Netbooks on the rise

European overview of national laptop
and netbook initiatives in schools

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European
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EXECUTIVE SUMMARY

BACKGROUND

Based on the belief that personal ownership of computing devices (e.g. netbooks, handhelds or mobiles) is highly motivating for students and also for teachers, the latest national ICT programmes increasingly focus on 1:1 initiatives by providing personal notebooks and netbooks to students, teachers and families. 1:1 computing is a new phenomenon in educational settings, indicating the ratio of items per user, i.e. one netbook per learner and referring to the current trend of low-cost computer devices, ranging from mobiles and handhelds to netbooks. Even though laptops are not a new phenomenon in educational settings, several European countries have started in the last years to invest further in low-cost computer devices, and netbook initiatives are developing more and more in schools and other educational contexts.

Moreover, at European level, European Schoolnet, in cooperation with Acer, is involved in a netbook initiative, which started early in 2010. The *Acer-European Schoolnet Educational Netbook Pilot* is aimed at understanding and documenting how learners and teachers can use netbooks in various educational contexts. The aim is to explore how the introduction of netbooks and 1:1 pedagogy in schools could change teaching and learning processes. Until June 2010 the pre-pilot involved 10 classes in 6 countries (UK, France, Germany, Spain, Italy and Turkey), while the full deployment phase will run from September 2010 to June 2011 involving 40 classes in each country (*www.netbooks.eun.org*).

APPROACH

The information provided in this report is based on European Schoolnet's country reports for ICT in education, mainly from the 2009-2010 edition but also from previous years, issued by European Schoolnet for representatives of Ministries of Education. Other initiatives were identified through desk research and additional submissions by Ministries or responsible authorities. All initiatives were described according to a common framework and validated by Ministries of Education or the organization involved in the initiative.

AIM AND STRUCTURE OF THE REPORT

In the framework of increased interest and investment in this field at national, European and international level, the paper aims to give a **general overview of laptop/notebook/netbook initiatives in a number of European countries** in two main areas:

1. It looks at the **scope** of these initiatives, including their aim, target groups involved and focus.
2. It analyses the **organizational framework**, including ownership, actors involved, and conditions for participation and funding.

Chapter 1 gives an introduction by setting out the background, approach and aim of the report. Chapter 2 describes and analyses the initiatives in terms of scope and organizational framework. Chapter 3 summarizes the main findings and Chapter 4 gives an outlook for the future. In Annex

1 the report contains a table overview with a short description of all initiatives. Annex 2 shows more detailed initiative sheets per country. A classification of initiatives according to target groups and initiators is presented in Annex 3.

FINDINGS

Netbooks on the rise- from general provision of ICT to 1:1 initiatives: This report identified 33 initiatives in 18 countries: Austria, Czech Republic, Estonia, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Spain and the UK. The aim is to give a general overview of national initiatives providing laptops/notebooks or netbooks to schools as identified in a number of European countries. Over recent years the general provision of ICT in schools has increasingly focused on 1:1 initiatives providing one laptop/netbook per pupil.

Large and small-scale initiatives: The largest initiatives in terms of number of netbooks provided in relation to the number of schools in the respective country can be found in the Czech Republic, Estonia, Greece, Norway, Portugal, Spain and the UK. As well as larger national initiatives, which include laptop/netbook provision, we can see the emergence of a high number of smaller-scale scattered initiatives, mainly research pilots and individual school initiatives, e.g. in Germany, Austria and the Netherlands.

Students and teachers as the main target audience: Most of the 1:1 initiatives presented here target students in the first place, teachers in second place and families in a few cases. Some initiatives in focus aim to tackle digital divides (the access divide) and specific target groups, e.g. disadvantaged families, children in kindergarten or with special needs, and rural schools. However, these are very few in relation to the overall number of initiatives looked at.

A focus on personal ownership of ICT and modernization of equipment: Initiatives are driven by the technology itself to further reduce computer/student ratios and to modernize the equipment for teachers and learners in and increasingly outside schools. Initiatives come with a wider package offered to schools including, more often than not, interactive whiteboards, wireless connections or Internet access (in the school but also in communal areas or at home), projectors, specific educational software and educational resources and training for teachers.

Pedagogical aspirations related to netbook use: In addition to a technology-driven approach, national or regional initiatives also aim to fulfil educational goals, such as the use of ICT in all subjects, to foster competence-based education and to exploit the possibilities of mobile learning (learning anywhere and anytime). Pedagogical aspirations linked to laptop/netbook initiatives lie in the personalization of learning, and supporting individual learning styles and different types of learners.

Public-private partnerships at the core of provision: Regarding the organizational framework, Ministries of Education are the principal initiators of these programmes. Sometimes national or regional governments, together with ministerial agencies also participate. However, some initiatives are run entirely at regional/local level or even at school level. Private enterprises are also involved in several initiatives since they are the main providers of laptops/netbooks: in the framework of the latest initiatives, public-private partnerships are becoming more and more common.

Financing models that benefit students in the first place: Benefits can be assigned to schools, students or directly to parents and families. When targeting schools, the provision of laptops is in some cases class-oriented. Individual classes or schools can create a pedagogical project and apply for a grant to buy ICT infrastructure to use laptops in class. In other cases awards are granted to schools or classrooms with ICT competences. In most cases students are the direct beneficiaries of the initiative, and are provided with netbooks or laptops at no cost to themselves for their own personal use both at home and in the classroom. These initiatives can be nationwide or cover only one region with the intention of later enlarging the scope. In a few initiatives families (e.g. low-income families) are the main target and may be awarded grants or other kind of incentives to buy laptops.

OUTLOOK

The above-mentioned findings based on the general overview of initiatives raise important challenges for schools and questions to be answered in the future.

New challenges for schools and scalability issues: These initiatives present new demands and challenges to schools: First, how to deal with the influx of technology in terms of infrastructure, implementation, everyday management (e.g. acceptable use policies) and secondly, how to integrate them purposefully into teaching and learning. The scalability of moving towards providing a 1:1 computing environment is also major question, as we do not know enough about the total costs of such initiatives.

Are the potential benefits realized in schools? Evaluation studies, particularly on 1:1 computing, have been carried out for eight initiatives presented here. Some of them are already completed, several are still ongoing. Results of evaluations including the research methods used should be further analysed and new initiatives should be studied in the near future. This would make it possible:

1. to have a better understanding of the lessons learnt in the implementation of the initiatives. This relates to rules, managerial problems, technological and educational support, and the technical readiness of schools.
2. to understand how and under which conditions these initiatives help bring about enhanced teaching and learning processes. This includes looking into specific pedagogical case studies or learning scenarios that have been drafted in the field. These might comprise computer-based study materials, teaching communities, development of methodology and teacher training.
3. to provide recommendations for school, teachers and policy makers based on a broad sample of studies which could nurture new initiatives in the field in an informed way.

Critical factors for the implementation of laptop initiatives: For some authors, presenting a review of the key themes of criticism levelled at 1:1 laptop initiatives, self-organizing schools are more suitable for deployment of such devices. "Laptop computers are not technological tools, rather they are cognitive tools that are holistically integrated into the teaching and learning of their school" (Weston and Bain, 2010).

In this perspective laptop and netbook initiatives could presumably become more effective:

1. when schools are able to guarantee a community which autonomously establishes a set of rules and procedures including support for professional development of teachers;

2. where all members (teachers, students, school leaders, families) are fully engaged in the design of the project. Each member should be an active agent, generating feedback and contributing to bottom-up changes (Weston and Bain, 2010);

3. where innovative and appropriate models of pedagogy are constantly employed, especially collaborative and blended learning. 1:1 elearning scenarios can be imagined where 1:1 refers not only to a child accessing a netbook for individual learning approaches, but to learners who collaborate, exchange and peer-learn with teachers, friends, classmates and parents in new learning environments.

It is evident that all stakeholders involved in the implementation of laptop/netbook initiatives should be aware that they require explicit and commonly shared strategies to integrate such devices effectively into teaching and learning.

Laptop scenarios: The following diagram illustrates possible laptop/netbook scenarios including different learning settings and learning approaches involved. Activities can include:

*   Teacher-led (frontal teaching) vs. individual or collaborative activities;
*   Online or offline activities;
*   Taking place inside or outside school;
*   Teachers as collaborators with learners as well as among themselves;
*   Group work around one or several individual netbooks.

School

Formal vs. informal learning
Teacher led vs. student led
Collaborative vs. individual learning
Blended vs. traditional learning
Offline vs. online

Home   Community
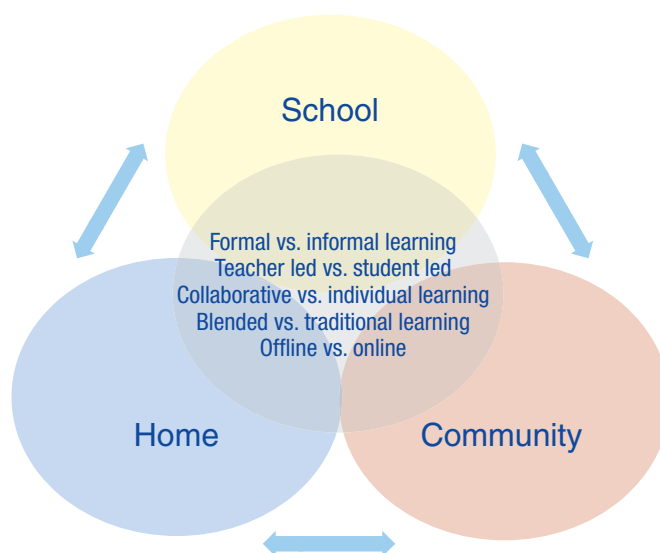
1. INTRODUCTION

1.1. BACKGROUND

The introduction and implementation of ICT in schools over the last ten years has generally taken place in three stages. First, computers were introduced in separate computer labs and used to teach ICT as a subject or for other subject-related purposes. Following this, computers were rolled out more and more in classrooms and in other parts of the school (e.g. libraries, computer corners) to ensure their integrated use and to reduce computer per pupil ratios considerably. In a third stage, with emerging technologies such as interactive whiteboards, handheld devices and netbooks, the latter two being lighter, smaller and more affordable, ICT integration now focuses on further widening access to ICT and using these tools to modernize classrooms and education systems.

