

**The transition towards
a digital society:**

Policy recommendations and actions

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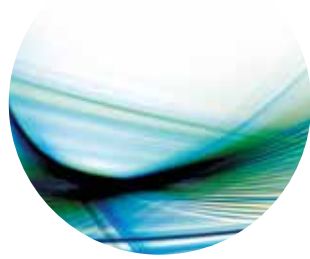
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Preamble

Digitalisation creates opportunities for increased prosperity, welfare and well-being. However, the digital revolution also intensifies existing challenges while simultaneously creating new ones. Realising its full potential, not only technologically but also socially and politically, will require an enormous effort. Digitalisation provides an unprecedented test of the strengths, resilience and agility of existing institutions (rules, procedures, processes, organisations, networks, institutions, culture ...). However, failure is not an option.

The starting position of Flanders is not bad. Flanders has a strong socio-economic fabric, innovative companies, a skilled and motivated workforce, efficient social services, etc. However, as digital developments occur swiftly, not falling behind is crucial. The decline of Belgium's position on the European Digital Economy and Society index 2018 is not the result of its own downturn or standstill but of faster progress in other countries.

A first task is therefore to create **awareness** of the opportunities and challenges that digitalisation entails and of the urgency of innovations and reforms. Today, not everyone is aware of what digital implies and what its implications are. Indeed, the digital economy differs fundamentally from classic economics and while many companies still think in terms of 'linear growth', the rate of change is rather exponential. The educational system faces huge challenges and the labour market is currently characterised by shortages (e.g. of ICT profiles, not just for tech companies but in just about every industry), transformations (from mapping 'people to jobs' to 'mapping skills to work') and threats to further polarisation (between groups with different level of education, remuneration, employability, distance to the labour market, ...). Regulation of data and online platforms require new (regulatory) concepts. Digitalisation requires nothing less than a social 'mind shift'.

Anticipating is a second challenge. Certain competences and skills will become more scarce in the future. Some individuals will be affected when it comes to their distance and access to the labour market. Monitoring tools, based on new types of information, indicators and parameters, need to be developed and improved to allow proactive responses to opportunities and to avoid/reduce bottlenecks in the labour market, in education, in the economy etc. Investments in knowledge building and dialogue with businesses, industries and social partners is needed to keep a finger on the pulse.

A third task is to increase **collaboration**. No actor on his own is capable of accomplishing the job transition, reskilling, digital ecosystem or internet-of-things challenges. Instead, mutual trust and intense collaboration must be supported among all sectors, between governments, social partners, employers, the self-employed, employees, knowledge and educational institutions, civil society organisations, governments, etc. Bundling and sharing information are key.

All societal actors have a crucial role to play, not in the least the government itself. The fourth and final challenge is therefore to initiate, stimulate and monitor concrete **actions**, and make sure that digitalisation remains high on the policy agenda. The digital transformation is a continuous process and so is the implementation, monitoring and adjustment of a comprehensive digital agenda. To steer the digital economy and society in the desired direction (i.e. towards more growth, inclusion and sustainability) policy choices must be made and initiatives taken.

The Flemish social partners aim to provide guidance and perspective while creating the right framework conditions for a smooth transition to a digital economy and society that ensure more welfare and prosperity for all. Therefore, in what follows, we present a set of policy recommendations that, on top of the previously published starting note and vision statement of the SERV, could form the basis for the necessary digital agenda for Flanders. The Flemish social partners strive for further dialogue about this topic with the Flemish Government and other interested stakeholders.



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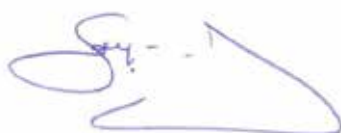
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01 / Introduction

In the SERV vision note 'The transition towards a digital society: a comprehensive policy agenda'¹ of 17 January 2018, fifty important building blocks were formulated within seven specific priority areas:

1. future-oriented skills and competences
2. a well-functioning labour market
3. adequate social protection and inclusion
4. infrastructure and regulation of data and platforms
5. innovation, entrepreneurship and organisational reform
6. modern public services
7. customised policies and legislation

The vision statement provides the general framework for a digital policy agenda. The recommendations and actions put forward in this note constitute an important step towards further concretisation of this vision.

The Flemish social partners postulate - given the current context, and within the Flemish competences and available means - the activities, policies and actions they believe are crucial to roll out during the coming months. They are complementary to their own activities as a representative organisation.

The policy recommendations and actions in this text are a snapshot as of today and are not exhaustive or static. For many recommendations, more elaborate studies or thorough reflection will be required.

In what follows, we first formulate a set of priority policy recommendations (section 2). Subsequently, in section 3, we discuss more extensively all of the (more than 100!) proposed policy recommendations and other actions within each of the seven priority policy areas mentioned above.

In the process of writing the recommendations, various experts and organisations have been involved, during expert roundtables, individual meetings, interviews ... Also, many experts have given feedback on earlier drafts of this note. Moreover, the SERV has participated in different workshops and seminars and has implemented the insights from several new reports since the publication of its original starting note and vision statement on digitalisation in 2017. The SERV would like to thank all experts and organisations that have participated in this process. Obviously, the Flemish social partners are solely responsible for the content of this note and have also worked intensively within their own organisations on the topic of digitalisation.

1 <http://www.serv.be/serv/publicatie/visienota-digitalisering-en-robotisering>



02 / Priorities

Digitalisation is a far-reaching evolution that evolves very rapidly. To be able to cope with the challenges it entails, a foundation of strong institutions and policies, well-functioning markets and effective mechanisms of social protection is required. In other words, Flanders needs to *'stand firm'*.

Second, digitalisation creates new opportunities to solve various societal challenges. A second policy strategy for Flanders is therefore to *'exploit'* the opportunities and new possibilities of digitalisation and target them towards more prosperity and welfare for all.

Third, we must not passively endure the impact of the digital revolution and technological evolutions. Instead, Flemish policies must steer developments in the desired direction and mitigate adverse effects. That is, *'steer and intercept'*.

In what follows, a set of priority policy recommendations are put forward for each of these three policy strategies: *'stand firm'*, *'exploit'* and *'steer and intercept'*. We will elaborate on them in section 3 and add further recommendations and actions in more detail. The numbers in the text refer to the numbered recommendations in section 3.

Priority recommendations and actions

Policy Strategy / policy issues	Education and training	Careers and the labour market	Economy and innovation	Services and government
<p>Stand firm</p> <p>what is (even apart from digitalisation) required to cope with new developments or changes?</p>	<p>Up-to-date education and training provisions</p> <p>monitor changes in skills and job requirements and swift implementation into education and training provisions</p> <p>sectoral collaboration and partnerships about skills</p>	<p>Future-oriented careers</p> <p>work-to-work transitions, career support with particular attention to (new) vulnerables</p> <p>a better and more competence-oriented matching of supply and demand in the labour market</p>	<p>Open innovation</p> <p>promote a strong collaborative culture within enterprises and between enterprises and research institutes</p> <p>stimulate living labs</p>	<p>Active government</p> <p>further introduce evidence-informed policy (e.g. through experiments and living labs)</p> <p>procurement committed to innovative products and services</p>
<p>Exploit</p> <p>how to exploit opportunities and new possibilities of digitalisation to create more prosperity and well-being?</p>	<p>Digital education</p> <p>invest in flexible learning, digital learning tools and digital infrastructure</p> <p>roll out an ambitious program for (re) training in ICT</p>	<p>Digital labour</p> <p>use digital tools for search behaviour, mediation and recruitment</p> <p>promote workable work with new technologies and workplace innovation</p>	<p>Digital economy</p> <p>support the implementation of digital technologies in SMEs</p> <p>use digitalisation as an opportunity for companies to internationalise</p>	<p>Digital services</p> <p>achieve more inter-governmental digitalisation projects and draw up a Flemish smart city strategy</p> <p>use digitalisation as leverage for well-being and health</p>
<p>Steer and intercept</p> <p>how to steer developments in the desired direction and mitigate adverse effects?</p>	<p>Learning culture / lifelong learning</p> <p>evaluate, reform and complement training incentives</p> <p>promote learning-oriented workshops</p>	<p>Complementarity / creating win-wins</p> <p>realise co-creation of new technologies</p> <p>regulate new types of work</p>	<p>Economic regulation</p> <p>create an adequate regulation of infrastructure and data platforms</p> <p>use economic tools and R&D policy to drive innovation</p>	<p>Digital access</p> <p>guarantee e-inclusion and digital access</p> <p>develop a master plan for a digital top infrastructure</p>

02.1 / Stand firm

Up-to-date education and training

The SERV asks for a permanent screening of the changes in skills, job requirements and professions and for the swift translation of these observations into education and training supply, into sectoral cooperation agreements concerning competences and into mediation and matching initiatives by labour market intermediaries (5-9). Digital literacy should be an integral part of the policy agenda (15, 35) and concerns the development and maintenance of digital skills among students, employees, independent contractors, managers and job seekers.

The SERV plans to organise consultations with stakeholders from education and training about how to ensure that their offer can be better aligned with the challenges posed by digitalisation and can be more adapted to (working) adults.

Future-oriented careers

The SERV wants shape careers for the future by evaluating the current policy instruments for job-to-job career transitions and by taking measures to improve the matching of supply and demand on the labour market (25, 28, 29). Particular attention should be given to the retention of new vulnerables in society and to reduce marginalisation of specific groups on the labour market (44).

The SERV plans to develop a long-term vision and strategy for both career policy and education and training policy based on an open debate on sustainable employability and reshaping future careers.

Open innovation

The SERV recommends that the Flemish Government supports the development of a strong culture of collaboration within enterprises and between enterprises and research institutions (72-74). The SERV also believes that more living labs should be created to develop, test and implement new digital technologies and applications (76). Also, when developing and introducing new technologies, employee involvement is a crucial factor of their successful implementation (4, 31, 71).

The SERV plans to consult about living labs and open innovation ecosystems and bring together all Flemish cluster managers to discuss a reinforced (inter)cluster collaboration.

Active government

The SERV supports policies that enable experiments and experimental legislation in various areas (health, energy, mobility, FinTech, cyber security, smart cities ...) (99-100). The government should also take up its role as a purchaser of innovative ICT products and services (i.e. innovative procurement) and as a provider of digital services to citizens and businesses (101-104).

02.2 / Exploit

New ways of learning

The SERV requests that education and training institutions invest more in new types of learning (project-, demand- and problem-based), in digital and flexible ways of learning and in (digital) infrastructure (12, 14, 16). Democratic access, both financially and physically, to learning material must allow sufficient and inclusive acquisition of digital skills. An ambitious program is needed for (re)training workers, job seekers, IT professionals and teachers with the required (IT) skills (18, 20-22).

Digital labour

The SERV recommends the development and support of new digital technologies that facilitate search behaviour, mediation and recruitment (27) and the dissemination of information (career support package) (26) but also to further explore the opportunities and risks of digital technologies for working conditions and workable work (32).

In the implementation of its action plan 'Workable Work' the SERV plans to investigate (through its Foundation Innovation & Work) the link between digitalisation and innovative organisation of the workplace.

Digital economy

The SERV asks the Flemish Government to continue supporting SMEs in implementing digital technologies (78, 79), to develop an adequate privacy and cyber security policy (48-49) and to use digitalisation as an opportunity for internationalisation (80). This implies, in addition to awareness raising and promoting an entrepreneurial-friendly ecosystem (66-68), paying attention to employee involvement, setting-up actions such as providing test facilities (78), organising partner matchings with technology suppliers, setting-up demonstrations and implementing new technologies through pilot testing, coaching, financial support (including new techniques such as FinTech, crowdfunding, credit unions ...) (69), ...

The SERV plans to study how companies design their products, production processes and business models in the context of digitalisation and innovation within the opportunities offered by industry 4.0. It will focus explicitly on the impact on work organisation, privacy, working conditions and workable work.

Digital services

The SERV asks that the Flemish Government creates the conditions for an ambitious digital government to ensure more decisiveness and impact (via e.g. a digitalisation test, the use of digital applications for inclusive services, administrative simplification and interactive policy formulation) and more intergovernmental cooperation (joint digitalisation projects, support for the professionalisation of local IT-policies ...) (82-90). In addition, digitalisation should be used as a leverage to improve health and well-being and reduce poverty and inequality (38-43).

The SERV plans to advise on how smart cities can be supported and promoted by the Flemish Government.

02.3 / Steer and intercept

Learning culture / lifelong learning

In collaboration with the Flemish Government, the SERV wants to roll out incentives for workers and supporting policies for lifelong learning and 'learning while working' as foreseen in the VESOC²-agreement 'Reform of training incentives for employees' of 11 July 2017 and to continuously assess this reform and adjust where necessary (1). More specifically, the Flemish social partners want to provide structures and incentives that stimulate a true learning culture and foster lifelong learning and learning while working in Flanders (2-4).

