ANALYSIS OF NATIONAL INITIATIVES on DIGITISING EUROPEAN INDUSTRY[1]:

BELGIUM:

Industrie 4.0 / Digital Wallonia / bedigital.Brussels / Digital Belgium
Made Different

CONTENT

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[1] This report has been produced for DG CNECT by Jan Larosse, independent adviser (Vanguard Initiatives Consult&Creation).
The analysis is limited to the information available till September 2017 and the proposed analytical framework can be a basis for a more comprehensive policy documentation.

1. General context

Belgium ranks 6th in DESI 2017. It belongs to the cluster of **high-performing** countries. Overall, it progressed slowly over 2016. Belgium ranks highest in connectivity (3rd) and integration of digital technology by businesses (5th), while digital public services are its biggest relative weakness.

The Belgian federal system is **highly decentralised** in policy making, in particular regarding competences for innovation and industrial policies. The successive state reforms aimed at a devolution of most of these competences to the regions as main policy level, avoiding hierarchy. As result the federal and regional governments have complementary competences and act as direct interlocutor with the EU on those competences. Belgium is represented in the European Platform for national initiatives on digitising industry by the **regional governments**. The Federal Government represents the national platform in the EU Coalition for Digital Skills and Jobs.

Policies to support digitisation are developed under the policy declarations of different Belgian governments for the period 2014-19. Due to the different institutional settings, initiatives for digitising industry/ I40 emerged in different settings:
- '**Digital Belgium**', at federal level. Among different measures related to the federal competences (e.g. also on infrastructures) several types of investments for digital transformation can benefit from tax reductions.
- '**Industrie 4.0**', in Flanders Region. The digital transformation is part of a general transition strategy 'Vision 2050', driven by major societal challenges: 'Making the leap to Industry 4.0', is one of the seven transitions.
- '**Digital Wallonia**' In Wallonia Region. The actions for digitising industry are connected to the overall transformation strategy (Marshal Plan) and coordinated through a Digital Agency.
- '**beDigital.brussel**s', in the Brussels Region. Under this umbrella the 'NextTech Plan' was introduced in 2017 to support digital start-ups.

There is **no formal alignment** of the different digital action plans in Belgium, neither for the industry 4.0 initiatives. But important steps are taken towards **integration** of policy initiatives of different domains **within** the different policy levels. The 'digital policy' combines policies from the digital agenda point of view. The 'industrial policy' combines digitisation with other elements of the economic transformation strategies. Interaction with stakeholders and the leading role of industry is institutionalised, often in a dynamics of top-down policy design with bottom-up policy shaping and implementation by industry-driven stakeholder fora.

'**Made Different**' is a support action initiated by the Belgian federation of technology companies (Agoria) and the Collective Research Centre for the technology industry (Sirris). It is addressing companies on the whole Belgian territory.

Other actions at national level: on the initiative of **Business Sweden** a 'Swedish-Belgian Innovation Network' is established that will have a pilot conference on 'Digitisation of the Future Industry' in October 2017, with the aim to gather and match the research and industrial actors in Sweden and Belgium, using Eureka and Eurostars funding. It is supported through different regional intermediaries.

National initiatives in Belgium supporting digitising industry
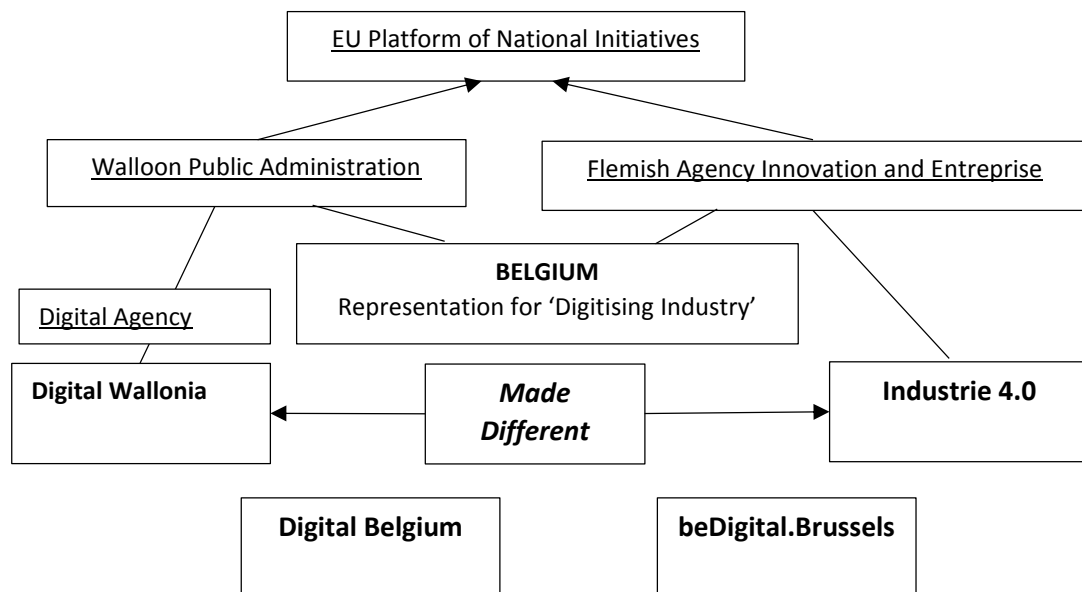
2. Made Different[2]

Made Different is an **industry-led, bottom-up initiative** that provides transformation and assessment services to manufacturing companies all over Belgium. It has been recognised as good practice for supporting transformation of companies by the Flanders and Walloon regions and inspired recently a new COSME support action on services for industrial SME transformation.

The programme is coordinated by Agoria, the Belgian federation of technology industry (www.agoria.be, 1800 member companies) and Sirris, its Collective Research Centre (www.sirris.be, with 2500 member companies), which have a broad national and European network. Sirris has in total 140 engineers and technicians spread over **8 technology centres** (application labs) across Belgium. In October it will open a demonstration facility for QRM product automation in its newest site for machine building, mechatronics and assembly in Kortrijk, set-up to support Factory of the Future (inaugurated in 2016). Sirris-labs also give smaller technology providers with top-technologies, the opportunity to show-case their solutions.

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[2] See also: Digital transformation Monitor, Belgium: "Made Different", May 2017

The Made Different programme was initiated in **2012** in response to the New Industrial Policy in **Flanders**, to implement transformation of companies in 'Factories of the Future'. It received project support between 2014 and 2016. Now it operates independently but is part of the portfolio of support measures of the 'Transition Industry 4.0', led by the Flemish Enterprise and Innovation Agency. In **Wallonia** this Made Different programme has been integrated in 2017 in a consortium with other services led by the Digital Agency, as specific support action under Digital Wallonia. This has focussed Made Different more on digitalisation in the overall approach.

This programme **accompanies individual companies with advisory services** in their transition to Factories of the Future, according to **seven transformations**: world-class manufacturing technologies; end-to-end engineering (integrated design approach); digital factory (digitising operational processes); human-centred production; production network (optimal eco-system); eco-production (sustainability standards); smart production systems (smart interconnection)

It has **four, interlinked components**:

1. **Awareness** raising events: roadshows and workshops to advertise the opportunities and need of becoming a Factory of the Future.
2. **Coaching**: providing a tailored guidance and assessment-on-demand.
3. The Factory of the Future **Awards**: to label the success cases (16 companies have been selected up to 2017)
4. Managing several company-led **learning networks** within the different Made Different transformation areas

Companies can execute an **on-line diagnostic** to discover the most relevant transformation opportunities, and receive an **advisory site-visit** as a stepping-stone towards a (paid) full assessment and **coaching** process. This process starts with a **commitment** of the top-management and leads to a **tailored** action plan and to implementation process that can last one to two years. These transformation plans address one or several of the seven transformation challenges.

The assessment and advisory services are provided basically through a pool of 40 **dedicated experts** of Agoria and Sirris. The **assessment** service stands for on average 10-15 days of consultancy (around 10.000 euro). Through their experience the advisors of Sirris learned to translate the broad objectives of transformation in realistic and recognisable opportunities at the shop floor (e.g. to support operators). They focus on the assessment stage, while the business case is up to the management. The **network of support services** is extended to collaborations with other federations and service providers, facilitated by the government efforts for coordination in Flanders and Wallonia. The experience is now transferred to other sectors and other European regions.

The Award is a **label** for companies that have successfully transformed on all 7 domains and can be used by the companies as a marketing, recognition and/or employer branding instrument, but also opens-up these factories as demo-sites for other companies. The **16**

Award winners (until now) have become members of an exclusive **Learning Network**, to further enhance their transformation through open innovation cooperation and exchange of experience (e.g. for lean product development). Other learning networks, on lead-time reduction or labour organisation, are open to other companies that are committed to act and share. Cross-company and cross-sectoral transfer of good practices can be enhanced in this way.