Based on the belief that personal ownership of computing devices (e.g. netbooks, handhelds or mobiles) is highly motivating for students and also for teachers, the latest national ICT programmes increasingly focus on 1:1 initiatives by providing personal notebooks and netbooks to students, teachers and families. 1:1 computing is a new phenomenon in educational settings, indicating the ratio of items to users, i.e. one netbook per learner, and referring to the current trend of low-cost computer devices, ranging from mobiles and handhelds to netbooks. Even though laptops are not a new phenomenon in educational settings, several European countries have started in the last years to invest further in low-cost computer devices, and netbook initiatives are developing more and more in schools and in other educational contexts.

Acer – EUN Netbook Pilot Schools, Friedrich Myconius School, Germany

Moreover, at European level, European Schoolnet, in cooperation with Acer, is involved in a netbook initiative, which started early in 2010. The *Acer-European Schoolnet Educational Netbook Pilot* is aimed at understanding and documenting how learners and teachers can use netbooks in various educational contexts. The aim is to explore how the introduction of netbooks and 1:1 pedagogy in schools could change teaching and learning processes. Running until June/July 2010, the pre-pilot involved 10 classes in each of 6 countries (UK, France, Germany, Spain, Italy and Turkey), while the full deployment phase will run from September 2010 to June 2011 involving 40 classes in each country (*www.netbooks.eun.org*).

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1 Country reports are updated annually with Ministries of Education in 28 countries according to a common framework provided by European Schoolnet. They are in-depth descriptions of national developments in 5 core areas of eLearning: The Education Context, ICT Policy, The Curriculum and ICT, Digital Learning Resources and Services, Teacher Education for ICT. The series of 2009/2010 reports has been published in May 2010 on the Insight portal: *http://insight.eun.org*. See references for other details on Country Reports.

Netbooks on the rise European overview of national laptop and netbook initiatives in schools

1.2. APPROACH

The information provided in this report is mainly based on European Schoolnet's Country Reports for ICT in education issued by European Schoolnet for representatives of Ministries of Education[1]. This analysis considers information provided in the Country Reports filled in at the end of 2009 and in some cases from previous years. Other initiatives were identified through desk research and additional submissions by Ministries.

Initiatives were identified from the following countries: Austria, the Czech Republic, Estonia, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Spain and the UK.

The 2009 Country Report Questionnaire did not contain a specific question concerning laptop/netbook initiatives. However, we were able to gather information on this subject from the following question, referring to ICT policies for schools: *Please provide a summary overview of ICT policies for schools. Name and describe the overall general policy for ICT as well as specific ICT programmes or initiatives (e.g. laptop programmes, whiteboard initiatives, esafety policies...). Please indicate their timeframe, main aims and strategies for implementation.*

In a second step, Ministries were approached to validate the information given on the laptop initiative and to add information according to a predefined template with a common set of descriptors.

We were able to examine a total of 33 initiatives from 18 countries, which highlights the growing importance of laptop initiatives as part of ICT policies for schools. In order to provide an overview of national laptop initiatives the following points were included in the follow-up analysis: scope (aim, target groups and focus of the initiative) and the organizational framework (including ownership, actors involved, and conditions to obtain funding).

1.3. SPECIFICATIONS OF TERMS

1:1 computing: 1:1 indicates the ratio of items per user, i.e. one netbook per learner. It refers to the current trend of low-cost computer devices ranging from mobiles and handhelds to laptops or netbooks, which have gained ground in educational settings. Typically the device is connected to the Internet and owned by the learner.

Initiative: in this report the term initiative is used as a general term and refers to project/programme as well. This report follows the same practice as Country Report Questionnaires, where the terms project, programme and initiative are interchangeable.

Laptops or notebooks are personal computers designed for mobile use, integrating most of the typical components of a desktop computer.

Netbooks (sometimes also called mini notebooks or ultraportables) are laptops that are small, light-weight, economical, energy-efficient and especially suited for wireless communication and Internet access.

Tablet PC refers to a slate- or tablet- shaped mobile computer device, equipped with a touchscreen or stylus.

1.4. AIM AND STRUCTURE OF THE REPORT

In the framework of increased interest and investment in this field at national, European and international level, the paper aims to give a **general overview of laptop/notebook/netbook initiatives in a number of European countries** in two main areas:

1. It looks at the **extent** of these initiatives, including their **scope**, **aim**, **target groups involved** and **focus**.
2. It analyses the **organizational framework**, including **ownership**, **actors involved**, and **conditions for participation and funding**.

Chapter 1 gives an introduction by setting out the background, approach and aim of the report. Chapter 2 describes and analyses the initiatives in terms of scope and organizational framework. Chapter 3 summarizes the main findings and Chapter 4 gives an outlook for the future. In Annex 1 the report presents a tabular overview with a short description of all initiatives. Annex 2 gives more detailed initiative sheets per country. A classification of initiatives according to target groups and initiators is presented in Annex 3.

This report aims to raise awareness of existing national initiatives in Europe and to gain a better understanding with a view to the implementation of the Acer-European Schoolnet Educational Netbook Pilot. An important element to bear in mind is that not only specific 1:1 initiatives or projects (where one laptop is given to one student or teacher) are taken into consideration in this review, but also national ICT infrastructure programmes, which include laptop/netbooks as part of general ICT provision for schools.

2. OVERVIEW OF INITIATIVES

2.1. SCOPE, AIM AND TARGET AUDIENCE

FROM GENERAL PROVISION OF ICT TO 1:1 INITIATIVES

The laptop phenomenon can be broadly divided into two waves of expansion. In 2003-2004, when the first laptop initiatives developed, governments or Ministries of Education were interested in spreading out computers and equipment for schools, focusing more on large-scale numbers than on individual approaches. The aim was to increase technological equipment in schools or classrooms and not to provide every student with a personal laptop. The tendency of more recent initiatives, which started in 2007-2008, on the contrary, is to address 1:1 computing, where every child receives her/his own personal computing device. The goal here is not only to improve school resources, but to enable every pupil or teacher to have their own laptop in order to connect to the Internet and to access educational resources irrespective of place and time. Thus, the wider aim of these initiatives is to dissolve the traditional boundaries between formal learning in school and informal learning in other settings (e.g. at home) and include a wider range of stakeholders (e.g. parents, community).

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LAPTOP / NETBOOK PROVISION AS PART OF LARGE-SCALE NATIONAL PROGRAMMES

A high number of **large-scale national ICT initiatives include laptop provision as part of their ICT infrastructure programme**.

In Northern Ireland, 65,000 desktops and laptops were connected to the Internet in the framework of the *C2K programme*. The programme includes the establishment of a high-level infrastructure, connectivity and resources which meet strategic targets.

In Hungary, educational institutions receive 3,000 student laptops in the framework of the *HEFOP 3.1.3/B/09/03 imitative*. The public educational programmes of the Social Infrastructure Operative Programme support the acquisition of IT tools needed to develop key competences for lifelong learning. The goal of the programme is to allocate tools needed for competence-

based educational programmes, educational programme packages including the use of digital learning content, to state schools supported through earlier calls.

In the Czech Republic, within the *Education for Competitiveness Programme*, the use of ICT will be fostered in all subjects. Schools can apply for a grant to use ICT in teaching. Examples of supported areas are: digitalization of textbooks, elearning, modernization of schools' equipment – purchase of DVDs, cameras, netbooks, notebooks, computers, software programs and interactive whiteboards (IWB).

In Israel, laptop provision was also part of a **wider package offered to schools** including a workstation comprising a laptop, projector and whiteboard.

In Portugal, a country which has a wide range of activities in the provision of laptops for students in all types of schools (kindergartens, primary and secondary schools), the initiative *Schools, teachers and laptops* provided each school with 10 laptops for teachers' use and 14 for students' use based on a submitted ICT project. Between September 2006 and January 2007, 31,000 laptops were distributed to 1,200 schools all over the country. The wider aim was to improve the use of ICT in the classroom, promote teamwork among teachers and help them to prepare their lessons and to sustain educational projects for the future.

Another ambitious initiative is the Spanish *Escuela 2.0 programme*, providing each fifth-grade pupil with a notebook and classrooms with an IWB as well as a wireless connection. The teachers of these fifth-graders will be provided with training (mainly online) according to their level of competence and students will keep their computers until they are 14 years old.

Norway specifically focussed on equipping all students in upper secondary schools with laptops from 2006 onwards. In the Norwegian education law the right to learning resources free of charge is specifically mentioned. County school authorities in all parts of Norway have run projects aimed at equipping all students with personal laptops (approx. 180,000). Additionally, a portal with learning resources, the *National Digital Learning Arena*, was created.

LAPTOP / NETBOOK PROVISION TO TACKLE DIGITAL DIVIDES

Countries see the provision of laptops or notebooks as an effective means to tackle **existing or emerging inequalities** in **access to ICT** and to **promote e-inclusion**.

For example France, facing an existing digital divide between rural and urban schools, developed a plan (*Rural Digital Schools*) for the development of ICT (laptops) in 6,700 rural schools in February 2009.

The UK has invested heavily to reach out to **disadvantaged families** to ensure that more children in state-maintained education in England have access to technology at home to support learning. The *Home Access* programme was born out of the recognition that there are still a significant number of learners who lack access to a computer and the Internet at home. The programme will benefit over 270,000 households that currently lack access by March 2011 and initially the programme will target learners in years 3 to 9 inclusive. The *Home Access* programme aims to ensure that it can best meet the individual needs of a variety of learners, as well as taking into account the need for flexibility for local tailoring.

A large-scale project in Catalonia (Spain) is being implemented to serve the **whole educational community** (5th and 6th year of primary school, 1st to 4th year in secondary, 1st and 2nd upper secondary, altogether 500,000 students). The final objective is to merge with the state-wide project "*Escuela 2.0*". Standard market broadband connections are provided for schools and **low cost Internet connections for students at home**.

In Israel a specific programme provides students with **special needs** with laptops. The aim is to offer Internet based learning for students with special needs, who receive a laptop and instructions in accordance with a specific personalized learning programme.

Children in kindergarten are provided with workstations in the *KidSmart* project in Portugal, an area that needed greater attention to promote e-inclusion.