The SERV plans to examine how the motivation for lifelong learning can be boosted and how participation in education and training can be increased (3). Related issues are the further optimisation of existing training incentives for employees, job seekers and employers and the promotion of an appropriate organisational culture, organisational models and management practices that support learning-oriented workplaces and learning while working (4).

Complementarity / creating win-wins

The SERV asks the Flemish Government to stimulate more intense collaboration between technologist / industrial scientists and social / human scientists and to organise the debate on the ethical and social impact of new technologies (105-107). It should be ensured that new forms of organisation and atypical working arrangements as a result of digitalisation, such as flexible contracts, agency work, labour pooling, shared workspaces, project work ..., are reconciled with qualitative employment, sufficient social protection and career security (30). The basic principle should be that the benefits of digitalisation must be shared by both employers and employees. Therefore, joint consultations are crucial. Moreover, a sectoral approach is equally important, as the impact of digitalisation may vary greatly by industry.

The SERV plans to gather information and feed the debate on new forms of labour organisation and atypical (more flexible) working arrangements. Moreover, based upon a study by its Foundation Innovation & Work, the Flemish social partners will explore the opportunities of 'good principalship' in employing an external flexible workforce.

Economic regulation

The SERV recommends to develop a master plan for a digital top infrastructure (54) and to ensure adequate control of data and a level playing field within the platform economy, with particular attention to the risks of market concentration and the so-called legal and fiscal grey areas (57-59). Both the regulatory framework and the regulators within network industries itself must be adapted to digitalisation and pay attention to the potential dualism that might exist between active and inactive (vulnerable) users (55-56, 61-63). Economic support instruments, R&D policies and other funding mechanisms should be streamlined in order to create sufficient critical mass and steer developments towards solving societal challenges and realising specifically determined goals (70-71). This is crucial to create complementarity and win-wins for both enterprises and employees.

The SERV plans to develop further recommendations on the management and regulation of (energy) data and market roles within a digitalised energy sector. Moreover, the SERV will consider the question of how smart distribution can contribute to the sustainable development of e-commerce.

Digital access

The SERV invites the government to develop a comprehensive policy package focussed on e-inclusion (33) in addition to the adoption of measures to improve digital access for all citizens and businesses (36). All digitally offered public services should be consistent and clear to citizens and businesses, regardless of policy level or domain, and should also take into account those who are less digitally literate (34). Inclusive digital access requires further substantial efforts. In addition, the government should take (well-coordinated) initiatives to create a digital and smart top infrastructure (55).

The SERV plans to organise a day on e-inclusion involving various experts and stakeholders.

2 VESOC is the Flemish Economic and Social Consultative Committee. In addition to the advisory role, the SERV also supports and assists the trilateral discussions between trade unions, employer's associations and the Flemish Government within VESOC. Consensus agreements closed in VESOC are binding for the Flemish Government, while social partners participate in their implementation.

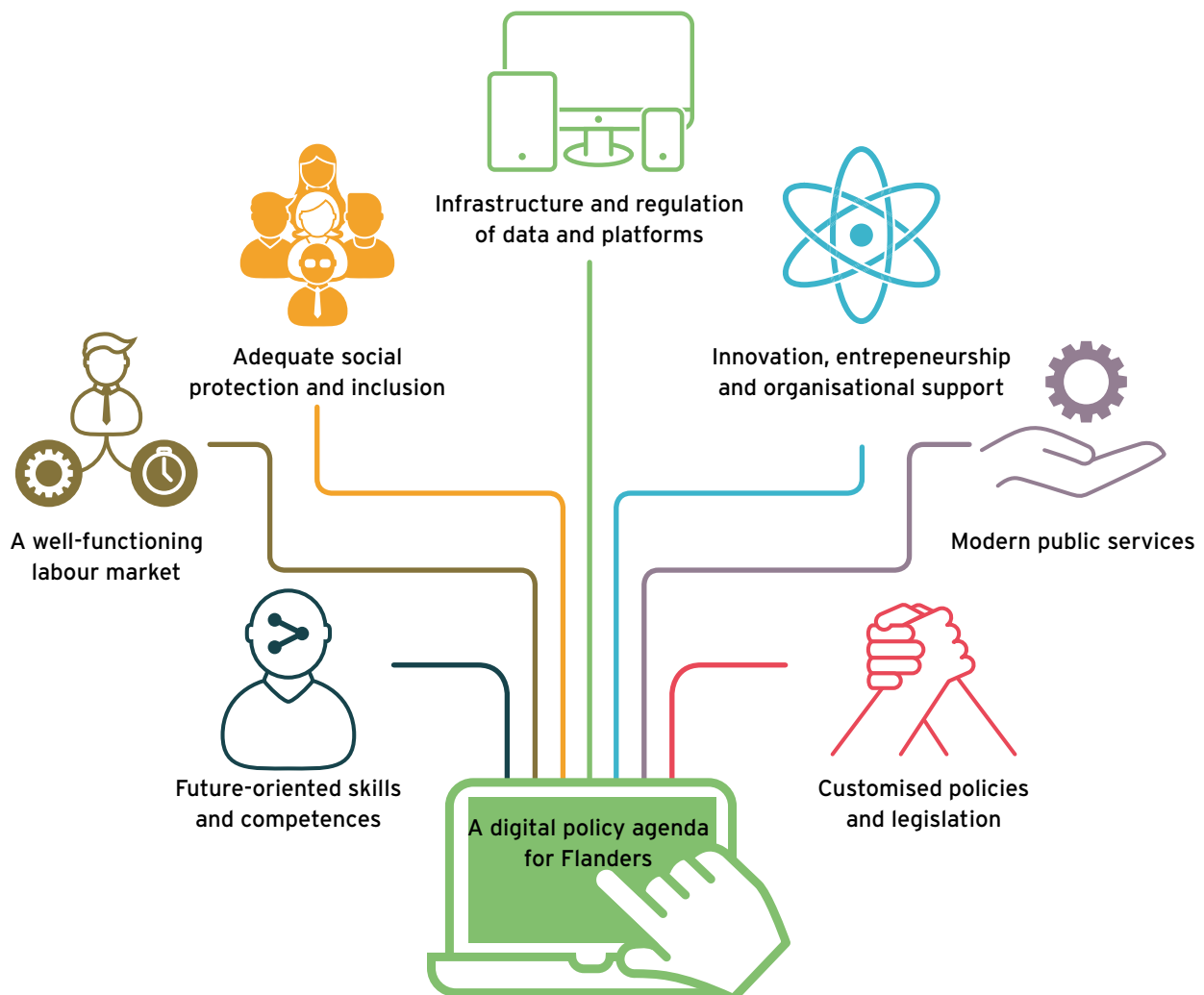


03 / Recommendations and actions

The policy recommendations and actions that are discussed below further elaborate on the abovementioned priorities. As mentioned before, they can be allocated to one of the seven policy domains set out in the SERV vision statement on digitalisation. All recommendations are addressed to the Flemish Government, while all actions are initiatives the SERV itself plans to take in the future on behalf of the social partners (in terms of consultation, advice and research). These actions complement the initiatives in which the Flemish social partners are already involved. For every action below, we explicitly make the link with the building blocks from the SERV vision statement.

Several recommendations are new and go beyond existing policies. Others are more consistent with current policy or (recently) announced initiatives. As to the latter, it was nevertheless important to list them as developments such as digitalisation reaffirm their importance and increase the urgency for their assessment.

The policy recommendations and actions in this text are a snapshot as of today and are not exhaustive or static. For many recommendations, more elaborate studies or thorough reflection will be required.



03.1 /

**Future
oriented
skills**



Future oriented skills

A learning culture focused on lifelong learning



A proactive response to changes



Responsive education and training institutions



ensure

structures and incentives that promote a culture of learning, lifelong learning and learning while working

permanent monitoring of changes in skills, job requirements and professions that may or will occur in the medium-run in various sectors in order to anticipate and translate them into policy and practice

education and training institutions that invest in the skills of the future, new forms of learning, digital learning tools, (digital) infrastructure, a flexible offer for adults and democratic access to learning materials



recommendations

- take steps to implement the VESOC-agreement on 'reforming employee training incentives'
- seize the OECD skills strategy review as an opportunity for the development of a shared vision on learning
- evaluate and improve training incentives so that learning motivation and participation increase
- encourage learning-oriented workplaces

- forecast future sectoral skills requirements
- integrate digitalisation in all sectoral covenants
- link skills to clusters
- translate forecasts of needs and bottlenecks more swiftly into updated job qualifications and education and training programs
- learn from and disseminate good practices in skill forecasting and their translation into training and work
- involve the regional level
- develop a common vocabulary and new indicators

- provide flexible educational / training opportunities for adults
- realise more intersectoral collaboration in training
- continue to implement dual education and learning while working
- develop a skill guarantee
- enable new and non-conventional forms of learning and education
- establish a knowledge centre for digitalisation and training
- increase the level of ICT-courses in compulsory education
- invest in (digital) infrastructure
- develop an ambitious program for training in ICT
- (re)train teachers
- increase the offer of specialized ICT/AI-courses in higher education
- intensify the STEM-agenda.
- invest in 'soft skills'

Develop a learning culture focused on lifelong learning



what?

In collaboration with the sectoral actors, the government must develop a learning culture focused towards lifelong learning.

why?

The impact of digitalisation on citizens' competences are huge. Continuous training is, not in the least for adults, increasingly essential to remain employable throughout careers, develop new skills and facilitate the switch to other professions or jobs. Employees should be able to stand firm. This is not only a task for the companies and their employees themselves, but also for job seekers, employment services and vocational training centres. Internationally, Flanders does not score well on this aspect: according to the latest figures, less than 50% of Flemish adults (25-64y) participated in formal or non-formal learning in the 12 months preceding the PIAAC-survey. In other comparable countries, this indicator is about 25%-points higher. Moreover, the intrinsic

motivation to follow training is lower than in most other countries. Labour market-oriented training/education remains important, but so is the development of a learning culture through creating awareness and providing incentives. Creating such a culture of learning will require intensive consultations and debate and coordinated initiatives by all stakeholders. Research and good practices should clarify the right conditions to learn. A specific challenge lies in the creation of skill-intensive workplaces within organisational and job conditions that facilitate learning while working and that enable individuals to maximally develop and deploy their talents. Finally, SMEs require specific attention on this aspect.

recommendations

1. Take steps to implement the VESOC agreement of 11 July 2017 on 'reforming employee training incentives'. With this agreement, the Flemish Government and the social partners focus on developing coherent policies on market-oriented training for workers. The goal is both to reform the existing training incentives for employees and to build awareness and enhance the learning culture through the use of, for instance, learning coaches.
2. Seize the OECD skills strategy review as an opportunity for the development of a shared view on learning ('learning is worthwhile') and new insights for future policies. The ongoing OECD review skills strategy for Flanders is an opportunity to continue the dialogue on how to best support lifelong learning in light of the challenges posed by digitalisation. This dialogue should lead to general awareness of and consensus on a strategy for developing the skills of the future, the development of a learning culture and lifelong learning.
3. Evaluate and improve training incentives so that learning motivation and participation increase. The monitoring and evaluation provisions that are part of the previously mentioned VESOC-agreement have to be complemented with social dialogue on how to encourage learning motivation and participation in education and training both through existing and new incentives for businesses, entrepreneurs, workers, job seekers and specific vulnerable groups. The aim is to further develop knowledge and take measures to stimulate workers, jobseekers and employers to invest in the permanent upgrading of their knowledge and skills. One possibility that deserves attention is a replacement income or financial incentive when training is followed, especially when this means a temporary reduction in hours worked. Awareness creation, and providing sufficient information, time and resources is key, as is tackling psychological and social barriers that affect learning motivation. Behavioural insights can help to overcome certain psychological thresholds and increase awareness of the importance of investing in one's future labour market position.
4. Encourage skill-intense workplaces. The workplace is often the most important and effective place for learning. Results from existing studies should be combined to better identify the organisational culture, models and management practices that are best suited to answer the challenges posed by digitalisation but also to discover the organisational factors and good practices to create skill-intense workplaces. Employee involvement is crucially important to ensure that workers support and add value to the strategic changes within companies, also when it comes to education and training. Employees will be more motivated if they are involved in an early stage in decisions about when and what to learn.

building blocks vision statement

- 8** Provide strong incentives for businesses and renew organisations to develop and use skills and competences
- 34** Ensure sufficient involvement of employees
- 37** Commit to innovative organisational change



what?