More than **300 companies** have already completed or are in the process of one or more transformations. The objective is to reach 500 companies and have 50 FoF by the end of 2018. The effect on new investments of these assessments and action plans is substantial. The 16 Award winning companies report almost 500M € investments in new technology, 11% job increase and reduction of lead-times by 80% after these investments.

http://www.madedifferent.be/en

3. Federal level: Digital Belgium

Political commitment and partnerships
'Digital Belgium' is an initiative of the Belgian Federal Government, launched in **April 2015**, to boost the digital economy and expand prospects for growth and jobs. The government Michel that started in October 2014, appointed a **Minister of Digital Agenda and Telecom** (part of the portfolio of deputy prime minister De Croo).
The initiative is supported by 'Digital Minds for Belgium', a **Steering Committee** comprising CEO-s from digital companies, entrepreneurs, investors and academics.
The ambition of the initiative is to bring Belgium in the **top three** of the DESI index by 2020, create 1000 new start-ups and 50.000 new jobs in different sectors.
Recent tax reform (Summer 2017) will benefit more private investments.

Status of Digital Belgium - Action plan
The Digital Belgium Action Plan has **5 pillars**, with each 3 to 6 projects dealing with actions that fall under the federal competences:
- **Digital economy**: the main focus is on start-ups and the use of tax incentives to promote entrepreneurship, growth and jobs to support the digital economy in all sectors
- **Digital infrastructure**: Ultra-fast internet Plan (promotion of high-speed internet for all Belgians; the federal government also takes action to cover white spots)
- **Digital skills and jobs**: National Coalition for Digital Skills and Jobs; awareness actions; digital hubs for introducing youngsters in digital skills
- **Digital trust and digital security**: strategy for open data; the Center for Cybersecurity stepped-up actions.
- **Digital government**: Digital Act; promotion of e-government (via e-invoicing for suppliers since 2016); 'Digital Health Valley' (giving health professionals new tools and help Belgian companies to play a global role).

Implementation

The Plan is in full deployment. Different instruments are part of transversal actions for innovation and economic transformation: e.g. the **Start-Up Plan** (with tax shelter for start-ups); enhanced tax and investment incentives for companies; promotion of the sharing economy. Other Ministries are involved (Work, Health, Science); the government has increased policy synergies with this plan.

There are dedicated awareness raising actions:

o **Tournée Digitale**: evening sessions co-organised with employer federations and private organisations (16 events with 2000 participants)

Digital Skills:

o Following the EU 'Digital Jobs and Skills Coalition', Belgium has started a national alliance called '**Digital Champions**' that brings together stakeholders from different regions.   http://www.digitalchampions.be/en/home.
o The '**Digital Skills Fair**' has assembled more than 50 projects all over Belgium in May 2017.
o '**BE Central**': 2000m² digital campus (from October 2017): www.becentral.org
o 'Digital Belgium Skills Fund' received €18 million to support digital skills initiatives working with socially vulnerable youth.
o There are different digital awareness and skill initiatives for **social inclusion**, and digital initiatives are also deemed important in development policy (Belgium promotes a 'European Digital Coalition')

Investment support (mainly through tax deductions):

o There is an important (generous) **tax deduction** mechanism for innovation (in 2016 the income deduction for patents was extended to software and other IP); also deduction for R&D wage-cost; investment allowances. The tax reform of 2017 will lower company revenue tax rates and increase deductions for investments.
o Tax shelter and tax incentives for crowd-funding for start-ups.
o '**Mobile health**' is a sandbox programme of 3,25 mio euro with 24 pilot projects for apps and other mobile applications in health services.
o '**Belgian Digital Health Valley**': a programme under Digital Belgium that aims at creating mobile applications, to be used by patients to monitor aspects of their health, through test bed projects.

Legal initiatives:

o The '**Digital Act**' in Summer 2016 (implementation of EIDAS European regulation to enforce equivalent between paper and digital formats)
o A stable framework for sharing economy

4. Flanders: Industrie 4.0

1. Context

The Flemish government (in place since 2014) has developed further the transformation policies started previously with 'Flanders In Action' and 'New Industrial Policy'. The comprehensive transition strategy 'Vision 2050' is driven by societal challenges in seven transition areas. The 'Spearhead Cluster Policy' is building critical mass in innovation for economic transformation in key industrial areas. Digital transformation is integrated horizontally in the 7 strategic transition strategies, including "Industrie 4.0". The program "Industrie 4.0" unites existing and new Flemish initiatives to boost digital business and manufacturing concepts in industrial companies.

In Flanders a range of horizontal instruments for the technology supply side can support bottom-up digital innovation projects. The transition programmes are driving the demand side for digitalisation. In addition a more mission oriented support to research and innovation for industrial transformation is given through the 'Strategic Research Centres' imec (for micro-electronics and ICT) and Flanders Make (for advanced manufacturing) and through the spearhead clusters in specific industrial areas that are implementing digital transformation (e.g. food, chemistry, logistics, construction, …).

SERV, the stakeholder forum for socio-economic policy dialogue, has organised two hearings across sectors about the impact of digitalisation and robotization. This resulted in a synthesis report with recommendations (July '17) at the start of a transnational ESF project on 'Social Partners in Digital Acceleration'.

VVSG, the Flanders federation of cities and municipalities, is engaged in 'Smart Cities'. The city of Antwerp and imec have set-up a major smart city test bed project 'Antwerp City of Things' with the support of the Flemish government.

Also, Flanders has an *e-government* programme that brings together all actions under 'Vlaanderen Radicaal Digitaal', using an extra-budget of 10 million euro a year to leverage breakthroughs. But at the moment no integrated digital agenda is in place in Flanders.

The strategic research organisation for digitalisation iMinds, a major player in Flanders supporting digitising of the industry, has merged in 2016 with the strategic research organisation for nano-electronics imec, creating a powerhouse in R&D&I of European dimension (see box).

Employers' organisation Agoria, the collaborative centre Sirris and the strategic research centre Flanders Make are dealing with the Factory of the Future challenge.

2. Status of ' Transitie Industrie 4.0'

Political commitment (Public Private Partnership)

The Flemish government elaborated a **long-term policy framework 'Vision 2050: a long-term strategy for Flanders'** in 2016. Based on a trend analysis, with sustainability as leading principle and knowledge development as driving force, **7 transition priorities** were defined to accelerate the transformation of Flanders. '**Making the leap to Industry 4.0**' is one of these seven. The other priorities cover transitions in circular economy, energy, work and lifelong learning, care and well-being, mobility, and smart living. These transitions are managed as '**system innovations**' with a dedicated governance mechanism based on cooperation platforms to ensure co-creation, long-term commitment, policy integration and a learning process through the set-up of experiments. Transition managers within the Flemish public administration are appointed with a mandate and autonomy to determine the process at operational level. Steering committees with key stakeholders will advise on the strategic orientation of the transition.

The Government of Flanders has designated the ministers responsible for every transition. For Industrie 4.0, the responsible ministers are: Mr. **Geert Bourgeois**, Minister-President of the Government of Flanders and Flemish Minister for Foreign Policy and Immovable Heritage, Mr. **Philippe Muyters,** Flemish Minister for Work, Economy, Innovation and Sport and Ms. **Joke Schauvliege,** Flemish Minister for Environment, Nature and Agriculture.

The agencies 'Flanders Innovation & Entrepreneurship' and 'Flanders Investment and Trade' are supporting the transition through services and financial support.

The transition manager for Industrie 4.0 is Mr. Leo Van de Loock, member of the management of Flanders Innovation & Entrepreneurship, the main agency supporting enterprises. He will be supported by a core group of stakeholders, led by Mr. Gilbert Declerck, the former CEO of imec.

The **concept paper** on Industry 4.0 was approved by the government on 21 February 2017[3]. This paper gives the general outline of the transition platform and describes the five main fields of action. The transition will build on, complement and reinforce existing initiatives.

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[3] https://www.vlaanderen.be/nl/vlaamse-regering/beslissingenvlaamseregering?search=industrie+4.0&publication_date=&publication_date_1%5Bmin%5D%5Bdate%5D=&publication_date_1%5Bmax%5D%5Bdate%5D=&competence=&delivery_channel=&delivery_channel_1=&=Zoek (in Dutch)

Strategic roadmap / action plan

In 2017 a **working programme** is developed for Industrie 4.0 along **5 axes**:

1. **Sustain a platform**: organizing a central point of information (hub) for all stakeholders concerning Industry 4.0 and its implications; awareness raising and promotion through events; stakeholder discussion and input to policy making.
2. **Strengthen the knowledge base:** additional research in the domains supporting the transition towards Industry 4.0 and the dissemination of the knowledge; networking of present actions; support of imec, Flanders Make and other institutes.
3. **Accelerate application**: supporting the transition of individual companies, in particular SMEs; promotion of support instruments; demonstration units and pilots; collaboration with spearhead clusters etc.
4. **Relate to framework conditions and society:** connecting with policies on learning and competences, legal consequences, EU standardisation, …; inventory of actions to be taken; study of impact on worker competences and labour organisation.
5. **Support international cooperation:** representation in EU policy initiatives; supporting the participation in the programmes and projects of the European Commission and stimulating internationalisation in general (e.g. international fairs and events).

