



Policy recommendations final edition



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INTRODUCTION TO THE DELIVERABLE

The main aim of the document is to provide the European Commission with suggestions on how support collaboration between the publishing industry and the ICT sector at EU level to create a healthy EU market for innovative content and technological solutions aimed at competing in a more and more global environment; several recommendations also address policy-makers at national level.

The recommendations are the result of an extensive dialogue between the communities of book publishers and ICT providers and draw inspiration from wider discussions held at TISP events, the business cases collected within the project as well as the experiences and reflections of the project partners; several external experts of digital publishing were also involved.

The document is structured on three levels: first there are some high level general recommendations, followed by a number of recommendation about various horizontal policies, including facilitating access to research; finally, a third level presents specific areas in which supporting research would be of interest for the book sector. The second and third levels are therefore more practical and concrete; however, suggestions for possible projects or tools and examples of best practices are given wherever possible throughout the document.

While the premises of the first edition of the recommendations still stand, the present edition is an advanced version, responding to the comments received by the reviewers and the Project Officer to the previous one, which prompted further reflections, a restructuring and substantial enrichment of the document (with clearer priorities, examples and more concrete proposals).

1. TAKING STOCK

TISP has already met one of its main goals: to foster more understanding and possibly cooperation between the book publishing and ICT industries.

We have learnt that there is more common ground than differences:

1. Book publishing and ICT are **businesses** alike, therefore they can speak the same language.
2. Both businesses thrive on the exploitation of **intellectual property** although their take of it might differ, the reason why this set of issues was deliberately left out of the scope of TISP.
3. Their prosperity hinges on: 1/ their ability to **innovate** continually whether by way of seminal content or devices/services deemed to be game-changers; 2/ their savvy at putting them on the right **market** at the exact right time.
4. Both businesses have earned **top positions in world markets**: cooperation may only take them both to new heights. TISP is meant to help them get there and support Europe's broader economy in the process.

2. RECOMMENDATIONS

2.1 GENERAL RECOMMENDATIONS

Two very broad, high level recommendations serve as a preamble to this document; they basically recall that the aim of pursuing further integration of ICT and book publishing is to enhance the business opportunities of both sectors as well as to meet the needs of consumers, and they state that maintaining support for initiatives that bring together the two sectors is a good basis to achieve further results. Promotion and support should favour projects which consider the whole ecosystem.

2.1.1 Solutions addressing commercial needs

Since we are talking about businesses, it should be clear that technology and innovation should provide **integrated publishing-technological solutions to address commercial needs**. Indeed, the value to society of a diverse publishing industry is immense. As crucial to a diverse publishing industry is a very diverse network of sales and trade infrastructure. Ultimately consumers should be able to access content anytime, anywhere, from the distribution channel and on the platform of their choice, with discoverability of e-books not having to depend only on big platforms.

2.1.1.1 Areas of focus for policy measures and tools

- Using ICT to **protect and expand diversity**; in the B2C domain, through small and big online book stores, big online platforms, independent networks of authors, booksellers and readers; in the B2B domain, through exchange platforms from book fairs, expert communities of practice and other social networks.
- **Facilitating the online presence of retailers and their ability to offer positive purchasing and reading experiences**, complete with an attractive legal offer of e-books and other e-content, enhancing the development and quick adoption of ICT solutions for e-commerce in all its aspects; this includes **removing barriers to e-commerce in general, facilitating access to markets, securing a true Digital Single Market and supporting implementation and adaptation to other policies** (such as compliance with the new VAT rules of 2015: VAT monitoring, MOSS returns, etc.).
- Building technical solutions to **improve the accessibility to new markets** (ensuring an efficient and effective presence and discoverability of editorial content in the digital marketplace) **and participation and inclusion of new communities** (including people with disabilities); for example, social networks may boost this socialisation and make it more productive.
- Developing ICT solutions to assist publishers in **protecting their IP in a user-friendly, consumption-enhancing way and facilitating rights communication, claims, clearance and discovery**.
- Enhancing **skills and competitiveness** by fostering technologies that **respond to the fast-changing markets and technologies** that now characterise global competition.

