DIGITIZATION OF THE WESTERN BALKANS 6 (WB6) & CHALLENGES FOR DEPLOYMENT OF NGN NETWORKS

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15 MAY 2018 OHRID, MACEDONIA

NEED FOR DIGITIZATION/DIGITALIZATION

World is becoming DIGITAL - this is not subject of decision, but must for the economy

"Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business."

USA is becoming GLOBAL player due to its free trade economy and stimulation of innovation, thus also deregulation

- EUROPE is LAGGING BEHIND due to overregulation and conservative approach toward business freedom but, the situation is changing:

  - An initiative called the Digital Single Market was developed, with recommendations for national digital agendas in EU, which gradually and positively should contribute to the future societal transformation, with more modern development of communities, structures and to create a basis for e-governance and information society.
  - The debate surrounding digitalization gained increased practical importance for politics, business and social issues, and is linked to political work issues for community development, new changes in the practical business approaches, effective opportunities for organizations in operational and business process development.

Western Balkan is still out of EU, without access to structural funds and partially transposing EU initiatives

Process of the digital transformation creates economic growth, as a 10-percent increase in the digitization index is associated with a 0.63 percent GDP growth in Western Balkans (source from the Study: The Impact of Digital Transformation on the Western Balkans – Tackling the Challenges towards Political Stability and Economic Prosperity)

DIGITAL TRANSFORMATION – THE ONLY WAY

In order to successfully meet the challenges of digital transformation, it is necessary to get deep understanding of the technical developments and trends that underlie the buzzwords of Big Data, the Internet of Things or Industry 4.0, as well as their business implications.

Changing operating environment

- World will consist of various networks or ecosystems
- Efficient collaboration and information sharing both within and among organizations is needed
- Operators should enable employees to work from anywhere and with any device
- Companies that build their IT on top of legacy systems will most likely regret their decisions later

Superior customer experiences

- Digitalization makes it possible to get closer to the customer before they even realize they need help
- By analyzing customer data, we can increase our understanding of customer needs and thus create ever better services
- By understanding of customer desires and needs, improving the customer experience, we are creating new services

New business opportunities

- Digitalization makes it possible new business models such as Sharing Economy (Airbnb , Über...)
- In the digital era, many of the most successful ideas have been created by an external operator
- Companies will also need strong partners to build future-proof solutions together—partners who understand both technology and business and have a clear vision of the future of business

WB6+ partners should be pioneers in enabling Digital Transformation, especially in Western Balkan

CURRENT SITUATION OF DIGITIZATION IN THE WESTERN BALKAN COUNTRIES

NO PUBLIC DEBATE ABOUT ROLE OF DIGITIZATION FOR THE REGION

ICT INDUSTRY AS CASH COW FOR GOVT. (SPECIAL FEES ETC.)

NO SINGLE MARKET FOR ICT SECTOR

LACK OF JOINT DIGITIZATION STRATEGIES

NO CROSS BORDER ACTIVITIES

DIGITIZATION WILL BE OF UTMOST IMPORTANCE FOR PROSPERITY IN WESTERN BALKAN COUNTRIES

DIGITIZATION NOT PART OF THE POLITICAL TOP LEVEL PROCESS

NEED FOR HARMONISATION OF LEGAL FRAMEWORK

OUR PARTNERS AS MAJOR INVESTORS IN WESTERN BALKAN REGION

ENABLE PAN EUROPEAN ICT INFRASTRUCTURE (PAN NET)

DIGITAL TRANSFMATION OF WESTERN BALKANS 6+ INITIAITIVE

WESTERN
BALKANS

RAISE AWARENESS FOR INVESTMENTFRIENDLY CONDITIONS

PAŽNJA ! Granični pojas
VENI RE ! Zona Kufitare
ACHTUNG ! Das grenzgebiet
ATTENTION ! Zône de frontière

