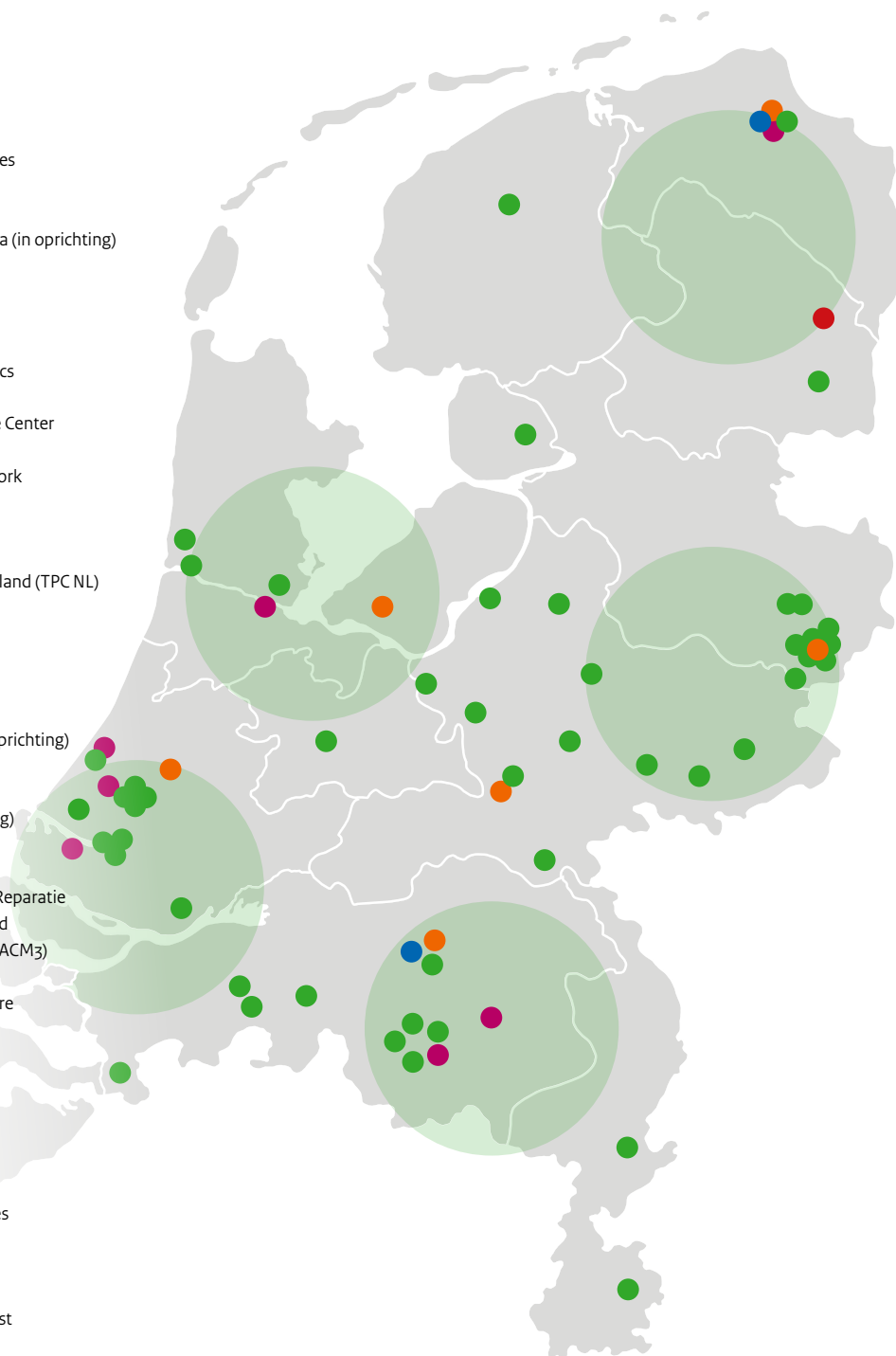
● Knowledge exchange and innovation hubs on the basis of big data analysis

● Field labs for 5G applications in areas such as robotics, mobility and agriculture

● Smart industry field labs and regional collaboration hubs

● SME Workplaces for entrepreneurs, offering support in the area of big data applications, online sales & marketing and automation

Visit nederlanddigitaal.nl/proeftuin for more details on these activities. (Dutch)

Ch. 3.   Priorities for the coming year

The Dutch Digitisation Strategy is broad in scope: from digitisation in domains ranging from agriculture and care to government, from digital skills to cyber security, and from ground-breaking research to ethical issues.

> **Digital Netherlands Conference: towards a Digitisation Strategy 2.0**
> With digital developments evolving at an ever-faster pace, we need the capacity to respond and operate flexibly. In order to facilitate this process, the government has committed to ongoing annual development of the Dutch Digitisation Strategy (DDS). We discussed this issue (Parliamentary Paper 34775-XIII No. 67) with scientists, entrepreneurs, civic organisations and regional authorities during the four-day Digital Netherlands Conference.[5] In which areas will we be joining forces and intensifying our cooperation? Where do we want to make a difference? These questions resulted in the formulation of various key priorities and joint initiatives for the coming year. These priorities consist of: artificial intelligence; applying data to address societal challenges and stimulate economic growth; digital inclusion and skills; the digital government; digital connectivity and resilience.

This update to the DDS provides an overview of our prioritised themes and initiatives for the coming year. However, this should not be interpreted as neglecting the other themes. We will continue to focus our efforts on the other activities and issues described in the DDS.

However, we do aim to devote additional attention to these priorities over the coming year as we work with entrepreneurs, scientists, civic organisations and regional authorities. All key priorities revolve around a specific cross-sectional issue, enabling us to bolster the foundation (basic conditions) for further digitisation.

3.1   Artificial intelligence

What do we want to achieve?
In the coming ten years, Artificial Intelligence (AI) is expected to have more impact on our economy and society than any other new digital technology. AI is evolving rapidly, and has found applications in almost e very imaginable industry and domain. However, AI can also put pressure on key basic rights and public values such as the prohibition of discrimination, human dignity and autonomy. The emerging technology was the central topic of debate during the first Digital Netherlands Conference.[6]

The Netherlands aims to lead the international field in human-centred AI by design, applying AI solutions to resolve a broad range of societal challenges. The government will be forming alliances and fast-tracking AI development in an effort to realise these ambitions and maintain our international competitiveness. The issue of inclusiveness and transparency and explicability of algorithms will be key in this regard. The government supports and endorses the guidelines established in the EU's recent communication on 'Ethics guidelines for trustworthy AI'.

What has been achieved so far?
The 'AI for the Netherlands' report was published as the first step towards developing a national AI strategy. Taking this report as its cue, the AI Taskforce (public-private) subsequently initiated various initiatives in the field of education and research. AI challenges in the area of shared public values and human rights are also being addressed in collaboration with the business sector, scientific community and civic institutions. A responsible innovation toolbox (including impact assessments, handbooks and guidelines) will be made available in support of this process.

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[5] Partly in response to the motion by Veldman et al.

[6] Partly in response to the motion by Verhoeven and Amhaouch (Parliamentary Paper 26 643, No. 565)

Business community gets to grips with ethical AI applications

A code of conduct has been drawn up at the initiative of the branch association Nederland ICT in an effort to support businesses in the development of responsible AI applications. This code of conduct is based around ethical principles formulated by the European Commission, and covers aspects such as the transparency of applied technologies. The code of conduct was presented during the Digital Netherlands Conference.

Government AI applications
As a part of the Transparency Lab initiative, the government is currently working with businesses and supervisory bodies to assess how algorithms and their practical applications can be made more transparent and verifiable.

What will we be doing over the coming year?
The government will prepare a strategic AI action plan in collaboration with public and private sector partners. These efforts will build on the conclusions of the *AI for the Netherlands* report, and involve collaboration with the AI Taskforce. We are also developing a broad, public-private AI Coalition capable of realising our joint ambitions in the field of AI. The action plan addresses the European Commission's call for member states to develop their own AI strategy. The government will strive to ensure close alignment with European initiatives and funds. A letter will also be drafted on the subject of AI, public values and human rights, providing further details on each specific challenge.

Action: digital technology incorporated in mission-driven Top Sectors and Innovation Policy

At the start of this year, the government determined the specific missions for its mission-driven top sectors and innovation policy and adopted an action plan for the development of key technologies.[7] A focus on digital technologies will be key in fulfilling these missions. Team Dutch Digital Delta[8] is working closely with the other top sectors and ministries to strengthen the development and application of digital technologies such as AI. This will enable us to strengthen the Netherlands' position as a knowledge leader and capitalise on economic and social opportunities.

Amongst other issues, the strategic AI action plan focuses on:
- Supporting research and innovation in the Netherlands and EU in order to strengthen the Netherlands' future earning power.
- Expanding knowledge and skills in order to effectively capitalise on AI's potential.
- Facilitating responsible data sharing, and leading by example through the sharing of government data.
- Creating clear frameworks that strengthen confidence in AI by safeguarding human autonomy and control.
- A Dutch government that leads by example through the provision of its digital services and application of new technologies such as AI.

[7] Parliamentary Paper 33009, No. 63 and 70
[8] *dutchdigitaldelta.nl/over-ons* (Dutch)

Actions:
- The government will be presenting a strategic AI action plan after the end of the summer period.
- At the end of the summer period, the government will present a policy plan on AI, public values and human rights. The principles for human-centred AI will be elaborated in showcase projects by various industries. These projects will serve to develop a shared knowledge base. The initiative is being conducted as a part of the government's efforts to lead by example.
- A network of innovation centres (Digital Innovation Hubs) will be established in order to fast-track application of AI in the SME sector. This network will collaborate with the various Smart Industry Hubs and Fieldlabs.
- A long-term AI research and innovation programme will be established for the 2020-2023 period. As a part of this initiative, businesses and government agencies will establish around 20 cutting-edge AI research laboratories at various Dutch universities. A total of nine AI labs focusing on fintech, retail, automotive and care have already been established thus far.
- The government is currently developing a research proposal with a value of around €3 million within the framework of the National Science Agenda. The initiative should yield greater insight into the labour-related impact of digital technologies such as AI.
- We are working to strengthen international partnerships with countries including Germany, France, the US and Canada. The prime minister and AI Taskforce will travel to the US in July 2019 as part of a special innovation mission.

3.2 Applying data to resolve social issues and stimulate economic growth

What do we want to achieve?
The availability and responsible application of data will be crucial in ensuring a successful digital transition. Demand for data has skyrocketed due to the rise of AI. The government aims to capitalise on the economic and societal potential of data in a responsible manner.

What has been achieved so far?
The responsible sharing of data is already being stimulated through various initiatives. JoinData enables farmers and other partners in the agricultural sector to reach mutual data sharing agreements. Parties in the logistical chain are doing the same via iSHARE. Data sharing also represents a key aspect of the Smart Industry programme.

Dutch vision on data sharing between businesses
Earlier this year, the government presented the Dutch vision on data sharing between businesses. The aim is to encourage more intensive data sharing between businesses. The government has formulated three principles for data sharing to this end:
1. Data sharing should preferably be arranged on a voluntary basis (with the government playing a facilitative role where necessary).
2. Data sharing may also be arranged on a compulsory basis (under certain strict preconditions, in support of a specific public interest).
3. Individuals and businesses should maintain control of their data (e.g. through safeguards for privacy and confidential business information).

NL DIGITAAL: Data Agenda Government
This agenda outlines the government's vision on improving data sharing between individual government agencies and data sharing between the government and commercial parties. The government has formulated three key pillars to this end:
1. The government must raise its data governance standards (getting all data in order)
2. Achieving greater yields from available data (data-driven working methods)
3. Safe and trustworthy data sharing between government agencies, businesses and citizens (data sharing, open data).