FOCUS OF 1:1 INITIATIVES

As pointed out at the beginning, a large number of countries are now focusing on 1:1 initiatives. The main features of 1:1 initiatives are: personal ownership (one device per person), low acquisition cost (especially netbooks) and access to the Internet.

Most of the 1:1 initiatives presented here target **students** (in the first place), **teachers** (in second place) and **families** (in a few cases). Initiatives can range from small pilot projects involving one school to larger initiatives providing 500,000 personal computers, such as the *Einiciativas* programme in Portugal.

One of the largest 1:1 initiatives with a wide reach-out has been implemented in Portugal in recent years. 500,000 personal computers were distributed to all students in the first years of primary school in the framework of the *e.escolinha* project to **promote the general use** of the computer and the Internet and access to knowledge. The project distributed the Magalhães computer, specifically designed for children at this age range (shock and liquid proof, light and small). The computers contain selected educational content and Internet access. The programme includes specific training and certification for teachers and the involvement of parents.

As early as 2003 in Poland notebooks were given nationwide to teachers in order to **deploy mobile teaching**. Malta provided all state primary school teachers with a laptop in order to encourage their use and enable teachers to plan and **produce learning resources at home** in 2006. The aim was also to use **ICT across the curriculum**. In Estonia, a specific programme, *Laptop for Teachers*, was initiated, in which 4,000 teachers received laptops in 2008.

Next to larger national initiatives, we can see the emergence of a high number of smaller-scale initiatives, mainly research pilots.

Austria recently finalized a pedagogical field trial, *Notebook-Netbook classes*, in which 12,000 Austrian students used notebooks in class and at home. The notebooks should allow students to be connected to the Internet at any time and have **access to learning resources inside and outside school**.

In two regions in Germany notebooks were introduced in schools. The aim of the initiative *1000 mal 1000: Notebooks in schoolbags* was to introduce notebooks in 13 schools of several types (mainly 14 year-old students) in the state of Lower Saxony to study their use, problems in implementation

and impact on teaching and learning. In the city of Hamburg individual schools or communities were invited to develop and submit notebook projects within a tender programme. The aim was to study **how netbooks can support individual learning styles and types of learners**.

In Israel a number of laptop projects have taken place. An experimental programme involved eight schools where laptops were loaned to all pupils in 6th and 7th grade (*Orange Computer*). In the project *Katom* laptop computers were provided in a number of pilot projects **examining their use for instructional and learning needs**. Other programmes include providing schools with workstations comprising a laptop, a projector and a whiteboard.

Also in Greece in 2007 a research pilot took place. Project working groups were established to **look at the legal issues, technical requirements, compatible educational software, teacher training and support services, the development of virtual learning communities and pilot implementation and evaluation**. Following the pilot phase (2007) the programme has been implemented as part of the *Digital School*, aiming at incorporation of ICT into educational processes. During the school year 2009-2010 **one netbook was to be provided to each A-grade student** of lower secondary schools (1:1, 113,226 students, 9,157 teachers).

In a research project in Estonia, *Laptop for Students*, students in one class from each of five selected schools received a laptop computer equipped with learning software, for use at home as well as school. The aim of the project was to **study the use of laptops by students and its influence on the learning process**. Laptop usage was analysed with special monitoring software.

In countries where schools are autonomous in integrating ICT, there have been several **bottom-up initiatives** by schools. In the Netherlands the laptop project of the *Verenigde scholen J. A. Alberding* had already started to equip students and teachers in two schools with more than 1,400 laptops already at the end of the 1990s. The wider aim was **to enrich the education programme** with all the possibilities that laptops can offer. Starting in 2006 laptops were rolled out to teachers and 1st year students for use throughout their school career in *St Aidan's Community* in Ireland. The aim was to develop student-centred technology and create a virtual learning environment for the students and teachers.

To sum up, the main focus of laptop/netbook initiatives, apart from the more general aim of wider provision of ICT in schools, is primarily on studying usage and the way laptops or netbooks can contribute to enhanced teaching and learning in a number of ways, e.g.:

- Deploying mobile teaching and learning, encouraging the use of ICT: a personal laptop, for use anywhere (e.g. at home);
- Supporting curricular integration and the use of ICT in all subjects;
- Supporting competency-based education;
- Examining their use for instructional and learning needs, the personalization of learning (individual learning styles and different types of learners);
- Encouraging teamwork among teachers;
- Providing access to learning resources and encouraging teachers in the production of learning resources.

NECESSARY FRAMEWORK CONDITIONS

Within the framework of laptop/netbook initiatives some of the wider conditions are put into place since providing laptops alone is not sufficient. These can include the provision of:

- Internet/wireless network access (at school, but also at communal level and at home);
- Educational content and learning resources (software or online);
- Additional devices, such as projectors, cameras, interactive whiteboards;
- Access to the school's network;
- Training for teachers (and certification);
- Pedagogical and technical support;
- Additional guidelines (e.g. safer Internet kits).

2.2. ORGANIZATIONAL FRAMEWORK: OWNERSHIP AND FINANCE MODEL

ACTORS INVOLVED

The organizational framework includes both the ownership and the finance model of the initiative. Ownership relates to the initiator and the partners involved. Most initiatives are either completely public or public-private partnerships. The information gathered here does not include private initiatives (which certainly exist), since the analysis is mostly based on questionnaires compiled by Ministries of Education. Indeed, **Ministries of Education** are the principal initiators of these programmes, but sometimes other Ministries, such as the Greek Ministry of Finance, are involved as well. **National, regional or local school authorities** are in many cases the initiators, as in the Italian *Classmate* project (Italian government), the Catalan *eduCAT1x1* (government of Catalonia) or the Norwegian initiative, where county school authorities run laptop projects. In Norway, counties are in charge of upper secondary school administration and schools have a large amount of autonomy. This is also the case for bottom-up initiatives in the Netherlands, where in most cases schools decide to form a network and launch such laptop/notebook initiatives together. In the Dutch initiative analysed in this report (see Annex 3) the board of directors of the school is the main initiator and actor.

As already mentioned, in several cases private enterprises are main co-actors since they are the direct providers of netbooks to students. **INTEL**, in partnership with the respective Ministries of Education, is involved in the *e-Escolinha* (Magalhães) initiative in Portugal and in the Tender Programme of the city of Hamburg. **IBM** participates in the *KidSmart* Project in Portugal, aimed at pre-school education. In recent years (2004-2007) IBM provided working stations to kindergartens with the purpose of contributing to the development of the Information and knowledge Society by promoting e-inclusion. **Microsoft** and the Austrian mobile company **Mobilkom** are partnership members of the *Notebook-Netbook Classes* initiative in Austria.

In a few cases **governmental agencies** or school portals are also involved: **Interklasa**, the Polish portal of Education, is a partner for *Notebook for Education* in Poland, and **Becta** – the government agency leading the national drive to ensure the effective and innovative use of technology throughout learning – is the main actor of *Home Access* in the UK.

Last but not least, universities play an important role in some projects, too. They are particularly involved in the evaluation process of the initiatives. Just to mention a few, **Humboldt University in Berlin** carried out the evaluation of the German project *1000 mal 1000: Notebooks in school bags*. Its final report provides a detailed project analysis and practical recommendations for action for all those who are planning to implement a notebook class. The **University of Donau Krems** analysed the scientific implementation of the Austrian *Notebook-Netbook Classes* initiative. The **University of Tartu** carried out a study on the *Laptop for Students* initiative in Estonia: one class in each of five selected schools received laptops to be used during one school year. Laptops usages were analysed with special monitoring software. The university group monitored the use of computers in schools and its impact on the 2008-2009 academic year and presented its work in autumn 2009.

FINANCE MODEL

The finance model mainly relates to the conditions for obtaining funding which, of course, also depend on the size and the scope of the initiative. In most cases **funding is granted to selected schools or classes** within a school. **Schools have to create a project,** submit it to the Ministry of Education and **apply for a grant** in order to receive ICT infrastructure (including netbooks, desktops, interactive whiteboards and other equipment) and services. In some cases, they have to demonstrate their experience in pedagogical usage of ICT. In other countries grants are allocated to a **selection of schools and no grant applications are required**, therefore schools do not have to prepare a pedagogical project, or demonstrate their experience in ICT in order to receive ICT equipment. Initiatives including a pedagogical project as a precondition to get funding usually imply a class-oriented approach and teacher/students can be more encouraged to work in groups through the preparation of their grant application.

Other **programmes are nationwide** and therefore more ambitious, since the aim is to cover the whole country. In some cases national initiatives start with pilot projects just in one region or in a small group of schools in order to study the implementation and impact of notebooks on teaching and learning and to apply the findings afterwards to the national system (*Escuela 2.0* in Spain and *Home Access* in UK).

In some initiatives grants **are awarded to families or low-income families**. For instance, in the UK, some low-income families were able to apply for a *Home Access* Grant to purchase a package consisting of a device, connectivity and support. For *eduCAT1x1*, in Catalonia, notebooks are bought and maintained by families at a price of €180 for the first year and grants are awarded to low-income families.

In some initiatives the finance model is based on **incentives**. In most cases the Ministry of Education, in partnership with private enterprises, provides incentives so that students or families can buy **netbooks or laptops at lower prices**. Broadband connectivity is often included as part of the package. Sometimes schools can obtain interactive whiteboards and other equipments as incentives for their programmes, too.

In some countries the national level has fewer responsibilities regarding educational policies and individual schools are characterized by a larger autonomy. As a result, they can adopt their own strategies for ICT and decide to equip the whole school community with laptops. For instance, in the Netherlands a laptop project in the *Verenigde Scholen J. A. Alberdingk Thijm* ("AT-schools") has been running since the 1990s. The schools provide the laptop for the

teachers with **no external funding** and the **parents pay for the students' laptops**. Also Luxembourg had a school-run initiative, Electronic Schoolbag, aimed at making a personal **laptop available to all pupils** at the Lycée Aline Mayrisch.