Implementation

The Transition 'Industrie 4.0' started in 2017 rolling out its work programme, with a focus on **streamlining** the existing R&I actions in Flanders and **connecting** to international networks. Project groups on communication and internationalisation will be active.

The main budget in 2017 will come from the open instruments of the agency Flanders Innovation & Entrepreneurship and the funding of the strategic research organisations. Including the direct funding of companies investing in R&D, innovation or investments supporting the transformation, the funding from Flanders for activities related to Industry 4.0 exceeds **50 million euro/year**. On top of that, projects are supported by the European Commission through the regional funds and instruments of DG Research and DG Grow.

In line with the philosophy of the action, additional funds will only be allocated to achieve **specific goals**. In 2017, 4 million euro will be spent to support the set-up and strengthening of **innovation hubs and pilot lines**, and a not yet determined budget will be given to **collaboration projects** between spearhead clusters and other organisations supporting the transition towards Industry 4.0.

The implementation of the work programme is supported by different organisations already active in this field, including the strong and diverse research

community and sectorial and technological innovation centres and professional organisations. There will also be a narrow collaboration with the network of **spearhead clusters** (in the domains of sustainable chemicals and plastics, materials, logistics and transport, energy and agro-food) and the **Innovative Business Networks**.

Furthermore, connections will be made with the other transitions, especially the transition towards a **circular economy** and the transition concerning **skills of the future**. As for the transitions concerning energy, health, housing and mobility, there will be a strong interaction with their agendas on innovation and digitisation.

Internationalisation will be based on cooperation with other regions and countries, and active participation in the European Platform of National Initiatives (Digitising European Industry). Flanders contributes to the Vanguard Initiative in different partnerships that are related to Industry 4.0, co-leading the network on 'high-performance manufacturing through 3D-printing'.

Strategic Research Centres supporting digitalisation of industry in Flanders

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Flanders Make
www.flandersmake.be/en

Flanders Make is the strategic research centre for the manufacturing industry. It emerged in 2014 from the **merger** of two competence centres (Flanders Drive and Flanders Mechatronics Centre) and the association with Sirris and ten specialised university research labs in the 5 Flemish universities. It receives a yearly government budget of close to **20 million euro**.

It will establish a manufacturing innovation network dedicated to 'Industrie 4.0', to help realise vehicles, machines and factories of the future, based in research in mechatronics, product development methods and production technologies. Expertise is funded on 4 key competences, all based on modelling and virtualisation: sensing, monitoring and decision-making; (co)design and optimisation; motion product specification; flexible assembly.

This community of more than **300 researchers** works on a joint research programme covering **eight themes**: clean energy-efficient motion systems; smart monitoring systems; high-performance autonomous mechatronic systems; intelligent product design methods; design and manufacturing of light-weight structures; additive manufacturing for serial production; manufacturing of high-precision products; agile and human-centred production and robotics systems.

In the Flanders Make **Symposium** of 21 Nov'17 on 'The Future of the Manufacturing Industry', FM will introduce its mobile, fully connected laboratory for flexible and human-centred production. This **facility** will bring technology to the companies to co-create advanced production methods and accustom operators to new production processes.

Flanders Make participates in INNO INFRA SHARE (Sharing Strategies for European R&I Infrastructures) an Interreg projects with 8 partners across the EU to **improve accessibility and utilisation of local R&I infrastructure by SMEs** (inventory and action plan for improving infrastructure policies).

Flanders Make seeks to join partnerships in H2020 programmes, e.g. those on Smart, Green and Integrated Transport. But the main ambition in 2017-18 is to accelerate even more the transition to Industry 4.0, with its corresponding digitisation, in particular focussing on personalised and flexible production at the cost of serial production, to move Flanders industry **from a strong follower position in front of the peloton** of the industry of the future.

imec
https://www.imec-int.com/en/home
imec (Inter-University Micro Electronics Center) was established by the Flemish government in 1984 as its first strategic research center. It has grown to the **largest** independent research organisation for nano-electronics in the world. It has a turnover of 500 million euro in research actions, including a yearly dotation by the Flemish government of **108 million euro**. After the merger with iMinds in 2016 that reinforced the digital technology capacities, the number of researchers grew to nearly **3500**, including those abroad (Netherlands, Taiwan, Hongkong and US). This merger was a strategic move to **connect** the **technology** development capacity in imec (leaderchip in microchip technology) to **applications** with embedded technology solutions (with software and ICT). imec offers a **single point of contact** for the exploration of advanced technologies in the following application domains: Smart Mobility, Smart Health, Smart Industries, Smart Cities, Smart Energy, Smart Education.

The **business model** of imec as technological research centre has been built successfully on providing an independent technology platform to the global ICT industry, on a cost sharing basis. Most major ICT companies work with the advanced facilities and generic knowledge base offered by imec to co-develop next generation industrial technology.

imec develops a **multi-layer approach** that combines world-class infrastructure (clean-rooms and prototyping labs), training facilities, PhD programmes and

platforms for research on targeted domains in energy, health, mobility and manufacturing. The offering of support covers open research consortia, bilateral R&D contracts, development on demand, low volume manufacturing and service. Also, imec has a dynamic technology transfer and spin-off creation activity (more than 100 over its life-time). It is engaged in many European research consortia and PPPs (such as ECSEL, HPC, …).

In this position imec has a capacity to be an **innovation chain and value chain integrator**, starting from its core technology development and system integration to prototyping and validation. The industrial validation of the applied technologies therefore is a crucial capacity for testing technologies close-to-market.

The **'Smart Industries' programme** in imec is connecting the research and technology capacities across the institute with specific industrial demands for technology applications. This is part of the **new business development** as technology supplier in application areas, besides the more mature model for scaling of core microchip-technologies. Technology labs of imec supply **tailored solutions** in technology domains that are relevant for Industry 4.0: from research into intelligent logistics and the Internet of Things, up to human-machine interaction, making sense of big data, the creation of sensor systems for industrial applications, imaging technology, and so on.

The **Smart Industry team** in imec is the **broker** in this matrix approach between the technology development capacities in imec and application labs of other service providers and client companies. imec uses the **Living Labs approach** developed by iMinds to accelerate the development of applications together with lead-partners in the application domains.

An example of this closer integration with application environments is the development together with Flanders Food of the **European partnership 'Smart Sensor Systems for afro-food'** under the Thematic Smart Specialisation Platform for Agro-Food. This emerging network with 9 other regions seeks to develop a joint validation network for sensor-based industry 4.0 solutions.

With this background imec is not only important for Flanders (making a joint roadmap with Flanders Make), but is a **major innovation hub of European dimension** in microchip technology and digital technologies that can connect to a large network of application labs across the EU to accelerate the validation of advanced technology solutions for Industry 4.0, in combination with other technology and solution providers.

https://www.imec-int.com/en/articles/smart-industries

Evaluations/studies

- Flanders Make and PWC surveyed (end 2016-early 2017) 30 leading manufacturing companies in Flanders, representing a total turnover of 16.4 billion euros and together employing more than 33,000 people, to find out their current maturity and future expectations of Industry 4.0. The study is the first in Belgium and based on PWC's Global Industry 4.0 survey 'Building your digital enterprise' (e.g. to compare investment trends). The study issued recommendations on the level of business strategy, need of pilot projects, capabilities, data analytics and transformation in digital entreprises, and the eco-system approach.
  http://www.flandersmake.be/sites/default/files/Industry%204.0%20-%20hype%20or%20reality%20-%2024-03-17%20%28002%29.pdf

- 'Toekomstverkenningen arbeidsmarkt 2050' is a comprehensive study of trends in technology, jobs, labour relations, careers and their impact on "21st century skills", and conclusions for training and education in long-term perspective 2050.
  http://www.ewi-vlaanderen.be/sites/default/files/conceptnota_visie_2050_bijlage.pdf

3. Other policy support to digitising industry

Boosting innovation

- The overall research and innovation policy framework offers already opportunities for R&I in ICT or industrial transformation. The most important subsidy programmes are the **business R&D and SME innovation support** (bottom-up projects), the **SME portfolio** (instruments to enhance capacity), **Strategic Transformation Support** (to help selected strategic companies to succeed their transformation).
- In addition the government launched its cluster policy for **Spearhead Clusters** (big consortia for long-term cooperation in strategic areas for growth) and for **business innovation networks** (short term actions to enhance bottom-up cooperation in specific domains). One of the recently established networks is '**Digitising Manufacturing**'. This network, managed by Sirris, brings together manufacturing companies and technology providers to support the creation of collaboration projects.
- Agoria and Sirris developed with financial support of Flanders Innovation & Entrepreneurship a program, '**Made Different**', to coach industrial companies through 7 managerial challenges to turn them into agile, high-tech smart manufacturing organisations. See http://www.madedifferent.be. Companies who fulfil these properties play an exemplary role for their pairs and are called 'factories of the future'. The program helps in identifying roadblocks and opportunities. It motivates companies to take the next step. The program is already adapted by the Walloon government and it will probably start soon in some neighbouring countries.

