

Assessing Copyright and Related Rights Systems

# Technological Development

Report on Piloting in Finland





cupore

**Assessing Copyright and Related Rights Systems: Technological Development. Report on Piloting in Finland.**

This report is the result of the first pilot study implementing Description Sheet 3 – *Technological Development*, one of the 37 indicators constituting a methodology framework for assessing the operation of national copyright and related rights systems. The methodology framework has been developed at the Foundation for cultural policy research (Cupore) in Finland as part of a project financed by the Finnish Ministry of Education and Culture. The pilot study was conducted by the core project team, Tiina Kautio and Nathalie Lefever, and by Milla Määttä, Intern at the Ministry of Education and Culture, between April and July 2013 and its results were first published in December 2013 on the website of Cupore.

*A handbook presenting the methodology framework is available on the website of Cupore at [www.cupore.fi](http://www.cupore.fi).*

**Cupore webpublications 39:3**

Kulttuuripoliittisen tutkimuksen edistämissäätiö (Cupore)

Foundation for Cultural Policy Research (Cupore)

© Authors and Foundation for Cultural Policy Research

Cover illustration: Oy Graaf Ab

**ISBN 978-952-5573-75-6**

**ISSN 1796-9263**

**May 2016**

## Executive summary

This document presents data collected in application of a methodology framework to assess the operation of copyright and related rights systems. More precisely, the information and analysis below correspond to the third description sheet presented in the methodology handbook, titled “Technological Development”. This description sheet lists key figures that help evaluate the general level of availability of information and communication technologies in the country. It also proposes to map organizations promoting digital business models. This data will be particularly useful to interpret the findings of Methodology Card 4 concerning digital business models and digital distribution.

Data concerning the level of development Information and Communication Technologies (ICT) in Finland is widely available from national and international sources. Finland is positioned consistently high in the corresponding rankings among countries. According to the latest estimates, in 2012, 79.7 % of Finnish homes had access to cable TV, 85.1 % of Finnish households had access to a home computer, 49 % of Finnish citizens have a smartphone for their own use and nearly one third of the citizens used it to access the Internet. Among Finnish households, 84.2 % had access to the internet and 75.8 % had broadband access. 90 % of Finns had used the Internet in the past 3 months and 78 % daily in 2012. Online shopping is also widespread. Moreover, Finland is fifth in the ICT Development Index and first in the Networked Readiness Index. In short, Finnish citizens have the technical means to access cultural goods and services through TV and radio or online.

Through a desktop search conducted on the internet, a large number of organizations promoting or supporting digital and open source business models were listed and described. As demonstrated by the Network Readiness Index of the World Economic Forum and INSEAD, Finland is a country where innovation is supported and promoted. For this purpose, several public funds and associations of stakeholders have created or coordinated research and information concerning technological development and digital business models. Few of them are entirely devoted to this specific topic, but the sum of their research, promotion and support activities is comparatively significant. In addition, a wide range of private consulting companies are able to offer services focused on the development of digital business models.

Furthermore, several private or public associations have been created to promote open source business models and content. Some of them are focused on specific operating systems (Linux, Unix or Ubuntu), but others have a more general purpose and have been set to support open source in various settings or industries.

In conclusion, it seems that in Finland, digital business models and, to a smaller extent, open source solutions are considered as important technological and commercial innovations and, as such, promoted and supported by research through a large range of organizations.

## Table of contents

<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>INTRODUCTION.....</b>	<b>5</b>
A. Context of the pilot study .....	5
B. Presentation of the indicator .....	5
C. Methods .....	6
<b>RESULTS .....</b>	<b>7</b>
Section 1. Key ICT Indicators .....	7
A. Households and individuals.....	8
▪ TV access and use.....	8
▪ Radio access and use.....	8
▪ Access to computer and to internet-connected mobile devices .....	8
▪ Internet access and use.....	9
B. Businesses .....	10
C. Global ICT indexes .....	10
▪ ICT Development Index.....	10
▪ Networked Readiness Index .....	11
Section 2. Organizations promoting or supporting digital business models.....	12
A. Research, information and promotion of digital business models .....	12
B. Operational support for companies using digital business models .....	15
▪ Associations offering support services to their members .....	15
▪ Private consulting services concerning the use of digital business models.....	15
C. Promotion of open source solutions.....	16
D. Ministries involved in the promotion of digital business models .....	17
▪ Ministry of Transport and Communications .....	17
▪ Ministry of Employment and the Economy .....	17
▪ Ministry of education and culture .....	17
<b>CONCLUSIONS .....</b>	<b>19</b>
A. Analysis and summary of the results .....	19
▪ Key ICT Indicators.....	19
▪ Organizations promoting or supporting digital business models.....	19
B. Methodological findings.....	20
▪ Limitations.....	20
▪ Guidelines for future research .....	20
<b>APPENDICES .....</b>	<b>21</b>
A. Description sheet .....	21
B. Information sources .....	22

## Introduction

### ***A. CONTEXT OF THE PILOT STUDY***

---

A methodology framework for assessing the operation of national copyright and related rights systems has been developed at the Foundation for cultural policy research (Cupore) in Finland. It is a collection of tools for achieving a systematic assessment of the functioning, performance and balanced operation of national copyright and related rights systems.

In the methodology, the assessment of the copyright and related rights system is determined through a framework consisting of so-called description sheets and methodology cards. The description sheets constitute guidelines to produce a comprehensive presentation and description of a country's copyright and related rights system and its operating environment. The methodology cards propose the collection of specific sets of data, either quantitative, descriptive or qualitative, that will be used as indicators of the functioning, performance and balanced operation of the system. Description sheets and methodology cards are accompanied by detailed information on the data to be collected, as well as analysis guidelines that will help connect them to each other.

The methodology framework is envisaged to be continuously improved through application feedbacks. For more information, see the Cupore website, [www.cupore.fi/copyright.php](http://www.cupore.fi/copyright.php).

This report presents data collected in application of Description sheet 3 of the methodology framework, titled "Technological development". It is the result of the first pilot study applying this indicator in Finland.<sup>1</sup>

This study was conducted by the core project team, Tiina Kautio and Nathalie Lefever, and by Milla Määttä, Intern at the Ministry of Education and Culture, between April and July 2013.

### ***B. PRESENTATION OF THE INDICATOR***

---

The indicator implemented here is intended to present the development and the use of digital communication technologies (/ICT) in the country whose copyright system is under analysis. It is part of the first pillar of the methodology framework, "Copyright Environment", and its first area, "The Context in Which the Copyright System Operates". It is a description sheet which provides a descriptive overview of the international copyright environment in order to support the analysis of the operation of the national copyright and related rights system.

As explained in the methodology handbook, several macro-level trends and phenomena such as digitalisation and the fast development of information and communications technologies are transforming the copyright system's operating environment rapidly. Digital technology has changed the ways to create, use, distribute and consume copyrighted works.<sup>2</sup> It has altered the traditional value

---

<sup>1</sup> The study was conducted based on the draft version of the Methodology Handbook, dated 19.7.2012. This report is modified from the original report to better correspond to the version of the Methodology Handbook dated 20.12.2013.