Best practices for inspiration:

Boeda platform, a platform to present and order forthcoming book titles

(<http://www.meta4books.be/boeda>)

Rook hotspots, allow people to read e-books for free in specific locations and buy them

<http://www.getrook.com>)

Librel, digital retail portal of francophone Belgian bookstores (<http://www.librel.be>)

Linked Content Coalition, consortium of standards bodies and registries aiming to enhance legitimate use of digital content through interoperable identifiers and metadata (<http://www.linkedcontentcoalition.org/>)

Rights Data Integration, project to demonstrate how to efficiently manage and trade IPR online

<http://www.rdi-project.org/>)

LIA Foundation, promotes mainstreaming e-book accessibility along the value chain

www.fondazionelia.org)

Buchhandel.de, common portal of German book trade (<https://www.buchhandel.de/>)

LOG.OS, open book trade platform (digital library, market place and social network) (<https://logos.vision/>)

Tolino media, open e-book and device retail platform (<https://www.tolino-media.de/home>)

European Digital Reading Lab, European headquarters International Digital Publishing Forum and Radium Foundation, it helps provide a technical foundation for the European digital publishing ecosystem

<http://www.edrlab.org>)

2.1.2 Fostering cooperation between ICT and book sectors

Initiatives that further help publishers understand technology on one hand and ICT providers realise that publishing affords them actual outlets for leading-edge technology on the other hand will be highly beneficial to both industries and for the whole society. Efforts should focus on further **enhancing opportunities for cooperation between the two sectors**, a cooperation that has only to gain from adequate infrastructure and practical collaborative initiatives.

2.1.2.1 What national and regional authorities can do

- Put book publishing (higher) on the agenda of national and regional cluster policies and cluster organisations.
- **Encourage the creation and flourishing of virtual and real meeting spaces and places.** As successfully demonstrated by TISP, personal exchanges and knowledge transfer are important building blocks for stable business relationships and best practices. This should **foster further convergence between the publishing industry and other creative sectors** to enhance the trans-media dimension of book production; industry operators themselves, once properly informed and skilled, are in the best position to bring about this increased convergence.
- **Organise events and supporting projects that include a full range of stakeholders:** software providers, start-ups, web and application developers, but also publishers, content and service providers, aggregators, operators in the supply chain, standard setting bodies (from both IT and publishing), research institutes, etc.
- **Support SMEs in the two sectors to participate in international projects.**

What to do in practice:

- **Tailor existing incentives and funding schemes** on a regional or national level to the needs of

innovation in book publishing, with a focus on application of technology.

- **Facilitate marketing and internationalisation** of companies at the intersection of ICT & book publishing.
- Develop a programme for **scouting trips for associations and individuals to cities and areas with a high innovation rate** in the fields where the two industries overlap.
- Develop a **curated database of best practices of projects and products** in the intersection area of ICT and publishing.
- **Inform companies**, especially SMEs, of **funding opportunities**, including EC funding programmes, and set up schemes to **facilitate their participation**.
- Encourage, fund or set up **labs and incubators** to foster collaborative R&D&I between publishing and ICT. This may involve research centres and other creative industries. Create a content pool for an experimentation lab.
- Create **occasions for start-ups** which are developing innovative tools or approaches **to meet existing publishing companies** which might have a use for these developments.
- Encourage organisations beyond trade ones to host **technological cooperation ventures**.

Best practices for inspiration:

Virtual and real meeting spaces and places, cross/trans-media collaboration, incubators:

Casa del Lector (Spain) (<http://casalector.fundaciongsr.com>)

The Loop (Belgium) (<http://www.retaildetail.be/nl/the-loop>)

iMinds Living Labs (<https://www.iminds.be/en/succeed-with-digital-research/living-lab>)

Flanders DC (<http://www.flandersdc.be/nl>)

iDrops (<http://idrops.be>)

Publisher of the Future (<http://www.uitgevenindetoekomst.be>)

Creative Harbour (project of the city of Antwerp; collaboration creative industries) (http://www.eurobest.com/attend/festival_at_a_glance/)

City government of Antwerp launches StartUpVillage (spring 2016)

Converging media (<http://www.convergingmedia.eu>)

JAM Today (Netherlands) (www.jamtoday.eu)

Renew the Book (Netherlands) (<http://www.renewthebook.com/>)

Digilab (Italy) (<http://digilab.uniroma1.it/>)

Editech (Italy) (www.editech.info)

Start-up club (Germany) (<http://www.boersenverein.de/startup>)

Labo de l'édition (France) (<http://www.labodeledition.com/>)

AKEP (<http://www.boersenverein.de/sixcms/media.php/1117/AKEP%20Tour%202016.pdf>)

Frankfurt Book Fair (<http://www.book-fair.com>), organiser of, amongst others: Classroom of the Future; Hot Spots – exhibiting and networking formats for digital innovators, StoryDrive: conference and networking event for ICT, books, film, games etc.; organization of scouting tours to US, Asia etc.)