Farmers lead the way on data sharing

The JoinData initiative allows parties in the agricultural sector to exchange data. Farmers can access, manage, connect and share each other's data on the basis of clear access and usage agreements. This helps them save time, making it easier to reach data-driven decisions. The initiative also contributes to further innovation, enabling participants to share and combine data on aspects such as milk production and animal health.

Guidelines on the use of data gathered in public spaces
Data is gathered in public spaces through various means, such as street lights equipped with sensors. The handbook sets out mandatory guidelines for the collection of data in public spaces. It contains a model regulation on sensor data, template data paragraphs for use in procurement conditions and a checklist aimed at safeguarding all parties' data interests during collaborations and partnerships.

The Learning and Expertise Centre for Data-Driven Working Methods (*Leer- en Expertisecentrum Datagedreven werken*, LED) and Big Data knowledge network identify best practices for data sharing between government agencies and businesses, and develop and disseminate tools and guidelines.

What will we be doing over the coming year?

Inter-sectoral data sharing
Problems may arise if cooperation on data sharing is limited to a specific chain or industry. The boundaries between individual industries are blurring, applications are increasingly cross-sectoral and comparable challenges in diverse industries can be addressed more efficiently if solutions are shared. This calls for a more overarching cooperation model that transcends the boundaries of individual industry sectors. The government supports the Data Sharing Coalition's efforts to develop a generic set of agreements on safe and responsible data sharing.

Accessibility and availability of commercial and scientific research data
Research data must be available and accessible to other researchers and stakeholders in order to facilitate new research and ensure the reproducibility of existing studies. The FAIR principles (Findable, Accessible, Interoperable and Re-usable) were developed in an effort to ensure better accessibility. GOFAIR is currently developing a certification system to ensure the quality and accessibility of research data on the basis of these principles.

Data derived from devices and cars
Digitisation is sparking major changes in the field of mobility. For example, cars produce and use an increasing amount of data. This data is becoming increasingly important to car maintenance and supplementary services. The underlying organisational structure can have a major impact on car manufacturers, garages, insurance companies and other industry players. Other industries are also facing comparable issues in terms of device data access.

Government data
The government has access to large amounts of data. Growing volumes of high-quality data are being actively shared with businesses and knowledge institutions in open data format. A growing amount of real-time sensor data is also becoming available through APIs.[9] If conventional data sharing proves difficult to arrange, the potential for other forms of data sharing will be assessed in accordance with the proposals in NL DIGITAAL.[10]

Actions:
- This May, parties from industries such as the logistics, agricultural, mobility and financial services sectors joined forces with the scientific community to establish a data sharing coalition. The coalition will encourage entrepreneurs from various industries to adopt safe and responsible data sharing methods. Efforts are also being made to develop a generic set[11] of operational, technical and legal agreements. The aim is to help businesses retain control over their data and share data with other parties without the need for complex bilateral agreements.
- The government is also working to stimulate voluntary data sharing at a European level in an effort to promote international innovation.
- The government supports GOFAIR's efforts to improve the availability of commercial and scientific data through certification.

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9 Application Programming Interface, a set of standards enabling communication between software programmes
10 Parliamentary Paper 26 643, No. 597
11 *rijksoverheid.nl/documenten/rapporten/2018/12/30/generiek-afsprakenstel-sel-voor-datadeelinitiatieven-als-basis-van-de-digitale-economie* (Dutch)

Actions (continuation):

- The government is assessing data accessibility developments in the automotive industry and working to formulate suitable policies (e.g. mandatory access). The government is also assessing current practical and legal arrangements on device data access by the logistics, agriculture and manufacturing industries
- The government's 'NL DIGITAAL; Data Agenda Government' initiative aims to stimulate data-driven working methods, encourage parties to get their data in order and facilitate data sharing. As a part of this effort, the government is working to determine which high-value datasets can be made available. The potential for a new API portal (to operate alongside the current open data portal) is also being assessed in order to facilitate the sharing of data with the business community.

Measures ensuring the continued competitiveness of online markets:

1. The responsible supervisory body must be granted the authority to take pre-emptive (ex ante) action if a platform becomes so dominant that consumers have little or no alternative to using its services. This will help to ensure that providers cannot gain permanent dominance over the market.
2. The government aims to adjust regulatory guidelines in order to ensure that competition regulations can be enforced effectively. This will enable supervisory bodies to apply the most effective methods in each case, factoring in the role of data or other relevant aspects where necessary.
3. The government also advocates the adjustment of European Commission thresholds for the reporting of market concentrations. For example, the introduction of transaction value-based thresholds would ensure effective oversight of any acquisitions where one of the parties is not generating significant turnover.

Data, platforms and competition

Digital platforms have become an integral part of our data-driven economy and society. They offer convenience, increase market transparency and bring together market parties through the efficient use of data and algorithms. Entrepreneurs can target their customers more accurately than ever, while consumers can choose from a greater range of options that match their preferences.

The downside, however, is that this development has also seen a limited number of platforms expand exponentially over a short period. This is further exacerbated by the typical characteristics of online platform markets, such as network effects, economies of scale and scope and businesses offering a large number of (integrated) products or services. As a result of these factors, the largest platforms' market position may become increasingly unassailable (winner-takes-all, or winner-takes-most).

The government regards such sustained dominance by digital platforms as undesirable, inevitably restricting new enterprises' market access and limiting the freedom of choice available to consumers and businesses online. The government has conducted an assessment to determine whether our current competition regulations still suffice to keep online markets competitive.[12] The outcomes showed that current government competition policy would have to be tightened in three areas.

Competition policy is largely enshrined in European regulations, prompting the Netherlands to actively benchmark the intended changes against legislation in other EU member states. We will need European partners and collaboration in order to be effective in this regard.

3.3 Digital inclusion and skills

What do we want to achieve?

The government aims to ensure that no one is left behind in our digitising world. This applies to both the labour market and broader society. Digitisation will have a profound impact on jobs and the knowledge and skills required. Current positions and tasks will change or disappear, as possibilities for new and better work emerge. We must thus ensure that everyone learns the basics at an early age, engages in lifelong learning and develops new skills in response to changing professions and tasks. Finally, we must provide adequate support to vulnerable groups.

What has been achieved so far?

The government, business sector, public organisations and knowledge institutions have already initiated numerous initiatives towards the development of digital skills and lifelong learning. Collaborations between the business community and education sector, are being strengthened through initiatives such as the Technology Pact, human capital agendas and Smart Industry action programme. Public, private and public organisations will be working together to promote digital inclusion as a part of the Digital Society Alliance (*Alliantie Digitaal Samenleven*). The main challenge thus lies in accelerating, strengthening and

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[12] Parliamentary Paper 27 879, No. 71

connecting existing activities rather than developing or introducing new ones.

Skill development at field labs

The Smart Welding Factory Field Lab was designed to facilitate fully-automated flexible production with welding robots that do not require any programming. Smart Welding Factory helps businesses make far more effective use of their welding robots: first-time right and one-piece-flow. The field lab developed a degree programme for welding robot programmers in 2018, working in collaboration with ROC Twente regional training centre, the Anton Tijdink Industry School and SMEOT.[13] This programme at senior secondary vocational education level 4 is available from 2019 in the construction and plate technology learning pathway. The course material is additionally available as an elective module within senior secondary vocational education, while the programme is also available as a course at the Smart Welding Factory Skills Labs.

Accelerating digitisation in the SME sector
SME Workplaces provide entrepreneurs in the SME sector support in the areas of big data, online sales & marketing and automation, enabling them to independently apply digital applications. The first practical test – entitled 'Driven by data' – is already under way in 's-Hertogenbosch. Students at the Jheronimus Academy of Data Science (JADS) will be helping entrepreneurs to extract added value from their data. Participants include Rabobank, the Confederation of Netherlands Industry and Employers and the municipality of 's-Hertogenbosch. The Ministry of Economic Affairs and Climate Policy will be supporting the establishment of 5 SME Workplaces over the course of 2019.

Digital skills in the education sector
This autumn will see a crucial step towards anchoring digital skills in our education system. Curriculum.nu will present its revised primary and secondary education curriculum, which focuses on digital literacy. A digitisation agenda for the primary and secondary education sector is currently being developed in order to allow for rapid action. In addition to improving the digital skills of pupils and teachers, this agenda will also serve to define ambitions on digitisation of the education sector.

Digitisation agenda for the primary and secondary education sectors

The agenda is being introduced as a part of government efforts to promote collaboration between the education sector and other parties, such as the business community. The coming years will see us focus on five key priorities:
• Teachers, school leaders and managers innovate by learning with each other and external parties;
• Digital literacy amongst pupils and teachers;
• Digital learning resources that work for users;
• Secure, reliable and future-proof infrastructure;
• Structural attention for the ethics of educational digitisation.

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[13] SMEOT is a senior secondary vocational level trade school for Metalworking, Mechatronics and Electrical Engineering in Hengelo

Universities and universities of applied sciences are also intensifying their focus on digital skills and employability. These aspirations have been set out in the Fast-Track Educational Innovation Plan *(Versnellingsplan voor Onderwijsinnovatie)*.

Digital skills in the workplace
The government aims to achieve a breakthrough in lifelong learning, and is working with all stakeholders to create a strong, positive learning culture.[14] The aim is to offer people greater control over their careers, for example by providing resources that can be spent on individual training and development at their own discretion. Businesses can also contribute to this breakthrough. The 'MKB!idee' policy experiment challenges SMEs to develop ideas that stimulate investments in the training and development of working people. The initiative specifically focuses on (future-oriented) technical challenges and digitisation.

Human capital agenda ICT
In order to ensure continued innovation, the Netherlands must invest in people with specialised knowledge of fields such as AI and data science. Knowledge institutions, education sector parties, government agencies and businesses are working to expand the pool of ICT staff and knowledge as a part of the Human Capital Agenda ICT initiative.

Vulnerable groups
The government aims to ensure that everyone can take part in our society, and has presented a coherent approach to the issue in its Digital Inclusion action plan.[15] The plan is designed to prevent exclusion, and centres on four main objectives:
• Making digital services easier to use for everyone (improving government services)
• Helping people to cope with digitisation (encouraging the development of digital skills)
• Explaining the consequences of digitisation (digital awareness)
• Collaborating with businesses and other organisations (public-private network)

Actions:
• Educational networks, representatives of the business community and the government organise round table debates between education sector parties and businesses. Participants develop concrete measures aimed at strengthening digital skills in the primary and secondary education sector.
• A revised primary and secondary education curriculum developed by teams of teachers and school administrators will be presented after the end of the summer period. Educational focal points include the aspect of digital literacy.
• The multi-year lifelong learning action agenda will be developed through various initiatives. These include pilot projects with training and employment helpdesks efforts to encourage a culture of learning in the SME sector, exploration of a personalised digital portal offering training opportunities, and the facilitation of a more flexible range of adult education programmes and individual learning and development budgets. The House of Representatives will receive further information about this shortly.
• The VSNU (the Association of Universities in the Netherlands), Nederland ICT (branch association), Nuffic and Ministry of the Interior and Kingdom Relations are developing a coherent approach aimed at increasing the stay-rate of international students in the Netherlands.
• The government will be creating a residence scheme for essential start-up employees from non-EU countries as part of a new pilot project.[16]

3.4   Digital government

What do we want to achieve?

The government launched NL DIGIbeter – the Digital Government agenda – in July of 2018. All tiers of government and numerous executive organisations are currently implementing measures to make the Dutch

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[14] Parliamentary Paper 30 012, No. 92
[15] Cf. Moorlag motion (Parliamentary Paper 26 643, No. 562)
[16] Parliamentary Paper 32637, No. 374

digital government more accessible, personalised and easy to understand. Efforts are also being made to improve people's digital skills (digital proficiency) and raise their awareness of the potential and risks of digitisation (digital awareness). Achieving our ambitions for a digital government will require bold experimentation and a willingness to learn quickly. Furthermore, our innovation efforts should always be based on respect for public values and basic rights.