GRANTS FOR FAMILIES

Home Access in the UK is a government programme which will help to ensure that more children in state-maintained education in England have access to technology at home to support their learning. Some low-income families were able to apply for a *Home Access* Grant to purchase a package consisting of a device, connectivity and support. **12,000 grants** were **awarded to eligible families**. Those not entitled to government help were encouraged to self-purchase. Part of the pilot activity involved working with approved suppliers to provide these *Home Access* packages, which meet pre-defined requirements and are available for all to buy. The *Home Access* programme works with local authorities, schools, colleges and tertiary sector organizations to ensure that families are provided with the support and guidance they need to secure the benefits of access to technology at home. An important part of this provision is Internet safety, so all the packages come with pre-set parental controls and are loaded with the award-winning e-safety guide, *Know IT All for Parents*.

In June 2009 the autonomous Community of Catalonia launched *eduCAT1x1*, designed to be gradually applied to the whole educational community (5th and 6th Primary, 1st to 4th Secondary, 1st and 2nd Upper Secondary: 500,000 students). For *eduCAT1x1* **notebooks are bought and maintained by families** at a price of €180 for the first year (co-financing: 50% family and 50% public funds, with grants for low-income families). Participation is voluntary, and eligibility is based on school and teacher decisions. Standard market broadband Internet connection is provided for schools, and low-cost Internet connection for students at home.

The German *1000 mal 1000*: *Notebooks in school bags* initiative applies only to the state of Lower Saxony but will probably broaden its scope. The pilot project is part of the *Lower Saxony Initiative-21*. For the first time notebooks were introduced in schools (all school types, mainly class 7= age 14). The aim was to study implementation and identify barriers or problems and the impact of notebooks on teaching and learning. The project was evaluated by the Humboldt University of Berlin. **Parents financed the laptops**, supported by the state government, with local authorities participating in the project to negotiate **special conditions** in the acquisition of hardware and software, **sponsored by private partners**.

The Austrian *Notebook-Netbook* classes project takes place within the framework of the *eLC 2.0* (eLearning Cluster Project). This is an initiative for upper secondary schools and colleges to implement elearning on a practical level. During the school year 2009-2010, 12,000 Austrian students were taught in notebook classes/laptop classes. The devices are **bought by families**. The pedagogical field trial started in spring 2009. The University of Donau Krems analysed the scientific implementation. All students of the selected classes have a netbook for their own personal use. The netbooks should allow students to be connected to the Internet anytime and have access to learning resources inside and outside school and at home.

GRANTS FOR SCHOOLS

In Hungary, the **winning institutions** in the call for proposals in *Human Resource Development Operative Programme HEFOP 3.1.3/B/09/03* launched the school year 2009-2010 mainly with student laptops and voting systems. The aim of the tender is to support competence-based educational programmes with digital education materials, digital learning contents and tools for digital content. Another purpose is to spread digital knowledge; to make digital literacy an everyday practice.

GRANTS FOR STUDENTS

The Estonian Ministry of Education also initiated a research project *Laptop for Students*: one class in each of five selected schools each received laptops to be used during one school year. The results were presented in November 2009. The study was carried out by the University of Tartu. **All students participating in the study were given a laptop computer.** These laptops were equipped with learning software. Students could use them at home as well. Schools participating in the project had to have an Internet connection and the teachers were required to be active users of ICT. Laptop usages were analysed with special monitoring software. The university group monitored the use of computers in the schools and its impact on the 2008-2009 academic year and presented its findings in autumn 2009.

Since 2006 county school authorities everywhere in Norway have run projects aimed at equipping all students with personal laptops. These projects are related to the right, laid down in the new educational law, to learning resources free of charge in primary and secondary education. Every student in upper secondary education pays **an annual leasing fee** of about €100 and is provided with a laptop.

GRANTS FOR PEDAGOGICAL PROJECTS

The Czech Operational Programme *Education for Competitiveness* is managed by the Ministry of Education, Youth and Sport (MoEYS), and receives support from EU structural funds finances. It is targeted to support **ICT use of ICT in all subjects** in schools. Schools have the **chance to create a project and apply for a grant for ICT** used in teaching. Examples of supported areas are: digitalization of textbooks, elearning and modernization of school equipment – purchase of DVDs, cameras, netbooks, notebooks, computers, software programs, IWBs, etc.

The Portuguese Iniciativa Escolas, Professores e Computadores Portáteis was aimed at **providing each school and its teachers** with laptops: **10 laptops for teachers' use and 14 for students' use, according to the project submitted**. In addition to the laptops, each school also received a video projector and a WiFi access point. In September 2006, 85% of the laptops were allocated, with the remaining 15% issued in January 2007. In four months this initiative distributed 31,000 laptops to 1,200 schools all over the country.

The Tender Programme of the city of Hamburg is another example where **individual schools or communities were invited to develop independent netbook projects** in order to analyse netbook learning processes and their support in individual learning styles and for different types of learners.

Within the Hungarian initiative *Student Laptop Programme* the **winning institutions in a call for proposals** in the Human Resource Development Operative Programme receive small laptops and the teaching methodology related to them.

GRANTS FOR ICT-EXPERIENCED SCHOOLS

The Italian *Cl@ssi2.0* initiative involves 156 lower secondary school classrooms (K10-13) with particular emphasis on the support and experimentation of the project. €30,000 are granted to each classroom in order to buy ICT infrastructure. The precondition for receiving the grant is that teachers have to **have some ICT skills** (e.g. be able to use ICT tools on a regular basis). 1:1 computing is guaranteed in each classroom, together with university coaching and ministry organization and training.

The Estonian Ministry of Education initiated the *Laptop for Teachers* programme in 2008: 4,000 teachers out of 15,000 received laptops. The first condition for receiving a laptop was the **teacher's express wish to have one**. Furthermore, at least one classroom in the school had to meet the necessary technical requirements to integrate laptops. Teachers also had to show familiarity with the use of ICT by fulfilling one of the following conditions:

- Having received training in the use of ICT in the last three years;
- Having graduated from university;
- Having been involved in training other teachers;
- Using ICT tools in teaching on a regular basis.

INCENTIVES

The *WiFi laptop for every student* campaign in France aims at giving every student the **opportunity to buy on credit a laptop computer with a WiFi card**, and to benefit from a free broadband subscription on campus (DUI - Ministry of Higher Education and Research). Several companies, bodies and organizations have chosen to provide assistance in achieving the objectives for ICT development in education.

The Italian *Classmate* project encourages students in middle school to use mini laptops for learning support; the **government gives €150 incentives for their purchase**.

In Malta all state primary school teachers have been equipped with a laptop in order to encourage them to use the technology and be able to plan and produce resources at home. At secondary level, schools that have implemented the use of ICT across the curriculum in their school development plan will be provided with IWBs to encourage them.

The *Notebook for education* project in Poland aims at providing teachers and educators with high quality good-value notebooks. **Interkl@sa provides teachers with IBM notebooks at reduced prices**. Interkl@sa together with IBM started the process of implementing portable computers in Polish schools, which gives the opportunity to deploy mobile teaching.

In June 2007 an initiative called *eIniciativas* was launched by the Portuguese government. Supported by the MoE and private enterprises, this initiative aims to finance actions to facilitate access to the information society, in order to promote e-inclusion. It involves teachers, school students and also students from vocational training under the programme *Novas Oportunidades*,

mentioned below (eOportunidades, eEscola and eProfessor). This gives **everyone the opportunity to obtain a laptop at a low price (€150)** and affordable Internet access. The current target is to reach more than 750,000 people.

In Israel the *Orange Computer* (2007) is an experimental programme involving eight schools: **laptop computers were loaned to all pupils** in the 6th and the 7th grades; as a result, the computer has become a natural learning environment for students.

INDIVIDUAL SCHOOL INITIATIVES

The Electronic Schoolbag initiative in Luxembourg aimed at making a personal **laptop available to all pupils** at the Lycée Aline Mayrisch. Pupils should be enabled to use laptops both as a complementary learning resource in various lessons and for collaboration, communication and creation of individual or group work. All classrooms and other learning areas in the school have been equipped with networking facilities (WLAN) and video projectors for easy and rapid connection of the laptop computers to the Internet.

In the Netherlands several initiatives are run directly by schools themselves (e.g. the laptop project at the *Verenigde Scholen J.A. Alberdingk Thijm* (AT-schools). The schools provide the laptop for the teachers **with no external funding** and the **parents pay for the students' laptops**. The only condition for participation is being a student (or a teacher) at one of the two schools involved.

3. SUMMARY OF FINDINGS

Netbooks on the rise - from general provision of ICT to 1:1 initiatives: As the report shows, laptop/notebook initiatives are on the rise and netbooks have gained increasing popularity in policy-making and education. 33 initiatives from 18 countries were identified: Austria, the Czech Republic, Estonia, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Spain and the UK.

Large- and small-scale initiatives: In 2000, ICT in education initiatives were aimed at a general push of technology, mainly computers, into schools. During the past decade, and starting with some scattered small-scale initiatives since 2004, a number of major large-scale initiatives initiated by national and/or regional governments in cooperation with industries focus on 1:1 computing, providing every child or teacher with a personal notebook or netbook. The largest initiatives in terms of number of netbooks provided in relation to the number of schools in the respective country can be found in the Czech Republic, Estonia, Greece, Norway, Portugal, Spain, and the UK. Next to larger national initiatives, which include laptop/netbook provision, we can see the emergence of a high number of smaller-scale scattered initiatives, mainly research pilots and individual school initiatives, e.g. in Germany, Austria and the Netherlands.

Students and teachers as the main target audience: Most of the 1:1 initiatives presented here target students in the first place, teachers in second place and families in a few cases. Some initiatives aim to tackle digital divides (the access divide) and specific target groups, e.g. disadvantaged families, children in kindergarten or with special needs, and rural schools. However, these are very few in relation to the overall range of initiatives looked at.

A focus on personal ownership of ICT and modernization of equipment: Initiatives are driven by the technology itself to further reduce computer/student ratios and to modernize the equipment for teachers and learners in and increasingly outside schools. Laptop/netbook provision in schools as part of large-scale national ICT infrastructure programmes or as specific 1:1 initiatives comes with a wider package offered to schools including, more often than not: interactive whiteboards, wireless connections or Internet access (in the school but also in communal areas or at home), projectors, specific educational software and educational resources and training for teachers.