<sup>2</sup> As it is stated in the UK government's strategy for Copyright in the Digital Age, © the way ahead (Intellectual Property Office & Department for Business, Innovation and Skills, 2009), it is now easier than ever for individual citizens to create, produce, reproduce, use and distribute copyright works through digital technology. Furthermore, consumers' willingness to pay for copyrighted works falls as they note the falling cost of digital copying.

In order to allow the consumers to benefit from the digital age and to make non-commercial use easier for consumers, the recommended actions of the strategy include

- improving access to orphan works,
- improving the processes for licensing copyright works, and
- legitimizing non-commercial use of legitimately purchased copyright works.

chains as authors have new possibilities for publishing their works and commercial copyright holders can sell products through new channels. This new environment for creation also allows users and consumers to group together into networks and become user-creators, motivating consumer-led innovation.

Technological changes have introduced new types of creations that have only recently entered the field of copyright protected works, such as databases, as well as new ways to create, such as online co-creation. They also have brought new ways to access copyrighted contents and new alternatives for traditional distribution channels, such as music streaming services and on-demand movies. Wider access to previous works and new possibilities for collaboration between authors have a potential for increasing the amount and quality of creations.

On the other hand, new technologies have made copying of some creative works easy and cheap, while broadband Internet access facilitates their exchange. Copyright infringement has become easier than before and there often is a lack of efficient technical methods to counteract unauthorized copying and exchange of copyrighted works. Responding to the problems caused by digital piracy requires enforcement measures that can conflict with other interests such as privacy of Internet users. As a result, the development of new technologies requiring new legal frames and new business models is among the strongest forces driving the development of copyright today.<sup>3</sup>

The description sheet proposes to collect two sets of information. The first set is composed of key statistical figures that would help evaluate the general level of availability of information and communication technologies in the country. In this report, analysis on the topic is based on a selection of representative statistical data and indexes concerning the ICT development in Finland. The second set of information is a list of organizations promoting or supporting the use of digital business models. This data will be particularly useful when interpreting the findings of Methodology card 4 concerning digital business models and digital distribution.

The description sheet presenting the indicator can be found in Appendix A of this report.

### ***C. METHODS***

---

In the case of Finland, the information collected for this indicator could easily be found through available national and international data. The method chosen was therefore desktop studies.

---

Furthermore, it is proposed in the strategy document that products and services of creative industries must evolve to offer consumers something they value and that non-compulsory registration systems may help right holders manage their rights more effectively.

<sup>3</sup> Copyright infringement and the issues of licensing and orphan works have become more complex and significant than ever in the digital environment. If a copyright system will not keep up with the changes in the environment, it may act as a barrier for the development of new technologies and innovations and prevent the access to new technologies. For a detailed discussion, see Digital Opportunity: A Review on Intellectual Property and Growth (2011).

### SECTION 1. KEY ICT INDICATORS

---

The purpose of this description sheet in its first part is to provide an overview of the development in Information and Communication Technologies (ICT) in the country whose copyright system is under analysis. Information and Communication Technologies include the use of computers and telecommunications equipments, telephony, broadcast media, as well as audio and video processing and transmission. The level of access to ICT technologies is likely to influence the level of access to cultural goods and services, in particular those that are distributed or shared through the Internet or television.

Some international organizations have proposed sets of indicators designed to offer an overview of the level of ICT development in a country. A comprehensive set of core ICT indicators was developed by the *Partnership on Measuring ICT for Development*<sup>4</sup>, but the data itself has to be found through other sources. The International Telecommunication Union (ITU), the United Nations' specialized agency for information and communication technologies, publishes an annual report on "ICT Facts and Figures"<sup>5</sup> as well as a more detailed report called "Measuring the Information Society" which includes the *ICT Development Index (IDI)*, ranking countries' performance with regard to ICT infrastructure and uptake, and the *ICT Price Basket (IPB)*, a metric that tracks and compares the cost and affordability of ICT services<sup>6</sup>. The OECD also proposes a set of 15 ICT indicators drawn from various publications and databases produced by the OECD's Directorate for Science Technology and Industry (DSTI). The World Bank makes available some databases and indicators on the level of development of a large number of countries, some of them related to ICT<sup>7</sup>. Eurostat, UNCTAD, the UNESCO Institute for Statistics and the United Nations Population Division also produce data useful for analyzing the level of ICT development in various countries.

As a result, for most countries, statistical data on ICT access is widely available. The question then is to select the indicators most representative and best fit for the purposes of the methodology for the assessment of copyright and related rights. The indicators proposed in the description sheet have been complemented with others from the sources above, and with two relevant global ICT indexes. The results are divided in three categories:

- Households and individuals: TV and radio access and use, computers and mobile phones access, Internet access and use.
- Businesses: use of Internet.
- Global ICT indexes: the ICT Development Index and the Networked Readiness Index.

---

<sup>4</sup> The Partnership on Measuring ICT for Development is an international, multi-stakeholder initiative to improve the availability and quality of ICT data and indicators, particularly in developing countries. It was launched in June 2004, on the occasion of UNCTAD XI. For more information and a list of its partners, see [http://new.unctad.org/default\\_\\_\\_\\_600.aspx](http://new.unctad.org/default____600.aspx).

The set of indicators developed by the Partnership is documented in "Core ICT Indicators – Partnership on Measuring ICT for Development". The document is available on the International Telecommunication Union website: <http://www.itu.int/ITU-D/ict/partnership/material/CoreICTIndicators.pdf>. Visited on 3.5.2013

<sup>5</sup> The 2013 edition is available here: <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013.pdf>. Visited on 17.5.2013.

<sup>6</sup> ITU publications are available here: <http://www.itu.int/en/ITU-D/Statistics/Pages/publications/default.aspx>. Visited on 20.5.2013.

<sup>7</sup> See for the databases: <http://databank.worldbank.org/data/databases.aspx> and for the indicators: <http://data.worldbank.org/indicator/all>. Visited on 11.11.2013.

## **A. HOUSEHOLDS AND INDIVIDUALS**

---

The level of access to TV and radio broadcasts and to the Internet are important measures likely to influence the consumption of copyrighted goods and services by individuals and households.

### ▪ **TV ACCESS AND USE**

#### **Cable TV subscriptions in total:**

According to the OECD key ICT indicators<sup>8</sup>, the latest data concerning TV subscriptions in Finland date back to 2006. At the time, statistics showed a 55.2 % rate of homes subscription, and a 24.5 % rate of homes passed<sup>9</sup>. This means that a total of 79.7 % of Finnish homes had access to cable TV. This puts Finland at the 8<sup>th</sup> position among the 23 OECD countries analyzed.

#### **Proportion of households with TV access:**

In 2012, 91 % of Finnish households had at least one TV set. 52 % of households had access to TV channels through cable, satellite or IPTV, and 39 % had terrestrial access only.<sup>10</sup>

### ▪ **RADIO ACCESS AND USE**

According to Finnpanel, 95 % of the Finnish population listen to the radio weekly, and an average of 77 % of the Finnish population listen to the radio for at least 15 minutes every day.<sup>11</sup>

### ▪ **ACCESS TO COMPUTER AND TO INTERNET-CONNECTED MOBILE DEVICES**

#### **Households with access to a home computer:**

According to the OECD<sup>12</sup>, 85.1% of Finnish households had access to a home computer in 2011. This puts Finland at the 8<sup>th</sup> position among the 39 OECD countries analyzed.