What has been achieved so far?

The government has presented NL DIGITAAL Data Agenda Government, which includes an innovation budget aimed at stimulating innovative government services. I-challenges are being organised in an effort to gain fresh perspectives on existing issues and facilitate new initiatives for the development of novel solutions. Societal challenges are also being addressed through the Startup in Residence programme.

Startup in Residence

The Startup in Residence programme links social issues to innovative solutions. Examples include: identifying people with low levels of digital literacy; a solution that persuades home owners to transition away from natural gas; a solution aimed at controlling leased land fraud; identifying and accommodating people urgently seeking a new home on the housing market; ensuring that the information provided to citizens by the government is easier to understand. Five winning start-ups will be further developing their ideas with the help of a financial incentive from the Ministry of the Interior and Kingdom Relations.

A Message Box app has been introduced in order to further improve the quality of digital services, and efforts are underway to improve and develop digital identity systems with the appropriate security level. This will require adoption of the Digital Government Act, a proposal for which is currently being assessed by the House of Representatives.

Digital Inclusion Action Plan

This action plan addresses both the opportunities and (general and social) challenges of a digital society. Amongst other aspects, this will involve ensuring the accessibility of government services and information and organising assistance for those with less digital skills. The 'Words Count' (*Tel mee met Taal*) programme focuses on improving the digital skills of functionally illiterate citizens. Digital government information points will be opened at libraries around the country. Current initiatives as a part of the Action Plan also include the Digital Society Alliance. The Alliance is developing concrete measures on 4 specific themes: care environment, online commerce, employees and the social environment. Collaboration will serve to increase the measures' effectiveness and social impact.

What will we be doing over the coming year?

The coming year will see a focus on achieving demonstrable results for citizens and businesses. This will involve collaboration on 4 epics (concrete projects); water consumption during dry spells, government services in relation to death, government services in relation to moving, and check my rights. The updated NL DIGIbeter, Digital Government Agenda will provide insight into the results achieved so far and any subsequent follow-up measures.

Actions:

- The government is investing in government innovation. Initiatives in this area include the innovation budget and Startup in Residence programme (currently being expanded into a cross-government programme).
- We will be investing in civic dialogue through a range of activities, including conferences, conventions, information provision and the establishment of a Historic Algorithmic Museum for secondary school pupils.
- The government will issue a policy letter on artificial intelligence and public values.
- The potentials and risks of algorithm-based decision making will be assessed within the context of safeguarding and fulfilling our shared public values. This will involve case studies in the area of social security, law, self-driving cards, peer-to-peer energy trading and content moderation.
- NL DIGITAAL, the Data Agenda Government, will be continued; Actions will centre on getting our data in order, ensuring data accessibility, data-driven problem resolution and working methods, responsible data use and legislation and regulations. These efforts will be aligned with ongoing initiatives in the area of poverty and consumer debt, energy transition and undermining crime.
- Proposals on secure login procedures for government and semi-public agencies are currently being formulated in preparation for the Digital Government Act and associated implementing regulations.
- Efforts are being made to ensure that the trustworthiness of all login procedures reflects the sensitivity of the relevant personal data.
- The notion of control over one's own personal data is taking concrete form through various initiatives. For example, citizens can download their personal data in an authenticated document that can then be used to apply for debt relief, a mortgage or rental contract.

3.5   Connectivity

What do we want to achieve?

A new generation of digital connectivity has arrived in the form of 5G. This new technology offers great potential; from ultra-fast mobile broadband to connectivity for large numbers of objects (IoT) and applications (such as self-driving vehicles) requiring a high standard of connectivity. Developments such as the introduction of 5G and efforts to connect remote areas to the fibre optic network will require both major investments by market parties and significant government efforts. The more effective our approach, the sooner we can reap the rewards of good digital connectivity

and strengthen the Netherlands' competitive position. The government is currently assessing safety risks on the basis of a threat analysis in order to safeguard security during the implementation process.

Cooperation charter

Telecom companies and government agencies presented the 5G Charter at the Digital Netherlands Conference on 21 March of this year. The Charter aims to make businesses, citizens and government agencies more aware of 5G's importance to the Dutch economy and society, ensuring more effective collaboration during the roll-out process.

What has been achieved so far?

This year saw the 3 millionth Dutch household connected to the fibre optic network, while numerous remote areas now finally enjoy broadband access thanks to the efforts of market parties, government agencies and citizens. The Connectivity Action Plan[17] and Mobile Communications Memorandum[18] were also launched over the course of the year, setting out lines of action for the subsequent phase.

5G in practice

The 5G network is already being tested at various locations throughout the Netherlands. For example, tests are being conducted in the Province of Groningen, port of Rotterdam and area surrounding the Johan Cruijff ArenA in Amsterdam. The network will also be tested in the city of Eindhoven, where ambulances carrying patients will offer 'remote assistance' in support of diagnosis and preparation for medical treatment. 360 cameras will be used to broadcast football matches from various viewpoints as part of another trial in the city's Philips Stadium.

Spatial data centre strategy
The government recently introduced its Spatial data centre strategy. Data centres play a crucial role in the development of our digital economy and society. In fact, the digital highway would ground to a halt without them. The Netherlands' geographic location within Europe, the many submarine communications cables emerging at our shores and AMS-IX all represent advantageous and important location factors. This is certainly borne out by the large number of data centres across our country: over 6,000 in total. The Spatial data centre strategy outlines a range of measures aimed at facilitating the development of new data centres and improving our business climate.

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[17] Parliamentary Paper 26 643, No. 547
[18] Parliamentary Paper 24 095, No 478

What will we be doing over the coming year?

Actions

- The 700, 1400 and 2100 MHz frequency bands will be auctioned by the start of Q2 2020 at the latest. The 26.5 – 27.5 GHz band will also be made available for commercial use over the course of 2020, subject to sufficient market demand. This will free up frequency bands to facilitate the growing volume of mobile data communications.
- Nederland ICT and the Ministry of Economic Affairs and Climate Policy have jointly initiated the launch of a 5G innovation network. The new network will bring together all current 5G initiatives (pilot projects, living labs) under a single roof. This effort to unite the entire Dutch 5G ecosystem (telecoms industry players and other businesses, local, regional and national government agencies, knowledge institutions) should help facilitate knowledge exchanges on innovative 5G applications and connect current and future initiatives.
- The national government is currently in talks with the Association of Netherlands Municipalities (VNG) and individual municipalities as a part of the effort to offer greater transparency on local policies and identify shared good practices in support of the roll-out. This will involve the publication of antennae policy and local rates for infrastructure roll-out.
- In preparation for the 5G roll-out (antennae), mobile operators, the VNG and national government will formulate a memorandum of understanding on renewal of the antennae covenant before the start of the summer period.
- A model business case for the development and commercial operation of networks has been published on samensnelinternet.nl in order to promote fast connectivity in remote areas.
- The broadband guide for municipalities and map of wired connection speeds per address will be updated.

As mentioned, the House of Representatives will receive a progress report on the Connectivity Action Plan (*Actieplan digitale connectiviteit*) before the end of the year.

3.6 Digital resilience

What do we want to achieve?

The government aims to improve the Netherlands' digital security, ensuring that businesses and citizens can rely on the safety of digital technologies and services. According to the latest threat analyses, the digital domain is facing a growing number of vulnerabilities and threats. Cyber threats are developing rapidly, as state actors increasingly focus on industrial and political digital espionage and make preparations for digital sabotage. The number of countries working to develop a digital offensive capability is growing, as attacks become increasingly complex. Ongoing digitisation may disrupt the balance between safety, freedom and economic growth.

What has been achieved so far?

The government-wide Dutch Cyber Security Agenda (*Nederlandse Cyber Security Agenda*, NCSA) published over the course of last year provides the basis for a coherent cyber security approach. This year also saw a start to the deployment of 95 million in structural additional resources earmarked by the government for cyber security.[19] The House of Representatives recently received an update on the first measures taken in this regard.[20] Organisations such as the National Cyber Security Centre, defence department, intelligence and security services and investigation services all recruited new cyber security experts. The Network and Information Systems Security Act (*Wet beveiliging netwerk- en informatiesystemen*, Wbni) also entered into force, establishing a duty of care and notification for providers and essential services and digital service providers. The Government Information Security Baseline has also been in effect since January 2019. Finally, a 'Diplomatic Response Framework' has been developed for international cyber incidents.

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[19] *rijksoverheid.nl/regering/regeerakkoord-vertrouwen-in-de-toekomst*
[20] Parliamentary Paper 26643, No. 614

Digitally resilient entrepreneurs

The Digital Trust Center (DTC) helps entrepreneurs adopt digitally secure business practices. The DTC comprises ten networks of businesses seeking to improve their cyber resilience, and offers a knowledge sharing platform for participating entrepreneurs. Smart Industry will hold one-day workshops on cyber security and the sharing of sensor data at four locations around the country in 2019. In addition to one-off knowledge dissemination, the workshop should serve as a starting point for follow-up workshops and master classes. This will ensure that a growing group of businesses learns to deal with cyber security issues. Participants can individually experiment with new developments such as open source IoT systems, software tools and Industry 4.0 standards. Participants will also be introduced to the industrial cyber resilience networks currently being established in regions throughout the Netherlands.

The House of Representatives was recently updated on the progress of the Roadmap Digital Hardware and Software Security (*Roadmap Digitaal Veilige Hard- en Software*), a document outlining measures towards improving the digital security of ICT products and services and Internet of Things (IoT) devices.[21] The European Cyber Security Act (CSA) entered into force in late June. The regulation establishes a European cyber security certification system for ICT products, services and processes. The European Council adopted guidelines on digital service and content provision agreements (digital content guideline) and sale of goods (goods sales guideline) on 15 April 2019. Both guidelines establish consumers right (where this can be reasonably expected) to receive general and security updates to any digital content and physical goods with a digital element. As a result, a uniform policy for security updates to consumer purchases will be introduced throughout Europe.

What will we be doing over the coming year?

Recent developments highlight the need for a strong focus on cyber security. We must also gain more insight into and control over the digital resilience of our nation's vital processes. To this end, the government will be increasing its focus on implementation of the NCSA. Various governmental initiatives will be developed in an effort to reduce threat levels and increase resilience.

Actions:

- The coming period will see a focus on structural and adaptive risk management:
  - Awareness – greater awareness of relevant risk factors and the required level of digital resilience;
  - Control measures and oversight – structural improvement of digital resilience and strengthening of oversight mechanisms;
  - Practice and testing – gaining insight into the effectiveness of current measures;
  - Control and intervention – the various parties take responsibility and intervene where necessary;
- Next year will see efforts to realise the Nationwide Coverage System, enabling the broader, more efficient and effective sharing of cyber security information between public and private sector parties. Various initiatives offering public-private support for short-term projects were launched last autumn, in collaboration with the Cyber Security Alliance (*Cybersecurity Alliantie*).
- The DTC is supporting the establishment of new partnerships, such as the North Netherlands cyber resilience centre (largely focused on the SME sector) and Brainport cyber resilience centre (focused on the high tech industry). A total of €1 million will be made available for at least 5 new partnerships over the course of 2019.
- The ministries of Justice and Security and Economic Affairs and Climate Policy launched cyber crime and cyber security campaigns in 2019, encouraging citizens and businesses to take concrete action and change their behaviours.
- The Netherlands would like to see the EU introduce minimum digital safety requirements for all internet devices through the Radio Equipment Directive.
- The Netherlands is committed to the active development and implementation of EU-wide cyber security certification systems for ICT products, services and processes as a part of the Cyber Security Act.