Organisation of events:

Book labs (<http://www.uitgevenindetoekomst.be/kalender/seminar/innoverende-booklabs>)

Scouting trips and internationalisation opportunities offered by iMinds and Flanders Investment and Trade:

<http://www.iminds.be/nl/business-ondersteuning/internationalisatie/go-global-programma>

http://www.flanderstrade.be/site/wwwnl.nsf/vpag/typesubsidies_subsidietype2?opendocument

http://www.flanderstrade.be/site/wwwnl.nsf/vPag/TypesSubsidies_SubsidieType1?opendocument

2.1.2.2 What European authorities can do

- Strengthen the communication around and the support for innovation in book publishing as one of the most important cultural sectors.
- Encourage increased **participation of publishers in international ICT and web-related development and standardisation activities** (such as IDPF, Radium Foundation, EDRLab, W3C among other bodies).
- **Create programmes for smaller European projects in the ICT/publishing intersection**, making access to funding through them easier still (e.g. by building networks between national industry associations, European Commission contact points, fairs, B2B publications, etc.) to especially and sustainably support small first-time applicants to such funding programs (ideas have to be developed to keep administration overheads as low as possible); since content / media products are culture / language specific, give special attention to cross-language and cross-cultural aspects under a European perspective (localisation procedures, etc.), possibly by linking them to relevant existing programs.
- **Supporting networking and benchmarking between national best practices.**
- Adopt a **timely standard-setting process** and an **integrated standardisation plan** to help European and international standardisation organisations as well as fora and international consortia to identify priorities and also contribute to further legitimising their activities.

What to do in practice:

- Establish a **cross-European interdisciplinary centre of excellence for the publishing industry** to share cross media knowledge, and to enable networking and knowledge exchange around ICT and publishing, targeting not only the book publishing sector, but also research institutions, financial experts, cluster organisations as well as the adjacent creative sectors.
- As part of such a centre of excellence: develop an **advanced matchmaking database of publishing and ICT demands and solutions concerning the whole ecosystem**: cooperation opportunities, licencing of content or technological solutions, etc.; this database could include proposals or tools for generation of ideas on the basis of the database contents. This is essentially an instrument for easier discovery of technology likely to meet the needs of a typical publisher. It should include as much as possible also opportunities for **networking**.
- **Support the maintenance of the TISP Smart Book**, an existing resource for ICT and publishing companies to showcase innovation and find inspiration and potential contacts.
- Invite book publishers and their trade representatives to **participate in events** such as the Cloudscape series, Net Futures, ICT Events, etc.
- Establish **funding programmes** tailored to book publishing, and especially the objectives mentioned

above **under H2020 and/or Creative Europe**, but also the European Structural Funds.

- Establish **funding programmes** - together with applied economics or business economics degree courses or business informatics – for **business model transformation**.

Best practices for inspiration:

Virtual and real meeting spaces and places, cross/trans-media collaboration, incubators:

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The Loop (Belgium) (<http://www.retaildetail.be/nl/the-loop>)

iMinds Living Labs (<https://www.iminds.be/en/succeed-with-digital-research/living-lab>)

Flanders DC (<http://www.flandersdc.be/nl>)

iDrops (<http://idrops.be>)

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JAM Today (Netherlands) (www.jamtoday.eu)

Renew the Book (Netherlands) (<http://www.renewthebook.com/>)

Digilab (Italy) (<http://digilab.uniroma1.it/>)

Editech (Italy) (www.editech.info)

Start-up club (Germany) (<http://www.boersenverein.de/startup>)

Labo de l'édition (France) (<http://www.labodeledition.com/>)

AKEP (<http://www.boersenverein.de/sixcms/media.php/1117/AKEP%20Tour%202016.pdf>)

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http://www.flanderstrade.be/site/wwwnl.nsf/vpag/typessubsidies_subsidietype2?opendocument

http://www.flanderstrade.be/site/wwwnl.nsf/vPag/TypesSubsidies_SubsidieType1?opendocument

Best practices for inspiration:

Opening of EDRLab (European Digital Reading Lab) in Paris, co-founded and supported by French government and industry (<http://www.capdigital.com/decouvrez-les-action-dedrlab-et-cap-digital-pour-le-deploiement-du-format-epub-et-la-standardisation/>)

Building on this research: <http://ocs.sfu.ca/tha/index.php/tha/2013/paper/view/115>

Future Classroom Lab, learning environment for policy-makers, industry partners, teachers and other education stakeholders to rethink the role of pedagogy, technology and design in classrooms (<http://fcl.eun.org>)

2.2 HORIZONTAL POLICIES (FOCUS ON PUBLISHING)

2.2.1 ICT to improve mainstream accessibility of books for print impaired people and the elderly

Genuine equal opportunities for print impaired people will be achieved when accessibility features will be incorporated in the mainstream publishing and distribution of books.