#### **Access to Internet through mobile devices outside home and work:**

However, computers are not the only way to access the Internet and enjoy cultural goods and services, and computers are not always used at home (or at work). The Official Statistics of Finland office discovered that in 2012, 49 % of Finnish citizens had a smartphone in own use. It further states that *“Internet use with a laptop and mobile phone is growing and becoming more regular. In 2012, nearly one-third of Finnish residents aged 16 to 74 and nearly one half of those aged 45 or under used the Internet with a mobile phone at least once a week elsewhere than at home or work. One year earlier, the share was 22 per cent. Internet use weekly with a laptop outside home and work nearly doubled to 16 per cent in 2012.”*<sup>13</sup>

---

<sup>8</sup> Data available at <http://www.oecd.org/Internet/broadband/oecdkeyictindicators.htm>. Visited on 14.5.2013.

<sup>9</sup> “Homes Passed is the the number residences or businesses with a feeder cable already installed near their premises, making them capable of being easily connected to a cable, telco or satellite network by a service provider, whether they choose to become customers or not.” (definition by Christine Martz and Bruce Bahlmann). In these statistics, the percentage of “home passed” only include those that do not have TV subscriptions. See <http://www.birds-eye.net/definition/acronym/?Meaning%20of%20HP%20Homes%20Passed&id=1353906050>. Visited on 25.4.2013.

<sup>10</sup> Data from Finnpanel, available at <http://www.finnpanel.fi/en/tulokset/tv/vuosi/tvtaloudet/2012/>. Visited on 18.6.2013.

<sup>11</sup> Data from Finnpanel, available at <http://www.finnpanel.fi/en/tulokset/radio/krt/viimeisin/tavoittavuus.html>. Visited on 18.6.2013.

<sup>12</sup> Data available at OECD - [www.oecd.org/sti/ieconomy/Final\\_6.a\\_PC%20Households\\_2012.xls](http://www.oecd.org/sti/ieconomy/Final_6.a_PC%20Households_2012.xls). Visited on 14.5.2013.

<sup>13</sup> Official Statistics of Finland (OSF): Use of information and communications technology by individuals [e-publication]. ISSN=2323-2854. 2012. Helsinki: Statistics Finland [referred: 2.5.2013].  
Access method: [http://www.tilastokeskus.fi/til/sutivi/2012/sutivi\\_2012\\_2012-11-07\\_tie\\_001\\_en.html](http://www.tilastokeskus.fi/til/sutivi/2012/sutivi_2012_2012-11-07_tie_001_en.html).

## ▪ INTERNET ACCESS AND USE

### **Internet subscriptions in total:**

According to the OECD<sup>14</sup>, in 2009, 1 459 000 broadband connections were subscribed in Finland, as well as 130000 dial-up connections.

### **Households with access to the Internet:**

In 2011, 84.2 % of Finnish households had access to the Internet. In 2009, 75.8% of Finnish households had a broadband access to the Internet<sup>15</sup>. This ranked Finland 7<sup>th</sup> among the OECD countries analyzed<sup>16</sup>.

### **Broadband subscriptions per 100 inhabitants:**

In 2012, there were in Finland 29.7 broadband Internet subscriptions (including DSL, Cable, Fibre/LAN and others) for 100 inhabitants. This ranks Finland at the 14<sup>th</sup> position among OECD countries<sup>17</sup>. According to Statistics Finland, just under 80 per cent of all households had broadband Internet in 2011.<sup>18</sup>

### **Availability of Digital Subscriber Lines (DSL):**

In Finland, 96 % of Internet lines had been upgraded in 2007.<sup>19</sup>

### **Internet use:**

According to data published by the Official Statistics of Finland, in spring 2012, Finland was among the top European countries in Internet use. *"Internet use is more widespread than in Finland only in other Nordic countries, the Netherlands and Luxembourg."*<sup>20</sup>

Statistic also showed that 90 % of Finns had used the Internet in the past 3 months and 78% of those aged 16 to 74 had used the Internet daily in 2012. This data is consistent with the findings of the World Bank, according to which 89.4 % of the Finnish population were Internet users (people with access to the Internet network) in 2011, making Finland the 7<sup>th</sup> country in the world with the highest Internet use.<sup>21,22</sup>

### **Online shopping:**

2012 statistics showed that the number of online shoppers in Finland is growing rapidly. In 2012, 65 % of Finnish citizens bought something via the web, and 47 % had made a purchase in the last three months, a four percentage points rise over the year. These statistics vary depending on the age of the user: two-thirds of those aged 25 to 34 had bought something over the Internet during the past three months, for only one tenth of those aged 65 to 74.

---

<sup>14</sup> OECD ICT key indicators: <http://www.oecd.org/sti/ieconomy/oecdkeyictindicators.htm>. Visited on 16.4.2013.

<sup>15</sup> Source: OECD Broadband Portal: <http://www.oecd.org/sti/ieconomy/oecdbroadbandportal.htm>. Visited on 16.4.2013.

<sup>16</sup> Sources: OECD ICT key indicators and Broadband Portal.

<sup>17</sup> Source: OECD ICT key indicators, following data provided by the Finnish government.

<sup>18</sup> Statistics Finland (2012). Joukkoviestimet 2011 – Finnish Mass Media. The publication is available at [http://www.stat.fi/tup/julkaisut/tiedostot/julkaisuuttelo/yklt\\_jvie\\_201100\\_2012\\_4884\\_net.pdf](http://www.stat.fi/tup/julkaisut/tiedostot/julkaisuuttelo/yklt_jvie_201100_2012_4884_net.pdf). Visited on 18.6.2013.

<sup>19</sup> Source: OECD ICT key indicators.

<sup>20</sup> Official Statistics of Finland (OSF): Use of information and communications technology by individuals [e-publication]. ISSN=2323-2854. 2012. Helsinki: Statistics Finland [referred: 2.5.2013].  
Access method: [http://www.tilastokeskus.fi/til/sutivi/2012/sutivi\\_2012\\_2012-11-07\\_tie\\_001\\_en.html](http://www.tilastokeskus.fi/til/sutivi/2012/sutivi_2012_2012-11-07_tie_001_en.html).

<sup>21</sup> Source:  
[http://data.worldbank.org/indicator/IT.NET.USER.P2?order=wbapi\\_data\\_value\\_2011+wbapi\\_data\\_value+wbapi\\_data\\_value-last&sort=desc](http://data.worldbank.org/indicator/IT.NET.USER.P2?order=wbapi_data_value_2011+wbapi_data_value+wbapi_data_value-last&sort=desc). Visited on 12.5.2013.

<sup>22</sup> This data could be referred to information about the purposes of the use of the Internet, provided by Statistics Finland. Data from the year 2007 is available at the Statistics Finland website, [http://www.stat.fi/til/sutivi/2007/sutivi\\_2007\\_2007-09-28\\_tau\\_001\\_en.html](http://www.stat.fi/til/sutivi/2007/sutivi_2007_2007-09-28_tau_001_en.html). Visited on 18.6.2013.