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[21] Parliamentary Paper 26 643, No. 618

Ch. 4. International efforts and collaboration

International cooperation will be key in realising the priorities set out in the Dutch Digitisation Strategy. This involves collaboration with European actors and other international partners such as the OECD and G20. As the Dutch government operates in this international context, it will be crucial to ensure a level playing field and vigorously defend the Dutch core values for a digitising world, including a free and open internet and effective ethical safeguards.

A free and open internet

The government remains committed to preventing political interference in the pillars of free and open internet. The Global Commission on Stability in Cyberspace – co-founded by the Netherlands – is working to safeguard against such intrusion. The Netherlands is also actively promoting the debate on multi-stakeholder Internet Governance, whereby all relevant stakeholders work together to ensure a smoothly functioning internet. These and other issues took centre stage at the recent EURODIG (European Regional Internet Governance Forum) conference held in The Hague from 17 through 19 June 2019 and organised by the Netherlands.

European efforts

A new European Parliament was elected in May 2019, while the new European Commission is set to be installed in the autumn. The government will endeavour to anchor all aforementioned priorities in the new European agenda. In doing so, it will actively develop partnerships through various informal decision-making bodies, e.g. bilateral meetings or the Digital 9+ (a group of EU countries pioneering the digital transition). The urgent need to build new alliances is all the more relevant in light of the upcoming Brexit process and other developments.

The government is committed to a strategic European digital policy, based around an integrated approach to the challenges and potential of digitisation. Relevant basic principles in this regard include fair and competitive markets, innovation (including European partnerships), mutual trust, privacy and ethics.[22]

AI is also high on the European political agenda. The government has advocated EU-wide efforts to develop AI, in accordance with the motion by Verhoeven.[23] As the European Commission's coordinated Artificial Intelligence for Europe action plan[24] emphasises, AI offers great potential for both Europe and the Netherlands. In light of rapidly evolving global developments and the billions invested by the United States and China, Europe must intensify its investments and develop a more effectively coordinated approach towards strengthening our competitiveness. The importance of these measures is broadly acknowledged by all member states.

The government has also advocated more intensive European cooperation on other digital technologies such as 5G and Quantum. This reflects the Dutch approach as outlined in our mission-driven innovation policy.[25] The relevant top sectors, ministries and knowledge institutions are preparing multi-year programmes in an effort to accelerate the development and application of key technologies. The Netherlands can avoid excessive dependencies by making targeted choices and investing in crucial technologies.

We will be focusing on cooperation at European level and regional initiatives in an effort to bring together knowledge and investment. The EU supports policy initiatives towards the development of strategic technologies as part the Research and Innovation framework programmes. The proposed provisional 2021-2027 budget for the new Horizon Europe programme has been set at €94.1 billion. The European Commission has proposed a roll-out programme for digital technologies under the name Digital Europe. Under the terms of the proposal, this programme – which spans the same 2021-2027 period – would be allocated a budget of €9.2 billion. The Netherlands' participation in framework programmes has proven highly successful so far, and cooperation with the new programmes is set to be continued.

Efforts are also underway to formulate a European approach to the ethical aspects of digitisation. A series of AI ethics guidelines were adopted on 9 April of this year. A test phase aimed at determining whether these guidelines are workable in practice was initiated on 1 June. The government will

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[22] Parliamentary Paper 21501-33, No. 742

[23] Parliamentary Paper 26 643, No 564
[24] Parliamentary Paper 22 122-2758
[25] Parliamentary Papers 33 009, No. 63 and 70

strive to maximise the number of participating Dutch companies and civic organisations. The aim is to position Europe's ethical approach to AI at a global level.

In accordance with the EU's ambitions for a single European data space, the Netherlands actively shares the priorities outlined in the government-wide vision on data sharing and measures towards creating a future-proof competition framework. Both issues will require EU-wide agreements, as much of the relevant legislation is already enshrined at European level. In parallel, the government is actively supporting various non-legislative initiatives. These include current industry efforts to develop a certification scheme for cloud services. The government

welcomes such market-driven solutions. In order to ensure integrated, strategic digital policies, the government would like to see the position of Vice Chair for Digital Policy continued under a new European Commission. A separate European Commissioner charged with the security union and cyber security issues should also be appointed.[26]

Non-EU engagements

The government is also seeking out new partnerships outside of Europe. After all, digitisation does not stop at the EU border. Products and services developed outside of the EU incorporate various alternate visions on digitisation, representing an additional challenge. This crucial issue will require both new dialogue and the setting of clear boundaries. The vision set out in the General Data Protection Act sends out a clear signal to the world: Europe's commitment to privacy is not up for debate.

The Digital Agenda for Foreign Trade and Development Cooperation (*Buitenlandse Handel en Ontwikkelingssamenwerking*, BHOS)[27] sets out the government's global strategy towards achieving BHOS policy objectives. Digital applications contribute to the UN Sustainable Development Goals, helping us to offer easy access to information and knowledge, create new markets and provide new payment services. This will require effective alignment with the digitisation priorities established as a part of the World Summit on the Information Society.[28] The government will also strive to control digitisation's global impact on trade flows while strengthening the Netherlands' strategic position.

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[26] Series of policy papers, priorities of the Netherlands for the EU 2019-2014, nr. CD1217NB001), Ministry of Foreign Affairs, March 2019
[27] Parliamentary Paper 34 952, No. 65
[28] Tunis Agenda for the Information Society (2005) and relevant follow-up agreements set out in UNGA resolution 70/125 from 2015

Appendix 1: DDS state of affairs

1. Capitalising on (accelerating) social and economic opportunities

Domain & ambition	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
Digitally-capable SME sector The government supports the SME sector in its transition to a digital economy	1) The Accelerating digitisation in the SME sector programme will be published before the start of summer.	• The 'accelerating digitisation in the SME sector' programme has been launched (Q2, 2018). • Three successful practical trials in support of SMEs were launched over the course of 2018: - Data (Den Bosch), - Online marketing & sales (Groningen) - Automation (in collaboration with the Chamber of Commerce, which will also be contributing to the provision of information) • The 'SME idea' (*MKB Idee*) initiative was launched in the autumn of 2018 in an effort to help SME sector employees develop their learning culture and skills.	• 2019 will see these initiatives scaled up and rolled out throughout the country in order to achieve greater impact. • As an offshoot of the practical trial in Groningen, September should see the opening of 5 planned regional SME Workplaces. Staff at the regional facilities will help entrepreneurs with any digitisation-related questions. The Workplaces in Groningen, North Brabant and South Limburg are expected to open this autumn. • The Chamber of Commerce (working in collaboration with Nederland ICT, Bouwend Nederland and Metaalunie) will provide businesses with additional support during the automation process, acting as a broker between supply and demand. A digitisation information and activation programme is currently being prepared. If proven successful, the Chamber of Commerce and Ministry of Economic Affairs and Climate Policy will scale and roll out the approach to other industries.	Ministry of Economic Affairs and Climate Policy (Ongoing) (Q3) (Ongoing)
An innovative, flexible industrial sector By 2021, Dutch industry will have the most flexible and digitally connected production network in Europe	2) The Smart Industry Implementation Agenda serves to promote the digitisation of Dutch industry.	• The Smart Industry Implementation Agenda (2018-2021) was launched in an effort to fast-track realisation of the Smart Industry programme targets. • 7 new field labs have been established (bringing the total to 41). • 5 regional Smart Industry Hubs have been established with the aim of strengthening regional cooperation. These hubs and field labs make up the regional ecosystem. • 2 cyber resilience networks have been established: 1) Brainport Cyber Resilience Centre; 2) Manufacturing Industry Cybersecurity Centre (East Netherlands) • The Data Value Centre was launched. This centre provides businesses and chains support and advice on the sharing of data, through Field Labs and other channels. • Cooperation between the Netherlands and Germany was further solidified in the form of an MoU focused on aspects such as standardisation.	• The five regional Smart Industry Hubs will be further expanded over the course of 2019. The aim is to reach 5,000 regional SME entrepreneurs, and connect them with smart industry. Additional efforts will also be made to share knowledge and expertise on new technologies such as AI and data sharing. • We will be developing a multi-year programme to strengthen the Smart Industry knowledge base as a part of our Mission-Driven Innovation Policy. This will involve addressing fundamental questions from field labs and the professional practice. Examples include robots that can be immediately deployed in flexible production process without the need for any programming time (zero-programming facilities). • Skills programmes will be developed for the various field labs (as a part of the Technology Pact), which can then provide training courses for current and future members of the workforce. • More intensive collaboration between the Dutch Smart Industry Field Labs and the German labs 4.0 Network, and a focus on international standards for the secure exchange of data.	Ministry of Economic Affairs and Climate Policy (Ongoing) (Q1-3) (Ongoing) (Ongoing)

Domain & ambition	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
A transparent and accessible digital government Information, government services and new technologies are accessible to all.	3) An ambitious, broadly-oriented agenda for the digitisation of public adminis-tration will be presented to the House of Representatives around the summer period.	• NL DIGIbeter, Agenda Digital Government have been launched (Q2 2018). • The digital inclusiveness action plan has been adopted (Q4, 2018). For more details, see action 17. • The proposed Digital Government bill, covering aspects such as secure login procedures for government authorities and semi-government authorities and the harmonisation of services, has been submitted to the House of Representatives for assessment.	• NL DIGIbeter, Agenda Digital Government, will be updated before the start of the summer period. • Implementation of the Digital Inclusion Action Plan (*Actieplan digitale inclusie*) will continue through 2019 and beyond. • We are developing proposals to incorporate additional topics in tranche II of the Digital Government Act or subsequent implementing regulations. • Efforts are underway to improve and harmonise the rijksoverheid.nl, overheid.nl and MijnOverheid.nl portals. • Life events and customer journeys will be applied to make government services more accessible and personal.	Ministry of the Interior and Kingdom Relations (Ongoing)
Smart, sustain-able mobility An integrated mobility system centred around users and user mobility. The Netherlands serves as the global testing ground for smart mobility.	4) The government will issue a letter on Smart Mobility developments in the public road system before the start of the summer period. A Digital Transport Strategy will be introduced before the end of 2018.	• Letters on Smart Mobility and Digital Transport have been sent to the House of Representatives. • A letter outlining an overview of key initiatives in the area of 'data in mobility' will also be sent before the start of the summer.	• A vision on freight transport will also be formulated, focusing on digital developments within the transport and logistics sectors. • A letter on Mobility as a Service (MAAS) will also be sent to the House of Representatives before the summer.	Ministry of Infrastructure and Water Management (Q2)
Better quality of life through digitisation Digitisation allows the Netherlands to improve quality of life, keep citizens healthy and independent as long as possible, and offer greater freedom of choice on individual care.	5) We are strength-ening the innovative capacity of our care system and developing greater awareness, knowledge and competencies.	• The government has introduced an overarching approach and various specific measures towards encouraging exchange of information in the care sector (2018).	• A statutory obligation will be introduced to ensure that information ends up in the appropriate place. These measures apply the potential of digitisation towards improving health outcomes. • Our policies on the basis of Awareness, Security, Monitoring and Problem Resolution will improve information security in the care sector by ensuring: - Greater I-knowledge at the Ministry of Health, Welfare and Sport (through measures such as a training module on cyber security for the digital transition throughout 2019, the assessment of care sector vulnerabilities and participation in the ENISA care sector cyber security exercise in 2020); - Our information security policy will be further elaborated in 2019 through the tightening of standards and frameworks (including the application of NEN standards and more intensive compliance monitoring), and; - Efforts to promote I-awareness, secure procurement methods and participation in Z-CERT.	Ministry of Health, Welfare and Sport (Ongoing)