Governments and stakeholders must screen and monitor the changes in skills, job requirements and professions and make sure these are taken into account in education and training offers, sectoral cooperation agreements concerning competences and in mediation and matching initiatives by labour market intermediaries.

why?

The pace of the digital revolution limits businesses and organisations to predict the skills of the future. Many competency and skill forecasts either focus on niche activities or study generic competencies. Most do not lead to sufficient valorisation. The monitoring of changes in required

skills should hence be organised differently than today. Anticipating on future developments in various industries should add to better competence matching and better suited education and training supply.

recommendations

5. Forecast future sectoral skills requirements. International studies have indicated general macro and/or meso trends but are not always applicable to the specific context in Flanders. Similar studies, that focus specifically on Flanders, should be initiated jointly by industries and stakeholders. Creating the right synergies is also a responsibility of the government and the social partners. Firms should supply the required information needed by industries or the government to make these projections. Through cooperation and information exchange, businesses and industries get more insight into future challenges. Web crawling- and big data analyses can also be applied (cf. Europass). All research results should be actively disseminated.
6. Integrate digitalisation in all sectoral covenants. Industry organisations play an important role in the Flemish labour market. Through sectoral policies, Flemish social partners have committed themselves to shape the Flemish labour market policies. Sector covenants are intended to develop a vision on the sectoral realities, challenges, trends ... and on the future direction of the sector. 'Digitalisation' should explicitly be included in these vision statements as one of the major challenges of the future, especially when it comes to changes in required skills and competences.
7. Link skills with clusters. Spearhead clusters, innovative business networks and strategic research centres mainly focus their activities on innovation and less on skills. Moreover, education and training actors have too little contact with innovation actors. These two networks should be brought together more structurally. The recent initiatives of the WSE and EWI departments to link both worlds through skills forecasts at the level of a cluster or an innovative business network deserve further attention. Important from a methodological point of view is that, from the start, a steering committee is founded in which all relevant partners (education, VDAB, SYNTRA, social partners ...) together develop an action plan.
8. Translate forecasts of needs and bottlenecks faster into qualifications and subsequently update education and training programs. Professional qualifications should be less detailed, more forward-looking, more easily transferable to training programs (for part-time training) and more useful for companies' HR policies. They should encompass soft skills, competences and non-technical skills and should also be updated regularly (every 5 years, for instance). The speed at which changes occur in education and training programs should be sufficiently high and they should be tailored to the dynamics and changes observed in the labour market. Intense contacts between educational institutions and the business community can help clarify the difference between 'what to learn in education' (basic knowledge) and 'what to learn in the company/while working'.
9. Learn from and disseminate good examples of skills forecasting and their translation into training and work. A culture of learning (for individuals, but also for organisations and businesses) must be developed bottom-up. A first step may be to learn from various local and (inter)sectoral initiatives and disperse them to other regions or industries. (Inter)sectoral and small-scale initiatives can be expanded or scaled-up.

10. Involve the regional level. The labour market is mainly organised regionally. In strengthening lifelong learning, sectoral initiatives and regional infrastructure can act as catalysts. To strengthen the coordination between employment and education at the regional level, a stronger (sub)local dialogue between education and training institutions, the social partners and local authorities is required. Various interregional projects can act as good practices.
11. Develop a common vocabulary and new indicators. Proper monitoring requires sound definitions that include new developments. The traditional terms low-, medium- and high-skilled are no longer sufficient for monitoring. This observation can be generalised: several statistics and indicators should be revised or supplemented as many traditional parameters no longer suffice.

building blocks vision statement

- 1 Invest in skills forecasts
- 6 Promote partnerships

Responsive education and training institutions



what?

Education and training institutions should proactively and appropriately align their offer and methodologies to digitalisation both throughout initial education and for lifelong learning.

why?

Digitalisation implies major shifts in required competencies (what needs to be learned), in learning and teaching methods, in the interaction between education professionals and students (how, when and where), and in learning needs (how much and who). Education must take the lead in (re-) education, (re)training and lifelong learning. The effect of school drop-outs, illiteracy and inadequate skills of school-leavers will have a more pronounced impact on the possibility of good matching between education, the labour market and society. Digitalisation also increases the need for a learning

culture focused on lifelong learning. In addition to the 'normal' students, (working) adults must also be addressed by adequate teaching approaches, courses offered by colleges and universities. Two challenges can be identified: (i) ensuring inclusive participation and (ii) ensuring that the education institutions are sufficiently flexible to cope with changing skill requirements. The education system faces an enormous task, often heard as followed: 'if we teach today's students as we taught yesterday's, we rob them of tomorrow'. In addition, sectoral and training funds also have an important role to play.

recommendations

12. Provide adults with flexible education and training opportunities. To encourage adults to evolve permanently, the formal training supply must be sufficiently flexible and demand-driven. Customised learning trajectories based on modern techniques such as online courses, combined learning and working and personal guidance, must add to the attractiveness of adult education. Universities and colleges should also be encouraged to focus more on working adults and working students and provide a specific offer for these target groups.
13. Realise more intersectoral collaboration in training. Each sector has its own dynamics but many problems are cross-sectoral, such as the limited number of entrants into technical training. Promotion and upgrading of technical subjects, both in secondary and higher education as in vocational training for workers and job seekers, is crucial. In addition, existing technical training offers must be better aligned. Intersectoral collaboration is also needed to support broad competence investments that facilitate shifts between companies and sectors.
14. Continue to implement dual education systems and workplace learning, also in higher adult education. Support internships and training of young individuals in companies and especially SMEs.
15. Work on a skill guarantee to ensure that children and adults acquire the necessary basic skills (including basic digital literacy and so-called '21st century skills') and provide educational and/or professional qualifications that guarantee functional (digital) literacy, even in professional (BSO), technical (TSO) and primary education. In the training offer for jobseekers, digital skills should also be more present. The VDAB must ensure access to the necessary technology and equipment to acquire those skills. The skills guarantee must thus also be extended to jobseekers.
16. Enable new ways of learning and non-conventional forms of education. Examples are project-based, demand-driven or problem-based learning, intensive short courses, flexible forms of learning and training methods with a greater focus on creativity, teamwork, cooperation and self-learning. A retraining program for teachers is also needed, along with its integration into teacher education.
17. Establish a knowledge centre for digitalisation and learning. In the next 10 to 15 years we can expect major changes in the way we learn, but also in what, when and where we learn. We foresee a future in which technology plays a prominent role within education (EduTech). However, as there are still many

uncertainties, additional knowledge creation and capacity building is required. Digitalisation in/of education is not a goal in itself but can help to achieve better educational outcomes and grades.

18. Increase the quality of ICT-courses in compulsory education. Data literacy, understanding algorithms and privacy literacy are just a few examples of skills which are increasingly important within a data-driven society. These constitute key competences for the future. Coping with technology will be necessary for everyone as all future jobs will encompass an IT component. The most widely used languages worldwide will no longer be English or Chinese, but universal programming languages such as Java, C, Python ... IT and programming thus are become crucial. Also, IT education should become less tool-oriented and more competence-oriented to ensure that the underlying skills are better developed.
19. Invest in (digital) infrastructure (with particular attention to special needs education, SNE). Democratic access (financially but also physically) to learning materials is needed to acquire sufficient digital skills in compulsory education and to learn how to function in a digital society. This includes infrastructure sharing (e.g. via 'Bring-Your-Own-Device', BYOD) with a focus on including those with lower income. Also, school material that needed to achieve final attainment levels should be free of charge. Companies should be encouraged to work together with schools and libraries. Schools and other public institutions should be encouraged to make their facilities (freely) available for digital skills training.
20. Develop an ambitious program for continued training in ICT. ICT profiles are scarce. This is not only true for pure tech companies but holds in about every industry. Digital technologies arise in every sector and the lack of appropriate ICT profiles limit company growth and risk soon to become the biggest threat to economy growth. Even today, basic digital skills are important for most jobs. Job seekers and employees need to be trained to ensure sufficient digital skills that are linked to professional digital needs. An ambitious program for training in ICT is therefore needed. Part of the ambition should be to educate (inactive, unemployed and employed) people for vacant digital jobs through internships or traineeships, dual education systems and short-term training programs. The number of programs for lifelong learning aimed at IT professionals should be increased and better attuned to new needs such as data-driven science and cyber security.
21. Focus on training and retraining of teachers. Ambitious programs that focus explicitly on teachers must be developed and incentives for participation must be created. Examples are 'train the trainer', peer learning, coaching, communities of practice, etc. Technical experts from IT-companies can be involved in the preparation of the courses and educational material.
22. Increase the offer of specialized ICT/AI courses in higher education. Training in AI is a condition to develop a new generation of researchers, developers and trainers. Demand for AI developers is high. The use of (research in) AI is interdisciplinary and concerns computer science, mathematics and human sciences (logic, linguistics, psychology). Training in the technical aspects of AI takes several years to complete and as AI evolves very quickly, continuous training is necessary. AI is already present at all Flemish universities, but mainly in individual courses and as an optional subject. Compared with, for instance, the Netherlands, the possibilities offered in Flanders are much more limited.
23. Intensify the STEM agenda and teach technical courses, also as a part of non-technical curricula and in leisure activities. Particular attention should be given to scientific and technical fields of study that offer considerable opportunities for finding a job. Still, too few young people opt for STEM curricula. Improvements are possible, especially when it comes to the inflow of immigrants and girls. In addition, technical education should be promoted, and its attractiveness increased, not only for young people but also for their parents. Currently, students and their parents focus too much on short-term valorisation of a study program and too little on the impact on total career possibilities. STEM initiatives can be better coordinated and must also be promoted to job seekers. In addition, technical skills should also be part of non-technical directions and supported in leisure activities. The cross-fertilisation of technical skills in other (non-technical) sectors such as health, nutrition, sports, etc. are large and have a great impact on the environment (i.e. labour organisations, work planning ...). Demand for knowledge and skills in applying technologies within non-technical professions increases. STEM-related leisure activities / technical academies / camps can also enthuse young individuals.

24. Invest in soft skills (STEM+). In addition to pure knowledge, learning how to learn is of paramount importance and should receive attention in all education and training. Lifelong learning should be encouraged in education itself. Innovation, creativity and interpersonal skills are crucial. So is STEM+: Science, Technology, Engineering and Mathematics but also Self-development of individuals (acquiring knowledge flexibly, autonomy, responsibility ...), Teamwork, Entrepreneurship and Mediation (transfer of knowledge, consultations, transparency ...).

building blocks vision statement

- 2 Strengthen key competencies and develop new skills
- 3 Promote new forms of learning in order to learn while working and work while learning
- 4 Encourage learning throughout the career
- 5 Focus on informal learning and improve accreditation of prior learning
- 6 Promote partnerships
- 9 Innovate and invest in future-oriented training infrastructure

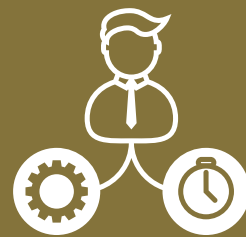
actions

The SERV plans to:

- collaborate with the Flemish Government to implement incentives for workers and supporting policies for lifelong learning and combined learning and working as foreseen in the VESOC-Agreement on 'reforming employee training incentives' of 11 July 2017 and continuously assess this reform and make adjustments where necessary;
- investigate and study specific topics and ideas in more depth, such as existing and new training incentives and incentives for learning motivation for businesses, entrepreneurs, workers and job seekers and for specific vulnerable groups; a commitment to achieve full employment and to guide and retrain job seekers; support training participation ...
- organise consultations with education and training institutions on the development of the education and training offer to better take into account digitalisation and adapt the offer to (working) adults;
- actively participate in the OECD skills strategy review for Flanders and prepare a publication with inspiring practices in companies and organisations;
- focus, in addition to the use of competences (ICO 2020), also on digitalisation in the results of the Enterprise Survey 2018 conducted by the Foundation Innovation & Work, and explicitly put the emphasis on skill-intensive workplaces and workplace innovation;
- use existing research results, including the findings and conclusions of the study 'Learning culture and learning processes in companies and organisations' performed by the Foundation Innovation & Work, when rolling out the supporting policies of the VESOC-agreement on 'reforming employee training incentives' of 11 July 2017;
- follow-up on the existing competency forecasts and monitors, and on the programs that support these forecasts (VLAMT, VIONA, ESF, SCOOP), and develop recommendations on the types of forecasts that have the highest value added (e.g. ROA report);
- advise on dual education systems in adult and higher education, on PAC and PAQ, on guidance for the educational career and on the funding mechanisms of higher education.