ENSURE POLITICAL SUPPORT FOR CROSS-BORDER ACTIVITIES

INDUSTRIE 4.0-
PAKET
WIRTSCHAFTS-
WUNDER-PAKET

POSITION PARTNERS AS KEY PLAYERS IN DIGITIZATION

A REGIONAL MULTI STAKEHOLDER INITIATIVE FOR A SUCCESSFUL DIGITAL TRANSFORMATION IN WB6+ REGION

TELEKOM AUSTRIA GROUP

telenor

SAP

EY

RegionalCooperationCouncil

HGK 1852

PRIVREDNA KOMORA SRBIJE 1857

СТОПАНСКА КОМОРА НА МАКЕДОНИЈА
ECONOMIC CHAMBER OF MACEDONIA

Ost-Ausschuss der Deutschen Wirtschaft
oa

AHK

ICK Innovation Centre Kosovo

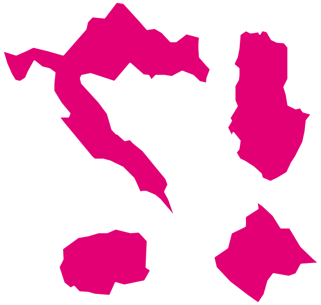
WB6+ digital transformation

COMMON HERITAGE

CROSS INDUSTRY APPROACH

REGIONAL PRESENCE

REGIONAL APPROACH NECESSARY TO REALIZE GROWTH POTENTIAL AND SET THE SCENE FOR FUTURE PROSPERITY



National approach prevents reaping the benefits from cooperation via …

- ➢ Different levels of development of ICT infrastructure & respective service portfolio
- ➢ Fragmented strategies & policies at the political level
- ➢ Difficulties to initiate joint actions and projects
- ➢ Obstacles in attaining funding sources resulting in lower investments

Regional approach facilitates cooperation and realization of efficiencies and growth possibilities via …

- ➢ Creation of larger and more flexible market
- ➢ Leveraging best local know-how from country to regional level
- ➢ Easier access to funding opportunities inducing higher and more investments
- ➢ Support from regional and EU initiatives
- ➢ Alignment with national initiatives (Digital Agenda 2020 and Digital Agenda 2025)
- ➢ Excellent & established relations between academia representatives throughout the Western Balkans
- ➢ Facilitating & boosting EU integration process of entire Western Balkans

SCOPE OF JOINT STUDY: MULTI-STAKEHOLDER DIALOGUE REQUIRED

1 Where We Are: Current Situation and Role & Importance of ICTs

- current state of digitization and relevance of ICTs as main drivers for digitization initiatives
- political and regulatory barriers

2 Economic Impact of Harmonized & Collaborative Digitization on the WB

- macroeconomic analysis of impact of enhanced digitization
- at country and regional level showing benefits of cooperation

3 Importance of "Analog Complements" for Digitization

- stresses importance of analog sectors and human assets
- implications for efficient alignment & cross-industry benefits

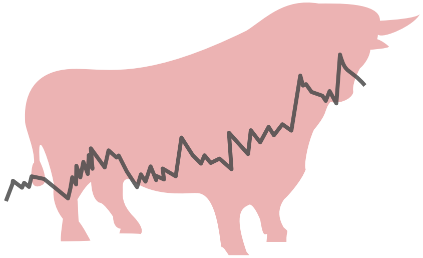
4 Social and Political Implications: Barriers and Needs

- identification of social and political challenges & chances
- Needs for & benefits of a regional approach

5 Recommendations for Policy Makers and NRAs

- recommendations need to be clear-cut and straightforward
- focus on key political & regulatory deliverables to boost process

Strategy
Execution
Success
RESEARCH
WEB
DATA
TECH



THE IMPACT OF STUDY FOR DIGITAL TRANSFORMATION ON THE WESTERN BALKANS, THE WAY FORWARD

Policy paper-Key messages from the study

- Tackling the Challenges towards Political Stability and Economic Prosperity in the WB6 region

Next steps and further initiatives

- Inclusion of study findings into relevant national strategies
- Leveraging key messages for digitization initiatives across sectors
- Promoting key messages via chambers and regional initiatives
- Study findings as reference point vis-à-vis national governmental institutions
- Study will serve as enabler & accelerator for funding & EU support

Economic Growth
Regional Economic Integration
Aid for Trade
Private Sector Development
Public Finance

Harmonized & enhanced digitization will result in benefits that clearly exceed the benefits from the mere sum of fragmented individual efforts creating innovations, growth, and jobs in the entire region.