Domain & ambition	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
A safe and sustainable food supply Digitisation contributes to the realisation of *people, planet* and *profit targets,* helping to improve food safety and reduce the environmental impact of agricultural activities.	6) We are investing in digital technology-based agricultural sustainability programmes.	• We have published our 'Agriculture, water and nature, valuable and interconnected' vision, a policy document focusing on the potential of digital technology. • The importance of digitisation in the agricultural domain played a key role during the Berlin Grüne Woche and Digital Day held in Brussels this April, resulting in the signing of two Memoranda of Understanding. • The new mission-driven Top Sectors policy for 2019 explicitly focuses on the application of key technologies, including ICT solutions for issues revolving around the theme of Agriculture, water and food). Efforts to this end include the cross-over High Tech to Feed the World agenda in collaboration with various Top Sectors (Agriculture & Food, Horticulture & Feed Materials, HTSM and ICT).	• A digitisation agenda for the Agriculture, Nature and Food Quality domain is currently being developed. • Further scaling of precision agriculture in the Netherlands through the National Living Lab for Precision Agriculture. 10 new growers were admitted in 2019, with preparations for the new wave of admissions in 2020 to start in mid-2019. • This spring will see an exploratory study to assess the potential for 1 or more field labs for the development of new smart farming concepts. • The Ministry of Agriculture, Nature and Food Quality's Blockchain for Sustainable Food production programme will be continued. • This spring, farmers in the Hoeksche Waard region will participate in a trial aimed at analysing tractor data and developing the necessary data infrastructure.	Ministry of Agriculture, Nature and Food Quality (Q3). (Ongoing) (Q2) (Ongoing) (Q2)
A flexible energy system The development of flexible energy networks, ensuring efficient use of the energy system and reducing the costs of the transition process.	7) We are working to make energy data more broadly available in a manner that allows consumers to retain control over their own information.	• The European Parliament adopted the 4th Electricity Directive in March 2019. Amongst other provisions, the directive mandates the creation of a data management model and sets out requirements for broader access to end consumer energy data (including meter and consumption data). • The Senate and the House of Representatives were informed of the decision to implement this directive through the proposed Energy Act 1.0 in April of 2019. The directive should be implemented by December 2020 at the latest.	• Preparations for the Energy Act 1.0 were initiated in early 2019; if all goes to plan, the Energy Act 1.0 will be submitted for broader consultation by the end of 2019. • As a part of these preparations, the structure of this 'data management model' is being discussed with diverse stakeholders including network operators, energy suppliers, metering companies, other energy service providers and supervisory bodies (AP, AT, ACM).	Ministry of Economic Affairs and Climate Policy (Q4)