- In 2017-18 Flanders Innovation & Entrepreneurship will start a new **living lab 'Industrie 4.0' program** in cooperation with the main research and sectorial actors to test, show and transfer advanced techniques and concepts to at least 500 manufacturing companies. On top of other regular funds, the program will start with a budget of 4 mln euro.

Skill development

VDAB is Flanders' major career conductor and training agency that provides the context for all Flemish citizens to develop their careers. (Staff > 2.000 people)
VDAB develops multiple programs in the context of the digital transformation of society and industry, often in cooperation with ESF.
Another important agency is **Syntra** Vlaanderen. It manages more than 24 learning campuses and 500 enterprise courses with thousands of participants.
The **Ministry** for Work promotes partnerships to develop competence profiles for the future and implement these in education and training qualifications. Experiment for new policies on 'dual learning' are deployed.

One of the other 7 transition priorities of the Flemish government in 2017-2050 relates to the important theme of '**Work, lifelong learning and dynamic careers**'. This transition programme started its activities in March 2017 on the basis of a foresight study on challenges for future labour market (including the digitalisation of the economy).

The transitions 'Industrie4.0' and 'Work' will align to develop cross-links.

Standardisation

Standardization efforts, apart from continuously elaborating the legal framework for all economic and societal activities, are mainly coordinated by the Belgian government or organised by employers' federations or collaborative centres.

Regulation Framework

Legislation is both defined by the Belgian and Flemish governments. There are specific laws concerning digital activities: e-commerce, e-invoicing, e-signing, media, piracy and fraud, IPR, data- and tele-communication, drones, robot safety,

4. Investments

A detailed analysis of the investments in smart manufacturing industries or new digital activities in Flanders will be carried out in the next months. It is estimated that

the funding from Flanders for activities related to Industry 4.0 **exceeds at least 50 million euro/year**.

In 2016 the Flemish government budget for scientific research (R&D) was 1398 million euro. The total R&D&I budget from the Flemish government will grow to 2217 million euro[4]. The budget for innovation was increased with 175 million in 2017. The government announced in September 2017 that budget for innovation in 2018 will be increased with another €75 million.

Cluster policy introduced in 2017 **new instruments** for Spearhead Clusters (up to 50% of the budget, and max €500.000 a year over a ten year period) and Innovative Company Networks (up to 50% for coordination costs and cluster activities of maximum €150.000 a year during maximum three years).

5. Good practices:

The integration of imec and iMinds in one high-tech research center for the digital economy creates a European power house that keeps Flanders on the world map.

Flanders has a network of **strategic research centres, with a double mission**: world-class research and economic relevance for companies in Flanders. This strategic research centers get long term support of the government, governed by 5-year contracts specifying KPIs and boundary conditions.

Up to 2016, 2 strategic research centres were operational in the broad field of ICT.

imec was founded already in 1983 and had grown to a global leader in the domain of nanoelectronics. It had innovated applications in smart systems for the Internet of Things (IoT), Internet of Health, and Internet of Power. It had built also an extensive and worldwide partner network, as well as in Flanders, and had generated successful spin-offs.

iMinds was founded in 2008. Its software expertise was widely renowned and its entrepreneurship activities such as the iStart entrepreneurship program (supporting start-up businesses) and Living Labs were first-rate. Its activities spanned research domains such as the IoT, digital privacy and security, and the conversion of raw data into knowledge. iMinds has participated in many European partnerships.

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[4] EWI – the Flemish department of Economy, Science and Innovation – publishes a yearly general survey of the investments of the Flemish government in R&D&I. See www.ewi-vlaanderen.be/speurgids/home (in Dutch).

Both centres were very complementary, as well in the scientific and technological specialisations as in the business model. Both had a strong international network and actively contributed to research priorities of EU 2020.

On the other hand, it was clear that the proliferation of the Internet of Everything has created a need for solutions that integrate both hardware and software. Innovative products for 'smart everything', serving optimally tomorrow's digital economy, can only be developed through intense interaction between both worlds and integration in a diversity of value chains.

So the decision was taken to **fully integrate both strategic research centres**. The combined entities are a world-class, high-tech research and innovation centre for the digital economy, that will combine the technology and systems expertise of **more than 3,500 specialists** with an ecosystem of Flemish companies and start-ups, and extensive international networks.

This merger is not only an asset for digital transformation in Flanders but has an important spillover effect to other European regions and innovation actors through **partnerships** in new European value chains.

Contribution to European priorities

Investments in key-technologies:

Robotics, AI, big data analysis, internet of things, nanoelectronics, new sensors, hyperspectral vision, 3D metal printing, smart energy, automation, predictive maintenance, digital operator support, new business cases and servitisation concepts,… .

Development and networking of Digital Innovation Hubs:

Through 'Industrie 4.0' Flanders will inventory and facilitate the networking of available innovation infrastructure and services for the manufacturing industry. The core network is built on the facilities of imec, Flanders Make and Sirris. But besides that there are other pilot and demonstration facilities in collective research centres of sectors or clusters (e.g. Food Pilot), and research and test facilities in universities and university colleges (e.g. the B-Phot Photonics Innovation Center at VUB). The network will be shaped in 2017-2018 as part of the **living lab program**.

Participation in industrial platforms:

Flanders is involved in different PPPs and KICs. E.g.
- Smart Factories: Flanders Make and imec
- Healthy Ageing: Flanders Care, Nano-for-Health intercluster initiative
- Smart Agriculture: Smart Agriculture Network
- Autonomous Driving: Flanders Make and imec. In 2017 Flanders Make started a new research programme of 50 million euro for self-driving vehicles (in public transport) counting 21 projects in which 34 companies are co-founding.

5. Digital Wallonia

1. Context

Political changes; new policies

Industrial transformation in Wallonia benefits from a long-term strategy for revitalisation of the economy with a broad societal support that is in place since 2005, the **Marshall Plan for Wallonia**. The Government elected in 2014 updated in May 2015 this strategy to 'Plan Marshall 4.0'. The Plan will mobilise **2,9 billion** euro public investments in the period 2015-2019 on five priority axes: human capital development; industry development by innovation; territorial development; circular economy. The fifth, **new priority axis is 'digital innovation', with a budget of 250 million euro**.

The new regional Government that took over in Summer 2017 for the remaining legislation period (2017-2019), has confirmed the budgets for Marshall Plan 4.0. Increasing the digital maturity of businesses and citizens is recognised by the new government as a major challenge to boost the economy.

Status of general Digital Agenda

This fifth priority on digital innovation in the Marshall Plan 4.0 was translated end of 2015 in a **strategy for digitalisation, 'Digital Wallonia'**[5]. The "Agence du Numérique" (Digital Agency) is in charge of the coordination of its implementation.

Five priorities have been defined: a smart and connected territory (high quality digital services for all Walloons, smartcities, …); digital competences and jobs (infrastructures and equipment for schools and life-long training); development of a strong ICT sector through a growth programme for all its companies and a priority set on international markets; digital transformation of the economy (Industry 4.0, e-commerce, electronic invoicing, …); accelerated digitalisation of public services through administrative simplification and Open Gov initiatives.

Role of ICT and of digitalisation of industry in R&I policy and in industrial policy of the Region

Digital transformation of the entire economy, through digitising operations in all companies is a core dimension of Digital Wallonia. Among its **50 measures** several are linked to the transition in companies, such as 'Made Different Digital Wallonia".

These measures are also **linked to other main axes** in the Marshall 4.0 plan, in particular to human capital training and to R&D in support of the 'Pôles de Compétitivité'.

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[5] www.digitalwallonia.be

After their launch in 2005-09 and further consolidation during 2009-14 period, the Walloon clusters policy is shaped through **6 'Pôles de Compétitivité'** in promising areas for future growth (more than 930 companies are members of the poles, of which 80% SMEs). It is now expanded and linked to the smart specialisation strategy of Wallonia. Internationalisation, participation in European networks, use of KETs, close cooperation with other technology and business intermediaries, and supply of training tailored to the needs of the poles, became part of their agenda, besides their core mission to promote collaborative research and innovation. The Poles can submit projects for research & development or for training, in response to dedicated calls of the Government (adding-up to about 1 billion euro all together until now). These Poles are therefore a very important instrument for the industrial transformation of the Region.