In the context of the methodology, it is interesting to notice that tourism services, travel tickets and admission tickets to cultural events are the purchases most often made online.<sup>23</sup>

### **Broadband access as a legal right:**

It is interesting to notice that the Finnish government is committed to guarantee a high-speed Internet access to every citizen. The Ministry of Transport and Communications has declared that a 1Mb broadband access would be a legal right in July 2010 and a 100Mb broadband connection would also become a legal right by the end of 2015<sup>24</sup>.

## ***B. BUSINESSES***

---

The use of Internet by businesses is an important factor in their ability to distribute their services and products in digital forms, and therefore directly influences the development of digital business models, among other in creative industries.

### **Use of the Internet in Finnish businesses:**

In June 2012, 99.8 % of Finnish businesses between 10 and 49 employees and 100 % of businesses with 50 employees or more used the Internet.<sup>25</sup>

According to the Official Statistics of Finland, in spring 2012, enterprises with at least 10 employees provided nearly a third of their personnel with a portable device and a mobile connection to the Internet.

Moreover, *“of the totalled up personnel of all Finnish enterprises, 31 per cent used portable devices with connection to the Internet through mobile telephone networks. Currently 78 per cent of enterprises have at least one portable device that allows a mobile connection to the Internet for business use.”*<sup>26</sup>

### **Use of broadband Internet in Finnish businesses:**

According to the OECD, in 2011, 98.7 % of businesses with ten or more employees used a broadband access to the Internet. This places Finland at the first position in the ranking of OECD countries according to this indicator.<sup>27</sup>

## ***C. GLOBAL ICT INDEXES***

---

The international indexes presented here have been developed for the purposes of assessing and comparing the ICT development of various countries. They put together selected indicators and offer useful information to complement the individual indicators presented above.

### **▪ ICT DEVELOPMENT INDEX**

The ICT Development Index (IDI) was developed by the International Telecommunication Union (ITU) in 2008 and updated every year since<sup>28</sup>. It is a composite index combining 11 indicators into one

---

<sup>23</sup> Official Statistics of Finland (OSF): Use of information and communications technology by individuals [e-publication]. ISSN=2323-2854. 2012. Helsinki: Statistics Finland [referred: 30.4.2013].  
Access method: [http://www.tilastokeskus.fi/til/sutivi/2012/sutivi\\_2012\\_2012-11-07\\_tie\\_001\\_en.html](http://www.tilastokeskus.fi/til/sutivi/2012/sutivi_2012_2012-11-07_tie_001_en.html).

<sup>24</sup> See the following news article: [http://yle.fi/uutiset/1mb\\_broadband\\_access\\_becomes\\_legal\\_right/1080940#](http://yle.fi/uutiset/1mb_broadband_access_becomes_legal_right/1080940#) and [http://news.cnet.com/8301-17939\\_109-10374831-2.html](http://news.cnet.com/8301-17939_109-10374831-2.html).

<sup>25</sup> Source: OECD ICT Key indicators.

<sup>26</sup> Source: Official Statistics of Finland (OSF): Use of information technology in enterprises [e-publication]. 2012. Helsinki: Statistics Finland [referred: 2.5.2013]. Access method: [http://www.tilastokeskus.fi/til/ict/2012/ict\\_2012\\_2012-11-27\\_tie\\_001\\_en.html](http://www.tilastokeskus.fi/til/ict/2012/ict_2012_2012-11-27_tie_001_en.html).

<sup>27</sup> Source: OECD ICT Key indicators.

<sup>28</sup> It is presented in the ITU annual report “Measuring the Information Society”. The 2012 edition is available here: <http://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2012.aspx>. Visited on 17.5.2013.

benchmark measure that serves to monitor and compare developments in information and communication technology across countries. These 11 indicators are grouped in three clusters with different weights<sup>29</sup>:

A. ICT access (weighs for 40 %):

1. Fixed-telephone lines per 100 inhabitants
2. Mobile-cellular telephone subscriptions per 100 inhabitants
3. International Internet bandwidth (bit/s) per Internet user
4. Percentage of households with a computer
5. Percentage of households with Internet access

B. ICT use (weighs for 40 %):

6. Percentage of individuals using the Internet
7. Fixed (wired)-broadband Internet subscriptions per 100 inhab.
8. Active mobile-broadband subscriptions per 100 inhab.

C. ICT skills (weighs for 20 %):

9. Adult literacy rate
10. Secondary gross enrolment ratio
11. Tertiary gross enrolment ratio.

The index is based on data from Eurostat, OECD, IMF, UNCTAD, the UNESCO Institute for Statistics, the United Nations Population Division and the World Bank. 155 countries are part of this index.

In the latest index (2011, published in 2012), Finland ranked fifth, the same position the country held in 2010. It is in 18<sup>th</sup> position in the “access” sub-index, fourth in the “use” sub-index and second in the “skills” sub-index.

#### ▪ NETWORKED READINESS INDEX

Another way of measuring the ICT development level is to see it through the country’s capacity to adapt its economy and society to the digital age. *“The Networked Readiness Index, calculated by the World Economic Forum, and INSEAD, ranks 144 economies based on their capacity to exploit the opportunities offered by the digital age. This capacity is determined by the quality of the regulatory, business and innovation environments, the degree of preparedness, the actual usage of ICTs, as well as the societal and economic impacts of ICTs. The assessment is based on a broad range of indicators from Internet access and adult literacy to mobile phone subscriptions and the availability of venture capital. In addition, indicators such as patent applications and e-government services gauge the social and economic impact of digitization.”*<sup>30</sup>

In the 2013 edition of the Global Information Technology Report<sup>31</sup>, among the 155 countries analyzed, Finland ranks first. The report notes that *“Finland, which arguably has one of the best educational systems in the world, stands out as a digital innovation hub. It boasts the world’s highest number of patent applications per capita in the domain of ICTs), which are ubiquitous in Finland. Ninety per cent of Finnish households have Internet access, compared to about 70% in the United States and 85% in the United Kingdom.”*

---

<sup>29</sup> For a description of each indicator and their respective weights in the index, see Chapter 2 of the ITU annual report.

<sup>30</sup> Source: Presentation of the Global Information Technology Report 2013 on the World Economic Forum Website: <http://www.weforum.org/reports/global-information-technology-report-2013>. Visited on 15.4.2013.

<sup>31</sup> Available on the WebForum website: <http://reports.weforum.org/global-information-technology-report-2013/>. Visited on 15.5.2013.

## SECTION 2. ORGANIZATIONS PROMOTING OR SUPPORTING DIGITAL BUSINESS MODELS

---

The purpose of the second parameter is to get an overview of Finnish organizations, associations, companies, etc, that offer support for or promote the utilization of digital business models.

The list of organizations presented below is divided into four sections:

- Organizations conducting *research, information and promotion of digital business models*. This includes a wide range of organizations (companies, non-profit organizations, projects, initiatives, clusters or funds), either publicly or privately financed, whose activities are significantly related to the development of digital business models.
- Organizations offering *operational support for companies using digital business models*. This category includes mainly private consulting services with particular expertise in digital business models. These companies do not aim at promoting digital business models as such, but their existence ensures that private companies developing their digital businesses can find some professional (even though private) support, which can be crucial for their operational success. This list is particularly subject to changes following changes in the business environment.
- Organizations involved in the *promotion of open source solutions*. It should be noted that some of these organizations are also involved in the promotion or support of digital business models in a broader sense.
- *Ministries involved in the promotion of digital business models*. This section includes only the ministries with central responsibilities in digital business models' promotion and support. It also lists notable government activities in the field when these are realized without intermediary organizations. In other cases, for instance when government funding is distributed through specific public organizations, the activities are listed in sections A or C.