MAJOR INCENTIVES NEEDED TO ACHIEVE EU CONNECTIVITY TARGETS

EU Targets 2025

Main ”socio-economic drivers” incl. schools, universities:

1Gbps

European households (urban and rural areas):

At least 100 Mbps upgradable to Gbps speeds

Uninterrupted 5G coverage for all urban areas and major transport paths

By end of 2020:

One major city per Member State to be „5G-enabled“

Expected Costs[1]

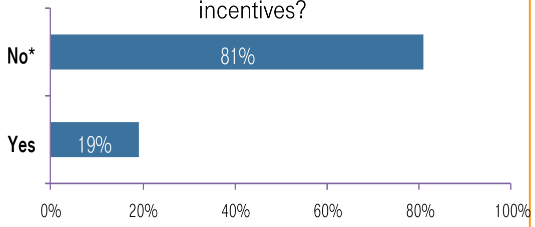
Gigabit Society vision requires ca. €660 billion investments 2015 - 2035

- €360 billion to be invested in ultrafast broadband enabling nearly 100% of European households to access mainly FTTP
- €200 billion to be invested in 5G due to cell densification, fiber to all base stations, complete 4G rollout
- €100 billion to be invested in low-latency proximity data centers

Role of Regulation

- Bulk of investments expected to come from private sector (EC: 90%)
- Established operators represent ca. 60% of annual network invest[2]
- Current framework stifles investment incentives (“*access regulation has delivered competition more at service level than at network level”*)[3]
- Financial investors call for change in ex-ante regulation.

Does EU telecoms regulation strike the right balance between price competition and network investment incentives?



Source: Credit Suisse, EU Telecoms Regulation: Investor Survey, 13 January 2016

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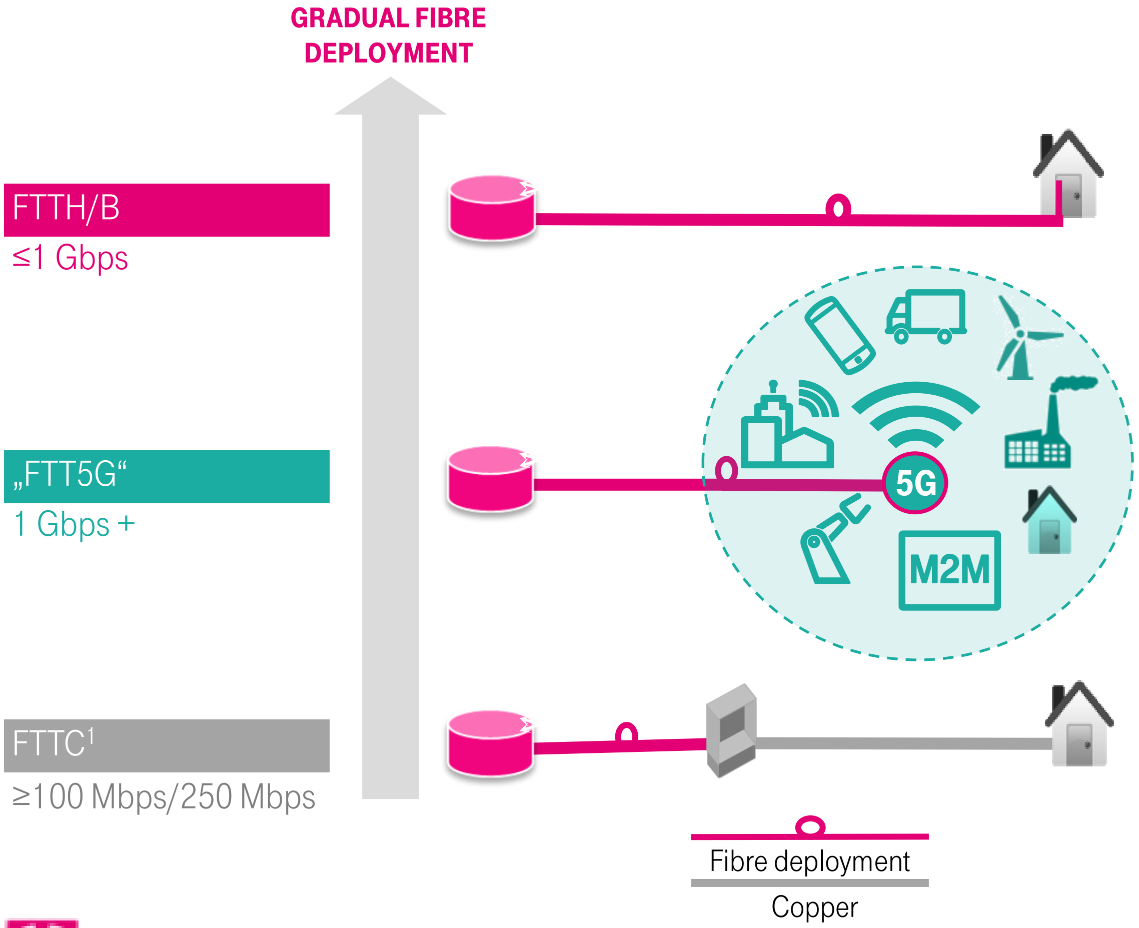
1) BCG report “Building the Gigabit Society: an inclusive path towards its realization”, 2016
2) ETNO annual report 2015
3) EU COM explanatory memorandum proposal Electronic Communications Code