The **Pole 'MecaTech'** (for mechanical engineering) will be the one most involved in the digital transformation actions. The MecaTech cluster projects are developed in four strategic fields: materials and surfaces of the future; comprehensive forming technologies; microtechnologies and mechatronics, and intelligent maintenance. With about 200 partners involved in projects carried out jointly by companies and research and training units, the MecaTech Cluster has created a new dynamic for "hybridisation of mechanical engineering", enhancing groundbreaking innovations.

The other Poles are also fully implicated in the digital transition programmes, like Skywin (aeronautics), Greenwin (green technologies for the construction sector), Wagralim (food industry), Logistics in Wallonia, …

Besides the Poles, the Walloon Government also conducts a cluster policy for smaller networks, of which two are **digital clusters**: **INFOPOLE cluster ICT** (a centre of excellence in ICT bringing together academic and industrial expertise) and **TWIST** (business cluster of audiovisual service providers).

The **smart specialisation strategy** of Wallonia is the guiding policy framework for the innovation and entreprise development actions foreseen in the Marshall Plan. Digitalisation is a transversal approach for deepening the innovation dynamics in all the 6 Poles, while it is also more targeted in the dedicated Poles and object of intercluster cooperation. Different ICT domains are part of the S3 priorities (such as additive manufacturing, IT applied to human health or logistics, embedded systems, IoT, …), and are subsequently prioritised in the R&I policy.

The programme "**Creative Wallonia**" (dedicated to the creative industries) also launched some initiatives to enhance digitisation. Hence in the field of e-health, the WeLL ("Wallonia e-health Living Lab") - active since 1 January 2015 - offers a place where users can express their needs in the area of health in order to define technological solutions with industry professionals, including SMEs (co-creation processes).

Under the Marshal Plan priority axis for **human capital development**, the offer of vocational training is increased in the priority areas for the poles, and in particular for energy, circular economy and digitalisation. In the area of digital economy, the Marshall 4.0 Plan supports professional training: by updating the list of digital professions; optimisation of digital training in competence centres and investment in tools for education; development of digital competences of unemployed workers

2. Status of the Digital Wallonia
Political commitment (through Public Private Partnerships)

The Digital Wallonia strategy was adopted in December 2015, based on the recommendations of a "**Digital Council**" (composed of CEOs, CTOs and representatives from various sectors - such as IT, media, health - start-ups, researchers, academics). It is a framework for developing a 'territory of digital excellence' through coherent public intervention, including in the field of legislation. It covers a wide range of measures: from awareness raising workshops (Digital Cafés) to support of start-ups.

Different initiatives have been launched, each time for a specific **sector** (retail, construction, …). One of these is "Made Different Digital Wallonia", started in 2017 to accelerate the digital transformation of industrial companies through awareness, diagnosis and accompanying support.

Strategic roadmap / action plan (main actions coming)

Digital Wallonia embodies the digital ambition of Wallonia. Digital Wallonia is divided into **3 complementary and inseparable axes**:

• A **strategy**. Adopted collectively by the Walloon Government, it sets out the priorities and objectives of public policies and the framework for supporting private initiatives in favour of digital.

• A **platform**. Governed in a collaborative way by the Walloon digital ecosystem, it provides services and support to public and private actors involved in the implementation of the digital strategy. The platform gathers information on the Walloon digital ecosystem with more than 5000 digital companies, actors, e-commerce sites, schools, research centers, … identified and containing information on the ecosystems of smart cities, e-health, Industry 4.0, etc.

• A **brand**. Driven by all the actors of the digital transformation of Wallonia, it ensures their visibility and federates the initiatives implemented within the framework of the digital strategy. This strategy marks the ambition of the Walloon Government to do everything possible to make Wallonia a connected and intelligent territory where technological companies are recognized leaders at the global level and the driving force behind a successful industrial

transformation, and where innovation is at the service of a quality education, the opening up of public services and the well-being of citizens.

The implementation of the digital transformation part of the Digital Wallonia strategy was significantly **accelerated in 2017**, in particular with the start of the Made Different Digital Wallonia initiative.

The implementation of the Digital Strategy has increased the capacity for integration of different (formerly often dispersed) policies and measures. The set-up of a **Wallonia Digital Innovation Hub** is a next step in coordinating all public and private service providers in an coherent framework supporting the digital transformation of industries.

The new government (for the period 2017-2019) is similarly committed to the digitalisation of the economy.

Digital Innovation Hub in Wallonia

Wallonia is currently working on establishing a Digital Innovation Hub. The objective of the Walloon DIH will be to **provide the support needed to companies** to transform their activities following the principles of industry 4.0, as promoted by the Region. Services offered will correspond to the level of **digital maturity** of the enterprise. They cover awareness activities, diagnosis of digital maturity, definition of a transformation plan and its implementation. They also tackle needs for scale-up, finance and innovation. This initiative will be open to all sectors of the industry.

The Walloon DIH should not be understood as a dedicated and independent structure. On the contrary, it results from the **combination** of different actors and coherent mechanisms to support digital transformation and the creation of companies, as well as from synergies between these elements. Many support actions, such as the Made Different Digital Wallonia, rely on an important network of partners (competitiveness clusters, recognised research centres, professional federations) and various awareness-raising and support mechanisms (Digital Wallonia platform, business vouchers' arrangement ("chèques-entreprises"), ...). Moreover, the different actors and arrangements are generally specialized according to the level of maturity of the targeted companies in their "Industry 4.0" transformation process.

The Walloon DIH covers **28 actions in an integrative framework for support** according to the **five dimensions** of the Industry 4.0 accompaniment by the Walloon DIH:

- Awareness: What are the benefits? What are the issues/concerns?
- Diagnosis: Where am I? What are the priorities?
- Transformation plan: How to do it?
- Realisation: Who can help me? Train me?
- Growth: How to value my transformation?

Additional dimensions, i.e. innovation and financing are considered as cross-cutting ones at all stages of the SME development.

Mapping of provided services according to the level of maturity of the company
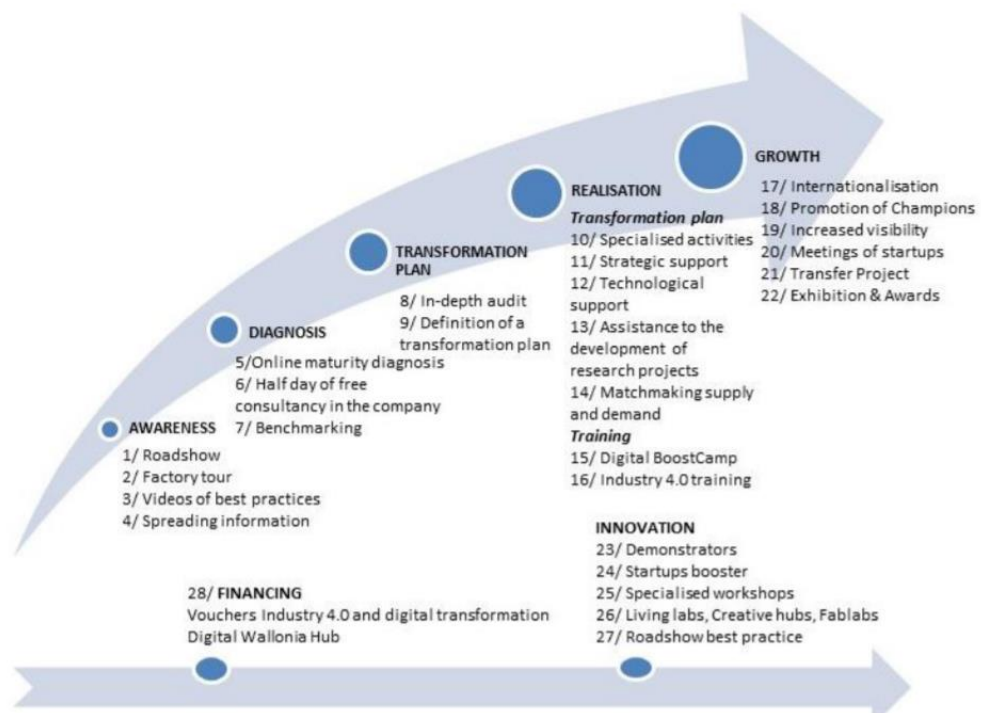
The **Agency** for Enterprise & Innovation "Agence pour l'Entreprise et l'Innovation" (AEI), the parent company of l'Agence du Numérique (Digital Wallonia), plays a role of **orchestrator** of this landscape. It is a limited company of public law whose purpose is to support the creation and business growth, and the innovation and development of new economic activities.