### **A. RESEARCH, INFORMATION AND PROMOTION OF DIGITAL BUSINESS MODELS**

---

#### **TiViT (Tieto- ja viestintäteollisuuden tutkimus / The Strategic Centre for Science, Technology and Innovation in the Field of ICT) - <http://www.tivit.fi>**

TiViT is a non-profit limited company founded in February 2008 by 46 partner organisations (including companies, universities and public bodies). Its focus is on promoting the development of digital service know-how for business needs. It is one of Finland's Strategic Centres for Science, Technology and Innovation (SHOKs). Its activities consist in financing and coordinating research projects and company-driven development of business practices, and in offering a service-creating laboratory online. These activities are financed through the collection of a service-based charge.

One of the ongoing programs coordinated by TiViT is the Next Media research program<sup>32</sup>. It is financed by TEKES (see below) and aims at searching for innovations in media experience, new business models, concepts and technology.

#### **TEKES (the Finnish Funding Agency for Technology and Innovation) - <http://www.tekes.fi>**

Tekes is a publicly funded expert organization for financing research, development and innovation in Finland (including research concerning digital business models). TEKES is funded by the Finnish state via the Ministry of Employment and Economy. Every year, Tekes finances some 1,500 business research and development projects, and almost 600 public research projects at

---

<sup>32</sup> See [http://virtual.vtt.fi/virtual/nextmedia/index\\_en.htm](http://virtual.vtt.fi/virtual/nextmedia/index_en.htm). Visited on 15.5.2013.

universities, research institutes and polytechnics. Funding is directed at technological innovations as well as service-related, design, business and social innovations. TEKES has a database of its company clients which covers 20 000 companies. The system is updated once per year with circa 4000 companies. TEKES also has a company database, ASTA, where it is possible to search for companies offering their services linked to open source software.

### **DiViA (Divigal Marketing Round Table - Aalto University Executive Education) -**

<http://www.divia.fi/divia/>

DiViA 2013 is a continuation of a project that started in 2002 with a goal to “create knowledge about how digital channels and social media should be used, how customers feel about the new channels and marketing methods, and how they adopt and use them”. For this purpose, DiViA organizes a discussion forum for experts and promotes academic research activities on digital marketing. To this day a total number of about 400 companies have participated in DiViA Forums.

### **Centre of Expertise Programme (OSKE) and the Digibusiness Cluster of Expertise -**

<http://www.oske.net/> and <http://www.digibusiness.fi/>

The Centre of Expertise Programme (Osaamiskeskusohjelma, OSKE) is a fixed term special government programme coordinated and financed by the Ministry of Employment and the Economy. The first OSKE programme was launched in 1994. OSKE promotes the utilization of the highest international standard of knowledge and expertise and aims at boosting business activities, fostering employment, and strengthening the know-how of small and medium-sized enterprises. The programme operates as a cluster-based model, and it involves 13 national Clusters of Expertise and 21 regional Centres of Expertise. Partners operating in the clusters include enterprises, universities, universities of applied sciences, research institutions, technology centres as well as financing bodies such as cities, municipalities, regional councils, the Centres for Economic Development, Transport and the Environment (ELY Centres), and the Regional State Administrative Agencies (AVIs).

One of the national Clusters of Expertise is the Digibusiness cluster with the general objective of facilitating the development of digital content products and services. The cluster is focused on, e.g., games, social media, animation, online services, TV-production, music, eLearning, and communication. Digibusiness is coordinated by Culminatum Innovation Ltd (Helsinki) which cooperates with organizations focusing on digital business: Hermia (Tampere)<sup>33</sup>, Åbo Akademi's University's Media City (Turku)<sup>34</sup> and research and product development centre Muova (Vaasa)<sup>35</sup>, BusinessOulu (Oulu)<sup>36</sup>, Kouvola Innovation (Kouvola)<sup>37</sup>, and Technology Centre Innopark (Hämeenlinna)<sup>38</sup>. Digibusiness offers different kinds of services for enterprises working in the field of digital business, cooperates different with research centres, and helps to develop innovations into successful products.

### **The Innobus Project - <http://www.innobus.fi/>**

Innobus is a project executed in cooperation with Finnish and Russian universities, companies and research and development groups. The project is governed by Wirma Lappeenranta and funded by the EU and the Finnish and Russian governments. The purpose of the project is to create innovation dialog between the two countries and to find solutions to help innovative companies grow and go international, conventional companies to modernize their operations, and universities to cooperate

---

<sup>33</sup> Website: [http://www.hermia.fi/in\\_english/](http://www.hermia.fi/in_english/). Visited on 25.6.2013.

<sup>34</sup> Website: <http://www.mediacity.fi/>. Visited on 25.6.2013.

<sup>35</sup> Website: [http://www.muova.fi/tmp\\_muova\\_site\\_1.asp?sua=1&lang=3&cs=7](http://www.muova.fi/tmp_muova_site_1.asp?sua=1&lang=3&cs=7). Visited on 25.6.2013.

<sup>36</sup> Website: <http://www.businessoulu.com/en/>. Visited on 25.6.2013.

<sup>37</sup> Website: <http://www.kinno.fi/en>. Visited on 25.6.2013.

<sup>38</sup> Website: <http://www.innopark.fi/>. Visited on 25.6.2013.

in R&D related issues. The main outputs of the project include, for example, case reports of innovation cooperation, guidelines about internationalization and modernization of innovative businesses, and self-assessment tools for SMEs. Consulting, advising and coaching assistance from the trained pool of experts, including experts on eBusiness and IPR, is also provided.

**Sitra (Finnish Innovation Fund) - <http://www.sitra.fi/en>**

Sitra is a public fund with activities promoting and stimulating new business models that aim for sustainable well-being. The fund was commissioned with the task of promoting Finland's stable and balanced development, economic growth and international competitiveness and cooperation. Sitra reports directly to the Finnish Parliament. One of its objectives is to increase opportunities for citizens to make themselves heard and to make choices, and in this view, develop new business models. Sitra offers training, finances research projects and other activities in order to fulfill its goals.

**HighTech Finland - <http://www.hightech.fi/direct.aspx?area=page&prm1=abouttf2008>**

HighTech Finland is a forum which offers information about innovative work done by Finnish companies and researchers in different areas, such as mobile communications, sustainable energy, environmental technologies, health care and advanced industrial processes and materials. The forum and its website are maintained by the High Tech Finland Team. A printed edition of articles on organisations that are innovating in their own fields is also published annually.

The HighTech Finland Team works closely with a wide range of organisations and companies. Their partners include, e.g., TEKES, the Ministry of Employment and the Economy, the Ministry for Foreign Affairs and Finpro.