TECHNOLOGICAL NEUTRALITY KEY TO ACHIEVE CONNECTIVITY TARGETS

Focus only on Fibre to the Premise would slow down achievement of EU targets



GRADUAL FIBRE DEPLOYMENT

FTTH/B
≤1 Gbps

„FTT5G“
1 Gbps +

FTTC[1]
≥100 Mbps/250 Mbps

Fibre deployment

Copper

VHC DEFINITION IN THE CODE

- Fibre up to distribution point or similar network performance
  - → Fibre-to-the-home (FTTH), fibre to the building (FTTB), possibly DOCSIS
- VHC definition likely excludes powerful technologies such as Super-Vectoring, Bonding, etc.
- Market driven deployment with technology mix significantly faster and cheaper[2]

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1) VDSL, Vectoring, Super-Vectoring
2) BCG report “Building the Gigabit Society: an inclusive path towards its realization”, 2016

PROPOSED ECC (CODE): MEASURES HOW TO IMPROVE INVESTMENT INCENTIVES IN ACCESS REGULATION

- To incentivise competition for the market, new investment in very high-speed connectivity should not be subject to regulation for a certain period.
- Currently foreseen regulatory incentives for new network elements in case of co-investment should moreover apply more broadly, e.g. including to:
  - joint-ventures where participation is agreed at the outset of an investment
  - fair, reasonable and non-discriminatory risk-sharing commercial wholesale offers
- Code should foresee long-term phasing out of legacy regulation to incentivise migration to very high-capacity networks.
- Rely on symmetric regime for access to civil engineering (remove new SMP-regime)
- Safeguard against multiple access products - limit any regulation to one network layer
- Refrain from intervening in competitive markets: remove new network sharing & access obligations for mobile

Why it matters

- Revolutionary service markets require profound regulatory reforms
- Need for a level playing field for competing services
- Less burdensome regulation for Telco's is key to support innovation & offering of popular services

NETWORK ‘MAPPING’ AND PASSIVE INFRASTRUCTURE ACCESS BASED ON SMP RISK MARKET DISTORTIONS

Mapping / geographical surveys

- NRAs with new powers to map existing and (planned broadband networks NGA and VHC) as basis for “geographic surveys” (3-year forecast)
- Mapping of existing networks can support regional market definition and analysis
- Survey of investment plans to designate digital exclusion areas resembles ‘planned economy ‘approach - may lead to less investment:
  - Obligation to share business plans and detailed investment intentions can distort competition
  - Fact that NRAs may sanction operators that provide ‘deliberately misleading’ information on investment plans distorts investment decisions - operators may under- or over-commit to avoid later sanctions

Access to civil engineering infrastructures

- New obligation on access to civil engineering assets of the SMP-player (e.g. entry to buildings, in-house cables, antennae, ducts, masts, cabinets…)
  - Access to civil engineering assets positive in principle: helps to leverage synergies and can contribute to cost-efficient and fast rollout.
  - But new obligations on SMP operators undermine symmetrical regime just entered into force[1] - bottleneck on last meters not SMP-related
  - Proposal to apply strict price regulation limits incentives to build new ducts
  - Criteria for removing access obligations beyond civil engineering infrastructure remain unclear

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[1] Directive 2014/61/CE on broadband cost reduction measures

LEGAL CHALLENGES FOR DEPLOYMENT OF NGN INFRASTRUCTURE

Legal challenges (from practice):

✓ Simplification of the procedure for obtaining approval for building base stations on green field locations

✓ Clarification of the obligations in the procedure for obtaining a solution for setting up base stations on a rooftop

✓ Changes in the procedure for obtaining an approval / solution for installing line infrastructure (optical cables, EE lines)

✓ Changes to the conditions for registration of Telco infrastructure in the Agency for Real Estate Cadastre in accordance with the Law on Real Estate Cadastre

✓ The construction of a public interest infrastructure (Telco, EE, gas pipeline, water supply, etc.) should be regulated in a separate Law on the construction of infrastructure of public interest.