ICT provides great opportunities to **enhance the accessibility of books for people with print impairments**. Policies and funding opportunities should foster the further development and especially implementation and deployment of integrated ICT/publishing solutions aimed to improve accessibility to digital publications while not thwarting consumers' choice and preference, using e-book and metadata standards that allow publishing accessible e-books (EPUB 3) and messaging information about their accessibility elements in a machine readable form (ONIX 3.0).

Furthermore, efforts should be made to ensure that accessibility features are embedded all along the book value chain (from file formats to reading software, DRM and devices, retailer websites and online payment service providers). This suggestion boils down to 'Accessibility by Design' to echo the 'Privacy by Design' features debated in the context of the General Data Protection Regulation.

2.1.2.1 What national and regional authorities can do

- Support **innovation actions to help publishers to produce accessible books and to promote projects aimed at involving all the actors in the value chain from production to distribution to consumption of accessible books**. The Digital Agenda for Europe (Pillar VI, Action 65) states that publishers should be encouraged "to produce directly their books in accessible formats". More needs to be done to help the market to move in this direction, involving all relevant stakeholders.
- Make **recommendations to the public sector to ensure accessibility of their own publications**. It is a paradox that while the private sector is called to take into account the needs of PIPs, no or little attention is paid to the public sector publications and documentation. In a classic case of leading by example, the public sector at all levels should move in this direction also if only to be credible when asking the private sector to do the same. In so doing, the public sector will also foster the demand for high quality services in this area and thus stimulate the market.
- Develop a set of **guidelines** for software developers, hardware producers, publishers, retailers, etc. **on accessibility all along the value chain**.

What to do in practice:

- Review national expenses for accessible books to assess how ICT may be used further to reduce costs and improve quality of books.
- Use those funds to spur on publishers, e-distributors, e-retailers to introduce accessibility features in

the mainstream production and distribution.

- Review national legislation to ensure that accessibility is taken in due consideration for the public sector publications and documentation.
- Elaborate guidelines for the public administrations on the matter.
- Fund pilot projects in the area.
- Promote PPPs to stimulate the growth of a market for high quality services in this domain.
- Establish a stakeholder platform to develop guidelines for accessibility all along the book value chain.

Best practices for inspiration:

LIA, catalogue of Italian accessible e-books (<http://www.libriitalianiaccessibili.it>)

Eureka Adibib, digital textbook library for students with learning disabilities (<http://www.eurekaonderwijs.be>)

Luisterpunt, Flemish public library for people with print disabilities, cross-border collaboration on Dutch language market (<http://www.luisterpuntbibliotheek.be/nl/>)

Radiobooks, stories by Dutch and Flemish authors written and read aloud (<http://www.radioboeken.eu/index.php?lang=EN>)

Platon, platform hosted by the French National Library to improve accessibility of books (<https://exceptionhandicap.bnf.fr/platon-web/>)

Accessible “Rentrée Littéraire”: for 3 years, French publishers and Associations collaborate to make accessible versions of new books launched in September for the “Rentrée Littéraire” available at the same time as the print version

DNA, Antwerp city magazine: online DAISY proof + audio read aloud; print version for senior citizens

2.1.2.1 What European authorities can do

- Support **innovation actions for cross-border circulation of accessible books.**
- Support **design and development of new production workflows and tools**, devices, etc. that **fully support the accessibility features**. Possible tools include EPUB production tools, DRM solutions, EPUB validators, reading software, which incorporate accessibility features.
- Guarantee that **publications and documentation of EU institutions are fully accessible** and based on **open standards**.

What to do in practice:

- Make a dedicated call for proposals to establish a European platform for accessible books, within H2020.

- Support a project (Best Practice Network) to scale the results of the LIA initiative at EU level.
- Make dedicated calls for proposals on this subject, within H2020, or introduce this element in more general calls as a priority criterion.
- The Publications Office of the EU should accelerate programmes to have accessible publications.
- Guidelines for all the services in the EC that produce different types of documentation to take into consideration accessibility features.
- The Parliament to make a project to have all the documentation fully accessible to PIP.

Best practices for inspiration:

The Accessible Books Consortium (ABC), a complement to the Marrakesh Treaty to Facilitate Access to Published Works for Persons who are Blind, Visually Impaired, or Otherwise Print Disabled (<http://www.accessiblebooksconsortium.org/portal/en/index.html>)

Transforming Institutional Publishing: Sharing Best Practices Seminar (<http://idpf.org/news-and-events/transforming-institutional-publishing-sharing-best-practices>)

2.2.2 E-skills

Digital skills have an increasing importance in the economy, including in the publishing sector. Any targeted initiatives to **enhance ICT skills** will benefit both sectors and should be supported, as well as those coupling media and publishing skills with ICT curricula. They will also fit the objectives of the Grand Coalition for ICT Jobs.