03.2 /

A well
functioning
labour market



A well functioning labour market

Future-oriented careers



Qualitative employment and career security for new work types and formulas



Organisational change and workable work



ensure

assessment of policy instruments for job-to-job career transitions and steps to facilitate the matching of supply and demand on the labour market



reconciliation of new organisational and atypical (more flexible) working arrangements with qualitative employment, social protection and career security and respect for labour rights



further research into the risks and opportunities of digital technologies for organisational changes and workable work



recommendations

- support job-to-job-career transitions
- develop a career support package and ensure its digital management
- use data analyses for a faster, more efficient and effective matching of supply and demand on the labour market
- take further steps in competence matching and recruitment
- ensure the recognition of skills and competencies

- consult with the federal government to achieve the highest leverage effect

- include changes in labour organisation when assessing skill forecasts
- promote workable work via new technologies and labour organisation



what?

The government and the social partners should ensure that careers are oriented towards the future so that workers, businesses and the inactive population can gain from digitalisation.

why?

Digitalisation reinforces the need for both (i) policies eliminating bottleneck vacancies and labour market shortages in the short term and (ii) a long-run vision and strategy on careers, education and training. Shaping future-oriented careers requires space for timely, i.e. preventative, (re)training and further training to anticipate potential opportunities and avoid unwanted career transitions. In addition,

job-to-job career transitions must be supported. As employees move more frequently between jobs or employers, or even move towards entrepreneurship, the relevance of supporting such career transitions increases. This concerns both labour mobility within and between industries. When jobs are lost, smooth and sustainable re-employment is essential.

recommendations

25. Support job-to-job-career transitions. Career thinking should be implemented starting from initial education. Current policy instruments (including career counselling cheques, outplacement, time credit or career breaks, education and training for workers) should be evaluated on that goal. In case of job loss, targeted coaching and guidance to bottleneck vacancies must be initiated.
26. Develop a career support package and ensure its digital management (see Jobs Pact and action 20 of the SERV action plan on 'Workable Work'). Workers must take charge of their own careers. For this, they require an overview of all the measures that can be used for support, reinforcement and reorientation of his or her career. This career support package should be embedded within a digital environment, such as 'My Career' (VDAB) or a digital counter.
27. Use labour market data analysis for a faster, more effective and efficient matching of supply and demand on the labour market. New technologies such as big data, artificial intelligence or gaming, support and facilitate user search and recruitment. Analysing and combining data (on competences in vacancies and jobseekers, on training, from competency forecasts ...) can allow faster responses to changing requirements and developments. For example, data mining and monitoring recurrent skill demands in vacancies can help to develop VDAB services. Respect for privacy however does remain key.
28. Take further steps in competence based matching and recruitment. There is a structural mismatch between the qualifications and skills of jobseekers on the one hand and the skills demanded by employers on the other. These differences reflect structural weaknesses in professional and educational choices (see above) but possibly also reflect the high demands of employers when it comes to the qualification level in comparison to the companies' growth potential or real needs. Conversely, the potential of existing employees is often neglected (retraining, internal mobility). This limits opportunities of those with good skills and is difficult to justify in an increasingly tight labour market. We must therefore develop a culture (and adapt legislation) in which recruitment or promotion are based more on competences and less on certificates or diplomas. The focus on degrees is especially pronounced in government, the healthcare and the social profit sector. Awareness campaigns (such as the 'Good Recruitment Campaign' in the UK) can help shift recruitment criteria, job descriptions and selection procedures, etc. The 'Working with Competences' program of VDAB that is currently being developed is consistent with this and could ensure a more qualitative mediation and matching.
29. Ensure the recognition of skills and competences. The recognition and certification of skills and competences should not stop at graduation but must continue throughout the whole career. The visibility of acquired competencies and skills must be increased which could help simplify job-to-job career transitions. This is a shared responsibility of educational institutions, employment agencies, employers and employees. A specific idea could be that in case of termination of employment, employers do not only mention the cause but also the competences and skills acquired by the employee during employment. There is also a need for a transparent and open framework for previously acquired competences (PAC)

and previously acquired qualifications (PAQ) which could accommodate the demand for greater flexibility in shaping own learning programs. Digitalisation can, for instance through various apps, play a role in the validation or certification of competences.

building blocks vision statement

- 13 Shape careers of the future
- 14 Ensure smooth and sustainable career transitions
- 15 Develop, attract and retain talent

Qualitative employment and career security for new work types and formulas



what?

The government and the social partners must ensure that new forms of organisations and atypical (more flexible) working arrangements as a result of digitalisation can be reconciled with qualitative employment, career security and respect for labour rights.

why?

Digitalisation creates new types of work (through digital platforms, networks, horizontal structures) and accelerates the use of new collaboration and working arrangements (flexible contracts, agency work, pooling of labour, shared workspaces, working crowd, project work ...). In addition, we observe an increased cooperation with freelancers and independent service providers. Labour is much more hybrid than before. These developments put pressure on existing social achievements, create

new questions (with respect to responsibilities and liabilities, for instance) and present a challenge to the existing social model. All types of work require sufficient social rights and securities. An adequate regulatory framework is needed to ensure qualitative, sustainable and stable employment. We must analyse how new types of work and atypical working arrangements may offer opportunities for the people who have a larger distance to the labour market.

recommendations

30. Consult with the federal government to achieve the highest leverage effect. Determine an appropriate policy based on own studies, consultations and discussion (see below). When it comes to Flemish competences, the government could explore the idea of training commitments for all workers, regardless of their legal status.

building blocks vision statement

- 12 Reconcile the diverse range of new and atypical types of (flexible) work with sustainable and qualitative employment



what?

The government and the social partners should encourage the necessary organisational innovations and deploy digitalisation to optimise workability.

why?

Digitalisation entails the emergence of new organisational models in companies and organisations. New technologies allow for more autonomy, participation and self-direction, lead to more customer- and project-oriented organisational structures, require different management skills, etc. A policy commitment to organisational renewal is needed, as is the presence of certain organisational characteristics and management skills that will become increasingly important in the near future. International comparative research shows

that Flanders is not among the best performing countries in these areas. Digitalisation can also have a positive impact on working conditions as it may lead to more autonomy and less stress and can reduce the amount of physically demanding, dangerous and repetitive work. Technology can thus make it feasible for people to work longer. But digitalisation might as well turn out negative for workability. We need to be vigilant and develop active policies to ensure new technologies add to more workable work.

recommendations

31. Include changes in work organisation when assessing skills forecasts. In skills forecasting, it is important not only to focus on the changes in skills or required competencies but also on the changes in work organisation. When implementing specific actions (such as the so-called 'Factories of the future'), innovations in labour organisation must also be considered.
32. Promote workable work via new technologies and workplace innovation. Digitalisation must be at the service of people, which means that technology should lead to better working conditions with a focus on complementarity and adaptive automation. The SERV action plan on 'Workable Work' can form a basis. In its implementation, the link between digital and technological innovations on the one hand and better working conditions on the other, needs further investigation. Measures should be taken to implement workplace innovations within companies. This includes disseminating knowledge on how workplace innovation contributes to better working conditions (e.g. via the digital platform werkbaarwerk.be as a central information point).

building blocks vision statement

- 11 Use digitalisation to optimise welfare, well-being and workable work

actions

The SERV plans to:

- develop a long-term vision and strategy for the Flemish career, education and training policies based on an open debate about issues such as labour mobility, job transitions between industries, sustainable employability and reshaping careers and working (with e.g. more alternation between work and learning, more space for (re)training, the balance between work and leisure, ...);
- investigate, via the Foundation Innovation & Work, the link between digitalisation and new workplace innovation in companies and organisations (cf. implementation of the action plan 'Workable Work');
- gather information on qualitative employment and career security for new forms of employment based on literature research, case studies and comparisons with other countries. The SERV plans to exchange experience and knowledge with foreign social partners in its ongoing ESF-project 'Social partners on the digital fast track';
- explore the opportunities of 'good stewardship' in employing an external flexible workforce, based upon a study by the Foundation Innovation & Work. A potential 'code on good stewardship' could include the mutual relations and working arrangements between hiring managers and external suppliers of flexible labour, or, alternatively, the way in which a company or organisation employs external personnel;
- facilitate an open debate on the possibility of a code of conduct that could lead to clear rules either in work regulations or in contracts when employing internal flexible employment, in terms of schedules, homework, adjustments of contracts, fees, implementation of CAO39, connectivity, etc.;
- based on this input, initiate and feed the policy debate on the appearance of new forms of work and working arrangements.

03.3 /

**Adequate social
protection and
inclusion**



Adequate social protection and inclusion

E-inclusion and digital access



Digitalisation as a leverage for welfare, health and social protection



Protection of (new) vulnerables



ensure

a full-fledged e-inclusion policy and measures to ensure digital access for all

more welfare, health and social protection, through reuse of data and automatic entitlement of certain rights, health literacy, reduction of health inequality and healthcare sector digitalisation

sufficient policy attention to (new) vulnerables



recommendations

- provide a full-fledged e-inclusion policy
- develop digital services and e-inclusive tools
- focus on digital literacy
- study various options to ensure better digital access
- regulate the terms and conditions within the platform economy

- ensure automatic entitlement of social rights
- use digitalisation to increase citizens' health literacy
- define ambitious quantitative targets to reduce health inequality, also through digitalisation initiatives
- apply digital tools for more inclusion and reducing poverty
- support and strengthen digital developments in the healthcare sector
- ensure timely (re)training of workers in health care

- map vulnerabilities and thresholds and act upon it
- recognise partners that have a role as actors in training and supporting vulnerable groups
- explore the opportunities of a commitment for training for all workers, regardless of their employee status
- reduce the number of NEETs



what?

The government should develop a full-fledged e-inclusion policy and take measures to realise the goal of digital access for all citizens and businesses.

why?

Digitalisation creates an ever-greater distance to the labour market for citizens who are not digitally literate. Digital exclusion, however, involves more than a gap between people with and without access to internet and is not only a problem of vulnerable groups such as people living in poverty, the low-skilled or the long-term unemployed. Indeed, digital exclusion is a complex phenomenon that is closely linked to social exclusion and has multiple

determinants. In order to avoid that digitalisation entails new mechanisms of social exclusion or reinforces existing social inequalities, a full-fledged e-inclusion policy is needed. Today, such a policy is missing. A specific emphasis should be put on users and their needs and skills for applying digital applications and digital counters. Measures are needed to achieve digital access for all citizens and businesses in practice.

recommendations

33. Provide a full-fledged e-inclusion policy. A comprehensive e-inclusion policy that is linked to the diversity and integration policies and to specific target groups is needed, such as the program Flanders Radically Digital. Guidelines have been developed on the accessibility of digital services, involving users in testing phases of the development of a digital service or handling 'intuitive design principles'. However, these guidelines should become more widespread and binding. Moreover, existing measures could also be rationalised, which may imply adjustments to but also elimination of existing initiatives. There is not only a need for horizontal and central control but also for more coordination. Today, every policy area operates within its own competencies while e-inclusion requires a high degree of cooperation and coordination between the federal, regional and local level. A third focus, in addition to management and coordination, is networking and knowledge expansion. In Flanders, many actors are working on e-inclusion. It is important that the government cooperates with them and that civil society organisations are recognised and supported in their role. The lack of formal policies and structural funding mechanisms implies that current actions towards e-inclusion largely remain ad hoc.
34. Develop digital services and e-inclusive tools. Every digitalisation process of public services should be accompanied by a reflection on the exclusion mechanisms and digital inclusion initiatives to guarantee participation of excluded groups and ensure usability. This is possible by developing guidelines and implementing an 'e-inclusion test' or 'e-audits', or even by involving an e-inclusive panel of potential users in co-creation processes (service design, proactive remediation ...). Possibly, framework agreements with intermediary organisations can be of major help. Existing services, which were not designed according to such guidelines nor in co-creation, should retroactively be made more e-inclusive. Finally, e-inclusion should also be taken into account in living labs or smart city initiatives.
35. Focus on digital literacy. Digital literacy is one of the basic skill sets that should be taught in schools. In addition, digital skills are also important for the large group of existing end users and employees of intermediate organisations as for those that take care of vulnerable groups. For instance, the network of public computer rooms (e.g. in libraries) can be strengthened and supported to focus more on digital literacy and e-inclusion. In addition to guaranteeing (free) access to hardware and internet, guidance is also important. We can think of peer-to-peer initiatives in which people spontaneously teach each other (e.g. within organisations, such as on public computers) and of retraining of librarians and social workers.
36. Study various options to ensure digital access: a minimum bandwidth for internet use, digital public counters (physical devices) or free WiFi in public places, social tariffs for internet, free access to certain domains (e.g. vlaanderen.be.), lower VAT on the internet bill ... It is the (co-)responsibility of the government to ensure that digital access is possible and feasible for everyone.
37. Regulate the terms and conditions within the platform economy. E-inclusion and digital access is also about transparency and fairness in the terms and conditions when creating an account on an online platform. Often, one must release personal data as a condition for opening an account and there is no real opt-out.

building blocks vision statement

- 17** Develop a transversal policy to combat polarisation
- 19** Safeguard e-inclusion
- 33** Increase user involvement

Digitalisation as a leverage for welfare, health and social protection



what?