Pedagogical aspirations related to netbook use: Next to a technology-driven approach, national or regional initiatives also aim to fulfil educational goals, such as the use of ICT in all subjects, to foster competence-based education and to exploit the possibilities of mobile learning (learning anywhere and anytime). Pedagogical aspirations linked to laptop/netbook initiatives focus on the personalization of learning, supporting individual learning styles and different types of learners.

Public-private partnerships at the core of provision: Regarding the organizational framework, Ministries of Education are the principal initiators of these programmes. Sometimes national or regional governments, together with ministerial agencies participate, too. However, there are some initiatives completely run at regional/local level or even at school level. In this case, it is more difficult to have a general overview of what is happening in the field. Private enterprises are also involved in several initiatives since they are the main providers of laptops/netbooks: in the framework of the latest initiatives public-private partnerships are becoming more and more common.

Financing models to benefit students in the first place: As regards the finance model, the allocation of grants or benefits can be addressed to schools, students or directly to parents and families. When targeting schools, the provision of laptops is in some cases class-oriented and individual classes or schools can create a pedagogical project, submit it to the initiator of the initiative and apply for a grant to buy ICT infrastructure to use it in class. Another option is to award grants to schools or classrooms with some ICT competences. In most cases, however, students are the direct beneficiaries of the initiative, and are provided with netbooks or laptops at no cost to themselves for their own personal use both at home and in classroom. These initiatives can be nationwide or cover only one region with the aim of later enlarging the scope. In a few initiatives families (e.g. low-income families) are the main target and can be awarded grants or other kinds of incentives to buy laptops. Therefore the provision of laptops is more and more suitable for their use at home and not only in schools, an Internet connection is often included in packages and parents are also involved.

4. OUTLOOK

The above-mentioned findings based on the general overview of initiatives raise important challenges for schools and questions to be answered in the future.

New challenges for schools and scalability issues: These initiatives first put new requests and challenges to schools to deal with the influx of technology in terms of infrastructure, implementation, every day management (e.g. acceptable use policies) and how to integrate them purposefully into teaching and learning leaving alone to use them as a driver for change in educational practice. The scalability of moving towards providing a 1:1 computing environment is also major question, as we do not know enough about the total costs of such initiatives.

Two areas – the provision of access to equipment and to the Internet (anywhere, anytime - not only at school) and pedagogical exploitation as a tool for learning resulting in increased learning benefits – deserve further attention especially in the light of recent OECD findings. These pointed, among other things, to "a stronger correlation between educational performance and frequency of computer use at home than at school" and to a "second digital divide" which is emerging "between those who have the right competences and skills to benefit from computer use, and those who have not" (OECD, 2009).

Are the potential benefits being realized in schools? Evaluation studies, particularly on 1:1 computing, have been carried out for eight of the initiatives presented here. Some of them are already completed, several are still ongoing. They have not been analysed as part of this report, but a first look at some of the results reveals some interesting findings.

For instance, the evaluation of the Connect School Project in Ireland suggests that "technology alone is a mode of delivery and not pedagogy" (C. Galvin, 2010). The suggestion is to move from "an over-focus on learning with ICT to a model that focuses more on teaching with ICT" and which includes development of methodology and teacher training. Staff training and ongoing teacher professional learning seem to play an important role in the improvement of learning outcomes within laptop initiatives. However, not all the programmes presented here in fact allocate part of their budget to that (15 initiatives out of 33 include some training for teachers, although in various formats) and the latest literature (Weston and Bain, 2010) points out that this is not the only important factor to guarantee a successful outcome from netbook initiatives, and a series of other conditions must be fulfilled. These include, for example, that the community that makes up the school –students, teachers, school leaders and parents, must have an explicit and simple set of rules that defines what the community believes about teaching and learning, and that each member of the community is an active agent, not merely a consumer or provider

in the process in a self-organizing school.

The use of evaluations: Finding a common paradigm for a meta-analysis of a wider set of evaluation studies poses some challenges. Initiatives vary as regards their scope, implementation, technology and evaluation focus. Indeed every initiative has to be placed within the national context of ICT in education. Annex 3 of the report shows a clustering of initiatives according to target groups, initiators and incentives for participation, which could be a starting point for analysing evaluation results as regards the more common types of initiatives.

Therefore, results of evaluations including the research methods used should be further analysed and new initiatives should be studied in the near future. This would make it possible:

1. to have a better understanding of the lessons learnt in the implementation of the initiatives. This relates to rules, managerial problems, technological and educational support and technical readiness of schools;
2. to understand how and under which conditions these initiatives contribute to enhance teaching and learning processes. This includes looking into specific pedagogical case studies or learning scenarios that have been drafted in the field. They might comprise computer-based study materials, teaching communities, development of methodology and teacher training;
3. to provide recommendations for schools, teachers and policy-makers based on a broad sample of studies which could nurture new initiatives in the field in an informed way.

Critical factors for the implementation of laptop initiatives: For some authors, presenting a review of the key themes of criticism levelled at 1:1 laptop initiatives, self-organizing schools are more suitable for deployment such devices. "Laptop computers are not technological tools, rather they are cognitive tools that are holistically integrated into the teaching and learning of their school" (Weston and Bain, 2010).

In this perspective laptop and netbook initiatives could presumably become more effective:

1. when schools are able to guarantee a community which autonomously establishes a set of rules and procedures, including support for professional development of teachers;
2. where all members (teachers, students, school leaders, families) are fully engaged in the design of the project – each member should be an active agent, generating feedback and contributing to bottom-up changes (Weston and Bain, 2010);
3. innovative and appropriate models of pedagogy are constantly employed, especially collaborative learning – 1:1 elearning scenarios can be imagined where 1:1 does not only refer to a child accessing a netbook for individual learning approaches, but to learners that collaborate, exchange and peer-learn with teachers, friends, classmates and parents in new learning environments.

Laptop scenarios: In a forward-looking perspective we predict that new technologies will be more and more entering schools as well as already being part of the everyday life of students, who use ICT in many different formal, informal and non-formal settings for a variety of purposes. Therefore, it is evident that all stakeholders involved in the implementation of laptop/netbook initiatives should be aware that they require explicit and commonly shared strategies to integrate such devices effectively into teaching and learning.

The following diagram illustrates possible laptop/netbook scenarios including different learning settings and learning approaches involved. Activities can range from:

- Teacher-led (frontal teaching) vs. individual or collaborative activities;
- Online or offline activities;
- Taking place inside or outside school;
- Teachers as collaborators with learners as well as among themselves;
- Group work around one or several individual netbooks.

School

Formal vs. informal learning
Teacher led vs. student led
Collaborative vs. individual learning
Blended vs. traditional learning
Offline vs. online

Home

Community
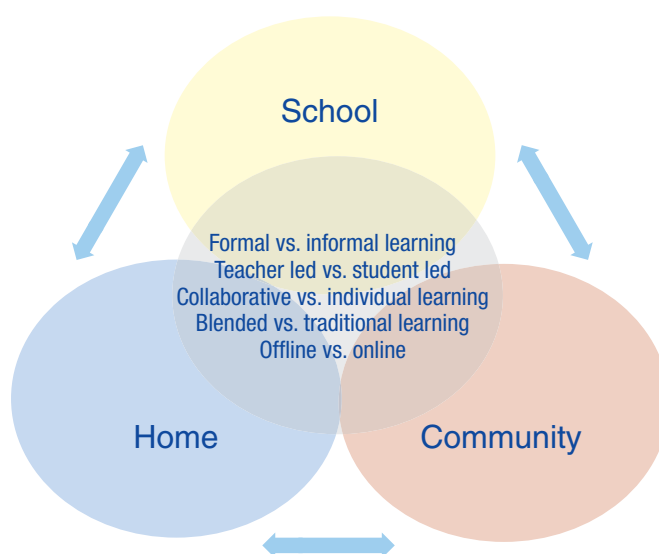
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ANNEX 1: OVERVIEW OF INITIATIVES

European laptop and netbook initiatives in schools

Country	Project Name	Timeframe	Description
Austria	Notebook-Netbook classes	2009-2010	• All students of the selected classes have a netbook for their **own personal use** (connection to the Internet anytime and access to learning resources inside and outside school and at home). • The project takes place within the framework of the eLC 2.0 (eLearning Cluster Project). • Initiative of the Austrian Ministry of Education for Upper Secondary Schools and Colleges to implement elearning on a practical level. • The **University of Donau Krems** looks after the scientific implementation. *http://netbooks.bildungstechnologie.org/front-page,* *http://www.elearningcluster.com/aktuell/303.php,* *http://www.elearningcluster.com/themen/laptopklassen.php*
Czech Republic	Education for Competitiveness /"EU peníze školám"	2010	• Part of **EU structural funds** finances. • Targeted at the **support of ICT** use in all school subjects. • Managed by the MoEYS. • Schools will have a chance to **create a project and apply for a grant for ICT used in teaching** (supported areas: elearning, digitalization of textbooks, teacher training aimed at ICT use, purchase of DVDs, cameras, netbooks, notebooks, computers, software programs, IWBs, etc.). *http://www.eupenizeskolam.cz*
Estonia	Laptop for Teachers	2008-2009 (stopped due to the economic crisis)	• Initiator: Ministry of Education • **4,000 teachers out of 15,000** received laptops. • Preconditions for getting a laptop: - Teacher had the desire to get a laptop, was employed as a teacher with a load of at least 0.5. - The teacher had received methodological training in the use of ICT in the last three years and/or graduated from university and/or was involved in training other teachers and/or the use of ICT tools in teaching on a regular basis. - At least one classroom was set up as a modern learning environment.