2.2.2.1 What national and regional authorities can do

- Include **ICT skills development in most curricula** in higher education, and especially in humanities; the publishing sector is highly likely to incorporate hybrid professional profiles.
- Promote **internships of ICT students** – international or not - at publishing houses.
- Support publishers in **promoting the publishing sector as a creative and innovative industry with digital challenges and opportunities**, to universities and other higher education institutions with an ICT programme.
- Develop a **placement programme for specialists as well as executives from companies** of one area to spend several months in a company of the other.
- Establish cumulatively self-reinforcing **regional zones of technical skill, venture capital, specialised suppliers and services, infrastructure, and spillovers of knowledge** associated with proximity to universities and informal information flows.

What to do in practice:

- Review study curricula in order to enhance the presence of e-skills.
- Invest Social Funds and other resources into initiatives aimed at achieving the abovementioned results.

Best practices for inspiration:

Fyxxilab, training for kids in STEM-ICT, also partnering with the the Antwerp Book Fair (<http://www.fyxxi.be>)

ICTDAG, enhancing ICT skills for teachers (<http://www.ictdag.be>)

Mediacampus Frankfurt, the advanced training campus of the German Booksellers and Publishers Association (<http://www.mediacampus-frankfurt.de/>)

Flemish Innovation Network (VIN) organises Interdisciplinary Summerschool (www.innovatienetwerk.be); VIN is an IWT Network

Literacy Campaign (LitCam): organises and events around the topic of media literacy (<http://www.litcam.de/en/litcam-conferences/conference-2015>)

Workshops organised by the Knowledge centre of Boek.be e.g. on e-publishing for dummies, YouTube Marketing, Search engine rankings etc.

Italian Publishers Association training programme for publishers

Master in Editoria – Italian Publishers Association, Università Statale di Milano, Fondazione Mondadori (<http://www.fondazionemondadori.it/cms/formazione/275/per-saperne-di-piu>)

French Publishers Association's new diploma for continuing education in order to provide digital skills to publishers (<http://www.sne.fr/enjeux/la-branche-de-ledition-a-mis-en-place-un-cqp-edition-numerique/>)

EDRLab: workshops and events on EPUB3 and digital publishing

2.2.2.2 What European authorities can do

- Create programmes that support the development of **specific cross-European vocational as well as academic courses** (including distance learning ones) **that systematically integrate skills and competencies in the intersection between content and ICT** and that bring them into a productive relation with other important topics like entrepreneurship, management and leadership / HR, kick-off funding, marketing, etc.
- Draft a **set of minimum standards** as a model for national authorities (similar to what done for STEM subjects).

What to do in practice:

- Creating a European expert database.
- Establishing an expert exchange programme.

2.2.3 Access to finance

Access to finance is another bottleneck that hinders innovation. Banks have long been one of the main sources of financing for publishers. However, as emphasised by the Green Paper on the potential of cultural

and creative industries of the European Commission¹, SMEs in this sector suffer because of the lack of capacity of the financial system to fully recognise the value of intangible assets such as copyright. With the growing need for innovation, the risks facing creditors and debtors are also on the rise. **Alternative sources of financing are needed for the creative industries investing in ICT**, and for publishing in particular. Inspiration in this respect can be drawn from the funding schemes available in the ICT sector.

2.2.3.1 What national and regional authorities can do

- Support the development of **expertise in the financial sector on how to assess intangible assets**.
- Ensure **awareness about funding opportunities** for the creative sectors (and publishing in particular).

What to do in practice:

- Support the implementation of the Guarantee Facility under Creative Europe.

Best practices for inspiration:

Flanders Investment and Trade, facilitates investment and supports export (<http://www.flanderstrade.be>)
Agency Entrepreneurship, provides also information on financing (<http://www.agentschapondernemen.be>)

2.2.3.2 What European authorities can do

- Facilitate the **matching between investors and entrepreneurs** in the publishing sector at EU level.

What to do in practice:

- Establish a European network of (young) investors in / for the creative industries / publishing industry.
- Feature Case studies on the different publishing markets in the European Countries and their investment situation. Make the investment in the publishing sector attractive for “Outsiders”.
- Provide SMEs with knowledge in investing.
- Establish a cross-country Mentoring Network between investors and young entrepreneurs
- Provide a platform where investors from outside the publishing industry and start-ups get matched.
- Tell stories of successful partnerships and about the new founders of media.

¹ http://eur-lex.europa.eu/legal-content/EN/ALL/;ELX_SESSIONID=B6PLTs3T8qmMLtrk9cmwkkGjp6M9pQ2Njh6zpGv4rGQXrhFg28lh!-1833460205?uri=CELEX:52010DC0183

2.2.4 Enhancing existing infrastructures

A lot of relevant work has been done already in the field of applying ICT to create solutions for the book sector, via cooperative efforts often supported as European projects or by private operators looking for market solutions. Further **solutions should be built** in a wide range of areas **on existing infrastructure and networks**, and more networks should be created to link individual solutions that would prove much more beneficial if connected with others.