The government and all stakeholders must use digital applications as a leverage for more health and welfare and reduce inequalities between (groups of) citizens. Digital developments in the health sector need to be supported and strengthened.

why?

Digitalisation can help to reduce differences in healthy life expectancy and to strengthen initiatives on prevention and primary care. Through common strategies for health promotion, such as providing health information or health education, reaching vulnerable groups is often difficult. With

the socialisation of healthcare and new platforms such as e-health or vitalink, the need to ensure health literacy becomes even more compelling. It is important to connect with international initiatives (e.g. ICHHealth.eu, EU action plan for e-health) and to allow for online health information management.

recommendations

38. Ensure automatic entitlement of social rights. This requires a clear definition of concepts used to assign rights and contributions, both within and across policy areas (e.g. 'income', 'household composition' or 'incapacity') so that collected data can be reused for multiple purposes. This does not require full alignment of the target group, measures or allocations. By cleverly using identical concepts about various measures and combining them with income limits, exemptions and supplements, the specificities of each allowance or any law can be maintained. The implementation is best done in steps: bring together relevant actors to increase their willingness to participate and identify bottlenecks both top-down and bottom-up; perform a conceptual analysis and integrate primary sources and the expertise of data administrators (some initiatives have already been taken, such as an inventory of existing social adjustments under the VAPA and the CSB survey on income and family concepts for the growth package); check the feasibility of potential concepts with existing initiatives (e.g. MAGDA, VASGAZ, civil counter ...) and technical capabilities (and define the necessary semantic standards to ensure interoperability between different authorities); accordingly adjust existing regulations and policies through an iterative process (first by creating new legislation and subsequently by transforming existing regulations).
39. Use digitalisation to increase health literacy of citizens. For that, it is necessary to define a clear vision of what is expected of citizens in terms of health literacy, to identify existing barriers (both for citizens and developing health care and digital applications), to learn from international best practices, and to use this knowledge to modify processes in healthcare and digital applications to better connect them with different target groups.
40. Define ambitious quantitative targets to reduce health inequalities, also through digitalisation initiatives. This is possible through a continued focus on access to primary care, also digitally, using available (aggregated or individual) data to preventively act and increase familiarity with existing digital platforms (e.g. e-health, vitalink) through, for instance, business coaches (e.g. Healthy Living).
41. Apply digital tools for inclusion and reducing poverty. Various digital tools and innovative solutions can help to provide a higher degree of self-reliance and participation in society and create opportunities for people with intellectual disabilities, deprived people etc .. 'AI for Good' needs to be supported further. That is, making the world a better place through artificial intelligence.
42. Support and strengthen digital developments in the healthcare sector. We think about administrative simplification through digitalisation (standardisation, harmonisation and maximum integration of the systems, avoiding duplicate registrations - i.e. only once - and interoperability), digitalisation of data sharing (Electronic Medical Record, Electronic Patient Record, the Shared Pharmaceutical Record, Personal Health Record for clients), remote care through remote monitoring and m-health (software and applications that allow for remote digital consultation etc.) and technical support of medical and paramedical personnel (robotics and automation). Importantly, we should also consider the impact of these evolutions on the

funding of healthcare, the roles and competences of care givers and institutions and the challenges they pose for accessibility (health literacy) and privacy.

43. Ensure timely (re)training of workers (doctors, nurses ...) in healthcare. The job content will change for many employees. Digital literacy and communication skills will be the most obvious skills influenced by digitalisation. Digital literacy implies being able to operate the many, often intuitive apps, software and robots, and being able to explain their functioning to patients. As such, communication skills will also be key for health care providers, in order to ensure care givers and patients have easy access to medical information.

building blocks vision statement

- 17 Develop a transversal policy to combat polarisation
- 18 Provide adequate social protection, health and welfare
- 20 Seize the opportunities of digitalisation for inclusion and protection

Protection of (new) vulnerables



what?

Together with the social partners, the government must pay significant attention to (the retention of) (new) vulnerables.

why?

Digitalisation should not lead to greater inequality in education, learning careers and sustainable employment opportunities. Lifelong learning, to give only one example, should not just be focussed towards the higher educated. Special attention must be given to vulnerable groups and the new vulnerables. The low-skilled, long-term unemployed, people with disabilities, older people, people from ethnic minorities and long-term sick are already vulnerable today. In addition to the existing vulnerable groups of people, there is also a group of the 'new vulnerable'. Businesses, the

self-employed, unemployed and those workers who lag in the field of innovation and technology require special consideration. Furthermore, employees whose duties are similar to, and thus easily replaceable by, new digital technologies or robots (i.e. routine tasks) have a higher chance to lose from digitalisation. In this respect, not only the low-skilled jobs, but also the jobs of medium and high-skilled workers could be affected. At the international level, social dumping as a result of digitalisation must be countered.

recommendations

44. Map vulnerabilities and thresholds and act upon it. The group of people that have a great distance to the labour market, those who are potentially vulnerable in the context of digitalisation and the new vulnerables that lack (adequate) digital skills, is large and diverse. This group also involves other 'disadvantaged' people, such as those individuals who perform routine tasks, people with outdated skills, people with limited key competences, digital illiterates, refugees, elderly people, people with low incomes, women, 'multicultural' employees etc. The underlying problems can be very diverse. For policy measures to be effective, we must target intervention as much as possible to their specific context. This requires a sophisticated exploration of what the main (infrastructure, conduct economic, financial, social ...) barriers are for each group and/or situation and how these barriers can best be eliminated. In any case, it is advisable to involve the target group in the development of training programs. Attention should also be paid to those people in new forms of work or flexible statutes with insufficient security. In addition, a large group of people in Flanders is not economically active. They could be re-activated given proper guidance and activation. Digital applications can help them to prepare for re-entrance into the labour market.
45. Recognise partners that have a role as actors in training and supporting vulnerable groups. Flemish civil society and private actors that are engaged in the field must be recognised and encouraged.
46. Explore the opportunities of training commitments for all workers, regardless of status. For some individuals, participation in education clearly lags behind, such as older and low-skilled employees, flex-workers and job-seekers. Thus, the problem of low participation may lie with the individual itself (negative prior learning experiences, low basic skills or financial problems), but may also be due to non-supportive working conditions (low degree of control over their own working hours, insufficient training in the company of employment ...).
47. Reduce the number of NEETs (Not in Education, Employment, or Training). Key goals must be to (i) increase literacy and (ii) reduce unqualified drop-outs and the number of young people who are not in training to work. The inflow of low-literate workers into the labour market remains high in Flanders. A certificate of secondary education, especially vocational and technical secondary education, does not provide sufficient guarantees for a sufficient level of (digital) literacy. Positive learning experiences and basic skills acquired at an early age, however, lay the foundation for lifelong learning and the ability to acquire complex competences later in life.

building blocks vision statement

- 7 Reach out to and involve vulnerable groups of today and tomorrow
- 16 Pay attention to disadvantaged and vulnerable groups

actions

The SERV plans to:

- organise a workshop on e-inclusion involving various experts and stakeholders.

03.4 /

**Infrastructure and
regulation of
data and platforms**



Infrastructure and regulation of data and platforms

Cybersecurity and privacy



support for citizens, organisations and SMEs in their privacy and cyber security policies



- create awareness
- find collective solutions
- invest in cyber security research
- increase citizen ownership of individual data
- seek to balance the commitments to openness and privacy

Regulation of infrastructure, data and platforms



initiatives to achieve a digital top infrastructure and adequate regulation of data and platforms



- initiate a debate on (the regulation of) investments in (communication) infrastructure (i.e. transparency)
- create a master plan for a smart digital top infrastructure
- provide adequate regulation of smart infrastructures
- strengthen the capacity of and cooperation between regulators
- study how regulation of data should be organised most efficiently
- sign up to European initiatives for a level playing field
- address new types of market dominance and disruption
- promote the development and dissemination of a code of 'corporate digital responsibility' (CDR)

Effective energy regulation and regulators



adaption to the challenges and opportunities of digitalisation in the energy sector



- develop a vision on digitalisation in the energy sector
- regulate energy data platforms adequately
- ask the VREG to analyse the impact of digitalisation on its required capacity and to create a joint digital control strategy with all stakeholders
- develop a publicly available energy data platform
- discuss power supply safety

ensure

recommendations



what?

The government should support citizens and SMEs in their privacy and cyber security policy and ensure the protection of critical infrastructure.

why?

Data protection and cyber security are inherently part of good company policy. Smart devices and services contain huge amounts of sensitive data and inappropriate use or even data breaches can have far-reaching consequences. Digitalisation thus goes hand in hand with cybersecurity. In 2016, no less than two thirds of Belgian companies reported being a victim of cybercrime, and the risks have even risen since then. Privacy and security are also important for citizens. Technological and legal measures must ensure a right balance of power

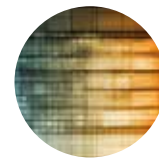
in the process of privacy exchange. If a user's privacy is compromised, he or she is weak in any negotiation. The concentration of data in the hands of major players and the existence of powerful profiling techniques and business models, require international regulation and active regulators who have sufficient resources to enforce those regulations. Governments should also ensure the protection of critical infrastructure that becomes more vulnerable due to digitalisation.

recommendations

48. Create awareness. SMEs and other organisations have to be sensitised and informed about the importance of data, the scope of the GDPR directive and cybersecurity, not only by the government but also by intermediary organisations and federations. Also, oversight bodies such as the Centre for Cybersecurity Belgium (CCB), the Privacy Commission and the Flemish Monitoring Commission have an important role to play.
49. Find collective solutions. For employees, the impact of technological changes in the workplace on their privacy is often unclear or uncertain. Many regulations are not up-to-date. Governments must ensure that digitalisation does not adversely affect the privacy and autonomy of workers. Specific attention should be paid to the legal framework for monitoring and control in the workplace. At the same time, employers could benefit from collective solutions to shared problems. The GDPR-directive, for instance, is a (financial) challenge for every business, especially for SMEs. Collective solutions and support could benefit all companies.
50. Invest in cyber security research (by government or via public tenders). Ensuring safe public data (use) and digital services is crucial. Several countries are currently developing a national cybersecurity industry supported by the government as first actor. Stimulating further research in this area can support the creation of domestic innovation leaders and promote the development and (international) dissemination of innovative solutions.
51. Increase citizen ownership of individual data. Provide a so-called virtual data safe for personal data: a digital and secured environment owned by the individual that contains his or her profile information, location and activity history. Advanced cryptography and a layered security architecture must ensure that these data cannot simply be shared and that, in order to access it, companies need to negotiate with the owner. Service integrators at government could ensure that sufficient control is exercised over what happens to the data within the appropriate legal framework.
52. Seek to balance the commitments to openness and privacy. Privacy is a 'closed' concept and seems inconsistent with policies on 'open' data. However, the government can provide proper information and create awareness to ensure both concepts go hand in hand. A too conservative attitude vis-à-vis GDPR must be avoided. Instead, governments should continue to play a leading role and strive for more open data and data sharing and develop guidelines for reuse of data.

building blocks vision statement

- 26 Support cybersecurity
- 27 Protect Privacy
- 28 Investigate privacy at the workplace
- 29 Protect consumers



what?

The government must create an adequate framework to ensure a digital top infrastructure and adequately regulate data and digital platforms.

why?