✓ Amendments to the Law on Public Roads (to enable the construction of the Telco infrastructure in the road belt and the protection zone)

✓ Harmonization (alignment) of the proposed amendments to the Construction Law with other laws affected by the procedure for the construction of Telco infrastructure.

NEXT STEPS & WAY FORWARD

IMPACT OF THE INCREASED DIGITALIZATION

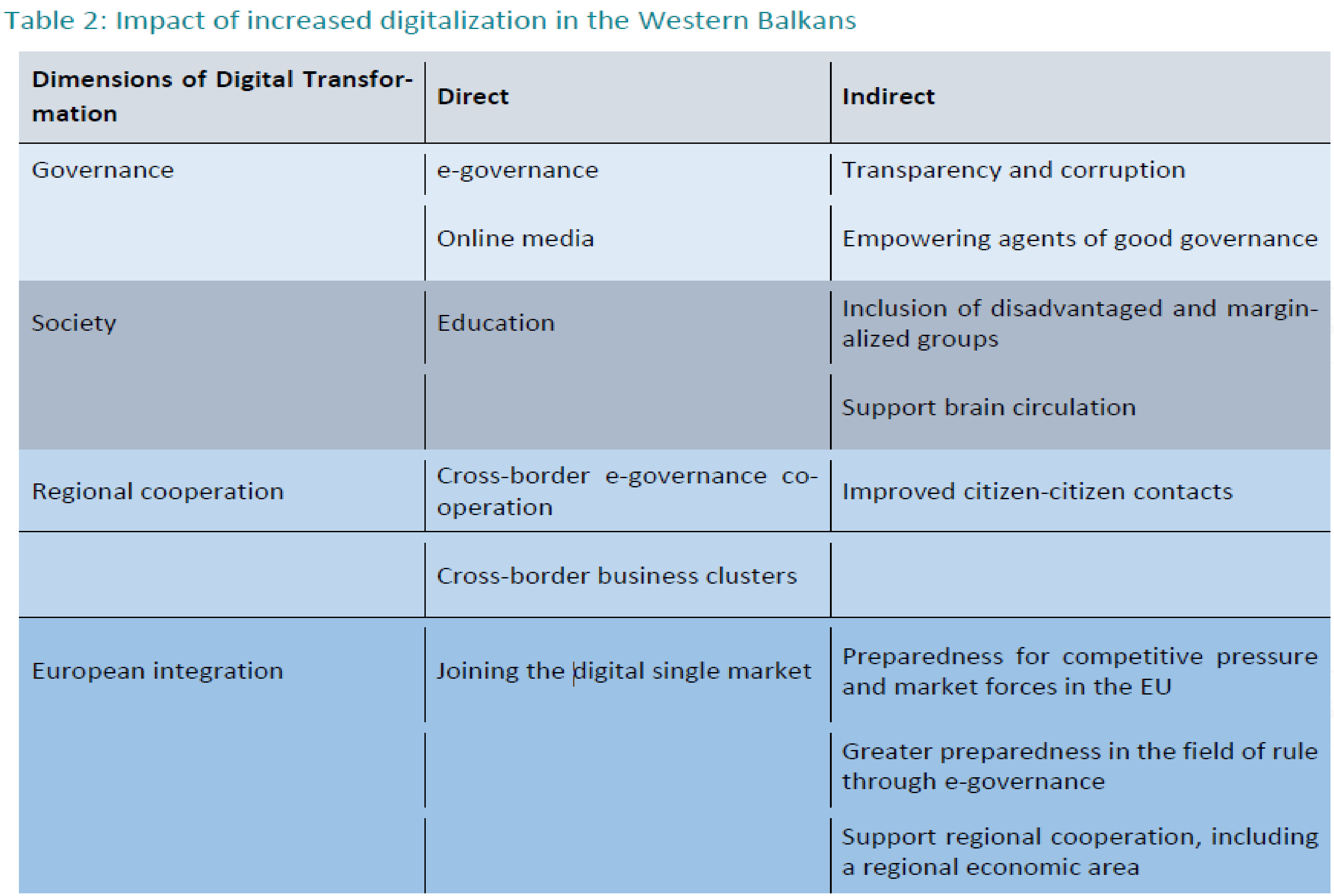

Table 2: Impact of increased digitalization in the Western Balkans

Dimensions of Digital Transformation	**Direct**	**Indirect**
Governance	e-governance	Transparency and corruption
	Online media	Empowering agents of good governance
Society	Education	Inclusion of disadvantaged and marginalized groups
		Support brain circulation
Regional cooperation	Cross-border e-governance co-operation	Improved citizen-citizen contacts
	Cross-border business clusters	
European integration	Joining the digital single market	Preparedness for competitive pressure and market forces in the EU
		Greater preparedness in the field of rule through e-governance
		Support regional cooperation, including a regional economic area

POLICY RECOMENDATION – ACTIVITIES TO BE DONE

- **Establishing permanent regional working groups** based on a multi-stakeholder approach can provide regional advice on issues of digital transformation and expertise that will facilitate and enhance the process. Such groups should be anchored within the Regional Cooperation Council and include representatives from the EU, governments, the business sector, civil society and experts.
- **Faster permits granting procedures for electronic communication infrastructure (ECI) deployment** and **decreasing the size and scale of parafiscal charges** on ECI investments are needed to boost ECI investments in Western Balkans economies.
- **Facilitating the use of public land** for ECI deployment and the provision of public funds aimed at upgrading existing and deploying new ECI in rural (white) areas is needed in order to promote balanced a geographical development of digital infrastructure.
- **Future-proof regulation that is fit-for-purpose and removes** national barriers to facilitating faster digital transformation and boosting investment incentives.
- **Facilitating the deployment of ECI in rural regions** via investment friendly regulation
- **Integrating digital aspects into curricula and education**. In order to prepare the labor force for the digital age and seize the full benefits of digitalization, educational and labor market policies need to introduce modern ICT curricula in schools; directing students to enroll more into the STEM areas at higher education level; increasing both the number and the portion of the population with higher education in general, as highly skilled workers are those who benefit most from digitalization; improving both the quality and the quantity of on-the-job training for the existing workforce, which would be more specialized and directed to the use of and adaptability to new technologies.