2.2.4.1 What national and regional authorities can do

- **Support existing networks** that provide ICT solutions, such as **ARROW** and **RDI**.
- **Interconnect existing databases** via robust networks to improve information management in areas such as content discovery.
- **Coordinate these actions with R&D&I initiatives or business ventures** aimed to promote innovative solutions to enhance discovery.

What to do in practice:

- Encourage the use of ARROW and support the establishment of ARROW workflows where not available.
- Support the creation of national copyright hubs.

Best practices for inspiration:

ARROW, rights information management infrastructure (www.arrow-net.eu)

RDI, project to demonstrate how to efficiently manage and trade IPR online (<http://www.rdi-project.org/>)

Copyright Hub UK, simplifying licensing online (<http://www.copyrighthub.co.uk/>)

2.2.4.2 What European authorities can do

- **Support existing networks** that provide ICT solutions, such as **ARROW** and **RDI**, at EU level, providing for coordination, application and geographical expansion.

What to do in practice:

- Encourage the use of ARROW and support the maintenance and further deployment of the system.
- Support the uptake of the results of the RDI project through targeted projects.

2.2.5 Stop VAT discrimination for e-books

EU Member States should be allowed to apply **reduced rates of VAT to e-books**, the way it works with print books. Despite being a matter of fiscal policy, this measure is strictly connected with the ICT/publishing intersection as it deals specifically with digital books. It is widely recognised within and outside the TISP consortium that this single measure would unleash the potential of the e-book market across Europe.

2.2.5.1 What national and regional authorities can do

- Encourage the Commission to make a proposal to allow **reduced rates of VAT on e-books**.
- Promote **awareness of the negative effects of the fiscal discrimination**.

2.2.5.2 What European authorities can do

- Propose an **adaptation of the current legislative framework**.

2.2.6 Access to research

Most companies in publishing are SMEs and as such often do not engage in R&D activities of their own. Access to research in ICT-related fields is therefore scarce. Infrastructure programmes should be encouraged that **enable low-threshold access to research in ICT for publishing companies**, connecting ICT companies, publishing companies and research centres.

2.2.6.1 What national and regional authorities can do

- Facilitate **access to research for publishing companies**, especially SMEs.

What to do in practice:

- Put book publishing on the agenda of publicly funded creative clusters as well as innovation and business support institutions.
- Support research clusters with a focus on media/ book publishing.

Best practices for inspiration:

iMinds.be ICON cooperative research programme (<https://www.iminds.be/en/succeed-with-digital-research/co-operative-research/icon-research-program>)

Collaboration between Trade sector organisations like Boek.be and universities to stimulate research (Master Thesis) in the field of (digital) publishing

VIGC, Innovation Centre for graphic communication, independent knowledge centre: helpdesk, organization of workshops and seminars, experts network, research projects and tailor-made support to SMEs (<http://www.vigc.be>)

Publisher of the Future project (<http://www.uitgevenindetekomst.be>)

2.2.6.2 What European authorities can do

- **Take into account the specific needs of the publishing sector** in designing support programmes for access to research at EU level.

What to do in practice:

- Support the formulation of a European Strategic Research Agenda for Publishing.
- Create structural frameworks within funding programmes such as Horizon2020 that allow SMEs from publishing to participate more easily in EU-funded projects.

2.2.7 Digitisation of education

It is a documented fact that digital content works wonders at capturing the attention and unleashing the imagination of the younger generation. ICT and publishing should increasingly work together to **support the creation and adoption of digital school books**.

2.2.7.1 What national and regional authorities can do

- Adopt policies conducive to the **effective use of ICT in education**, involving all relevant stakeholders, **including publishers**.
- Support the **adoption of ICT equipment and of digital professional material** in order to achieve the digitisation of schools while ensuring quality and pedagogical results.
- Encourage the development of **solutions for personalised and adaptive learning**, for example through intelligent use of metadata and enrichment of educational content.
- Adopt **balanced data protection policies** that do not hamper the development of personalised learning solutions.
- Improve the **e-skills of teachers**, paying due attention to their capacity to select and use quality e-content in pedagogical contexts.

What to do in practice:

- Provide training for teachers in the use of ICT.
- Provide adequate funding for the adoption of ICT equipment and digital learning materials by schools.
- Encourage the development of a viable standards platform for digital education (a simple but consistent method of publishing metadata for learning content, a data model description language which will enable supplier communities to specify new data structures in a consistent and extensible manner, a new specification for the adaptive sequencing of learning content, a specification for the machine-readable description of learning objectives and curricula and a machine-readable data handling description language).