Infrastructure largely determines the attractiveness of a region for foreign investments and foreign talent. Digitalisation also requires a good digital infrastructure as it supports (new) businesses and digital applications and is the backbone for the 'Internet of Things' and online commercial platforms. These allow for an increase consumer choice, create new markets and opportunities for creative entrepreneurship and data-driven innovation. They may add to solutions for societal challenges such as mobility, security, healthcare ... A sufficient speed and coverage and competitive prices are key, however. The 'European Digital Economy and Society index 2018' shows that Belgium could do better, especially when it comes

to connectivity. Belgium's drop to position 8 does not result from its own poor performance, but rather of better performing neighbouring countries. According to the European Commission, Belgium should continue to promote the use of broadband and the development of a mobile top infrastructure. The use of mobile broadband is among the lowest in Europe in Belgium. High prices and a low capacity and range of digital infrastructure are problematic. Regulation of infrastructure, data and online platforms is crucial to avoid problems of concentration of market power, user exclusion and price discrimination. Monopolies and vendor lock-ins can be detrimental to new entrants in the market, keep prices up and hamper innovation.

recommendations

53. Initiate a debate on (the regulation of) investments in (communication) infrastructure (i.e. transparency). The Belgian telecom sector has called on the governments to intensify the digital revolution, in collaboration with all government levels (federal, regional, local), i.e. to close a New Deal. The government should analyse which instruments are best suited to ensure that the necessary investments to increase the capacity and coverage of the digital infrastructure can be made, while ensuring equal access, sufficient competition and market-conform pricing.
54. Create a master plan for a smart digital top infrastructure. Within an IoT-framework, the network must combine (storage) capacity, bandwidth, communication and self-learning capacities in an intelligent and decentralised way. That is, not only within a data centre, but also embedded in intelligent devices, sensors, robots, self-driving cars, etc. Developing such a top infrastructure is a major challenge: it is complex (both for R&D, implementation and operation), requires interdisciplinary collaboration between governments, companies and research institutions and asks for significant investments. In addition, hardware and software systems, applications, new business models and regulation must be developed and updated simultaneously. Flanders could take a leading role internationally. Timely creating sufficient capacity is key.
55. Provide adequate regulation of smart infrastructure. Smart infrastructure has great potential but also holds risk, for instance when it comes to privacy, security, anti-discrimination, transparency, democratic control but also to equal access and security of supply. This applies even more to self-learning systems. To avoid adverse outcomes, proactive regulation is needed for infrastructure and infrastructure related services.
56. Strengthen the capacity of and cooperation between regulators. Digitalisation requires stronger cooperation between regulators such the CREG, VREG, BIPT, VRM, NBB, CCB, the privacy commission, etc. Digitalisation changes how the infrastructure and networks are operated and managed and therefore urges for technical expertise, vision, responsible management and investment in a context of rapid and unpredictable developments. This requires a transparent process with incremental steps and continued evaluation-based adjustments. Regulators must ensure adequate regulation, implement the right policy objectives and avoids unwanted effects. For this, cooperation between regulators must intensify and certain sectoral regulations should be combined and integrated. Governments and regulators need additional knowledge and expertise to fulfil their role: not only technical, but also about new forms of supervision, regulation and ethics.

57. Study how regulation of data can be organised in the most effective way. Both a sectoral and horizontal policy approach must be applied: which data infrastructure is provided publicly, and which is left to the market, who finances this infrastructure, who benefits from advanced data infrastructure and its data potential? In any case, a maximum amount of data must be publicly organised in order to create a level playing field.
58. Sign up to European initiatives to create a level playing field within the platform economy, with particular attention to the risks posed by market power concentration and legal and fiscal grey areas. Future European regulation on the free movement of non-personal data, aimed to boost the data-economy in Europe, could prove very important. Many possibilities exist: a European harmonisation of national legal systems, a legal status for the platform economy by establishing a European Agency for the classification of digital platforms, a code of conduct for platforms and regulatory customised solutions, possibly through new or modified European regulations. Moreover, the liabilities of network platforms active in Europe must be determined also when these platforms operate from abroad. A level playing field in terms of taxation, statutes and other legal provisions must be ensured.
59. Address new types of market dominance and disruption. An updated definition of market dominance, market disruption and anti-competitive behaviour is required. No longer does only the size of a company matter, but also the transaction value or volume of data a company controls. Regulatory agencies should scale up their tools with new research methods to analyse market dynamics and develop algorithms that exploit price trends and follow platform behaviour. Together with users, regulators must ensure that platforms allow for participation (voice) and are held accountable (exit). Transferability of data from one platform to the other is only one example (cf. the current practice of switching from energy suppliers). Furthermore, new forms of digital cross-border labour migration exist due to increased outsourcing of tasks and activities. Major challenges will be to deal with these various sources of labour migration and to avoid unfair competition and social dumping.
60. Promote the development and dissemination of a code of 'corporate digital responsibility' (CDR). Companies that excel in the development of such a code can create an important competitive advantage. Basics of CDR may include digital stewardship (data management must meet the expectations of the data providers), digital transparency (openness about how companies handle customer data), digital empowerment (helping customers make better decisions by judiciously analysing the data they have uploaded), digital equity (customers get something back in return for the provision of personal data, in cash or in kind) and digital inclusion and data donation (sharing personal data for the public good).

building blocks vision statement

- 22 Create a world-class digital infrastructure
- 23 Ensure adequate and fair competition within an equal level playing field
- 24 Regulate data
- 29 Protect consumers
- 39 Strengthen open data policy
- 40 Collect data and develop a big data strategy



what?

Governments should develop a strategy for regulation (and regulators) in the energy sector so that they can adapt to the challenges and opportunities of digitalisation.

why?

Digitalisation has important implications for market organisation and regulation of the energy sector. Regulations must keep pace with the rapid developments in this domain. The merger of distribution network operators and their multi-utility model make this even more pressing. The discussion should focus also on ownership, management, sharing and reuse of data. Main topics

are: the organisation and capacity of the regulatory agencies, the interdependence between industries, the development of the digital infrastructure and the distribution of costs and benefits involved, the possible dualism between active and inactive (vulnerable) users, the establishment and regulation of data platforms, the link with flexibility and smarter energy system and energy tariffs.

recommendations

61. Develop a vision on digitalisation in the energy sector that fits into a broader strategy on the integration of (local) renewable energy, the regulation of utilities, data governance, e-governance, core competences, an energy vision, flexible energy systems, adjustments to the tariff structure, etc.
62. Regulate energy data platforms adequately. Atrias, a new platform, wants to become a digital database that encompasses all data on the consumption of gas and electricity in Belgium. As such, Atrias could simplify and streamline the exchange of digital data between distribution system operators and energy suppliers. This is a necessary condition to process digital data from smart energy meters that will be rolled out from 2019 onwards. Atrias has already been launched but still faces many difficulties and delays in its implementation. The Flemish government must intervene and provide regulators the right tools for regulation.
63. Ask the VREG to examine the impact of digitalisation on its required capacity and to create a digital control strategy, in collaboration with stakeholders and other regulators both in the energy sector and in other industries (such as telecommunication). This strategy should strengthen data control, ensure that the efficiency gains due to digitalisation flow back to the user and, in addition to data security, privacy and protection of commercial data, also consider cyber risks, transparency, impact on market access and competition, impact on the dualism between active and non-active (sensitive) users, etc.
64. Develop a publicly available energy data platform, together with the energy regulating agencies, data administrators and users, that connects databases and unlocks and visualises energy-related data.
65. Discuss power supply safety. Sophisticated software and algorithms increasingly become the main determinants of the supply, transmission and distribution of electricity. Simultaneously, the power system is also changing in other areas (power production and power consumption) which poses challenges for the stability of the system as a whole. There is insufficient insight into what digitalisation implies for the vulnerability of power supply, as for its potential social impact. The government must recognise and investigate this potential impact. At the European level, collaboration in studies concerning product safety demands and energy network codes could prove important.

building blocks vision statement

24 Regulate data

25 Strengthen the role of regulators

actions

The SERV plans to:

- closely follow the impact of digitalisation on energy sector regulation and make recommendations on management and regulation of (energy-related) data and market roles in a digitalised energy sector.

03.5 /

**Innovation,
entrepreneurship and
organisational reform**



Innovation, entrepreneurship and organisational reform

A stimulating entrepreneurial ecosystem



Elevated and targeted innovation efforts



Digital technologies and internationalisation within SMEs



ensure

more start-ups and scale-ups, also in the digital economy



an increased and targeted use of innovation efforts and a strong culture of collaboration within and between enterprises



support to SMEs for the implementation of new digital technologies and for applying digitalisation as a means of internationalisation



recommendations

- help start-ups to acquire entrepreneurial competences
- ensure that entrepreneurship is adequately reflected in education and entrepreneurial training
- evaluate the legal and fiscal framework
- solve the mismatch between the demand and supply of capital

- increase R&D spending and ensure a sufficient critical mass
- adopt a 'mission-oriented' innovation policy
- ensure cooperation among spearhead clusters (SPC) and between the strategic research centres (SOC) and universities
- address all relevant sectors and industries
- eliminate barriers for SME collaboration
- create an ecosystem for AI
- support experiments and living labs
- initiate and enforce foreign partnerships and public-private cooperation

- sensitise SMEs
- ensure swift marketisation of new ideas or innovations
- encourage internationalisation and better inform SMEs about government support
- include other, non-SME, small organisations

A stimulating entrepreneurial ecosystem



what?

The government should ensure the existence of a stimulating entrepreneurial ecosystem that removes the causes of the low dynamics.

why?

Start-ups and scale-ups are crucial for the digital transformation of the economy. However, in Flanders and Belgium, fewer new businesses are created compared to other European countries and

their growth is more limited. The causes must be explored and addressed. Probably, entrepreneurial culture and competences, funding possibilities and the legal and fiscal environment add to the problem.

recommendations

66. Help start-ups to acquire entrepreneurial competences. Lack of entrepreneurial skills hamper start-up and growth. Many start-ups lack economic (sales and marketing, knowledge of finance ...) as well as HR and management skills. Coaching by intermediaries and large companies can be crucial to overcome such problems.
67. Ensure that entrepreneurship is adequately reflected in education and entrepreneurial training. Young people often do not learn what entrepreneurship is. Students from different backgrounds (technical, economic, legal ...). should be brought together to ensure cross-fertilisation between different skill sets. Universities and colleges should encourage such active collaboration and teamwork.
68. Evaluate the legal and fiscal framework. It is crucial to identify the areas in which administrative simplification is possible and which legal and fiscal obstacles for company growth and internationalisation could be removed.
69. Solve the mismatch between demand and supply of capital. Many instruments for capital funding exist in Flanders, but more focus should be given to the start-ups that are in continuous need for growth capital. Access to expansion capital is often difficult and this hampers scale-up of businesses and digital innovations. Growth capital funding is small, too fragmented and dispersed. Simultaneously, new innovative ideas and models often face financing constraints due to the greater uncertainty they entail. How young innovative companies are financed should be tailored more to their risk profile. A public dialogue is required on the use of financing funds, the consolidation of growth capital and the mobilisation of resources from institutional investors (mutual funds, pension funds, insurance companies), as well as the possible use of new financial instruments (FinTech, crowdfunding, credit unions, corporate venturing, business angels, revolving funds ...).

building blocks vision statement

- 35 Encourage start-ups and company growth
- 36 Promote entrepreneurship

Elevated and targeted innovation efforts



what?

The government should support the creation of living labs and stimulate innovation through the promotion of spearhead clusters and innovative business networks and their collaboration with universities and innovation followers. Policies must steer innovation towards public needs and relevant outcomes.

why?

Digitalisation blurs traditional industry boundaries, increasing the need for intersectoral collaboration and changes in business innovation. In living labs and test environments, products and services quickly transform from a prototype into a test product with input and interim evaluation of users. This is in contrast to a more traditional and linear innovation process in which knowledge is developed solely by R&D departments. Open innovation within spearhead clusters and business networks also

become more important. Collaboration happens in three ways: through co-creation (with employees, customers, stakeholders ...), through alliances (with colleagues, suppliers ...) and through the ecosystem (network chain, cluster, ...). IT and AI are a driver and a common interest. Moreover, additional criteria will be required to identify the social value added of (digital) innovations, i.e. outcome, in addition to the current input and output indicators.

recommendations

70. Increase R&D spending and ensure a sufficient critical mass. Flanders must continue its efforts to achieve the 3% target for R&D and must further strengthen its innovative and competitive position in Europe. Therefore, ensuring a sufficient critical mass is important when new initiatives are taken. Today, this is often not the case.
71. Adopt a mission-oriented innovation policy that focuses on major societal challenges, creates win-wins for businesses and workers, and aims to achieve specific goals. Innovation policy should steer technologies towards these specified goals through a more focused R&D policy and targeted economic instruments while still allowing for bottom-up experimentation and learning. The starting point should be complementarity between man and machine. Additional studies are required, by ECOOM for instance, to map potential criteria for a better assessment of the social value of innovation. A broad involvement of employees and employers in the design of future innovation policies is recommended.
72. Ensure cooperation among spearhead clusters (SPC) and between the Flemish strategic research centres (SOC) and universities. Intercluster cooperation should be further encouraged and supported, including through a focus on digitalisation. This also applies to the SOCs (imec, VIB, VITO, Flanders Make). Cooperation should become an explicit goal in their functioning. Additionally, a strong link between the SOCs and (various) industries is essential for the valorisation of fundamental research. Collaboration among Flemish universities should also intensify since this is underdeveloped today.
73. Address all relevant sectors and industries. Spearhead clusters (Catalisti, SIM, Flux50, VIL, Flanders' Food) and innovative business networks such as Euka (drone cluster Flanders), Digitizing Manufacturing, BIM (Building Information Modelling), Smart Digital Farming and Eggsplora (cluster for FinTech) ... cover many, but not all, economic domains. The choice not to support SPCs in the domains in which a SOC is already active, for example, implies that biotech and the environmental sector is somewhat neglected in cluster policies. This also applies to the services sector and social profit. Nevertheless, business networks are equally important in these sectors.
74. Eliminate barriers for SME collaboration. SMEs must be sensitised to the importance of partnerships. Intellectual property is often a main concern in collaborations between SMEs and knowledge institutions.
75. Create an ecosystem for AI which joins academic excellence and business initiatives with financing institutions, government agencies and customers. The aim should be to provide more basic AI research and stimulate start-ups in the field of AI, but also to create a 'strategic plan' for AI. It includes mapping

the ongoing AI activities in Flanders, determining research topics and educational needs, developing suitable AI-testing infrastructure (open source and privacy-respecting learning environments, real-life test environments and high-quality data sets for development and training of AI systems), initiating initiatives for knowledge and technology transfer, analysing ethics and safety etc.