**Finpro - <http://www.finpro.fi/>**

Finpro is a Finnish trade, internationalization and investment development organization founded in 1919. Finpro aims at international growth and success of their client companies by carrying out assignments for companies and running several major international projects, such as Cleantech Finland, and Future Learning Finland. The Finpro network consists of approximately 550 Finnish companies, the Confederation of Finnish Industries, the Federation of Finnish Enterprises, and the Federation of Finnish Technology Industries (EK). Finpro is a public-private organization and operates under the Ministry of Employment and the Economy. Finpro works closely also with other organizations, such as the regional Centres for Economic Development, Transport and the Environment (ELYs), TEKES, and the Ministry for Foreign Affairs.

Finpro's experts in global locations help Finnish companies obtain information about target markets, enter selected markets and network with local actors. The Finpro network offers industry expertise in several fields, including software and digital media. They offer information concerning the sector's development and funding centres, as well as new growth areas.

FinNode (<http://www.finnode.fi/>) is a global network of Finnish innovation organisations managed by Finpro and founded to support the internationalization of Finnish business and research organizations and to promote innovation. FinNode operates in United States, China, Russia, Japan and India. The network includes also the Ministry of Employment and the Economy, the Ministry for Foreign Affairs, TEKES, Sitra (the Finnish Innovation Fund), VTT Technical Research Centre of Finland, the Academy of Finland, the Ministry of Education and Culture, and the Confederation of Finnish Industries (EK). FinNode's principal interest groups in Finland include Centres of Expertise (OSKEs), Strategic Centres for Science, Technology and Innovation (SHOKs), and regional Centres for Economic Development, Transport and the Environment (ELYs).

FinNode monitors the operational environment for the Finnish innovative organizations, produces data, and executes different kinds of projects in its field of expertise. An example of a project concerning digital business models is called Digitalization of Russia: Digital Content Business

Network<sup>39</sup>. The project was launched to support the internationalization and networking activities of the Finnish software and digital media industry players and industry clusters such as Digibusiness Cluster of Expertise, TiVit, and Tekes.

**DigiDemo grants** - [http://www.kopioisto.fi/avek/tuen\\_hakeminen/digidemo/](http://www.kopioisto.fi/avek/tuen_hakeminen/digidemo/)

DigiDemo grants are awarded twice a year by The Promotion Centre for Audiovisual Culture (AVEK) to projects aiming at developing cultural contents and services in digital form. It is funded by the Ministry of Education and Culture for a total of 910.000 euros in 2013.

## **B. OPERATIONAL SUPPORT FOR COMPANIES USING DIGITAL BUSINESS MODELS**

Some of the organizations listed above (for example OSKE) engage not only in research and information on digital business models but also provide practical support for companies using digital business models. In addition, the following organizations fulfil that purpose:

### ▪ **ASSOCIATIONS OFFERING SUPPORT SERVICES TO THEIR MEMBERS**

**Internet Industry Finland (Verkkoteollisuus)** - <http://verkkoteollisuus.fi/en/verkkoteollisuus-ry/>

Internet Industry Finland is an association founded in April 2010 by Finnish service providers in the e-business area. The members include companies offering e-commerce services, companies producing digital services and growth companies operating in the digital environment. Instead of finding technological solutions for businesses utilizing digital business models, the association is focused on developing the conditions of growth industries and the Finnish business know-how. It aims to improve the conditions of e-commerce and e-business in Finland and to produce services for its members: networking, training, consultancy, business support and information.

### ▪ **PRIVATE CONSULTING SERVICES CONCERNING THE USE OF DIGITAL BUSINESS MODELS**

Here is a list of consulting companies currently offering services specialized in the digital environment and the development of new digital business models in Finland:

- Brandson (<http://brandson.fi/>) - company providing services concerning digital business, including planning digital strategies and digital business models, and technology consulting.
- CapGemini (<http://www.fi.capgemini.com/>) - multinational corporation providing consulting, technology and outsourcing services especially in the field of IT.
- Dagmar (<http://www.dagmar.fi/>) - marketing and consulting company providing consulting services on, among others, digital communication and business.
- Digital Media Finland (<http://www.digitalmedia.fi/in-english/>) - consulting company specialized in solving problems related to digitalization and business development.
- Ernst & Young (<http://www.ey.com/FI/>) - global consulting organization with a "Media and Entertainment" section proposing services in "Doing business in a digital world"<sup>40</sup>.
- Ixonos (<http://www.ixonos.fi/>) - mobile and online solutions company developing wireless technologies, software and solutions for mobile devices and multi-channel online services.
- Magenta Advisory (<http://www.magentaadvisory.com/>) - management consulting company specialized in digital business.

---

<sup>39</sup> See [http://www.finnode.fi/projektit/finnode\\_russia\\_-\\_digitalization\\_of\\_russia\\_digital\\_content\\_business\\_network.125.xhtml](http://www.finnode.fi/projektit/finnode_russia_-_digitalization_of_russia_digital_content_business_network.125.xhtml). Visited on 21.5.2013.

<sup>40</sup> See [http://www.ey.com/FI/fi/Industries/Media--Entertainment/Media\\_and\\_Entertainment\\_Overview](http://www.ey.com/FI/fi/Industries/Media--Entertainment/Media_and_Entertainment_Overview). Visited on 15.5.2013.

- Talent Vectia (<http://www.talentvectia.com/fi>) - Finnish consulting and training company which provides services including guidance in digital business models and ICT.
- Umbrella Strategic Advisory (<http://www.umb.fi/>) - Finnish consulting company providing services to for, among others, developing business models.

### ***C. PROMOTION OF OPEN SOURCE SOLUTIONS***

---

#### **Finnish Centre for Open Source Solutions (COSS) - <http://www.coss.fi>**

COSS is a national development agency promoting the development and adoption of open source solutions in various industries and public sector. COSS members represent more than 140 open source suppliers, solution providers and public and private organizations utilizing open source solutions and innovation models.

#### **Creative Commons Finland (CC) - <http://creativecommons.fi/>**

Creative Commons is a non-profit organization founded in 2001 in the US. The goal of CC is to enhance the dissemination of creative content in the society by offering different kinds of copyright licenses for free to be used by the public. Creative Commons Finland is a website which offers information on Creative Commons licenses in Finnish. The organizations behind Creative Commons Finland are Helsinki Institute of Information Technology (HIIT) and the Media Lab which is a unit in the Department of Media at the School of Arts, Design and Architecture within Aalto University. Different kinds of Creative Commons licenses have been translated into Finnish in 2004, and they can be found from the website.

#### **Devaamo - <http://wp.devaamo.fi/>**

Devaamo is a non-profit association promoting open source development and supporting open source developers in various ways, for example by arranging different kinds of events for developers.

#### **Forum Virium Helsinki - <http://www.forumvirium.fi/>**

Forum Virium Helsinki is a company owned by the City of Helsinki. From 2005, it has been operating in the metropolitan area as a cluster of companies and public organizations (City of Helsinki, Finnvera, Sitra, Tekes, Tieke and VTT). The aim of Forum Virium Helsinki is to develop new digital services and businesses and to create contacts for international markets by working in close cooperation with partners from the public sector, the business world, and end-users. It specializes in promoting the use of open data in Finland: the company has organized developer events and competitions to promote open data application development work. By opening up public data they promote cooperation between the application developer community and the city's ICT ecosystem. Open digital service interfaces, processes, guidelines, and usability standards are being developed through the City Service Development Kit project.