Best practices for inspiration:

Knooppunt, common portal for digital learning materials
<https://www.knooppunt.net/Security/XcasLD/Login.aspx>

Edutab, project to support stakeholders in digitisation of education

(<http://www.iminds.be/nl/projecten/2014/03/20/edutab>)

Bingel, online learning platform (<https://www.bingel.be>)

Kweetet, online learning platform (<https://www.kweetet.be/home>)

Sofia, online learning platform (<http://sofialearn.be>)

Diddit (<http://www.diddit.be>)

Sanoma Learning, provider of digital learning solutions (www.sanoma.com/en/learning)

Classroom of the Future thematic area and events dedicated to innovation in education at the Frankfurt Book Fair (http://www.buchmesse.de/en/Focus_on/education/)

For further reference see Pierre Danet, Crispin Weston: http://edtechnow.net/2015/02/22/w3c_priorities/

2.2.7.2 What European authorities can do

- Whereas the EU has no direct competence in education policy, it can encourage Member States to adopt relevant policies and support the necessary technological developments through its funding programmes.
- Adopt **balanced data protection policies** that do not hamper the development of personalised learning solutions.

2.3 RESEARCH AND INNOVATION IN THE BOOK SECTOR

Improved knowledge of the sectors that warrant some type of support or intervention is always a good starting point. **Research** should be supported **on the book sector**, both on more general issues such as market development and trends, cultural trends, reading behaviours, and more specifically on the interaction of ICT and book publishing and reading, as well as on past experiences of productive relations between content and technology.

R&I is to be supported in all the phases of the production and distribution of books, not limited to digital products. Specific projects should be supported in the areas identified as relevant for research and innovation. This should be done with a view to **bring search results as proof of concept to the market**.

2.3.1 ICT for more attractive e-products, enhanced production and distribution

Integrated ICT/publishing solutions can make books more attractive - especially to the digital natives - by turning them into trans-media boosters of creativity or apps which prolong the story of a book or give it a new angle. They can also enhance production and distribution processes. Investment should be encouraged in **technologies that improve products, production, distribution and marketing processes**. In this area, all measures and tools that **facilitate e-commerce** in general are likely to help.

Specific areas for development:

- **Speed of change or updating of content**; IT content needs to be constantly improved and updated at the speed of implementation, and publishing needs solutions with the issue of version tracking and

linking on the Web, which is especially important for e-books.

- **Content management systems** and, more in general, technologies for the **management of the production process** of paper and electronic books in integrated and cost effective way.
- **Design and development of new products and services**, in all the publishing areas (children and adult fiction and non-fiction, educational content, research journals and monographs, professional content, including databases, etc.).
- Improving **logistics** for the effective distribution of printed books.
- Enhanced **reading devices**.
- Enable more **real prototyping** in cooperation with ICT.
- Tools for **digital authoring**.
- **Semantic web, social tools, web 2.0** for book promotion.
- Tools to **improve rights and rights information management** to facilitate licensing.
- Developing **user-friendly DRM** where applicable.
- **Reading software, multilingual text-to-speech, reading devices**.
- Tools to deal with the **implementation of VAT rules on the distribution of electronic services**.
- Tools and technical features to deal with **digital preservation** of cultural content.
- Research about **the impact of IoT on the publishing sector and the interaction between content and machines** and its consequences (e.g. for education).
- Establish a **European digital showroom** for more marketing to make the success and achievements of the innovation in the publishing sector more visible.

Best practices for inspiration:

Young Digital Planet (YDP), a Sanoma Learning division in Poland (<http://www.ydp.eu>)

Flemish Innovation Network, network of innovation support organisations

(<http://www.innovatienetwerk.be>)

Radium LCP DRM, development of user-friendly DRM (<http://readium.org/projects/readium-lcp>)

2.3.2 Market data, semantic data, Big Data

Data and metadata have always been very important for book publishing and their relevance can only increase as more and more book content is delivered online. Investments are needed to **enhance the capacity of generating quality metadata as well as of processing large amounts of data** for a range of purposes (from content creation to content discovery and market analysis).

Specific areas for development:

- Increasing the **capacity to generate and analyse market data** (and attention should be paid to the interplay with other areas of legislation concerning the use of commercial data).
- Developing **ICT tools to support standards adoption**, especially among smaller publishing companies; equally the publishing sector should produce new resources to enable ICT to grasp the potential in the publishing world's data and content management standards.
- Encouraging the **application of good metadata and actionable identifiers**, since linking together different types of content with common subjects and audiences is the primary purpose of metadata.
- Promoting initiatives in the field of **creating, cleaning and exploiting book industry data** (product data, ordering and sales and book content data).
- Research on the **impact of data correlation and data storytelling** on the content industry.
- Developing **common semantic standards**, which must be understood and implemented consistently (e.g. ISO and other international trade standards).
- Facilitating discovery and clearance of rights by streamlining the related process. **Standards and infrastructure for metadata about right ownership and licensing** offer one path worth encouraging.
- Documenting and spreading **best practices** in all the above areas.