76. Support experiments and living labs in which businesses collaborate with research institutes and have the opportunity to develop, test and implement new digital technologies (big data, block chain, robotics, wireless communication ...) and related applications.
77. Initiate and enforce foreign partnerships and public-private cooperation (e.g. back-office content - public - and front-office applications - private). The government should provide the basic services for which the private sector can develop apps and software.

building blocks vision statement

- 31 Drive social innovation
- 32 Realise true (inter)sectoral cooperation
- 33 Increase user involvement
- 34 Ensure sufficient involvement of employees
- 10 Steer digitalisation towards higher employment



what?

The government should support SMEs in implementing digital technologies and operating internationally.

why?

Digitalisation offers opportunities for smaller and innovative companies to adapt to rapidly changing circumstances and offer new services. Many SMEs are still not aware of the opportunities, threats and challenges posed by digitalisation. Raising awareness is urgent and necessary because the rate of change is exponential while many companies still think 'linear'. Moreover, SMEs often face many unanswered questions: what technologies are available? Are they relevant to my business strategy? Do these technologies offer a real added value for competitiveness and differentiation? SMEs simultaneously face specific barriers: they

have fewer available resources to attract the right skills and competences or to control cyber risks adequately. Raising awareness and support for SMEs is therefore crucial and the strategy must be both to bring companies closer to digitalisation and to bring the suppliers of digital technologies closer to the companies. Digitalisation also enables more internationalisation. More extensive information is available, markets are more reachable and online market barriers are practically non-existent. Government support may stimulate more companies to extend their activities abroad.

recommendations

78. Sensitise SMEs and make them aware of the importance of digitalisation for future-proofing both internal and external business and organisational processes. It seems interesting to develop a comprehensive research institute or platform on which SMEs can pose all their questions on digitalisation. In addition to raising awareness about existing and emerging technologies and data management, there is also a need for providing test facilities, encouraging partner matching with technology vendors, demonstrating in-house technologies or technologies that can temporarily be made available by developers, implementing new technologies via pilot trials, etc.
79. Ensure a swift marketisation of new ideas or innovations. This requires finding the right partners and knowledge, e.g. through partnerships with innovative digital start-ups, and discover funding opportunities to create digital applications (software and hardware). Equally important are the following: coaching and support to SMEs when introducing or upgrading their digitalisation processes (e.g. advisory council at SMEs with IT specialists or advice funded through the Flemish 'KMO portefeuille'), training and the creation of templates for web shops, capacity building at intermediary organisations for digital support to SMEs, etc. The evaluation of VLAIO-initiatives can be used to develop more specific instruments for and support to digitalisation.
80. Encourage internationalisation and better inform SMEs about government support. European support programs can be an important driver of international networking, cooperation and strategic alliances, knowledge creation and diffusion and international marketing of innovations.
81. Include other, non-SME, small organisations. In addition to SMEs, we must also support the digitalisation of educational institutions, the social profit sector, the social economy, etc. with targeted policy instruments. Particular attention should be paid to the technological possibilities that may contribute to the employment of (physically or mentally) disabled people. Experiments within the social economy should be supported and best practices should be disseminated.

building blocks vision statement

- 30 Sensitise and support enterprises in the implementation of digital technologies
- 36 Promote entrepreneurship

actions

The SERV plans to:

- organise consultations on how to support living labs and open innovation ecosystems;
- bring together the cluster managers to detect potential barriers and synergies for enhanced (inter) cluster operation related to digitalisation;
- explore the possibilities to aim innovation policy more towards complementarity and creating win-wins for employers and employees. The same question holds for more general supporting policies to offset the potential negative effects of the innovations;
- perform research at its Foundation Innovation & Work within companies on how they design their products, processes and business model in order to further digitalisation and innovation. Particular attention will be given to the question how companies deal with disruptive trends in their processes, collaboration, customer relations ... The study will provide information on how governments and sectoral organisations can better support the digitalisation of businesses;
- update the study performed by the Foundation Innovation & Work from 2015 on the competence portfolio of the self-employed;
- examine the link between digitalisation and circular economy within the ongoing SERV-activities on circular economy. Digitalisation can be an important driving force in the transition to a circular economy: for tracking (raw) materials, the monitoring of use for product service combinations, matching via digital platforms within a value chain approach (waste as a raw material), reverse logistics ...

03.6 /
Modern
public services



Modern public services

An ambitious digital government



Digital applications for better services and policies



Smart cities and smart mobility



ensure

the right (governance) conditions for an ambitious digital government through digital leadership, coordination and funding

digital applications for inclusive government services, administrative simplification and interactive policy-making

a Flemish smart city strategy and the realization of automated and connected mobility and 'mobility as a service'



recommendations

- join forces in information and ICT policies
- adopt an increasingly external focus
- collaborate more intensively with the local and federal governments
- provide for a good funding framework

- use digitalisation for inclusive government services and administrative simplification
- implement international e-government principles such as digital-by-default, inclusiveness, 'only once', privacy by design, and 'interoperability by default'
- experiment with new technologies and open the debate on (possibilities and limits to) the use of big data by government
- invest in digital expertise and soft skills of public servants
- develop and promote interactive policy-making through digital communication channels and applications

- develop a Flemish smart city strategy
- provide possibilities for experimentation and living labs
- accelerate the roll-out of city-of-things in Flanders
- take initiatives for a more sustainable development of e-commerce in Flanders
- facilitate automated and connected mobility in Flanders



what?

The government must create the (governance) conditions for an ambitious digital government by investing in digital leadership, coordination and funding.

why?

We need to further develop the digital government, also beyond 2020. Despite many good principles and initiatives (such as the 'no wrong door' principle, use of authentic data sources, service integration, integration of applications), Belgium and Flanders score relatively worse in the field of digital public services and open data compared to other indicators of the European digital Economy and Society Index. As a result, both within the government as in broader society, opportunities

for efficiency gains and new applications are missed. It is necessary to increase the efforts and pinpoint the areas that need further improvement. This challenge is not merely technical, but also managerial: we need digital leadership (vision, decisiveness), coordination and funding. An appropriate administrative approach should be strategic, overarching and comprehensive. A broad-based digital policy is necessary.

recommendations

82. Join forces in information and ICT-policies. There already exists a comprehensive information and ICT-policy but the autonomy of various ministries and departments is large, and a collaborative culture is lacking. Therefore, fragmentation remains high and ongoing developments in the field of data exchange, open data, 'only once' or automatic entitlement of rights, are only slowly being implemented. The 'Information Flanders' Agency needs to increase its capacity and its leverage effect. A vision on the digital society is essential. Progress should be monitored more closely, and laggards need to be made accountable, e.g. through improved monitoring of the 'comply or explain principle', by extending the i-monitor to all departments and agencies of the Flemish Government, or through information audits by Audit Flanders. Ideas such as digitalisation test (to assess new and existing regulations with respect to digitalisation) deserve further reflection.
83. Adopt an increasingly external focus. The objectives and principles of government programs such as Flanders Radical Digital must go beyond the own government processes and services. Next to codesign and cooperation with private partners and organisations, it must be a strategic objective of the government to take a leading role in further digitalising society (cf. ongoing projects at the federal level such as e-box, e-invoicing, B2B or the Digital Transformation Dashboard).
84. Collaborate more intensively with the local and federal governments. Existing initiatives towards local authorities must be strengthened. There is a need for (1) more effective support to the professional development of local ICT policy and management, (2) more guidelines and interdepartmental digitalisation projects and (3) intensified cooperation and sharing of hardware, software and humanware. Moreover, intensified cooperation with the federal government is critical to achieve high performing e-government-services. Accessibility for users (citizens, workers, businesses) must be the main focus, rather than administrative processes or division of competencies.
85. Provide for a good funding framework. Financing of open data initiatives is often a problem. The size of funds is not proportionate to the financing needs. A different financing framework that stimulates investment in and unlocking of data imposes itself.

building blocks vision statement

- 38 Further digitise public services
- 41 Promote co-creation and open innovation within government
- 44 Achieve a cooperative management culture
- 45 Promote international cooperation



what?

Governments should improve their use of appropriate digital applications and strive for inclusive (e-) services, administrative simplification and interactive policy.

why?

Digitalisation enables administrative simplification through a smooth and easy accessibility of public services (digital counters and applications). Simultaneously, simplification is a key condition for further digitalisation of public services. All digital public services should be consistent and clear to citizens and businesses, regardless of policy level or domain, and should not bypass those who are less digitally literate. Furthermore, digital technologies can also increase participation in policy (e-democracy) as they increase the opportunities for bilateral communication and co-creation. However, technology is not a panacea and not all can be digitalised. As to participation and

consultation methods, the main focus should be put on quality and not on a maximal use of digital technologies and open internet consultations. Moreover, online safety is a concern and the risk of manipulation is large. The draft decree on Flemish Administration contains some good ideas on which further elaboration is needed, including on the principles of customisation, i.e. communication adapted to the target group, and inclusion. Other plans include the development of a centralised consultation platform, better accessibility of websites and mobile applications for government agencies.

recommendations

86. Use digitalisation for inclusive government services and administrative simplification. Focus first on the implementation of various e-government principles (cf. EU-Talinn statement of 6 October 2017) before initiating a diversity of small projects about blockchain, AI ...
87. Implement international e-government principles such as 'digital-by-default', 'inclusiveness' and 'accessibility'. That is, ensure that citizens and businesses can interact with public administrations online, in the way and when they choose to do so. A user-centred approach requires an integrated government and a multichannel strategy tailored to the characteristics of the target group (universal design). It also requires initiatives to involve several individuals and businesses in improving public services (service design, redress and complaint mechanisms ...). Digital contact points for local government levels that are compatible with services from other governments must be developed.
88. Ensure that citizens, institutions, and companies only have to provide certain standard information to the authorities and administrations once. Existing 'only once' initiatives remain rather limited. There is a need for increased cooperation and data exchange between administrations and governments, the construction of basic registers and databases, and the development of a culture of data reuse. This is a prerequisite to avoid that the ongoing digitalisation of government services further increases the digital divide.
89. Ensure trustworthiness, privacy by design, security, openness and transparency of data. Security and privacy should be embedded into all public services. Governments must make sure citizens and businesses are able to manage their personal data held by public authorities. Increasing the availability and quality of open government data and linked open data is an important objective. For this, it is required to also involve local governments.
90. Implement 'interoperability by default'. Interoperability is crucial to ensure easy data sharing between governments and countries and to avoid vendor lock-ins. This requires action at several levels: technical (implementation of European interoperability frameworks (ISA⁺, EIRA), promotion of open source solutions or open standards and systems), semantic (concepts), organisational (coordination, provision of ICT solutions of (or developed by) the government for reuse by civil society) and legal. The OSLO-standards (Open Standards for Local Authorities) should guide Flanders regarding its interaction with and among local authorities.