Its missions are to:
- pilot, structure, lead and assess a network of operators that offers a coordinated package of services to project developers and businesses;
- support the development of entrepreneurial culture and of new business models;
- facilitate the access to any relevant information to companies and project developers through a single entry point: the Infos-Entreprises portal;
- ensure optimized technology and knowledge transfers in the field of R&D;

> • contribute to make Wallonia a land of digital excellence through its subsidiary, the Digital Agency.

Implementation

The Digital Wallonia strategy with its **50 measures** managed through the **Digital Agency** is endowed with a total budget of **500 million euro** for the period 2015-2020 (with an important contribution from ERDF).

There are competitive calls limited to targeted (and labelled) audiences, such as Competence Poles or Creative Hubs. But there are also open horizontal support measures such as vouchers for digital transformation services.

New instruments that foster the creation of innovative enterprises include **W.IN.G**, **Wallonia Innovation and Growth**, an equity platform for financing the growth of digital startups, managed by the public investment fund SRIW. This fund is not only providing seed-capital but has an Investment Committee composed of serial entrepreneurs that act as mentors and offer coaching if necessary, as well as access to networks, and to other services. After one year of activity (at the end of 2016), 252 applications were submitted. Investment decisions were made for 40 startups, for a total amount of 4,651 million euros. To date, 23 interventions have been realized by the signature of a convention and 1,758 million released.

In 2017 Made Different Wallonia was rolled out.

Made Different - Digital Wallonia

Objectives:

Made Different Digital Wallonia is an awareness and support program for the Walloon industrial companies in their transformation to industry 4.0.

Actors involved:

This program brings together 22 partners and actors of economic development in Wallonia: 5 sectoral federations; 5 competitiveness clusters; 7 research centres; 3 technical, Innovatech (support for matchmaking) and the Digital Agency (AdN).

Actions in progress

There are three types of **awareness** actions:

• An information and promotion roadshow for novice companies to be organized every year in 2017, 2018 and 2019;

• A ½ day consultancy for industrial companies to assess their state of maturity using an online tool made available for free;

• Specialized and intersectoral workshops on the different themes of Industry 4.0: IoT, big data, virtual simulation, artificial intelligence, etc.

The actual **support** (accompaniment) consists of three actions, in line with the original 'Made Different' initiative of Sirris (one of the involved research centres):

- A thorough scan (audit) carried out within the company over several days;
- The definition of an action and transformation plan to Industry 4.0;
- Personalized support in the implementation of the plan.

In addition there is the opportunity for the company to assess its level of maturity and participate in the "Factories of the Future" awards.

The difference with the original Made Different project is its close ties with Digital Wallonia, organised by the Digital Agency through the following **tools**:

• A website dedicated to the Made Different program;

• A mapping of the industry 4.0 provision of services (Digital Wallonia platform);

• A tool for sharing information and documents;

• A CRM (customer relationship management) for monitoring companies in the process.

Budget: around 350-400K Euro.

https://www.digitalwallonia.be/made-different-digital-wallonia/

In march 2017, another important measure was decided by the Walloon Government: the simplification and full digitalisation of the public aids to SME's.

Under the management of the administration of the Public Service of Wallonia in charge of economic affairs, technology and research (DGO6), various grants and public aid for enterprises, especially those related to economic development and SME's, are now available via an online platform where Walloon SMEs can apply for virtualized **business vouchers** ("Chèques entreprises"), including those related to digital transformation. These are three-fold:

• Vouchers for **digital transformation**;

• Vouchers for **Operational Excellence and Industry 4.0**;

• **Cyber security** vouchers.

Other aids for technological innovation are also available, such as technological vouchers ("Chèques technologiques").

Evaluations/studies.

The Agence du Numérique has a strong skill in studying the level of digital maturity of Wallonia (citizens, companies, schools, specific sectors, … For each major topic of the

Digital Wallonia strategy, the Agency has published or will publish "digital maturity barometers" that will serve as monitoring tools for the Government and all the partners involved in the strategy. Moreover, specific diagnosis tools of digital maturity are offered to the Wallon companies in various sectors: construction, food, Industry, retail, … These tools are fully coherent with the global maturity barometer and may be used as monitoring assets by the individual companies, their sectorial representatives and the Government.

3. Other policy support to digitising industry

Boosting innovation

Many initiatives in favour of R&D for digital innovation have been undertaken in the framework of the Marshal 4.0 Plan and its focus on the 'Pôles de compétitivité', and support of industrial valorisation of this research. Digital transformation is part of many of these research and innovation projects in industrial modernisation, besides the 245 million specifically earmarked for digital innovation.

The reform of the **RDI aid decree** in 2016 has made it possible to increase public aid e.g. for demonstrators and pilot plants in companies.

Besides, the '**Digital Wallonia Hub**' was launched early 2017 to support high-potential companies (champions) in their scale-up and internationalisation, through financing of innovation with recoverable advances.

Skill development

The first axis of the Marshall4.0 Plan on human capital development (endowed with **305 million** euro) supports digital education in schools, at the workplace and organisations to ensure digital inclusion. Also the unemployed are given the opportunity to have free ICT training.

Based on skills areas related to digital transformation that have been defined by the Walloon public service for employment and training (FOREM)[6], the strategic agendas (2017 – 2020) of the Walloon **competence centres** (Technofutur, Technifutur, Technobel, Technocité) have been aligned; they include Industry 4.0 theoretical and practical training (from the management to the training of operators) that can be mobilised by companies in their overall digital transformation plan (see e.g. the "human centered production" aspect of "Made different | Digital Wallonia"). Besides competence centres, creative **fab labs** can also be mobilised – as places of prototyping of new practices and technologies –

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[6] Analyses of various sectors : https://www.leforem.be/chiffres-et-analyses/metiers-d-avenir-transition-numerique.html

in order to better connect with enterprises in terms of needs and skills development.

Standardisation

…

Regulation Framework

The Walloon Parliament voted on 12 July 2017 a legislation for an open data service , to give all citizens access to all open public sector data in a sharable format.

4. Investments

The total investment in digital transformation consists of **targeted support** with calls that are only open to certified organisations (Poles, Competence Centres) and **horizontal support** measures (in particular with vouchers). The Agency for Enterprise and Innovation and its subsidiary, the Digital Agency, are the main instruments for subsidies. In total 500 million euro will be engaged in the period 2015-2019 for digital innovation.

'**Wallonie Finance**' brings together the main public investment agencies (SRIW for bigger participations, Sowalfin for SMEs) providing financial instruments.

The support system for **digital transformation in SMEs** has been rearranged and simplified. The support mechanism through 'company cheques' (vouchers that companies can use themselves to buy eligible services) has been completely digitised itself with an on-line application procedure for the retained types of vouchers: digital transformation; operational excellence; cyber-security; co- working.

The subsidised actions are:
o Advice (audit) to analyse opportunities and needs or develop an action plan; audits for cyber-security
o Coaching (accompanying) to put action plans in practice, tests, follow-up.
o Training on operational excellence, based on practice
  https://www.digitalwallonia.be/aides-transformation-numerique/

5. Good practices:

….

6. Contribution to European priorities

Investments in key-technologies:

….

Development and networking of Digital Innovation Hubs

Digital Wallonia is structuring its services for digital transformation of companies in a virtual **Digital Innovation Hub Wallonia** that integrates the eco-system (see above). There are also seven Creative Hubs located in the Walloon region following a logic of territorial coverage (network). They act as collaborative co-creation laboratories (under the Creative Wallonia programme for the creative industries) aiming at the creation of innovative and creative projects, the networking of actors, the creation of a community, and the accompaniment of new ideas.

But there are also a number of **technical facilities** to support digital transformation: Fablabs / Living Labs / Incubators.
   o The Fablabs (currently 12) are open laboratories for testing and experimenting. They are open places where various tools – mainly digital such as 3D printer and laser cutting – are available for the design and realization of objects of all kinds.
   o The Living labs are design places of innovative products and services. Work in these places is organised around research, analysis, exchange of experience and co-creation to enable project developers to achieve exploitable results. The user is at the core of the innovation process. The areas already covered are: e-health, industrial innovation, creative industries and technologies, and food.
   o The certified Collective Research Centres (42 under the association 'Wal-tech') are supporting the digital transformation for the companies in their technology fields (in particular CETIC for ICT; CENAERO for aeronautics; CENTEXBEL for textiles; CSTC for construction; ULTITEL for telecom and signal processing; SIRRIS for manufacturing).
In addition there are 5 'Digital Competence Centres for vocational training'.

Participation in industrial platforms

Smart Factories / Healthy Ageing / Smart Farming / Autonomous Driving …
For smaller regions it is difficult to connect local players to these initiatives.