#### **Finnish Linux User Group FLUG - <http://www.flug.fi/>**

FLUG is an association of Finnish Linux-users. Their goal is to help forward operations connected to Linux and to support Linux-users in Finland. FLUG operates on a voluntary basis.

#### **Finnish UNIX Users Group FUUG - <http://www.fuug.fi/>**

The Finnish UNIX Users Group was founded in 1984 and is the oldest UNIX-/POSIX-related association in Finland. Their goal is to support the Finnish know-how on UNIX and other open systems and operate as a link between users and equipment suppliers.

**Linux-Aktivaattori** - <http://l-a.fi/Etusivu>

Linux-Aktivaattori is a non-profit association promoting the use and development of free and open source software and operating as a network for Finnish projects related to open source software. Linux-Aktivaattori was founded in 2001, and it arranges different kinds of events and trainings.

**Ubuntu Finland** - <http://www.ubuntu-fi.org/>

Ubuntu Finland, founded in 2005, is one of the official local communities of the international Ubuntu Community. Ubuntu is a free Linux operating system and it is based on open source software. The Ubuntu project promotes the use and development of open source software. Ubuntu Finland's goal is to support, advertise, develop and give translations of Ubuntu and enhance the deployment of open source software in Finland. Ubuntu Finland operates on a voluntary basis.

#### ***D. MINISTRIES INVOLVED IN THE PROMOTION OF DIGITAL BUSINESS MODELS***

---

▪ **MINISTRY OF TRANSPORT AND COMMUNICATIONS - [HTTP://WWW.LVM.FI/](http://www.lvm.fi/)**

The areas of responsibility of the Ministry of Transport and Communications in Finland include transport policy and communications policy. The latter concerns issues relating to communications networks, information security and data protection, information society policy, the mass media, and postal services. The Ministry of Transport and Communications monitors the functionality and promotes development of the transport and communications sectors. The Ministry offers publications concerning among others digital business.

▪ **MINISTRY OF EMPLOYMENT AND THE ECONOMY - [HTTP://WWW.TEM.FI/](http://www.tem.fi/)**

The areas of responsibility of the Ministry of Employment and the Economy in Finland include the operating environment of entrepreneurship and innovation activities, the functioning of the labour market as well as regional development. This includes, for example, industrial policy, innovation and technology policy, internationalization of enterprises, and functioning of markets. The Ministry of Employment and the Economy offers services and financing for developing business and executes projects aimed at supporting the various industries. The Ministry is also the central administrative authority for budgeting, developing relevant legislation, and providing guidelines for enterprise subsidies and corporate analyses of their recipients.

▪ **MINISTRY OF EDUCATION AND CULTURE**

The Ministry of Education and Culture is in charge of developing policies in the fields of culture and science, among others. As such, the digital distribution of cultural content is part of its areas of expertise.

**Public funding for enhancing the availability of digital materials and for using open data –**

[http://www.minedu.fi/OPM/Kulttuuri/kulttuuripolitiikka/avustukset/Kulttuurin\\_tietoverkko\\_.html?lang=fi](http://www.minedu.fi/OPM/Kulttuuri/kulttuuripolitiikka/avustukset/Kulttuurin_tietoverkko_.html?lang=fi)

In April 2013, the Finnish Ministry of Education and Culture called for applications for special grants concerning projects on the availability of digital materials and the promotion of open data (Avustus kulttuurin ja eri taiteenalojen digitaalisten aineistojen saatavuuden ja avoimen tiedon hyödyntämisen edistämiseen). The aim was to increase the appropriation of culture and different fields of art in society by promoting the availability of content in a digital form, the diverse use of materials and the related application development. The call for applications was open to projects aiming at making available in digital form materials significant on a cultural or artistic point of view,

and to projects promoting open data application development related to culture and art. The maximum amount allowed as a grant would be 500.000 euros.

**National digital library project** - <http://www.kdk.fi/en/>

The National Digital Library project is an initiative by the Ministry of Education and Culture to improve the availability and usability of the electronic materials of libraries, archives and museums and to develop a long-term preservation solution for the materials. Simultaneously, the National Digital Library project is a part of the development of national electronic services and infrastructures. The goal is to ensure that the information of Finnish culture, heritage and history is safely stored, easily found and actively used. At present, 35 organisations are participating: ministries, national institutions in charge of preserving cultural heritage, scientific and public libraries, archives, museums and representatives from other central interest groups.

## Conclusions

### **A. ANALYSIS AND SUMMARY OF THE RESULTS**

---

#### ▪ **KEY ICT INDICATORS**

Data concerning the level of development of the Information and Communication Technologies (ICT) in Finland is widely available from national and international sources. Finland is positioned consistently high in the corresponding rankings among countries. According to the latest estimates, 79.7 % of Finnish homes had access to cable TV, 85.1 % of Finnish households had access to a home computer, 49 % of Finnish citizens have a smartphone in their own use and nearly one third of the citizens used it to access the Internet. Among Finnish households, 84.2 % had access to the Internet and 75.8 % had a broadband access. 90 % of Finns had used the Internet in the past 3 months and 78 % daily in 2012. Online shopping is also widespread. Moreover, Finland is fifth in the ICT Development Index and first in the Networked Readiness Index. In short, Finnish citizens have the technical means to access cultural goods and services through TV or online.

#### ▪ **ORGANIZATIONS PROMOTING OR SUPPORTING DIGITAL BUSINESS MODELS**

After a desktop search conducted on the Internet, a large number of organizations promoting or supporting digital business models and open source were listed and described. They were classified in four categories according to their purpose:

- research, information and promotion of digital business models
- operational support for companies using digital business models
- promotion of open source solutions
- ministries involved in the promotion of digital business models.

These categories include a large number of public or private companies, associations and other organizations. As seen in the previous chapter, in the section concerning “Networked Readiness Index”, Finland is a country where innovation is supported and promoted. For this purpose, several public funds and associations of stakeholders have created or coordinated research and information services concerning technological development and digital business models. Few of them are entirely devoted to this specific topic, but the sum of their research, promotion and support activities is comparatively significant. In addition, a wide range of private consulting companies are able to offer services focused on the development of digital business models.

In addition, several private or public associations have been created to promote open source business models and content. Some of them are focused on specific operating systems (Linux, Unix or Ubuntu), but others have a more general purpose and have been set to support the use of open source solutions in various settings or industries.

In conclusion, it seems that in Finland, digital business models and, to a smaller extent, open source solutions are considered as important technological, commercial, cultural and social innovations and, as such, promoted and supported by research through a large range of organizations.

## ***B. METHODOLOGICAL FINDINGS***

---

### ▪ **LIMITATIONS**

Concerning the first parameter, data on ICT indicators varies quickly, but sometimes it is difficult to get recent data (concerning Finland, in some cases the latest data available date back to 2009). It could be better to limit the research to the latest figures, as opposed to completing a grid of recommended indicators.

### ▪ **GUIDELINES FOR FUTURE RESEARCH**

The data is easily found as long as relevant statistics and databases exist. It is particularly relevant to explore national and international statistical databases in the field (see the list of international sources in Appendix B).

Since the methodology is designed to be internationally implemented, it is important to use sources which are official or widely recognized. All sources should be listed and, as much as possible, widely available for consultation by international researchers.