2.   Strengthening the foundations (basic conditions)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
Ground-breaking research and innovation				
A strong national foundation for knowledge, research and innovation The Netherlands benefits from digitisation while helping to shape its further development. This involves maintaining a high standard of knowledge, which can only be achieved through collaboration between universities, universities of applied sciences, other knowledge institutions, businesses and government agencies.	8) As a key technology, ICT will feature prominently in the updated Top Sectors policy.	This spring, the House of Representatives received further updates on the new mission-driven Top Sectors policy and focus on key technologies such as ICT.	A knowledge and innovation agenda (2020-2023) themed around the key technology of ICT will be prepared this summer as a basis for the development of multi-year programmes.	Ministry of Economic Affairs and Climate Policy (Q3)
	9) We are seeking to achieve optimal alignment between the National Science Agenda, 'The Digital Society' by the VSNU (Association of Universities in the Netherlands), action lines set out by Team ddd and individual ministerial knowledge agendas.	Various projects have been initiated in an effort to align these agendas more closely. A case in point would be the two approved National Science Agenda cyber security calls, which are currently being elaborated in further detail. Agreements on further alignment have been reached with the VSNU.		Education, Culture and Science Economic Affairs and Climate Policy (Ongoing)
	10) The government stimulates innovation by encouraging more intensive use of the Small Business Innovation Research scheme (SBIR).	Various SBIR projects on the use of blockchain technology were conducted over the course of last year with partners such as the Province of Groningen and Rotterdam. An SBIR Serious gaming in the care sector was also organised over the course of 2018. The 1st SBR phase (tendering) for public sector AI has been completed.	2019 will see the introduction of various new initiatives, including: artificial intelligence for public services (Ministry of the Interior and Kingdom Relations, Ministry of Justice and Security and RVO Netherlands Enterprise Agency); 3D printing technology for space infrastructure (T&I and NSO Netherlands Space Office); and satellite data use during large-scale earth works (National Police Force, Human Environment and Transport Inspectorate and NSO). A feasibility study will be conducted to assess the potential for public sector AI applications and the launch of new living labs (Ministry of the Interior and Kingdom Relations).	All (Ongoing
	11) We are developing public-private partnerships in the area of big data analysis, cyber security, blockchain technology, artificial intelligence, 5G and quantum computing.	• Big data: the big data research programme (Commit2data, with over 100 participating businesses) has been expanded to include the theme of agriculture/food, and will focus more intensively on the issue of health. • The Dutch Blockchain Coalition's 'Blockchain for Good' vision document (2018) presents five blockchain projects in the area of government services. Use cases in the area of identities, logistics, credentials, pensions and subsidies are currently being developed in collaboration with the involved ministries. Projects in the area of identities and credentials are part of a broader EU approach to the application of blockchain technology. • A second National Science Agenda cyber security call was published with the support of six ministries. • The 5G testing ground in Groningen has been expanded. The Municipality of Eindhoven has signed the 5G covenant, and will be participating in test frequency experiments.	• A strategic AI action plan is set to be published in Q3. • The provisional national Quantum Technology agenda has been completed, with more details on implementation and financing to be announced in Q4. • NWO has put out a research call for blockchain technology. • The Ministry of the Interior and Kingdom Relations and VNG are working with municipalities to develop a Smart Society Ecosystem. The initiative will contribute to the acceleration and scaling of specific iconic projects in areas such as safety, security and digitisation of the outdoor area. Smart Society Icon Projects will receive support in the process of attracting new partners, shaping public-private partnerships and acquiring the necessary funding. Specific attention will be devoted to the national and international coordination of research and product development within current ethical and legal frameworks (currently one of the greatest impediments to innovation and scaling).	Ministry of Economic Affairs and Climate Policy (Q3) (Q4) (Q4)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
Ground-breaking research and innovation				
	12) We are initiating an internationalisation agenda centred on the promotion of trade, international cooperation and strategic acquisition.	Specific opportunities and focus areas have been identified by means of a marketing analysis. The outcomes have been assessed by sector organisations and other stakeholders.	This autumn will see the publication of a broadly-supported internationalisation agenda, including an action plan for expansion to other focus countries.	Ministry of Economic Affairs and Climate Policy (Q4)
Innovation-friendly and future-proof legislation Legislation and regulations do not impose unnecessary restrictions on innovation.	13) A helpdesk will be created, enabling entrepreneurs to report any legislative impediments to digital innovation.	The helpdesk was opened in early 2019, and can be reached through its website: *ruimteinregels.nl/thema/digitale-economie*.	The Ministry of Economic Affairs and Climate Policy will intensify its communication activities, raising awareness of the Digital Economy helpdesk amongst innovative SMEs. This will involve the use of channels such as the Digital Netherlands programme's official website and twitter account. The Digital Netherlands conference in the spring of 2020 will also devote attention to the helpdesk, highlighting specific previous cases.	Ministry of Economic Affairs and Climate Policy (Q3-4)
	14) The procedures for testing and experimentation at testing sites – including drone experiments – will be simplified.		European drone legislation is set to take effect on 1 July 2020. This will invalidate current national legislation in relation to documents on drone use. In one notable exception, businesses with a drone testing site will not require a flight permit for drones up to 25kg. These measures are expected to be implemented in the spring of 2020.	Ministries of Economic Affairs and Climate, and of Infrastructure and Water Management (2020)
	15) The Better regulations and services programme – aimed at eliminating concrete impediments to innovation and facilitating experimentation – will be launched before the start of the summer period.	• The Better regulations and services programme was submitted to the House of Representatives over the course of last year. • The programme comprises various individual ministerial action programmes, and outlines each ministry's concrete measures towards reducing the regulatory burden on businesses.	• The ministries will be further implementing measures in the individual programmes. • An initial progress report detailing the status of the various action programmes will be submitted to the House of Representatives in the summer of 2019.	Ministry of Economic Affairs and Climate Policy (Ongoing) (Q2)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
Career alternatives, new skills and lifelong learning				
The educational curriculum is up-to-date Young people possess solid basic ICT skills and information skills, and are media savvy.	16) The primary and secondary education curricula devote attention to digital literacy and practical skills, helping pupils to prepare more effectively for the future.	• Development teams comprised of teachers and school administrators are working to develop the curriculum. The professional field is closely involved in curricular development and content, including the paragraph on digital literacy. Input from the business sector and Digital Netherlands Conference is applied as a part of the curricular development process. • The digitisation agenda for the primary and secondary education sectors (PE/SE) is presented at the Digital Netherlands Conference.	• The different parts of the curriculum will be approved in the 2nd half of 2019, and should be reflected in the year 2019/2020. Partners such as Kennisnet, Surf and the business community will also be involved in the implementation process. • The Ministry of Education, Culture and Science and Ministry of Economic Affairs and Climate Policy will organise round table discussions between the education sector and business community after the end of the summer period. These meetings will serve to improve cooperation and develop concrete actions towards improving the digital skills of primary and secondary school pupils and teachers.	Ministry of Education, Culture and Science (Q4) (Q3)
Adequate level of basic digital skills Everyone can participate in the digital society.	17) Efforts are being made to develop training initiatives for those with limited digital skills. The government supports municipalities, libraries and civic initiatives providing additional training to those with limited digital skills.	A digital inclusion action plan outlining concrete measures for the digitally disadvantaged was presented in late 2018. The programme aims to improve the basic digital skills of all Dutch citizens. Efforts are also underway to develop a support network.	Implementation of the digital inclusion action plan will continue through 2019 and beyond.	Ministry of the Interior and Kingdom Relations (Ongoing)
	18) Government agencies are more focused on providing clearly understandable and user-friendly digital services.	Effective 1 July 2018, all government agencies are legally required to make their websites and mobile applications more accessible.	Accessibility requirements must have been met by 23 September at the latest. We will also be opening Digital Government information desks in libraries.	Ministry of the Interior and Kingdom Relations (Q3)
	19) Practice-based experiments and living labs will also be initiated in order to identify effective responses to the population's needs.	A newly-established alliance between public and private parties, knowledge institutions and experts in the field is working to improve digital literacy in the Netherlands	The alliance is developing concrete actions within 4 key themes: care environment, online commerce, employees and the social environment.	Ministry of the Interior and Kingdom Relations (Ongoing)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
Career alternatives, new skills and lifelong learning				
A learning workforce People have the opportunity to continually develop their knowledge and skills, and can keep functioning effectively in a changing environment without any loss of job satisfaction.	20) The government will announce an action plan outlining ground-breaking lifelong learning measures before the start of the summer period.	The action plan was launched in September of 2018. Broad efforts are being made to stimulate a positive culture of learning in collaboration with social partners, educational institutions and parties from the professional field. Individual learning accounts and a digital overview of training options will offer individuals greater control over their own development. Experiments and pilot projects will also be initiated in an effort to promote a strong culture of learning in the SME sector. The regional support structure will also be further strengthened through the training and employment helpdesks and other initiatives. Plans for a more flexible range of adult education programmes – e.g. in the form of tailored training programmes reflecting individual needs – will also be presented.	The Life Long Learning Action Plan will be elaborated into 6 specific action lines for the 2019-2022 period: • Strengthening regional support: 3 pilot projects will be launched in various Employee Insurance Agency (UWV) regions (3-year period) • Promoting a culture of learning in the SME sector: to be linked to the 48 million in funds earmarked in the Wiersma motion (3-year period) • Flexibilisation of the Secondary Vocational Education sector (Ministry of Education, Culture and Science action line, 4-year period) • Digital portal: currently under exploration (Ministry of Education, Culture and Science action line) • Stimulating the use of individual learning accounts - Experiment in collaboration with James • Public individual learning and development budget will be 'designed' and implemented by the UWV, start date in 2020 or 2021 • Communication in support of a culture of learning An evaluation framework will be developed to assess the experiments and pilot projects in the Life Long Learning Action Plan. This will involve collaboration with the MKB!dee initiative (Ministry of Economic Affairs and Climate). A total of 60 to 70 applications in response to the current tender will be approved in late 2019.	Ministry of Social Affairs and Employment (Ongoing) Ministry of Social Affairs and Employment/ Ministry of Economic Affairs and Climate Policy (Q4)
Sufficient ICT professionals Businesses have access to sufficient well-qualified staff.	21) The Technology Pact will be continued and the Human Capital Agenda ICT will be rolled out in order to improve the availability of qualified ICT staff.	The Technology Pact was continued over the course of 2018 and will remain focused on digital skills in the education sector until the end of 2020. The ICT HCA achieved the following results through the end of 2018: • 6 regional public-private partnerships between the business community and vocational education institutions. • Successful targeting of 4,000 pupils through the Pass IT on (Geef IT door) initiative.	The ICT HCA approach was adjusted at the start of 2019, and is now more focused on collaboration between education and business sector parties. NL ICT will also be contributing in-kind to the new agenda from 2019 onwards. The focus will be on: • Regional public-private partnerships between the business community and vocational education institutions. • Collaborative efforts are also being made to increase the stay-rate of international students visiting the Netherlands. • Incorporating new technologies (such as blockchain and AI) into higher education curricula. • Pass IT on (higher education) will initiate a collaboration with Jet-Net/Technet.	Ministry of Economic Affairs and Climate Policy (Ongoing)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
Career alternatives, new skills and lifelong learning				
	22) The Strengthening Government ICT HR action plan will be rolled out over the course of 2018 as part of the effort to improve the recruitment and retention of government ICT staff.	Launch of the inter-ministerial Strengthening Government ICT HR programme. Initiatives established as a part of this programme include I-trainee, a programme comprising a data science track, targeted ICT recruitment campaigns and an initiative whereby ICT candidates' CVs are shared (subject to permission by the candidate) between the various government bodies.	In addition to the continuation of ongoing projects, 2019 will see the establishment of various new initiatives. These include the introduction of a cyber security track within the I-trainee programme, and a collaboration between the government ICT service and higher education-level ICT programmes. This partnership should help secure a greater supply of ICT alumni while increasing the level of knowledge and expertise within the within the government ICT service.	Ministry of the Interior and Kingdom Relations (Ongoing)
Clearer information on working via platforms More effective support for people seeking a suitable employment relationship and clearer frameworks for employers.	23) A government investigation into the position of platform workers has been sent to the House of Representatives with an official response.	The Committee on the Regulation of Work has been approved and installed. The Social and Economic Council of the Netherlands (SER) was commissioned to conduct an exploratory study of the platform economy. Amongst other aspects, the study focused on the position of platform workers, the position and nature of platform companies and the enforcement of false self employment regulations.	The Committee on the Regulation of Work is currently assessing whether existing regulations still reflect our current and future ways of working. The Committee has been requested to issue a report on the subject by November 2019 at the latest.	Ministry of Social Affairs and Employment (Q4)
	24) The coalition agreement sets out various measures aimed at providing greater clarity for self-employed contractors and clients, while preventing false self employment.	Measures to replace the Assessment of Employment Relationships (Deregulation) Act are currently being developed. This largely concerns the impact of measures to protect the lower segment of the workforce and facilitate businesses at the upper end of the market. The new measures will require further exploratory studies, which are currently underway. The legal subordination criterion was also clarified on 1 January 2019. As regards the client statement, development of the web module is on schedule and should be completed by 1 January 2020.	A series of measures will be introduced to prevent false self employment and downward competition on the basis of employment conditions (with a focus on the lower end of the labour market) and provide greater certainty to independent contractors with high hourly rate operating at the higher end of the labour market. The relevant legislation underlying these measures for both ends of the labour market spectrum should ideally take effect on 1 January 2021. The measures also aim to provide independent contractors and their client certainty that no employment relationship has been entered into. A web module will be developed to this end, and is expected to be completed on 1 January 2020. Further details will be announced before the start of the summer period.	Ministry of Social Affairs and Employment (Ongoing)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
A dynamic digital economy				
Competitive markets Markets remain competitive, ensuring a fair and competitive digital economy.	25) The viability of current competition regulations will be assessed, and various measures towards ensuring market competitiveness will be analysed.	• The Ministry of Economic Affairs and Climate Policy issued a consultation document and met with experts and stakeholders in early 2019. The outcomes of the consultation and expert meetings will be applied to formulate an official position on the desirability of adjustments to the current range of competition measures and introduction of supplementary regulations. • This spring saw the publication of a letter to the House of Representatives outlining an official position on the future of existing competition measures (Parliamentary Paper 27879, no. 71) and a response to the Verhoeven Initiative Policy Document (Parliamentary Paper 35134, no. 3).	The Netherlands will strive to promote the resulting position amongst its European counterparts, with a focus on the new European Commission.	Ministry of Economic Affairs and Climate Policy (Q2)
Fair relationships Platform companies should treat the providers active on their platforms fairly.	26) The relationship between platforms and entrepreneurs – both within the Netherlands and Europe – should be based on a transparent approach to conditions, dispute resolution and search results.	An agreement on the Platform-to-business regulation was reached in February. The regulation includes transparency requirements and stipulations on the resolution of disputes between platforms and their business users.	The regulation was formally approved by the Council on 14 June, and will be published before the start of the summer period. Platforms will then have a period of 12 months to comply with the regulation.	Ministry of Economic Affairs and Climate Policy (Q2)
	27) The government is currently assessing the free market impact of best price guarantees, and is expected to inform the House of Representatives about the results in the second half of 2018.	The investigation has been completed and will be submitted to the House of Representatives along with a response.	The investigation and government response is expected to be submitted to the House of Representatives around the summer period.	(Q3)
	28) The government is currently in talks with municipalities and platforms to discuss a uniform registration system for home owners renting out their houses to tourists through platforms. Such a system will allow for more effective and efficient enforcement by municipal authorities.	A proposed bill would enable municipalities – subject to certain preconditions – to introduce registration requirements for private citizens offering their home for rental through platforms. These requirements may be supplemented with a duty to report each rental and/or a licensing requirement for specific areas. Furthermore, parties renting out their homes to tourists would also be required to specify their registration number in advertisements. The municipalities are currently discussing the options for further development and funding of a uniform registration system.	The proposed bill will be adopted before the start of the summer period and should be presented for Parliamentary review in the autumn. The bill is expected to take effect in mid-2020.	Ministries of Economic Affairs and Climate Policy, and of the Interior and Kingdom Relations (Q2-4)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
A dynamic digital economy				
A flourishing data economy In the Netherlands, data is most effectively shared within and between individual industry sectors.	29) We are currently exploring the potential for a set of open cross-sectoral agreements on responsible and voluntary data sharing between businesses.	The government has commissioned a study to assess the potential and challenges of data sharing between individual businesses. The study identified various bottlenecks. These largely concern entrepreneurs' lack of awareness of the importance and possibilities of data sharing and a general lack of trust. There are also various operational, technical and legal challenges. The study advocates more intensive knowledge sharing and cooperation.	The data sharing coalition launched in May 2019. The coalition will be helping businesses in various sectors to share data easily and securely on the basis of a mutual sense of trust. The initial focus will be on exchanging knowledge and exploring the options for application. The data sharing coalition will subsequently work to establish a generic set of cross-sectoral agreements.	Ministry of Economic Affairs and Climate Policy (Q2)
	30) The government is developing a vision on data sharing.	The government's vision on data sharing between businesses was published in February. This vision comprises the government's ambitions, the principles and preconditions underlying their realisation and various government measures for the short-term.		Ministry of Economic Affairs and Climate Policy (Q1)
	31) Government data will be made more easily accessible. This will involve a focus on: • ensuring real-time access to dynamic government data. • a substantial increase in the amount of highly valuable data sets, easier and more cost-effective accessibility and support during the application process.	The NL DIGITAAL Data Agenda was presented in 2019. The Data Agenda explains how data can be applied (more effectively) to resolve societal issues. The Agenda explicitly focuses on the safeguarding of public values and fundamental rights.	NL DIGITAAL, Data Agenda Government, outlines concrete actions for the 2019-2021 period. Actions will centre on getting our data in order, ensuring data accessibility, data-driven problem resolution and working methods, responsible data use and legislation and regulations. These efforts will be aligned with ongoing initiatives in the area of poverty and consumer debt, energy transition and forms of undermining crime.	Ministry of the Interior and Kingdom Relations (Ongoing)
A world-class digital infrastructure Retaining our leading international position in the area of fixed and mobile communication networks.	32) A digital connectivity action plan, outlining measures to ensure the broad accessibility of 5G and other technologies – will be presented before the start of the summer period.	The Digital Connectivity action plan was presented in July of 2018. The aforementioned actions are currently being implemented.	A progress report featuring a response to the adopted motions will be submitted to the House of Representatives towards the end of the year.	Ministry of Economic Affairs and Climate Policy (Q4)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do (and when)?	Who (Timeline)
Strengthening the resilience of citizens and businesses				
A safe digital society People and businesses can safely use digital technologies.	33) The Dutch Cyber Security Agenda (Nederlandse Cyber Security Agenda, NCSA) focuses on 7 lines of action.	The House of Representatives has been updated on the current state of affairs by means of the NCSA progress report (Parliamentary Paper 26643 No. 614) and 2018 Dutch Cyber Security Monitor. Examples of concrete results include: • The start of significant additional investments in capacity and expertise at bodies such as the NCSC, security and intelligence services, investigation services and Ministry of Defence. • The launch of the Cyber Security Alliance, which will organise public-private partnerships on a range of projects (including Up-to-Date Standards for Secure e-mail). • Launch of the Alert Online awareness campaign, aimed at encouraging safe digital behaviour amongst a broad target audience. • Development of a cyber security risk model for businesses by the Centre for Crime Prevention and Safety.	The coming year will see a focus on structural and adaptive risk management: • Awareness – greater insight into vital digital interests and improved risk awareness. • Control measures and monitoring – formulating and monitoring security targets on the basis of relevant threats and risks in order to increase resilience. • Practice and testing – more joint exercises and tests, exchange of best practices. • Control and intervention – intervention by the relevant ministerial departments in cases where key parties refuse to take recommended measures to eliminate major risks.	Ministry of Justice and Security (Ongoing)
	34) The Digital Trust Centre (DTC) will provide entrepreneurs with up-to-date information and concrete advice on cyber threats.	The DTC was launched in 2018, and has since made concrete contributions to secure digttal commerce. The website (*digitaltrustcenter.nl*) helps entrepreneurs apply the five basic principles of secure digital commerce. A total of 10 alliances (clusters of businesses seeking to improve their cyber reslience) are currently affiliated with the DTC, which has also launched a platform to facilitate the sharing of knowledge between entrepreneurs. Collaboration within the framework of the National Cyber Security Centre (NCSC) also took concrete form in 2018, with participants now actively sharing knowledge and experience.	The alignment of supply and demand for secure digital commerce represents DTC's main challenge for 2019. As a part of this effort, the following priorities have been defined for 2019: • Expanding the network of partnerships. A total of €1 million will be made available for new partnerships over the course of 2019. This should lead to the establishment of at least five new partnerships. • Strengthening cooperation between the DTC and NCSC. • Further developing and promoting the website and platform and providing additional tools to reach non-vital businesses (aligning supply and demand). A progress report will be submitted to the House of Representatives before the start of the summer period.	Ministry of Economic Affairs and Climate Policy (Q3-4) (Ongoing) (Ongoing) (Q2)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do (and when)?	Who (Timeline)
Strengthening the resilience of citizens and businesses				
A safe digital society People and businesses can safely use digital technologies.	35) The Netherlands will advocate for rapid adoption of the Cyber Security Act (CSA) in Brussels. As regards the short term, the government advocates the adoption of mandatory certification for specific product groups. The role of security by design will also be important in this regard. In the longer term, these measures should be gradually supplemented with a mandatory certification system or CE marking requirements for all products with internet connectivity.	The CSA has entered into force, with nationwide implementation of the required components currently underway. The launch of a European CEN working group focused on IoT standards (with the Netherlands acting as chair and NEN administrator) has led to the bundling of standardisation efforts. The working group will be formulating standards to facilitate the implementation of CSA schemes. The EC will also be conducting an impact study over the course of 2019.	The CSA was published on 7 June and entered into force on 27 June 2019. The establishment of a National cyber security certification body will be enshrined in national legislation. This measure should be implemented within a period of 24 months. The EU will develop certification schemes with active assistance from the Netherlands. The House of Representatives was updated on the progress of the Roadmap Digital Hardware and Software Security on 20 June (Parliamentary Paper 26643 no. 618).	Ministry of Justice and Security (Ongoing)
	36) The Ministry of Defence will be updating its Cyber Strategy over the course of this year.	The Ministry of Defence has published its 'Defence Cyber Strategy: Investing in the Netherlands' digital capability´ (2018).	The coming years will see a focus on implementing this strategy through various lines of action. Realisation of these lines of action will take several years due to the complexity of the relevant environments and issues. One such line of action will involve the development of HGI (highly classified information) crypto, as part of a strategic collaboration with Fox Crypto. We will be intensifying our efforts in other areas, such as the expansion of capacity for security assessments.	Ministry of Defence (Ongoing)
	37) The broad Digital Government Agenda will include a package of measures towards improving information security and cyber security in the realm of public administration.	The House of Representatives was updated on government information security in October 2018. Concrete actions include the introduction of an inter-administrative information security framework; the Government Information Security Baseline will take effect on 1 January 2019.	• The requirements established in the Government Information Security Baseline will be implemented at the various tiers of government. • A group of experts will assess the potential for introducing information security requirements as a procurement condition.	Ministry of the Interior and Kingdom Relations (Ongoing)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do (and when)?	Who (Timeline)
Strengthening the resilience of citizens and businesses				
Protection of and control over personal details Citizens can rest assured that their online privacy is adequately protected, and have control over their own personal details.	38) The government will strive to develop and implement an ambitious European e-privacy regulation.	The Council has yet to conduct a general orientation or formulate a common position. In light of the upcoming European elections, we do not expect the e-privacy regulation to be introduced in the near future.	The Netherlands remains committed to the rapid introduction of an e-privacy regulation.	Ministry of Economic Affairs and Climate Policy
	39) As announced in the coalition agreement, the government will focus on safeguarding privacy between individual citizens. This autumn, the government will send a letter to the House of Representatives outlining its vision on the strengthening of privacy between individual citizens. The letter will also set out a range of proposed measures.	The announced letter, Protecting horizontal privacy, was submitted to the House of Representatives on June 7 (Parliamentary Paper 34926-8). The letter has been broadened in scope to outline the government's vision on horizontal privacy, and focuses on the relationship between citizens and commercial entities.	The government will present a horizontal privacy agenda focused around three lines of action: 4. Raising public awareness of privacy through a public information campaign and other measures. 5. Expanding the scope for action. A privacy guide for citizens and businesses will be published in mid-2019. The government also wishes to see the introduction of a user-friendly facility enabling the removal of online images that have been published without consent. A feasibility study to this end will be conducted before the end of the current term. 6. Strengthening current standards Privacy standards should offer an adequate level of protection. Various actions have been initiated to this end, including the criminalisation of revenge porn, measures against the filming of traffic casualties and other people in need, and efforts to tighten the GDPR in order to curtail the data dominance of large tech firms (as a part of the GDPR evaluation).	Ministry of Justice and Security (Q2) (Q2-3)
	40) Clear frameworks for personal data manage-ment will be formulated before the end of the current government term as a part of the 'Control over personal data' programme. The first draft version of the Uniform Set of Requirements for personal data manage-ment will be published in late 2018.	Relevant frameworks (uniform sets of requirements) have been explored in consultation with numerous parties on the basis of ongoing pilot projects and experiments in the various sectors.	A policy letter on control over personal data will be submitted to the House of Representatives before the summer of 2019. This letter will centre on three lines of action: 1. data sharing with private sector parties 2. one-off data provision 3. the right to correct and inspect data. The letter will announce the introduction of clear frameworks (based on the uniform set of requirements) for data sharing with a statutory basis in the Digital Government Act.	Ministry of the Interior and Kingdom Relations (Q2)