- **Providing retraining programs** and anticipating sectors which are threatened by job destruction through digital transformation. Retraining will help citizens employed in vulnerable sectors prepare for new jobs, and some to be able to work in digital sectors.
- **Adopting a regional e-governance strategy**. This strategy needs to ensure interoperability with the EU and cover efficient and convenient e-health and business registration, as well as citizens' documentation. Furthermore, it needs to implement **systematic and unified e-budgeting and e-procurement** for all levels of mechanisms aiming at

POLICY RECOMENDATION – ACTIVITIES TO BE DONE2

reducing corruption opportunities and establishing transparency.

- **Committing to a clear timetable to abolish roaming charges** within the Western Balkans and between the Western Balkans and the EU. This would reduce both costs for business and individuals in the region and encourage the economic integration of the region with the EU.
- **Supporting the development of cross-national e-commerce** to improve regional trade and encourage new businesses. This can be best achieved through compatible standards and increasing trust in transnational e-commerce.
- **Providing support for the digital preparedness of SMEs and start-ups**. This includes training, supporting technology acquisition, financial support and facilitating teleworking.
- **Supporting digital start-ups** and other frameworks for digital transformation, such as shared workspaces with high-speed broadband and other incubators. This can be achieved both by choice of accurate regulatory design and by enhancing the availability of funds, especially in rural communities, when these are able to involve vulnerable or marginalized groups.
- **Targeting EU funding through IPA and twinning** to promote digital transformation and learning from digital frontrunners in EU, as well as support mechanism for SMEs and startups.
- **Establishing twinning projects** to pair up digital frontrunners in the EU with WB economies on digital lighthouse projects, such as Estonia on e-governance. These can help the transfer between member states and digital front-runners and WB economies.
- **Integrating the WB6 into the European Digital Single Market,** even if WB economies cannot yet join the European Single Market**.** This would help ensure unified standards and interoperability to ease the way towards full EU membership**.**
- **Mainstreaming a digital dimension** into other fields of integration and the promotion of regional cooperation. This includes assessing the state of e-government in Rule of Law chapters (23&24) and other aspects of EU integration.