91. Experiment with new technologies and open the debate on (possibilities and limits to) the use of big data by the government. Initiatives for the use of data and data analytics (including big data, artificial intelligence, blockchain ...) are important to achieve data-driven public services, data for better decision-making and risk-based regulation and inspection. Simultaneously, the use of big data in the public sector should be subject to conditions of a public debate, control and transparency. In order to gain experience, Flanders should co-create on a Code of Standards for Public Sector Algorithmic Decision Making.
92. Invest in digital expertise and soft skills of public servants. The staff (both senior officials and junior employees) must not lag behind. They need to acquire digital competences to ensure digital leadership, to apply and implement digital by default policies, to continuously improve working methods and processes and to strengthen their professional, personal and social skills within a lifelong learning perspective. For some employees, internships in private IT firms can prove interesting. In addition, other important skills include knowledge of new technologies and business models, communication and networking skills ...
93. Develop and promote interactive policy-making through digital communication channels and applications. Policy should be designed as a continuous learning process (what works and what does not?) and take into account differences in digital literacy (from digital outcasts or the digitally self-excluded to digital all-stars). Other framework conditions need attention too, such as transparency about policy and the use of digital instruments, an effective communication and mobilisation strategy and feedback.

building blocks vision statement

- 42 Increase public transparency and interaction
- 20 Seize the opportunities of digitalisation for inclusion and protection



what?

The Flemish Government should establish a policy framework for the promotion and coordination of smart cities and smart logistics initiatives.

why?

In a smart city, ICT is combined with infrastructure, architecture, objects and people to address social, economic and environmental challenges. Investing in smart cities can result in more efficient public services, improved collaboration, interaction and transparency, more public safety, competitive Flemish cities, more innovation and more liveable city. Some initiatives to support smart cities have already been developed, but a coherent vision

and strategy is lacking. Moreover, such a strategy should also encompass sustainable mobility and smart logistics. The transition from physical to online changes the size and composition of the good flows in urban areas. Internet shopping and home delivery have a severe impact on mobility and the environment. Simultaneously, digitalisation allows for smarter logistics and possibilities for further rationalisation of transport in the future.

recommendations

94. Develop a Flemish smart city strategy that integrates ongoing smart city initiatives and strategies, is coordinated between the various federal, Flemish and local initiatives (Smart Flanders Program, City of Things, ...) and enables Flemish cities and towns to develop and implement their own smart city strategy.
95. Provide possibilities for experimentation and living labs. Pilot projects or living labs create conditions in which innovation and smart initiatives can flourish. A platform should be developed on which knowledge and results of such experiments are shared and the development of standards is encouraged.
96. Accelerate the roll-out of City-of-Things in Flanders. Local governments must collaborate structurally in (international) smart regions, together with spearhead clusters and business networks. Major cities should be encouraged to involve their neighbouring communities when developing their smart cities initiatives. Societal challenges transcend city borders thus cooperation and sharing knowledge can create a win for both cities and surrounding municipalities. Awareness of the opportunities and constraints in the municipalities should be increased by disseminating knowledge on new technologies and providing training for local civil servants. The Flemish Government should create a knowledge database and helpdesk and stimulate the appointment of a chief technology officer (CTO) in every city or region.
97. Take initiatives for a more sustainable development of e-commerce in Flanders. The focus should be on the costs and effects of transport and e-commerce and on investigating the potential of decoupling spaces and regional transport hubs to organise good flows more efficiently.
98. Facilitate automated and connected mobility in Flanders. Flemish transport policy and its scientific and industrial stakeholders are faced both with great opportunities and various challenges due to digitalisation. An adjusted facilitating and regulatory framework is necessary to ensure we can seize the opportunities. A horizontal policy approach is needed, and the Flemish interdepartmental steering committee that recently has been established, could provide the necessary support. The aim is to solve barriers (concerning for instance the exchange of data, cyber security, ethics and responsibility ...), explore technological options and gradually develop a customised facilitating and regulatory framework. This could form the basis for the further development of digital mobility, intelligent transportation systems, smoother traffic, more road traffic safety and mobility-as-a-service.

building blocks vision statement

- 31 Drive social innovation
- 43 Support smart cities
- 44 Achieve a cooperative management culture
- 48 Stimulate the use of experiments, test pilots and living labs
- 50 Monitor the environmental impact

actions

The SERV plans to:

- follow-up and advise on the developments in the field of ICT and information policy and e-government;
- organise an academy on the opportunities and threats of AI, big data and blockchain applications;
- continue to involve other stakeholders, experts and citizens in major consulting projects and see how these interactions can be facilitated through digital channels. The SERV is also open to cooperate in consultations with civil society organised by the Flemish Government (cf. new role adopted in the preliminary draft of the latest decree on the Flemish Administration);
- advise on the support and development of smart cities and living labs, as basis for a Flemish smart city strategy;
- analyse how smart distribution can contribute to the sustainable development of e-commerce.

03.7 /

**Tailored
policies
and legislation**



Tailored policies and legislation

Experimentation and living labs



A pioneering role of the government



Ethical and social impact



ensure

an active policy that enables experimentation areas and pilot projects

a pioneering role of the government in the digital transition as a procurer of innovative ICT products and services and as a digital services provider to citizens and businesses

a dialogue on the ethical and social impact of new technologies and concrete implementation of 'complementarity'



recommendations

- adopt policies that enable experimentation areas and pilot projects
- set up or facilitate specific pilot projects within socially relevant domains

- use the Flemish policy program 'Innovative Public Procurement' as a means to further digitalise the economy
- build a knowledge platform on innovative public procurement
- ensure sufficient opportunities for start-ups and SMEs in public procurement
- realise the 3% innovative procurement target

- organise structural cross-fertilisation between technological/industrial sciences on the one hand and social/human sciences on the other
- pay attention to ethical and social issues when developing new technologies
- follow-up on the European debate on ethical codes

Experimentation and living labs



what?

The government has to learn when making policy and make use of living labs and create opportunities for experimentation and pilot projects.

why?

Due to the speed, uncertainty and unpredictability of digital developments, policy needs to be more flexible, swift and continuously learn. Regulating too soon can hamper the creation of new innovative business models; regulating too late may expose companies, consumer or employees to undesirable effects or market distortions. Governments must learn from each other and use experiments to discover which policies are most effective. Digitalisation also changes the relationships between collaborators, which calls for other types of innovation processes, for example in so-called

living labs or labs in socially relevant domains (health, energy, mobility, cities, FinTech): accessible environments in which developed solutions are tested and implemented to show that innovative ideas in Flanders actually work in practice. The SERV welcomes that the Flemish government has adopted its opinion of October 31, 2016 to develop a legal framework for experimentation. However, the concept note and regulation that was introduced in the draft decree on Flemish Administrative Policy are far from enough.

recommendations

99. Adopt policies that enable experimentation and pilot projects. The government should reflect on when and where experiments are useful, what the priorities are, what are the lessons learned from the experiences (i.e. the meta-level of the various experiments with respect to the processes, criteria, observed problems and bottlenecks etc.).
100. Set up or facilitate specific pilot projects within socially relevant domains (labour, health, energy, mobility, FinTech, cyber security, smart cities ...). In such test beds or sandboxes, start-ups and companies should be able to test their ideas and products in a safe setting and discover the potential implications for the legislation, in close dialogue with regulators. Guarantee the involvement of stakeholders in the design, implementation and evaluation of the experimentation areas and living labs.

building blocks vision statement

- 47 Deploy new policies and regulations
- 48 Stimulate the use of experiments, test pilots and living labs

Pioneering role of the government



what?

The government should play a pioneering role in the digital transition as a purchaser of innovative ICT products and services and digital services to citizens and businesses.

why?

The government itself is a major actor in the digital transition as a procurer of innovative ICT products and services and as a digital services provider to citizens and businesses. Innovative and sustainable procurement can stimulate the development of creative and innovative solutions. If the government performs innovative purchases, companies are

challenged to develop new products and services. This is an important tool to provide sustainable, innovative responses to social challenges, to support the necessary transition of the Flemish economic fabric and to improve the quality of public services in markets where the government is a major purchaser.

recommendations

101. Ensure that the Program Innovative Procurement becomes a structural instrument for the realisation of long-run objectives such as the digitalisation of the Flemish economy. Again, the focus should be on innovations that create a win-win for companies and employees.
102. Build a knowledge platform 'Innovative Public Procurement'.
103. Ensure sufficient opportunities for start-ups and SMEs in public procurement. Innovative procurement should not always be targeted towards big companies with a proven track record, but also create opportunities for start-ups and small businesses in Flanders. This implies paying equal attention to both innovative procurement and precommercial innovative purchases, applying different evaluation criteria, simplifying procedures (e.g. reuse of information), avoiding unfair competition and social dumping, as well as ensuring a level playing field within the platform economy (see above).
104. Realise a minimum of 3% innovative government procurement and gradually increase this share by 2030, as a part of the broader policy framework for government procurement. The 3% target should be monitored via the 'E-Delta' contract management.

building blocks vision statement

- 49 Develop a pioneering role for the government

Ethical and social impact



what?

The government should promote co-creation of technology and organise the debate on the ethical and social impact of new technologies.

why?

New technologies such as AI raise new ethical and social issues. Underlying algorithms often constitute a black box and ask for increased transparency and clarification of liabilities. Not all technological innovations are desirable from an ethical, security or privacy perspective. The extent to which people accept and desire decisions on technology and equipment should also be considered. (New forms of) Technology Assessment (TA) could prove important. That is,

the assessment of the ethical and social impact of new technologies. Co-creation of technology by engineers, social scientists, technologists and users must ensure that automation and digitalisation are at the service of society and workers. Workers must be actively involved in an early stage to ensure the development of complementary AI systems that allow for more autonomy and control (human-in-command) and maintain satisfaction and pleasure to work.

recommendations

105. Organise structural cross-fertilisation between technological/industrial sciences on the one hand and social/human sciences on the other: (1) develop interdisciplinary research teams at university level; (2) include social and human sciences in Flanders Make; (3) set up a research institute in Flanders where technology / industrial scientists and social / human scientists collaborate (4) ensure a structural and broader involvement of civil society actors (including employers and employees) in the design of innovation policy and the management innovation actors.
106. Pay attention to ethical and social issues when developing new technologies. Reflecting on ethical issues should not only occur in retrospect, but already from the start, when designing a new system. Indeed, new technologies, and the doomsday scenarios that accompany them, often raise concerns, which slows down decision-making and implies that opportunities are missed. In order to reduce doubts, concerns and uncertainty, it is crucial to ensure good communication at the right time and to the right audience, to make analyses based on facts and scientific insights, to spread the results to the broad public in an understandable manner and to ensure sufficient involvement of the public.
107. Follow-up on the European debate on ethical codes. At the EU level, a lot of work is currently being performed on an ethical code for AI and online platforms: studies, recommendations, examples of foreign practices (also in the private sector), an expert group to develop and propose a draft on 'guidelines on AI ethics' (building on the guidelines of the European Group on Ethics in Science and New Technologies and the Barcelona Declaration for the proper use and development of AI in Europe), etc.

building blocks vision statement

- 46 Perform technology assessments
- 31 Drive social innovation
- 10 Steer digitalisation towards higher employment
- 11 Use digitalisation to optimise welfare, well-being and workable work

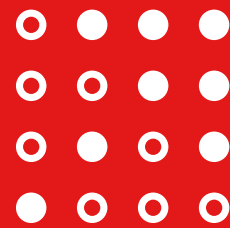
actions

The SERV plans to:

- organise a roundtable with experts on the ethical and social issues, focussing especially on education, the labour market and economic policies;
- reflect on a code of ethics for (dealing with) robots, intelligent machines and intelligent environments as input to the consultations at the European level.

03.8 /

**Social
dialogue**



Social dialogue



what?

The social partners wish to open the debate on the consequences of digitalisation for the social dialogue

why?

Digitalisation affects many issues related to social dialogue and is therefore an important topic for social partners in their consultations. Involvement of employees and a well-functioning social dialogue are essential elements to ensure that technological innovations go hand in hand with increased productivity, task enrichment and improvement of workers. They also allow to openly discuss the quantitative and qualitative impact of digitalisation on employment and enable workers and businesses to timely prepare for the expected changes (e.g. in required competences). Also, the question of the distribution of costs and benefits of technological change should be addressed. A good social dialogue ensures that technological changes are socially supported and can be executed in a sustainable

manner. Furthermore, digitalisation imposes a reflection on how existing (established) institutions and processes of social dialogue can be reshaped and reinforced. Different developments have led to rethinking of the structures and services of both individual social partners as the institutional consultation framework. One can think of the blurring of sector boundaries, the emergence of new labour relations and new forms of employment (e.g. the platform economy) or the increased rate of change induced by new disruptive technologies. Finally, governments and policy makers must provide room, consolidate and reinforce the process of social dialogue, and rethink its own position vis-à-vis the social dialogue.

actions

The SERV plans to:

- continue its initiative to invite various speakers to present their views on the functioning of (the process of) social dialogue in the future.
- exchange knowledge and experience about the impact of digitalisation on the process of social dialogue between Flemish and foreign social partner within its ESF project "Social partners on the digital fast track
- based on the above, analyse how the Flemish social dialogue could be reshaped and share its insights with the social partners at different levels (sectoral, federal, European ...)