Best practices for inspiration:

The Dutch Language Union and the Human Language Technology Center (<http://taalunie.org/human-language-technology-htl>)

Meta4Books vzw and Publisher of the Future with Open Refine pilot project to stimulate Flemish publishers to clean up data

2.3.3 Online discovery

The Internet is characterised by what seems to be an almost infinite amount of 'information'. Finding the relevant information is crucial and discoverability tools need to be explored. ICT can provide inexpensive **ways to make the online discovery easier**.

This is closely linked to the issue of data and metadata: semantic web technologies can be particularly helpful in this area and the concept of discoverability itself needs to be broadened in the era of Web 2.0 and semantic/social technologies. ICT can help process large data volumes efficiently, and publishers can provide the experience and proven semantic definitions to feed back into the loop. Today, people rely almost uniquely on search engines to find information about available publications; to improve the discoverability of publications on the internet and ensure that more retail outlets get visibility, hence creating the rights conditions for cultural diversity, it would be useful to explore how the existing metadata can support such an activity and what would be the additional information required to operate a tool facilitating the online discovery of books.

Specific areas for development:

- Supporting innovation in **application of semantic web** to the sector, also promoting integration with typical editorial skills; as an example, classification information could be crowd-sourced or extracted automatically from full text and then editorially enhanced.
- Promoting the **use of Web 2.0 and social tools to help users to discover books** and other e-content starting from their reading experience.
- Supporting a **feasibility study** for a project to create a **tool to facilitate the online discovery** of books and e-books, based on existing sources of bibliographic information and metadata standards.

Best practices for inspiration:

National content aggregators like www.offrelegale.fr (France), www.thecontentmap.com (UK)

2.3.4 Automatic translation

Multilingualism is one of the bases of Europe's rich and vibrant cultural diversity, and **literary translations** are one of the main tools that allow this richness and diversity to be enjoyed by the widest possible audience. Beside national and EU support programmes for translations and the circulation of works abroad (grants, platforms facilitating contacts among people buying and selling rights, platforms to find translators, etc.) the issue should be tackled also from a technological point of view, through support for **tools and initiatives that facilitate automatic translations**.

Specific areas for development:

- Supporting study and research in **linguistic engineering**.
- Supporting research and development of **machine translation tools**.
- Enhancing the development of **tools to facilitate the work of human translators**.
- Encouraging the creation of **platforms for collaborative translation** of certain kinds of works.
- Supporting **online platforms that facilitate international exchanges and the discovery of authors and works** in order to encourage their translations.

Best practices for inspiration:

IF Livre, tools and information for the internationalisation of French books
<http://iflivre.institutfrancais.com/en>

LIST OF REFERENCES

Green Paper - Unlocking the potential of cultural and creative industries (COM/2010/0183)

THE TISP PROJECT

*TISP (Technology and Innovation for Smart Publishing) is the European project aiming to foster the connection between **publishing companies and ICT enterprises**, in order to stimulate new partnerships and business models.*

*TISP is a platform for sharing experiences, market analyses and business case studies. Publishing and new technologies can find, within an international network, room for a debate about innovation, where supply and demand can match to support the creation of **innovative products and services** as well as **new technological solutions useful for the professionals** of the book value chain.*

*To this end, several **professional meetings** will be organised (at least four each year) in occasion of the most important trade events in the two domains, and further networking activities will go on throughout the project's life with different communication tools and channels.*

*The results of the exchanges between stakeholders as well as the outcomes of TISP events are gathered in the **TISP Smart Book** (web-site: <http://www.smartbook-tisp.eu/>), a web resource consisting of a set of business cases and other relevant material that may support decision making by companies in launching new business models. Among the objectives of the project, there is also the elaboration of **policy recommendations** which, shaped by feedback from the TISP events, will be addressed to the competent institutions, at national and EU level.*

Started in January 2013 with an expected duration of three years, TISP is based on a consortium of 25 organisations from 12 countries, under the coordination of AIE, Associazione Italiana Editori. The consortium is composed by the umbrella organisations of the two sectors involved, the Federation of European Publishers and DigitalEurope, the organisers of the world's three most important book fairs, the Bologna Children's Book Fair, the Frankfurt Book Fair and the London Book Fair, sixteen national trade associations and four research institutes.

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