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do (and when)?	Who (Timeline)
Strengthening the resilience of citizens and businesses				
Effective consumer protection during internet purchases Consumers in today's digital world can take informed decisions when purchasing products online.	41) Consumers need to know which counterparty to turn to in the event of any questions or problems. This means consumers must be informed about the identity of the contracting party and should know whether the supplier is acting as a business or consumer. The government will consult with consumer rights organisations, manufacturers and platforms to identify the most effective approach.	In progress – action specified in Consumer Agenda (Parliamentary Paper 27879, No. 64).	The government is organising a round table discussion with online market-places. These discussions should yield effective new ways of providing consumers the information they need. This process may involve the use of pilot projects, and will be linked to the new information requirements arising from the New Deal for Consumers.	Ministry of Economic Affairs and Climate Policy
	42) The government aims to ensure that consumers have better access to information on their basic rights when making purchases through an online platform, and will be exploring the options for more effective communication with various parties.	In progress – action specified in Consumer Agenda. (Parliamentary Paper 27879, No. 64)	The government is organising a broad consumer awareness campaign. Also see ad) 41.	
	43) Negotiations on new EU legislation will focus on ensuring stricter requirements for information provision and platforms' duty to provide greater transparency on the identity of their providers.	The Council, EP and EC reached an agreement on the New Deal for Consumers on 2 April 2018. The deal establishes more stringent information requirements and obliges platforms to provide greater transparency on the identity of their suppliers.	The government will initiate implementation of the New Deal for Consumers once the package of measures is officially approved by the EP and Council.	
	44) The government will investigate the concrete problems encountered by consumers when purchasing products that are (or could be) part of the Internet of Things. As a part of this effort, the government will also assess whether the Internet of Things is being effectively monitored and problems can be addressed adequately.	In progress – action specified in Consumer Agenda. (Parliamentary Paper 27879, No. 64)	The government has entered into talks with the Netherlands Authority for Consumers and Markets (Autoriteit Consument en Markt, ACM), Dutch Data Protection Authority (Autoriteit Persoonsgegevens, AP), Netherlands Telecom Agency (Agentschap Telecom, AT) and Netherlands Food and Consumer Product Safety Authority (Nederlandse Voedsel- en Warenautoriteit, NVWA) supervisory bodies, and will inform the House of Representatives on its progress later this year.	
	45) The government's investigation into issues encountered while making purchases on digital platforms will be submitted to the House of Representatives along with a response in the second half of 2018.	Implemented (Parliamentary Paper 27879, No. 64)		

Themes & ambitions	Actions outlined in the DDS (2018)	Current status/results	What are we going to do?	Who (Timeline)
Basic rights and ethics in the digital age				
Confidence in the digital future The safeguarding of public values and human rights is factored into the development and use of data and algorithms.	46) The government has called on the Netherlands Scientific Council for Government Policy (Wetenschappelijke Raad voor het Regeringsbeleid, WRR) to issue a recommendation on the threats and opportunities of artificial intelligence.	The government has issued a request for the aforementioned advisory report to the WRR.	The WRR is preparing the advisory report requested by the government.	Ministry of Economic Affairs and Climate (Ongoing)
	47) A working group will be established to explore the ethical issues surrounding digitisation and propose concrete follow-up measures where necessary.	The working group was launched in the autumn of 2018.	The working group will issue a policy letter on AI, public values and human rights after the end of the 2019 summer period.	Ministry of the Interior and Kingdom Relations (Q3-4)
	48) The Minister for Legal Protection will issue a letter on the legal impact of developments in the field of algorithms and artificial intelligence in the autumn of 2018.	The letter was submitted to the Senate (with a copy sent to the House of Representatives) on behalf of the State Secretary for the Interior and Kingdom Relations on 19 December 2019. The Minister of the Interior and Kingdom Relations has provided the House of Representatives with a response to the 'Algorithms and basic rights' study by Utrecht University.	The Minister of the Interior and Kingdom Relations will submit an 'AI, public values and human rights' (AI, publieke waarden en mensenrechten) policy letter to the House of Representatives in the autumn of 2019.	Ministries of Justice and Security, and of the Interior and Kingdom Relations (Q3)
Cooperation and dialogue There is a need for broad civic dialogue on new ethical issues.	49) The government organises and encourages dialogue on technological developments.	The civic dialogue project, part of the Ministry of the Interior and Kingdom Relations' New technologies and public values programme, has been launched. The project aims to help diverse stakeholders gain greater awareness and understanding of the ways in which new technologies impact our social values.	We are investing in civic dialogue through a range of activities, including conferences, conventions, information provision and the establishment of a Historic Algorithmic Museum for secondary school pupils.	Ministry of the Interior and Kingdom Relations (Ongoing)
Reliable information and content on online platforms An open information society in which the democratic rule of law is protected and illegal online activities are prosecuted.	50) Additional resources have been earmarked for investigative journalism.	The Coalition Agreement structurally earmarks an annual sum of 5 million to encourage investigative journalism in the Netherlands. The Journalism Promotion Fund (Stimuleringsfonds voor de Journalistiek) and the Special Journalistic Projects Fund (Fonds Bijzondere Journalistieke Projecten) – two funds supporting investigative journalism in the Netherlands – established schemes to support investigative journalism editorial staffs and projects and encourage talent development over the course of 2018.	The effectiveness of these plans will be monitored and evaluated in collaboration with the two funds. The structural application of these resources will be assessed in the autumn of 2019.	Ministries of Economic Affairs and Climate Policy, and of Education, Culture and Science (Q4)
	51) The outcomes of an investigation and round table discussion on the personalisation of news services will be shared with the House of Representatives before the start of the summer period.	The results have since been shared with the House of Representatives.	Completed.	

Appendix 2: overview of financial resources for the digital economy

Mona Keijzer, State Secretary for Economic Affairs and Climate Policy

Last year, the House of Representatives requested a general report on financial resources for the digital economy.[29]

I recently updated the House of Representatives on the Public Investment in Key Technologies study, which was conducted by Technopolis research agency at my request. The report outlines the scope of (previously) earmarked investments in key technologies, including digital technologies. See: Parliamentary Paper 33 009, No. 72.