6. beDigital.brussels

1. Context

- Brussels holds a **medium** position in different international rankings for digital transformation. In the list of 34 ICT Hubs in the EU, Brussels ranked 24th.

- In its 'Regional Policy Statement 2014-19', the Brussels government announced the ambition 'To make Brussels a **Digital Capital**'[7] and to make the digital transition a main axe of the development programme for the revitalisation of the economy. In the framework of the 'Strategy 2025' the regional government has committed itself to promote new employment opportunities, in particular through supporting digital entrepreneurship (axe 1, measure 10).

- With the objective to make Brussels a 'smart city', in line with the policy statement, the government set-up in 2015 a platform to develop partnerships between education, business community and public administration, to integrate new technologies in daily life and stimulate research and innovation. '**Smartcity.brussels**' is a **digital hub** for integrating new technologies into all areas of communal life, including governance, education, health, digital services for businesses, smart mobility and safety; pursuing the development of the digital communication infrastructure (optical fibre network, wireless network); rolling out e-government further. It also supports the creation of advanced technology centres to train people in high-value technology jobs.

- In July 2016, the Government of the Brussels Capital Region approved the new 'Regional Innovation Plan 2016-2020'. With this plan, Brussels wants to become the **capital of innovation**. That is why Brussels has also opted for a 'smart specialisation strategy', focussing public R&D investments on **three priority areas**: Health – personalised medicine; Environment – Green Economy; ICT – **Digital Economy**.

- In 2016 the Minister of Economy assigned the Cluster Software.brussels the task of formulating suggestions and recommendations for a **ICT Entrepreneurship Plan** (the 'Nexttech.Brussels' Plan), in synergy with the other initiatives in the digital strategy of Brussels. The objective of this Plan is to create a supportive environment for the creation and growth of companies active in ICT in Brussels region, with a set of 20 concrete measures.

- In order to gather under a common label all digital initiatives in Brussels, the Brussels government launched in January 2017 'bedigital' (first 'Digital Brussels'), a new **integrated digital strategy** for the region to establish Brussels as a quality brand.

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[7] www.

Given the importance of the digital sector and its implication in many public competences a global approach is deemed necessary for Brussels to become a European reference for the creation, transformation and sustained growth of digital companies in the territory, through a dynamic and coordinated eco-system and to contribute to increasing Brussels and Belgian ranking in the DESI index.

2. Status of Bedigital.brussels

Political Commitment

- The Brussels government decided in February 201 to put all their digital initiatives under a **common label**: Digital.Brussels (later converted in Bedigital.brussels).
  http://cirb.brussels/fr/quoi-de-neuf/actualites/digital-brussels-une-nouvelle-strategie-numerique-unifiee-pour-la-region-bruxelloise

- The common vision will be implemented through a **Coordination Committee for the Digital Strategy** in Brussels within the Brussels Government consisting of representatives of the 3 ministers in charge of this digital strategy: the minister in charge of the economy, the state-secretary charged with the Digital Transition and the state-secretary in charge of scientific research as well as the associated administrations (BRIC, Impulse, Innoviris) and clusters (software.brussels).Bianca Debaets is state-secretary charged with the Digital Transition.

- Bedigital.brussels is the umbrella for **three government plans** to position Brussels as international quality label for the digital transition:

  o '**Smart City Brussels**', started in 2015, to position Brussels better as a digital and smart city through coordination of all public initiatives and awareness raising. The Smart City project is the backbone of Bedigital.brussels. A Smart city manager, part of the CIRB (center for informatics of the Brussels Region) was assigned in 2015 and links the different initiatives. In 2017 a broad smart city strategy was adopted and a Smart City Program Office is in preparation.

  o The '**Regional Innovation Plan 2016-20**', adopted in July 2016, after a broad consultation of more than 200 stakeholders from different sectors were consulted, including companies, colleges and universities, (regional) public institutions, representatives of the other Belgian Regions and Communities, professional associations and civil society. This inclusive approach ensures broad-based support for the Brussels research and innovation ecosystem. The plan aims to be the reference framework for the research and innovation policy and a catalyst for socio-economic development, with the ambition to become a capital of innovation. That is why Brussels has also opted for a 'smart specialisation strategy', whereby local forces are supported in priority areas such as Digital Economy. **The research and innovation agency Innoviris is in charge of implementation.**

- o The Plan '**Nexttech.Brussels 2017-2020**', finalised in January 2017, is a plan of the Ministry of economy, largely conceived by the ICT sector itself to benefit the ICT sector, with the objective of growing employment in ICT and professional reconversion to ICT jobs. It contains 20 measures to promote ICT entrepreneurship in coordination with the business community, research organisations and public authorities.

Plan NextTech Brussels 2017-2020
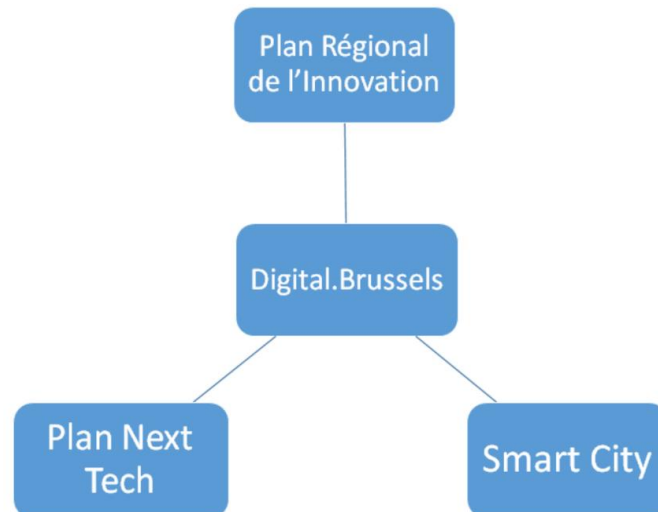
B. Strategic roadmap/action plan

Smart city

- '**Smart City Brussels**' is the backbone of the overall digital strategy, for improving critical factors such as connectivity, investment in human capital, use of internet and digitalisation of public services. https://smartcity.brussels
- In 2017 a 'Smart City Strategy' was adopted in the framework of bedigital.brussels initiative. Besides the Smart City Manager for coordination within the Brussels administration, a Smart City Ambassador will be assigned with representation of the quality label outside Brussels.
- A Smart Smart City **Programme Office** will be installed to boost further initiatives in smart mobility, energy, environment, etc.It will liaise with internal and external stakeholders, develop the general roadmap for the strategy and monitor projects, and develop and implement the technical architecture for the ICT strategy of the region. The Smart city strategy defines a roadmap with certain key metrics related to Digital Economy and Society Index (indice DESI); a focus is made on the digital inclusion as well.
- Brussels participates in the EIP Smart City.

http://cirb.brussels/fr/fichiers/brussels-smart-city-strategie

Nexttech

- '**Nexttech Brussels 2017-2020**' is a **Plan for IT entrepreneurship** largely conceived by the ICT sector itself to benefit the ICT sector, with the objective of growing employment in ICT and professional reconversion to ICT jobs.
- The plan contains **20 concrete measures** structured in **three axes**: facilitation, training, diffusion. It has thematic focus on three key-technologies: Internet of Things; Virtual and Augmented Reality; Management of Big Data and Artificial Intelligence.
- The 20 concrete measures aim to remedy the **deficiencies** that have been analysed: on the level of lack of transparency and coherence in support policies, lack of synergy in support instruments, lack of visibility, insufficient seed-capital, lack of skilled workforce.
- Therefore the organisation of the plan is transversal, **assembling** the existing regional economic support initiatives. One measure (nr6) is that agents of support organisations will be physically present at regular hours in the different business centers and incubators to provide tailored coaching and support services.
- Other **new** measures are the organisation of encounters of start-ups with VC-funds (nr3) and of an accelerator for business creation, focussed on the three key-technologies to. The integration of Fablabs in a network to support start-ups in digital fabrication through offering of specific equipment such as VR/AR headsets, IOT equipment on top of more traditional 3D-printers, laser cutters and CNC milling machines (measure (nr 8) is also connected to the recent plan to support a circular economy.
- The main measure of Nexttech is the creation of an **ICT Employment Training Centre**, that will concentrate existing programmes, with the objective to double the number of ICT training courses.
- To make this happen a total budget of **€7,86 million** is invested in the Nexttech Plan, in addition of the measures already foreseen. This overall budget (Nexttech and other measures contributed to the overall digital strategy) is decomposed over the three axes as followed : Facilitation: 3.590.000 euros ; Training: 4.060.000 euros ; Diffusion: 360.000 euros.
  https://nexttech.brussels/

Regional innovation plan

- The **Regional Innovation Plan 2016-2020** pays particular attention to three strategic priority areas that reflect the Region's strengths and can create leverage for welfare in Brussels.
  1. Health - Personalised medicine
  2. Environment - Green economy
  3. **ICT – Digital economy**