	Laptop for Students	2008-2009	• Initiator: Ministry of Education • In each of 5 selected schools one class received laptops to be used during one school year. • All students participating in the study were given a laptop, equipped with learning software, to be used at home as well. • The University of Tartu monitored the use of computers in schools and the impact on the 2008-2009 academic year with special monitoring software. • Schools participating in the project had to have an Internet connection and the teachers were required to be active ICT users. *http://panther.tiigrihype.ee/sylearvuti/sylearvutiuuring.pdf*
France	Rural digital Schools	February 2009	• Broadband Internet access at an affordable rate and for the whole of France is one of the main objectives of regional planning, particularly in rural areas. • Initiator: DUI - Ministry of Higher Education and Research • A WiFi laptop for every student gives every student the opportunity to buy on credit a laptop computer with a WiFi card, and to benefit from free broadband access on campus. • Several companies, bodies and organizations have chosen to provide assistance.
	WiFi laptop for every student	2009	• Initiator: DUI - Ministry of Higher Education and Research • Broadband Internet access at an affordable rate and for the whole of France is one of the main objectives of regional planning, particularly in rural areas. • A WiFi laptop for every student gives every student the opportunity to buy on credit a laptop computer with a WiFi card, and to benefit from free broadband access on campus. • Several companies, bodies and organizations have chosen to provide assistance.
Germany	1000 mal 1000: notebooks in school bags	2009	• The pilot project is part of the Lower Saxony State Initiative-21. • For the first time, on a wider scale, notebooks were introduced in schools (all school types, mainly class 7 = age 14). • The aim was to study the implementation, identify barriers or problems and the impact of notebooks on teaching and learning. • Parents financed the laptops, they were supported by the regional government and local authorities participating in the project (private partners offered financing at low interest rates and sponsored hardware and software) • The project was evaluated by Humboldt University Berlin and is part of the Schulen ans Netz initiative. *http://www.schulen-ans-netz.de/waswirbieten/ publikationen/dokus/n21evaluationsbericht.pdf*

	Tender Programme, City of Hamburg		• A **tender programme** started by the **City of Hamburg**. • Individual schools or communities were invited to develop **individual** and **independent netbook projects** within this programme. The project mainly involves notebook experienced classes. • **Individualization of learning processes** (advancement of learners), netbooks as a means of supporting learner-centred education (how netbooks can support individual learning styles and types of learners).
Greece	New School - Digital School	2009 - 2010	• Last school year (2009-2010) one **netbook was supplied for each student** of A' Grade of lower secondary school (1:1). Every student has his/her own netbook. • Direct cost of the provision of laptops: €450 per student • The MoE in cooperation with the Ministry of Finance are the initiators • **Pedagogical Institute** (educational software & specifications) • Students involved: 113,226. Total number of Lower-Secondary Schools all over Greece, 1,894, 9,157 teachers of Philology, Mathematics and Physical Sciences. Number of laptops: 122,383.
Hungary	HEFOP 3.1.3/B/09/03	2009	• Initiator: National Development Agency, project o-financed by the EU. • The number of supported projects is 400 within the scope of the tender • More than 3,000 student laptops • The winner institutions in the call for proposals in the Human Resource Development Operative Programme launched the school year 2009-2010 mainly with student laptops and voting systems. • The aim of the tender is to support competence-based educational programmes with digital education materials, digital learning contents and tools for digital contents in the schools that were supported in the tender HEFOP 3.1.2, 3.1.3. *http://www.nfu.hu/content/2983*
	TIOP-1.1.1/07/1	2009	• Direct goal of TIOP 1.1.1 is to establish ICT infrastructure in Hungary that provides equal access to knowledge, and which is need to develop key competences for lifelong learning. • An emphasized goal is the IT development of formal education, i.e. to establish the "**Intelligent school**", which primarily focuses on the development of IT infrastructure. • Initiator: National Development Agency, project co-financed by the EU • Equipment: school workstation (PC), classroom package, voting system package, application server package, complementary ICT package for students with special needs *http://www.nfu.hu/content/4634*

	TIOP-1.1.1/09/1	2009	• Initiator: National Development Agency, project co-financed by the EU • This project aims to directly contribute to the implementation and distribution of a strong ICT supported, 1:1 (1 student/1 computer) educational environment in state education. • Ongoing tender • State educational institutions: primary school, secondary school • Ages addressed: 6-18 • Additional equipment: teacher laptop, router, WiFi access point, digital trolley, screen-reading software *http://www.nfu.hu/content/4901*
Ireland	Connect School Project - St Aidan's Community School	2006-2007	• Laptops were rolled out to the **teachers and to all 1st years** for use throughout their school career in **St Aidan's Community** • The aim was to develop student-centred technology and create a Virtual Learning Environment for the students and teachers. Evaluation report available • A core group of teachers with high ICT skills leads the project within the school and develops and delivers the training programme to their colleagues. *http://connect.southdublin.ie/connect* Report: *http://connect.southdublin.ie/connect/images/stories/d/connect%20school%20evaluation%20report_final%20%282%29.pdf*
Israel	Integration of Internet based learning	2007	• Programme intended for students with special educational needs, in which pupils with disabilities receive laptop computers as well as instruction in accordance with a learning programme specially built for each individual.
	Orange Computer	2007	• An **experimental programme** involving eight schools: laptop computers were loaned to all pupils in the 6th and the 7th grades; as a result, the computer has become a natural learning environment for students.
	Project Katom	2007	• Laptop computers are provided in a number of pilot projects examining the use of laptops for instructional and learning needs.
	Whiteboard	2007	• Programme providing schools with workstations, which include a laptop, a projector and a whiteboard.
Italy	Classmate	2009-2010	• The Classmate project encourages students in middle school to use **mini laptops for learning support**. • The government gives €150 incentives for their purchase. *http://www.scuola-digitale.it/classi2.0/*

	Cl@ssi 2.0	2010-2011	• Emphasis on the support and experimentation of the project. • 156 lower secondary school classrooms (K10-13) • €30,000 each classroom, • 1:1 computing in each classroom. • University coaching, Ministry organization and training
Luxembourg	Electronic Schoolbag	2002-2004	• The idea is to make a personal laptop available to all pupils at the **Lycée Aline Mayrisch**. • All classrooms and other learning areas in the school equipped with networking facilities (WLAN) and video projectors for easy and rapid connection of the laptop computers to the Internet. • All electronic schoolbags are registered and each pupil has their **own login and password**. • The project was evaluated internally as well as externally throughout the different phases of development. *http://www.laml.lu http://www2.myschool.lu/home/pla/Downloads/Electronic_Schoolbag.pdf*
Malta	Suggested computer distribution at school	2006	• Computer layout in Maltese primary schools requires an **average of 4 computers per classroom**. • The policy for ICT hardware, maintenance and support covers state secondary and primary schools in Malta and Gozo on a national level. • 1,200 laptop computers, 5,000 networked PCs in 86 primary and special schools and 1400 PCs in 92 labs in secondary schools together with peripherals such as printers, large monitors and video converters are covered by this policy.
	Incentives	2006	• All state primary school **teachers have been equipped with a laptop** in order to encourage them to use the technology and be able to plan and produce resources at home. • At secondary level, schools that have implemented the use of ICT across the curriculum in their School Development Plan will be provided with Interactive Whiteboards to encourage them.
Netherlands	Laptop project at the "Verenigde Scholen J.A. Alberdingk Thijm" (AT-schools)	Since the 1990s	• Board of directors from the AT-schools are the direct initiators of the projects. • Two schools within the AT-schools, a regular secondary school with 850 students and an International School with 450 students, are involved. At these two schools every student and teacher works with an Apple Macbook (1,400 Macbooks) • The school provides the laptops for the teachers, the parents pay for the students' laptops of the students • Estimated cost: more than €2m. *www.atscholen.nl*

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Norway	Not defined	From autumn 2006	• From 2006, county school authorities in all parts of Norway have run projects aimed at equipping all students with personal laptops. • These projects should partly be seen in relation to the new paragraph in the education law, which lays down the right to learning resources free of charge in primary and secondary education • County authorities' spending is partly covered by funds from the Ministry of Education aimed at providing all students with free of charge learning resources (both analogue and digital). Each student pays an annual leasing fee of about €100; this equals the minimal study fund for which any student is eligible. • All students in upper secondary education (ca. 180,000) • Rough estimate = €30m/year (which includes the students' leasing fee)
Poland	Notebook for Education	2003	• The Notebook for education project aims at providing teachers and educators with high quality good-value notebooks. • **Interkl@sa** provides teachers with **IBM** notebooks at reduced prices. • Interkl@sa together with IBM started the process of implementation of mobile computers in Polish schools and gives the opportunity to deploy mobile teaching. *www.interklasa.pl*
Portugal	KidSmart Project (Kindergarten)	2004-2007	• Portugal participates as a partner in KidSmart project. • This project was aimed at pre-school education and is based on a **partnership between IBM and the Portuguese MoE**. • In the last few years (2004-2007) IBM gave work stations to **kindergartens** to contribute to the development of the Information and Knowledge Society, as it promotes e-inclusion.
	e-Escolinha (Primary Education)	2009	• The programme e.escolinha addressed all students from private and state schools who attend the **first years of school**. • Its goal is to guarantee the **general use of computers and Internet**, in order to promote the access to knowledge (e-Escolinha). • The government distributed the personal **computer Magalhães**, specifically designed for children in this age range. • It is shock and liquid proof and it is light and small and yet can be used by the whole family. Magalhães is equipped with educational contents which are specially selected for these children and Internet access. *http://www.iniciativa-magalhaes.com/* *http://www.eescolinha.gov.pt*

	eIniciativas	June 2007	• Main actors: **government, MoE and private enterprises**. • This initiative aims to finance actions to facilitate access to the Information Society, in order to promote e-inclusion. • It involves teachers, school students and also students in vocational training under the Novas Oportunidades programme. • This gives the opportunity for everyone to have a laptop for **a low price** (€150) and affordable Internet access. Currently the main goal is to reach more than 750,000 people.
	Iniciativa Escolas, professores e Computadores Portáteis (Secondary Education)	2005-2006	• Initiator: CRIE (Computers, Networks and Internet at School) unit from the Directorate-General of Innovation and Curricular Development (DGIDC) of the Ministry of Education. • This initiative supported the curricular integration of ICT and Innovation; improved the use of ICT in the classroom; promoted teamwork between teachers and educational groups; helped teachers to manage and to prepare daily activities; and supported educational projects for the present and for the future. • Schools had to establish valid projects to develop and submit them to MoE appreciation. The goal was to give each school 10 laptops for teachers' use and 14 for students' use, according to the submitted project. In addition to the laptops each school also received a video projector and a WiFi access point. • In September 2006, 85% of the laptops were allocated, with the remaining 15% issued in January 2007. • In four months this initiative distributed 31,000 laptops to 1,200 schools all over the country. *http://www.eescola.net/*
Spain	Aragona: Programa Pizarra Digital	2003-2004	• **The Community of Aragon** has pilot plans for introducing **tablet PCs** and IWBs in their schools • Tablet PC, 1:1 computing Objectives: to encourage innovative process in the educational context, improve ICT competences, impact on social and family environment
	Catalunya: eduCAT1x1	2009-2013	• **Merged with state-wide project "***Escuela 2.0***":** June 2009. • Project designed to be gradually applied to the whole **educational community** (5th and 6th primary, 1st to 4th secondary, 1st and 2nd upper secondary: 500,000 students) • Voluntary participation, based on school and teacher decision. • Standard market **broadband Internet connection for schools**, low-cost Internet connection for students at home. *http://www.plane.gob.es/escuela-20/*