As compared to other countries included in the study, the Netherlands invests relatively few ex ante earmarked funds in key technologies due to our bottom-up approach (based on the use of a generic instruments such as the R&D tax credit (*Wet Bevordering Speur- en Ontwikkelingswerk, WBSO*) and PPP surcharge (*PPS-toeslag*). In the case of the WBSO, subsequent analysis shows that a considerable portion of the budget is spent on digital technology innovations:

WBSO and digital innovations:
(2016) budget €1,143 million, of which 29% was spent on ICT innovations = €335 million.
(2017) budget €1,455 million, of which 21% was spent on ICT innovations = €303 million.
(2018) budget €1,370 million, of which 21% was spent on ICT innovations = €290 million.

In other words, the resources earmarked for the digital economy are largely made available through generic instruments. The below overview outlines the various generic instruments available to entrepreneurs engaged in digital technology research and innovation.

Specific policies
R&D tax credit and PPP-surcharge may also be applied towards specific programmes such as Smart Industry and the SME action plan (which also focuses on digitisation). I refer you to the relevant letters and reports for more details on the resources (from various sources) earmarked for these specific programmes.[30]

The government also approved the specific missions for its mission-driven top sectors and innovation policy and action plan for the development of key technologies at the start of this year.[31] (footnote 32,). A focus on digital technologies will be key in fulfilling these missions.

Follow-up measures
As indicated during a parliamentary committee meeting on innovation on 19 July 2019, I will be providing the House of Representatives with annual updates on public investment in key technologies. As regards our efforts in the field of artificial intelligence (AI), I will be updating the House of Representatives by means of the Strategic AI action plan set to be published after the end of the summer period. The government's 2019 Spring Memorandum also earmarks structural additional resources for multi-year innovation programmes in the area of key technologies. This summer will also see the start of the Focus on policy and implementation options (*traject beleids- en uitvoeringsopties in beeld, BUIB*) programme, which will explore the options for increasing public and private investments.

The House of Representatives will also be informed of this initiative.

[30] Parliamentary Paper 32637, No. 316; 29826, No. 94 and *https://www.smartindustry.nl/wp-content/uploads/2019/05/Smart-Industry-Fieldlabs-2018.pdf*

[31] Parliamentary Paper 33009, No. 63 and 70

[29] Parliamentary Paper 26 643, No. 563

Generic innovation instruments applied by Ministry of Economic Affairs and Climate Policy*

(x €1 million, as in 1st supplementary budget)	2019	2020	2021	2022	2023
PPP allowance	144	162	169	172	172
International Innovation	44	40	41	40	39
Innovation credit	58	55	56	57	57
Eurostars	17	18	18	18	18
MIT	29	39	40	39	39
R&D tax credit (WBSO)	1,205	1,205	1,205	1,205	1,205
Total	**1,497**	**1,519**	**1,529**	**1,531**	**1,530**

* including digital innovation, not specifically labeled

Appendix 3: outcomes and results of the 2019 Netherlands Digital Conference (March 18-21, 2019)

The four-day Digital Netherlands Conference, an event with over 2000 participants and more than 80 sub-sessions on a wide range of topics (attended by parties from the business sector, scientific community and civic organisations) proved highly successful.

The conference helped to strengthen collaborations in the area of digitisation by bringing together key players, more accurately defining existing goals and fast-tracking measures. Digital Netherlands yielded various concrete initiatives and themes which can now be jointly addressed. This was also discussed during the digital Netherlands forum (*Beraad Nederland Digitaal*). I will outline a few of these key initiatives and themes below.

Artificial intelligence (AI)

This first edition of the Digital Netherlands Conference centred on the issue of AI. Developments in this field are evolving rapidly, yielding a wealth of applications with major impact on our economy and society. The following measures were taken over the course of the conference in an effort to ensure that the Netherlands can effectively address the opportunities and challenges of AI:

- **National AI coalition.** Today saw the launch of the National AI Coalition, an initiative by the Confederation of Netherlands Industry and Employers and the Dutch Federation of Small and Medium-sized Enterprises. The coalition envisages the Netherlands as Europe's leading centre for AI innovation, and will be addressing challenges in the areas of knowledge, research and skills. Businesses, institutions, researchers and civic stakeholders have been invited to join the coalition.
- **Knowledge labs.** The AI Coalition will be establishing labs at universities in various cities, including Utrecht and Amsterdam. 10 such labs are to be established over the course of this year, enabling businesses and researchers to collaborate on the development of high-value knowledge and innovative applications. Plans to establish a new lab at Delft University of Technology specialising in fintech were announced today.

- **Code of ethics.** Entrepreneurs will take Nederland ICT's lead in implementing a code of conduct, which should serve as a useful guideline for the development of responsible AI applications.
- **Strategic AI action plan.** The government will publish a Strategic AI action plan after the end of the summer period, enabling the Netherlands to capitalise on AI's potential and address its inherent risks. Amongst other issues, the action plan will focus on education and research, the use of data, the transparency and explicability of algorithms and relevant ethical aspects. These efforts will involve collaboration with the National AI Coalition.

Smart economic and societal digital applications

Digitisation offers great potential for societal and economic applications. Examples include care robots, smart traffic lights and smart grids. We will be taking the following measures to capitalise on these opportunities more effectively:

- **Smart cities.** A broad coalition including the VNG, G5, G40 and Ministry of the Interior and Kingdom Relations outlined its intention to fast-track innovation and scaling in the Smart Society Declaration. The partners will be conducting iconic urban projects in areas such as urbanisation, climate adaptation, healthcare, mobility, employment and security.
- **Smart Industry.** 5 hubs have been launched in an effort to strengthen regional cooperation that should reach over 5,000 businesses. Smart Industry facilitates the application of new technologies such as robotics, AI and 3D printing, enabling us to capitalise effectively on the digital transformation. Existing field labs will be enhanced and new ones will be established, offering entrepreneurs the opportunity to experiment with emerging technologies.
- **SME workplaces.** The Ministry of Economic Affairs and Climate Policy has indicated its willingness to finance or co-finance at least 5 regional SME Workplaces over the course of 2019, and is calling on administrators, entrepreneurs and other regional stakeholders to *jointly* develop solid plans.

- **Self-determination and self-care.** The Dutch College of General Practitioners will join forces with public and private partners to transform Thuisarts.nl into the Netherlands' go-to source for reliable information and digital self-determination and self-care resources.
- **Digital government: innovative capacity.** The government also aims to capitalise on the potential of new technologies, and will be relying more intensively on the innovative capacity offered by start-ups. Today marked an important step in the development of the Startup in Residence programme. We are working with administrators and civil servants to implement the 'start-up way': a step-by-step working method that leaves room for experimentation.

Data sharing and accessibility (a flourishing data economy)

The availability of data and potential for responsible societal and economic applications will be crucial in ensuring a successful digital transition. The following agreements have been reached in an effort to ensure responsible and optimal growth of the data economy while effectively balancing risks and opportunities:

- **Data sharing coalition.** Data sharing should become the accepted standard. Today saw the first step towards establishing the Data Sharing Coalition, an alliance between parties from the business services, logistics, agricultural, energy, mobility and industrial sectors. The aim is to help entrepreneurs in each of these industries share data with other sectors in a secure and responsible manner. The relevant agreements will shortly be recorded in a declaration of intent.
- **Satellite data.** The Ministry of Agriculture, Nature and Food Quality and Netherlands Space Office has launched a satellite data portal 2.0 today. The portal will provide universal access to an entirely new wealth of satellite data, enabling applications by the agricultural sector, logistics industry and other domains. This offers an excellent basis for the development of smart applications, including AI-based solutions.
- **Data-based ethical innovation.** Government agencies, knowledge organisations, business sector parties and civic organisations met today to discuss ethical principles for responsible data-driven government innovation programmes. The development of these rules was one of the first action points outlined in the first inter-administrative Data Agenda Government.

Connectivity / 5G

A new generation of digital connectivity has arrived in the form of 5G. This technology has a wealth of applications, from hyper-fast mobile broadband to extremely demanding applications such as self-driving vehicles.

- **5G Charter.** A large number of telecoms sector players, innovative businesses and municipalities are collaborating on the basis of the 5G Charter to ensure the successful roll-out of 5G across the Netherlands. The parties are working to harmonise regional policies while sharing knowledge on opportunities, innovation and good practices.

Digital skills & inclusion (ensuring universal participation)

Digitisation is having a profound impact on jobs and the knowledge and skills we need to do them. This development will require major efforts to ensure and sustain inclusiveness and universal participation. Crucially, all citizens must learn basic digital skills at an early age and continue to develop their skills through lifelong learning. We will have to support vulnerable groups in this process. Various actions have been initiated in an effort to bolster digital skills and inclusion.

- **Primary education.** Education and business sector parties (including the PO Council, VO Council, Kennisnet and Nederland ICT) will be collaborating to implement the primary and secondary education digitisation agenda. The parties will be joining forces to improve digital skills amongst teaching staff and strengthen the education sector's innovative capacity, ensuring that pupils possess the skills required in the 21st century.
- **Social impact.** How do we define a healthy balance between online and offline? How is digitisation affecting our social interactions? Today marked the official launch of the 'Digital Society Alliance' , an event attended by Princess Laurentien of Orange, representatives of the business community, civic organisations and the Ministry of the Interior and Kingdom Relations**'.** The alliance will be focusing on digital awareness, skills and social impact. We aim to ensure that everyone can participate in modern society. This subject was discussed during today's civil dialogue, attended by over 100 participants from all age groups.
- **Lifelong learning.** The Smart Industry alliance will intensify its focus on digital skills. New lifelong learning modules and the active sharing of knowledge between field labs and regular and vocational education institutions should enable employees and entrepreneurs to improve their digital skills.

Digital resilience

Digital vulnerabilities are growing as a result of both career criminals and state actors engaged in industrial and political digital espionage. The following agreements have been reached in an effort to bolster the Netherlands' digital resilience:

- **Resilient organisations.** Members of the Cyber Security Alliance are working to safeguard the Netherlands' digital resilience. Amongst other initiatives, the Alliance will be testing organisations' critical core systems as a part of the TIBER-NL (Threat Intelligence Based Ethical Red Teaming) project. Parties interested in exploring the possibilities of the TIBER-NL project in greater detail are invited to contact the Cyber Security Alliance through its website *cybersecurityalliantie.nl/* (Dutch).
- **Cyber Innovation Hub.** The Ministry of Defence will be working with stakeholders to explore the options for a Cyber Innovation Hub where ministries, research institutions and businesses can collaborate on cyber security issues. This could involve scouting for relevant technologies, experimenting with promising market parties and developing methods for the more rapid implementation of new solutions.
- **In the classroom.** As a part of the effort to increase children's digital resilience, State Secretary Knops presented the first copies of 'Donald Duck explores the digital world' to the Children's Council today. The special edition will be distributed to all Dutch Donald Duck subscribers in April. The special edition is accompanied by a teaching package that enables primary school teachers to discuss new technologies and basic rights – for example freedom of choice, autonomy and privacy – with their pupils.

International engagement

Digitisation is an international development. Realisation of our ambitions and targets will thus require cooperation with European and other international partners, e.g. within the frameworks of the OECD and G20. This year will see the election of a new European Parliament and accession of a new European Committee. In light of these developments, it will be crucial to strategically promote the Dutch priorities at European level. In addition, the Netherlands and Germany will be intensifying their cooperation in the area of smart industry to ensure a more competitive and resilient SME sector.

Follow-up: towards a Dutch Digitisation Strategy 2.0

The digitisation of our economy and society requires a continually evolving strategy. These outcomes of the Digital Netherlands Conference represent an important first step in this development process. My colleagues and I will ensure that the contents of this document and all input gathered by the rapporteurs during conference sub-sessions are factored into the elaboration.

The government will subsequently submit the second edition of the Digitisation Strategy to the House of Representatives this summer. This document will describe the government's efforts to realise an innovative digital economy and society in collaboration with all stakeholders. After all, the successful digitisation of our economy and society will require a genuine joint effort.