- The **ICT sector** in Brussels counts 40.000 jobs. The ICT innovation domains that are considered the most promising are those that have a **broad application** domain: data (collection, treatment and analysis of data), SaaS (Software-as-a-Service), Internet of Things , e-security, and image processing. These technologies support directly the strategic activity domains 'personalised medicine', 'green economy'. But also the cultural and creative industries are important application domains in Brussels.
- Because digitalisation and automation bring about an important mutation in the labour market, the Plan will also support – besides innovation in the ICT sector - sensibilisation and training to develop ICT competences.
- The Regional Innovation Plan has culminated in a synthetic plan that is structured along **four transversal, strategic axes**:
  1. Improving the innovation chain (measures to promote spin-outs, , knowledge transfer, clusters, etc)
  2. Supporting new forms of innovation and new innovation players (networks of living labs and fab-labs);
  3. Improving communication on and raising awareness of the Regional Innovation Plan (in particular action 25: awareness raising and training for ICT careers)
  4. Ensuring a more inclusive and effective governance of the Regional Innovation Plan (including strategic intelligence, interregional partnerships, innovative public procurement)
     http://www.innoviris.be/fr/politique-rdi/plan-regional-dinnovation/pri-2016-revision-2me-lecture-web.pdf
     http://www.innoviris.be/en/rdi-policy/regional-innovation-plan

- In the framework of the Smart Specialisation Strategy, implementing the priority on ICT, the Plan foresees the creation of a **Pôle de Compétitivité ICT** and an Innovation Plaza that will offer space for joint research for the Brussels universities.

Implementation
- The **Regional Innovation plan** includes **45 actions** (in its four strategic axes), mostly generic but most of them relevant for the digital sector (as it one of the most innovative sector in Brussels). As this stage, most of the actions are running or in implementation phase. Innoviris is in charge.
- Also the **Smart City strategy** is deployed actively: with Smart city thematic meetings; support of co-working /incubators like digityser and own ICABB regional incubator; support of the Fablab network; support to European project calls like Organicity.
  Every year a B2B and B2C focused awareness raising event spotlights a topic of Smart city; e.g. education, culture, economy. Brussels Digital Week (October 2017) will be the biggest event on digital ever organised in Brussels.
  http://www.brusselsdigitalweek.be/

The Smart City **portal** brings together projects under five themes: safe, mobile, social, service, infrastructure. https://smartcity.brussels/knowing-more

- The **Information Center of the Brussels Region** (CIRB) is the main actor for implementing the Smart city connectivity strategy of the region through the bundling of infrastructures, ICT platforms, data and ICT human resources. E.g. the 'fiber to the school' project (linking all secondary schools in Brussels with fibe optics) and wifi.brussels (public wifi hotspots on marketplace and subway); and further projects of mutualisation in security (video cameras) and common software projects, like the succesfull citizen participatory Fix my Street app.

- In 2016 the Brussels region **open data portal** (opendatastore.Brussels) was set up and brings together datasets of different public and private actors. The open data strategy is further enhanced by thematic hackatons. http://www.opendatastore.brussels/

- **Nexttech** is the pillar for support to the digital economy in Brussels region strategy for digitalisation. This is in its early stage, but existing channels already support digital transformation under the existing instruments for innovation promotion (Innoviris) and business development (Impulse).

- The Brussels-Capital region entrusts to **impulse.brussels** (the enterprise agency of the Brussels government) delegated tasks that are related to economic development (NCP for H 2020, and member of the EEN) and the management of several European programmes. http://www.abe-bao.be/en/about-impulsebrussels

  Impulse.brussels also supports enterprise networks and clusters in the following business segments: ICT, green technologies, eco-construction and life-sciences. In ICT they focus more particularly on niches such as business intelligence, Enterprise Resource Planning (ERP) / Customer Relationship Management (CRM), Security, the Geographic Information System (GES), E-Health.

  impulse.brussels promotes the emergence of a growth ecosystem in which entrepreneurs can acquire and share skills and knowhow, develop synergies with key partners (academics, technology transfer officers, consultants, business angels, other Brussels institutions, …), confront the barriers to their development and collectively resolve their problems (clustering).

  In this way clusters and enterprise networks have been created in the targeted sectors, among these: **Cluster software.brussels** (who was entrusted a major role in the preparation of the Next Tech Plan) http://www.softwareinbrussels.be

- In 2017 the **first project call** of Next Tech was launched (400.000 euros), open to companies in the Brussels region, to support the implementation of several measures of the Plan on: awareness raising among youngsters, short ICT trainings, preparation for international Tech Fairs and coaching for implementation of the priority technologies (VR/AR, IoT, Data management). The call offers financial support (up to 60.000 par project) and accompanying services of the public organisations, tailored to the needs of the selected companies.

- Another tool for implementing the NextTech plan is the **Microsoft Innovation Center** Brussels. MIC Brussels, started in 2011 as one of the first actor in the startups ecosystem, is a public-private partnership between between the Brussels Region and private partners like Microsoft, whose goal is to sustain the development of the IT sector in the Brussels region with a specific focus on SaaS and Clouds technologies. The MIC Brussels leverages the technology capabilities offered by the Microsoft Executive Briefing Center. This means sticking as closely as possible to the local needs and objectives, notably the NextTech Plan. The fact that Impulse and the CIRB are founding members with seat on the Board makes the needs easier to assess and answer.

  Microsoft supports with sector expertise two flagship programs: the Boostcamp for early-stage entrepreneurs and Step Up!, an acceleration program for growing startups. Among the objectives realized up to now: 60+ startups incorporated in the Brussels Region, 790+ certifications passed & 330+ jobs created.

Evaluations/studies

- The Coordination Committee for the Digital Strategy in Brussels has received the mission to monitor and analyse public policies allowing the implementation of the digital strategy in Brussels. No evaluations have been performed yet (as the strategy is very recent).

3. Other policy support to digitising industry

Boosting innovation

- **Innoviris** supports and funds the Brussels-Capital Region's R&D policy, to encourage innovation, including in the digital sector which one of the most innovative sector within the Region. To that purpose, Innoviris piloted the Regional Innovation Plan 2016-2020 (see above for more details). Two new Ordinances on the promotion of research, development and innovation have been adopted in July 2017 and will allow a continuous improvement of the support to innovative actors (including in the digital sector).
  http://www.innoviris.be/en/discover-innoviris/publications?set_language=en
- Innoviris recently launched a call (**Team Up**) to foster collaboration between academia and industry in **Artificial Intelligence** (more than 4 million euro).
  http://www.innoviris.be/en/events/matchmaking-event-lets-team-up-to-develop-and-use-ai

Skill development

- In 2017 the Region supports the creation of a **Pole for training in ICT** (ICT Employment Training Centre), that will concentrate the resources of different existing public initiatives in one place (in a new building, budgeted for 4.450.000€). (see also http://www.evoliris.be)
- This Pole will be the unique **platform** to address the different target groups (workers and unemployed, students, trainers and educators, public and media). This will be a **partnership** of all public actors in training and education (including universities) and also private sector (federations, companies). The financing will be mixed public-private. This training Pole will be **integrated** in the future "Pôle de Compétitivité" for ICT that will located in the Brussels university area university.
- The **objectives** of the Pole are to double the number of normal courses and triple the short courses with top infrastructure, to facilitate better matching of company needs and skills in the region. In addition it aims at developing synergies between the public services, to develop techno-pedagogic expertise and engage in partnerships with private institutes for lifelong learning.
(See NextTech)

Standardisation
- For Smart city: **OASC** (open and agile smart city) http://www.oascities.org/

Regulation Framework
- PSI directive – Open data ordinance of the Brussels region (October 2016)

4. Investments

- The **R&D investments** of the Brussels Region will double between 2014 and 2020 (to € 78 million). The budgets for 2017 and 2018 are 57 and 63 million euro. http://www.innoviris.be/fr/politique-rdi/plan-regional-dinnovation/pri-2016-revision-2me-lecture-web.pdf
The additional budget for **Nexttech** 2017-2020 is €7,86 million.

5. Good practices:
- Collaboration industry / academia: http://www.innoviris.be/en/financial-aid-for-companies/brussels-aid/team-up-academic-research-industry.

- Setting-up PPP: **Irisnet** is a PPP between Orange group and Brussels region through CIRB (= own telecommunications network for administrations, also used for Smart city projects like public wifi and fiber to the school);

- Pilots and demonstration (in Smart city): pilots through European project BIOTOPE demonstrators

6. Contribution to European priorities

- Investments in key-technologies:
    o AI (Team Up call of 4 million see above)

- Development and networking of Digital Innovation Hubs:

    o bedigital aims to better align the different initiatives and support for the digital companies, also through digital innovation hubs.