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	Escuela 2.0	2009	• Nationwide ICT plan for schools launched in September 2009 • It builds on the developments already achieved in each region (e.g. Catalonia) and goes further, trying to generalize access to hardware and digital content in schools in order to integrate ICT pedagogically into the school life. • As far as hardware is concerned, the project will provide **each fifth grade pupil with a notebook** and their classrooms will have an IWB as well as a wireless connection. • The teachers of these fifth graders will be provided with **training** (mainly online) according to their level of competence. • Students will keep their computers **until they are 14 years old**, and every coming year, for the following four years, the new fifth graders will be provided with notebooks.
UK	*Home Access* Programme	2008-2010	• The *Home Access* scheme provides grants to families to purchase a compliant computer and Internet package from a range of approved suppliers. • Launched in September 2008 and based on the government's aspiration that **all school age learners should have access to a computer and connectivity at home**. • The programme aims to **benefit more than 270,000 households** that currently lack access **by March 2011**. • In the pilot over 12,000 grants were awarded to eligible families. The programme was launched in January 2010 and by mid-April over 100,000 families had already benefited. • Delivered by **Becta**, the government agency responsible for promoting the effective use of technology in learning. • Engage more parents in their child's learning • Context: Home: 91% of children have *home access* to Internet from high income families. Only 67% in deprived families. Over 1 million children have no access. UK research shows that having a computer at home associates with a 2 grade improvement in formal exams; parental involvement a significant factor in improving pupil attainment. *http://schools.becta.org.uk/* *http://schools.becta.org.uk/index.php?section=oe&catcode=ss_es_hom_02&rid=17246*

ANNEX 2 INITIATIVES BY COUNTRY

AUSTRIA

NOTEBOOK-NETBOOK CLASSES

Timeframe	2009-2010
Objective	Make use of the smaller and more efficient mini notebooks in class
Short description	1:1. All students of the selected classes have a netbook for their own personal use. The netbooks should allow students to be connected to the Internet anytime and have access to learning resources inside and outside school and at home. Actors document usage of netbooks in microblog
	Scope
Target audience	Students
Number of classes, schools, students, involved	• Phase 1 Pilot Project: Sept. 2009 - Feb. 2010: 6 schools. Focus: introduction & new developing methodological approach
	• Phase 2 Extended project: March 2010 - June 2010: 9 schools Focus: data collection for research on 360° learning lifestyle
	• Phase 3 Dissemination: Sept. 2010 - June 2011: 20 additional schools. Focus: dissemination educational governance educational scenarios
Level of education	Pilot: secondary education. Extended project: primary and secondary education
	Organization and implementation
Initiator	Austrian Ministry of Education Bundesministerium für Unterricht, Kunst und Kultur
Actors involved	The university of Donau Krems studies the scientific implementation
	Microsoft provides computers. Mobilkom Austria provides Internet connection
Funding provided f	The project takes place within the framework of the eLC 2.0 (eLearning Cluster Project)
Description of the device	Model: Mobile Netbook Q10Air+
	Pedagogical Dimension
	Actor-Network Theory (ANT) Observing actors like an ethnographer (Bruno Latour)
Pedagogical scenarios developed as part of the initiative	"Following the actors"
	Enabling actors to produce traces to follow
	Microblogging, closed system installed on university servers: *http://www.floopo.com*
Evaluation (yes/no)	Yes, university of Donau Krems
Further information	*http://netbooks.bildungstechnologie.org/front-page,*
	http://www.elearningcluster.com/aktuell/303.php,
	http://www.elearningcluster.com/themen/laptopklassen.php

CZECH REPUBLIC

EDUCATION FOR COMPETITIVENESS (EU peníze školám)

Timeframe	2007-2013
Objective	The ECOP focuses on the development of human resources through education in all its various forms with an emphasis on the comprehensive system of lifelong learning, creation of an appropriate environment for research, development and innovative activities and stimulation for cooperation among the entities involved.
Short description	Active usage of ICT in the system of education in general is one of the programme's main aims. School can come with a project and apply for a grant for usage of ICT in all the subjects and teaching. Some examples of supported areas are: digitalization of textbooks, elearning, modernization of schools' equipment - DVDs, cameras, netbooks, notebooks, computers, software programs, IWBs, etc. Under this programme an initiative more aimed at supporting ICT development is being planned (easier way for all schools).

Scope

Target audience	The programme covers all educational institutions, but the purchase of ICT equipment is aimed mainly at primary and secondary schools
Number of classes, schools involved	About 4,000 schools can participate (about 30,000 classes, 600,000 pupils)
Level of education	Primary, lower secondary (for "EU peníze školám")
Age range of students	6 -15
Number of netbooks	It is up to schools

Organization and implementation

Initiator	The Ministry of Education, Youth and Sport is the initiator of the initiative, within the framework of the Operational Programme "Education for Competitiveness"
Actors involved	Managed by the Ministry of Education
Finance model	Grants to schools that submit a project
Funding provided	Part of EU structural funds
Estimated total costs	Planning initiatives "EU peníze školám" – 4.5 bn CZK
Conditions for participation	Schools have to come with a project and apply for a grant for ICT used in teaching
Additional equipment provided (e.g. IWB)	DVDs, cameras, netbooks, notebooks, computers, software programs, IWBs, etc.

Pedagogical Dimension

Training provided to teachers	Schools can also apply for a grant covering training provided to teachers - e.g. usage of IWBs, school's software etc.
Evaluation (yes/no)	The programme is in progress
Further information	http://www.msmt.cz/areas-of-work/education-for-competitiveness-operational-programme-period
	http://www.eupenizeskolam.cz/

LAPTOP FOR STUDENT / LAPTOP FOR TEACHERS

Timeframe	2008-2009
Objective	To give a laptop computer to all students participating in the study.
	Teachers' programme: using modern tools and learning environment for teachers to contribute to the quality of work and increase efficiency (stopped due to the economic crisis).
Short description	Students' programme: 1:1 computing. In 5 selected schools one class from each received laptops to be used during one school year. Students could use laptops at home as well.

Scope

Target audience	Students/teachers
Number of classes	In 5 selected schools one class from each.
/teachers involved	In 2008 about 4,000 teachers out of 15,000 received laptops.

Organization and implementation

Initiator	Ministry of Education
Actors involved and their role in the initiative	The University of Tartu monitored the use of computers in schools and the impact on the 2008-2009 academic year and presented the study in November 2009. Private partners provided laptops.

Conditions for participation	• Student programme: schools participating in the project had to have an Internet connection and the teachers were required to be active users of ICT.
	• Conditions for teachers getting laptop:
	  - the teachers had to express the wish to get a laptop
	  - the teacher had passed the last three years methodological training of the use of ICT and/or graduated from university and/or involved in training other teachers and/or the use of ICT tools in teaching on a regular basis.
	  - at least one classroom was set up as a modern learning environment

Additional equipment	Laptop computers were equipped with learning software.

Pedagogical Dimension

Evaluation (yes/no)	Laptop usage was analysed with special monitoring software (Track4Win, Monitor) by the University of Tartu. Questionnaires, interviews, lesson observations, analysis of documentation and monitoring logs installed in students' computers were used for data collection. Expectations, which were high during the distribution of laptops, diminished towards the end of the project.
Summary of main results of evaluation	Some recommendations followed: • Rules: a set of rules should be laid down since laptop usage is a relatively new concept in schools. What could a laptop be used for? When is it appropriate to use it for e.g. information search/gaming etc.)? • Development of methodology and teacher training. More expertise in computer-assisted teaching is required. This should be an important aspect in pre-service training too. • Computer-based study material: insufficient materials suiting the Estonian context • Educational-political conditions: educational management could consider possible computer usage • Educational technological support: appropriate educational technological support together with ideas and materials could be very helpful for teachers
Further information	Piret Luik, Eno Tõnisson, Hasso Kukemelk (2009), *Laptops for Students, Research Project in Estonia*, University of Tartu

RURAL DIGITAL SCHOOLS

Timeframe	2009
Objective	Reduce the digital divide between rural and urban schools: government's economic stimulus initiative
Short description	A new plan for the development of ICT: rural digital schools will be equipped with a high speed Internet access

Scope

Target audience	Rural Schools
Number of schools involved	6,700 schools in rural communes (with fewer than 2,000 inhabitants)

Organization and implementation

Actors involved	NextiraOne provided computers and software for the primary school in Vermenton
Finance model	Under the project, the government is awarding up to €10,000 for computer hardware and software to each school in communes of under 1,200 inhabitants
Funding provided for this initiative	€67m are allocated to rural schools for the acquisition of laptops
Direct costs of the provision of laptops	The school then paid for the installation of WiFi base stations and subscribed to SFR
Conditions for participation	Schools in rural communes (fewer than 2,000 inhabitants)
Additional equipment provided (e.g. IWB)	Schools receive money for the acquisition of laptops, IWBs and software

Pedagogical Dimension

Training provided to teachers	Teachers will be trained to use digital resources from a national platform to which they are also expected to contribute.

A WIFI LAPTOP FOR EVERY STUDENT

Timeframe	2009 (now closed)
Objective	Broadband Internet access at an affordable rate and for the whole France is one of the main objectives of regional planning, particularly in rural areas.
Short description	This campaign aimed at giving every student the opportunity to buy on credit a laptop computer with a WiFi card, and to benefit from free broadband on campus.