The time needed for this pilot study will depend for each country on the availability of data and the country's inclusion in international databases, statistical researches and international indexes. The task consists mainly in gathering information; a relatively small amount of analysis work is necessary. In the case of Finland, where most of the data was easily accessible, the workload for collecting data and drafting this report could be evaluated at 4 weeks of full-time work. With the help of an already-made list of useful references, this time could be reduced.



### **International:**

- "Core ICT Indicators – Partnership on Measuring ICT for Development", document available on the International Telecommunication Union website: <http://www.itu.int/ITU-D/ict/partnership/material/CoreICTIndicators.pdf>.
- Eurostat Community Surveys on ICT usage (Information society statistics) [http://epp.eurostat.ec.europa.eu/portal/page/portal/information\\_society/introduction/](http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/introduction/)
- Global Information Technology Report 2013 on the World Economic Forum Website: <http://www.weforum.org/reports/global-information-technology-report-2013>
- OECD Broadband Portal: <http://www.oecd.org/sti/ieconomy/oecdbroadbandportal.htm>
- OECD Key ICT Indicators: <http://www.oecd.org/Internet/broadbandandtelecom/oecdkeyictindicators.htm>
- The International Telecommunication Union (ITU)'s report on "ICT Facts and Figures", 2013 edition, available here: <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013.pdf>
- The International Telecommunication Union (ITU)'s report on "Measuring the Information Society", available here: <http://www.itu.int/en/ITU-D/Statistics/Pages/publications/default.aspx>
- World Bank Databases: databases: <http://databank.worldbank.org/data/databases.aspx> and development indicators: <http://data.worldbank.org/indicator/all>

### **Finland:**

- Statistics Finland: [http://www.stat.fi/til/aiheet\\_en.html](http://www.stat.fi/til/aiheet_en.html)
- Statistics Finland, Use of information and communications technology by individuals (e-publication); ISSN=2323-2854. 2012. Helsinki: Statistics Finland, available at [http://www.tilastokeskus.fi/til/sutivi/2012/sutivi\\_2012\\_2012-11-07\\_tie\\_001\\_en.html](http://www.tilastokeskus.fi/til/sutivi/2012/sutivi_2012_2012-11-07_tie_001_en.html).



**Assessing Copyright and Related Rights Systems: Piloting of the methodology framework in Finland**

Cupore webpublications 39:1	<i>National Context. Report on Piloting in Finland.</i>
Cupore webpublications 39:2	<i>International and Regional Context. Report on Piloting in Finland.</i>
Cupore webpublications 39:3	<i>Technological Development. Report on Piloting in Finland.</i>
Cupore webpublications 39:4	<i>Macroeconomic Importance of Copyright Industries. Report on Piloting in Finland.</i>
Cupore webpublications 39:5	<i>Markets for Copyrighted Products and Services – Focus: Literature (Book Publishing Industry). Report on Piloting in Finland.</i>
Cupore webpublications 39:6	<i>Volume of Domestic Production of Copyrighted Products and Services. Report on Piloting in Finland.</i>
Cupore webpublications 39:7	<i>Volume of Exported and Imported Copyrighted Products and Services. Report on Piloting in Finland.</i>
Cupore webpublications 39:8	<i>Development of Digital Business Models and Income Based on Digital Distribution. Report on Piloting in Finland.</i>
Cupore webpublications 39:9	<i>Copyright Law. Report on Piloting in Finland.</i>
Cupore webpublications 39:10	<i>Copyright Policy. Report on Piloting in Finland.</i>
Cupore webpublications 39:11	<i>Public Consultation on Law Proposals. Report on Piloting in Finland.</i>
Cupore webpublications 39:12	<i>Use of Impact Assessment and Research in Policy Development. Report on Piloting in Finland.</i>
Cupore webpublications 39:13	<i>Public Administration of Copyright. Report on Piloting in Finland.</i>
Cupore webpublications 39:14	<i>Enforcement by Public and Private Actors – Focus: Public Authorities. Report on Piloting in Finland.</i>
Cupore webpublications 39:15	<i>Enforcement by Public and Private Actors – Focus: Private Actors. Report on Piloting in Finland.</i>
Cupore webpublications 39:16	<i>Sanctions and Remedies for Copyright Infringement. Report on Piloting in Finland.</i>
Cupore webpublications 39:17	<i>Application of Sanctions and Remedies for Copyright Infringement. Report on Piloting in Finland.</i>
Cupore webpublications 39:18	<i>Availability of Alternative Dispute Resolution Mechanisms. Report on Piloting in Finland.</i>
Cupore webpublications 39:19	<i>Use of Alternative Resolution Mechanisms for Solving Copyright Disputes. Report on Piloting in Finland.</i>
Cupore webpublications 39:20	<i>Individual Exercise of Rights – Focus: Literature (Book Publishing Industry). Report on Piloting in Finland.</i>
Cupore webpublications 39:21	<i>Collective Management of Rights. Report on Piloting in Finland.</i>
Cupore webpublications 39:22	<i>Efficiency of Collective Management Organizations. Report on Piloting in Finland.</i>
Cupore webpublications 39:23	<i>Copyright-related Information Activities. Report on Piloting in Finland.</i>
Cupore webpublications 39:24	<i>Copyright-related Education for the Public in General. Report on Piloting in Finland.</i>
Cupore webpublications 39:25	<i>Public Awareness of the Rights. Report on Piloting in Finland.</i>
Cupore webpublications 39:26	<i>Copyright-related Education as Part of the Education of Professionals for Creative Industries. Report on Piloting in Finland.</i>
Cupore webpublications 39:27	<i>Research on Copyright-related Topics. Report on Piloting in Finland.</i>
Cupore webpublications 39:28	<i>Copyright-related Research and Study Programs in Universities and Research Institutes. Report on Piloting in Finland.</i>
Cupore webpublications 39:29	<i>Efficiency of Copyright as an Incentive to Create and Invest in Creative Works – Focus: Literature (Book Publishing Industry). Report on Piloting in Finland.</i>
Cupore webpublications 39:30	<i>Access to Copyrighted Works by the Public. Report on Piloting in Finland.</i>
Cupore webpublications 39:31	<i>Access to Copyrighted Works for Follow-on Creation.</i>
Cupore webpublications 39:32	<i>Transaction Costs in Transfer and Licensing of Rights – Focus: Literature (Book Publishing Industry). Report on Piloting in Finland.</i>
Cupore webpublications 39:33	<i>Terms for Transfer and Licensing of Rights – Focus: Literature (Book Publishing Industry). Report on Piloting in Finland.</i>
Cupore webpublications 39:34	<i>Unauthorized Use of Copyrighted Works in Physical Form. Report on Piloting in Finland.</i>
Cupore webpublications 39:35	<i>Unauthorized Use of Copyrighted Works in Digital Form. Report on Piloting in Finland.</i>
Cupore webpublications 39:36	<i>Analysis of Stakeholders' Opinions on the Copyright System – Focus: Literature (Book Publishing Industry). Report on Piloting in Finland.</i>
Cupore webpublications 39:37	<i>Analysis of Stakeholders' Opinions on the Copyright System – Focus: End-users. Report on Piloting in Finland.</i>