Scope

Target audience	University students
Level of education	University

Organization and implementation

Initiator	DUI - Ministry of Higher Education and Research
Actors involved and their role in the initiative	Several companies, bodies and organizations have chosen to provide assistance in achieving the objectives for ICT development in education.
Conditions for participation	Every student had the opportunity to buy on credit a laptop computer with a WiFi card, and to benefit from free broadband on campus.

1000 MAL 1000: NOTEBOOKS IN SCHOOL BAGS

Timeframe	2009
Objective	The aim was to study implementation, identify barriers or problems and the impact of notebooks on teaching and learning.
Short description	Students of class 7 were provided with personal laptops. The pilot project is part of the Lower Saxony State Initiative-21
	Scope
Target audience	Students of class 7
Number of schools involved	13 schools in Lower Saxony
Level of education	Secondary education
Age range of students	13-14
	Organization and implementation
Initiator	Public-private partnership: regional government, counties and local authorities, private partners were involved
Actors involved and their role in the initiative	Humboldt University in Berlin evaluated the project. There were also numerous private partners, which offered financing at low interest rates and which sponsored hardware and software.
Funding provided for this initiative	Parents financed the laptops, supported by the regional government and local authorities participating in the project.
	Pedagogical Dimension
Training provided to teachers	The action programme n 21 was responsible for organizing teacher training.
Evaluation (yes/no)	Yes
Summary of main results of evaluation	The Humboldt University in Berlin report provides a detailed project analysis and practical recommendations for action for all those who are planning a body of notebook class.
Further information	*http://www.schulen-ans-*
Short description	*netz.de/waswirbieten/publikationen/dokus/n21evaluationsbericht.pdf*

TENDER PROGRAMME, CITY OF HAMBURG

Scope	Individual schools or communities were invited to develop individual and independent netbook projects within this programme.
	Scope
Target audience	Individual schools or communities
Number of schools involved	19 schools (37 classes)
Initiator	**Organization and implementation**
	A tender programme started by the City of Hamburg
Actors involved	City of Hamburg, INTEL
	Pedagogical Dimension
Pedagogical scenarios developed as part of the initiative	Individualization of learning processes (advancement of learners), netbooks as a means of supporting learner centred education (how can netbooks support individual learning styles and types of learners)

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NEW SCHOOL - DIGITAL SCHOOL

Timeframe	2009
Objective	Following the implementation of the pilot phase (2007) the Programme has been expanded as part of the "Digital School", aiming at incorporation of ICT into the educational processes.
Short description	Students are provided with laptops.
	Scope
Target audience	All A' grade students and teachers in lower secondary schools all over Greece
Number of students, teachers involved	113,226 students, in all lower secondary schools all over Greece (1,894). 9,157 teachers of Philology, Mathematics and Physical Sciences.
Level of education	Lower secondary schools
Age range of students	12-13
Number of laptops	122,383
	Organization and implementation
Initiator	The MoE in cooperation with the Ministry of Finance
Actors involved and their role in the initiative	MoE (supervising)
	Information Society
	Pedagogical Institute (educational software & specifications)
	Ministry of Finance (funding)
	Digital Aid
Finance model	Co-funding EU and Greece
Funding provided	€55m
Direct costs of the provision	A coupon worth €450 per student
Conditions for participation	Total number of students of A' grade lower secondary school and teachers of Philology, Mathematics and Physical Sciences.
Additional equipment provided (e.g. IWB)	Supply of "Digital School" classroom equipment, consisting of:
	16 software programs and digital books, developed by the P.I., interactive whiteboards
	USB sticks >= 4GB (included in the sum of €450 coupon)
Description of the device	Minimum Hardware requirements: 1. CPU >=1.3 GHz
	2. RAM >=1024 MB (DDR2 or better)
	3. Screen >=10 inch
	4. Hard disk >=120 GB (SATA)
	5. USB ports >=2
	6. Wireless LAN
	Software requirements: 1. Dual Boot
	a. Win XP Home or better
	b. + Open source operating system (e.g. Linux)
	2. Educational software (installed)
	3. Anti-virus for Windows (3 years license)
	4. Parental Control (3 years license)
	5. PDF reader
	6. Office suite for both Operating Systems

NEW SCHOOL - DIGITAL SCHOOL

Pedagogical Dimension

Training provided to teachers

During 2002-2004, from a total number of 145,000 school teachers, 108,500 attended a teachers' ICT basic skills training programme (Phase 1) and of these 80,500 have already been successfully certified. The programme consisted of the following units: basic concepts of Informatics and the use of a PC; word processing; spreadsheets; presentation and database applications.

The subject of Phase 2 of the teachers' training programme is the professional development of teachers in ICT exploitation in school practice, aiming:
• to familiarize them with the use of the basic computer applications,
• to enable them to exploit the new technologies in class and
• to support the educational process.

Thus, during 2005–2008,
• 4,200 attended a teachers' ICT basic skills training programme (Phase 2.1) and of these 2,821 have already been successfully certified at Specific Training Centres (ΚΣΕ) and
• 357 attended University Training Programmes (ΠΑΚΕ) on ICT and have been awarded the title of ICT trainer.

At present, a teachers' ICT specified skills training programme (Phase 2.2), including Philology, Mathematics and Physical Sciences, is in progress (2009-2012), and the prospect is that:
• 27,600 school teachers will attend a Training Programme at Specific Training Centres (ΚΣΕ) and
• 202 will be awarded the title of ICT trainer, after having attended a University Training Programme (ΠΑΚΕ) in ICT.

Evaluation (yes/no)
Yes

Summary of main results
Still in progress.

Further information
MoE(supervising) Information Society
(www.ypepth.gr/ktp_index.htm)
• Pedagogical Institute (educational books, software & specifications)
(www.pi-schools.gr)
(http://www.pi-schools.gr/books/gymnasio)
(http://www.pi-schools.gr/books/dimotiko)
• E-yliko *(www.e-yliko.gr)*
Training Phase
(http://bepipedo.cti.gr/portal/index.php?option=com_content&task=view&id=242&Itemid=880)
http://www.oepek.gr/index_gr.html
• RACTI (Research Academic Computer Technology Institute) (http://www.cti.gr)
(http://b-epipedo2.cti.gr/portal)
(http://b-epipedo.cti.gr/portal)

HUNGARY

COMPETENCE-BASED TOOLS OF THE EDUCATIONAL PROGRAMMES

Timeframe	2009 Spring
Objective	Public educational programmes of the Social Infrastructure Operative Programme serve the establishment of the modern educational tool-system by supporting the acquisition of IT tools needed to develop key-competences for lifelong learning.
	The goal of the programme is to allocate tools needed for competence-based educational programmes, educational programme-packages, including the use of digital learning contents to state schools supported through earlier calls.
Short description	The aim of the tender is that it should support competence-based educational programmes with digital education materials, digital learning contents, and tools for digital contents in the schools that were supported in the tender HEFOP 3.1.2 /3.1.3. Another purpose is to spread digital knowledge, to make digital literacy an everyday practice. The winner institutions in the call for proposals in Human Resource Development Operative Programme launched the school year 2009-2010 mainly with student laptops and voting systems.

Scope

Target audience	Educational institutions
Number of projects involved	400 projects supported within the scope of the tender
Level of education	Public educational institutions: nursery school, primary school, secondary school
Age range of students	The students involved in using competence-based programmes.
Number of laptops involved	More than 3,000 student laptops

Organization and implementation

Initiator	National Development Agency
Finance model	Funds available at launch of the tender: HUF 2,5bn
	Schools can apply for minimum HUF 1m, maximum HUF 9.5m
	Nursery schools can apply for minimum HUF 1m, maximum HUF 4m
Funding provided for this initiative	Project co-financed by the EU. Funds available at launch of the tender: HUF 2.5bn
Direct costs of the provision of laptops	Schools spend of the funds on student laptops
Estimated total costs	Funds available funds at launch of the tender: HUF 2.5bn
Conditions for participation	Institutions taking part in HEFOP 3.1.2. and 3.1.3.
Additional equipment	Voting system, software, digital learning content, evaluating tools

Pedagogical Dimension

Training provided to teachers	The School of the House of Future set out 30 training lessons for teachers. Its name is Classmate, PC usage during school lessons – methodological and software knowledge for digital training.
Pedagogical scenarios developed as part of the initiative	The aim of the training is to know and utilize ICT tools and set out a methodological knowledge base. It is very important to have the proper knowledge before setting up the technical conditions for teaching with CMPCs. In order to have an efficient usage of the CMPC asset, teaching should be differentiated by age, subject, theme.
Further information	*http://www.nfu.hu/content/2983*

TIOP-1.1.1./07/1.

Timeframe	Start date: spring 2009, ongoing tender
Objective	Public educational programmes of the Social Infrastructure Operative Programme serve the establishment of the modern educational tool system by supporting the acquisition of IT tools needed to develop key-competences for lifelong learning: The Social Infrastructure Operative Programme supports the development of the educational infrastructure. The direct goal of TIOP 1.1.1 is to establish ICT infrastructure in Hungary that provides equal access to knowledge, and which is needed to develop key competences for lifelong learning.
Short description	Development of the IT infrastructure supporting pedagogical and methodological reforms
	An important goal of one "priority" in the programme is IT development of formal education, i.e. namely to establish the "Intelligent School", which primarily focuses on the development of IT infrastructure. The development thus ensures a standardized basic IT infrastructure for all state education institutions (except kindergartens), which is an essential condition for distributing competence-based education, and also contributes to the equalization of local differences.

Scope

Target audience	Educational institutions
Number of projects	896 projects supported within the scope of the tender.
Level of education	State educational institutions: primary school, secondary school
Age range of students involved	No data. Ongoing tender, but ages addressed according to school, 6-18.

Organization and implementation

Initiator	National Development Agency
Actors involved	Project co-financed by the EU
Finance model	Funds available at launching of the tender: HUF 24.11m. State schools can apply for minimum HUF 0.5m, maximum HUF 0.7m
Funding provided	Funds available at launch of the tender: HUF 24.11m
Conditions for participation	In the Central Hungary region (Budapest, Pest county) new projects could not be subsidized within the framework of the present call for applications.
Additional equipment provided (e.g. IWB)	School workstation (PC), classroom package, voting system package, application server package, complementary ICT package for students with special needs

Pedagogical Dimension

Training provided to teachers	The School of the House of Future set out 30 training lessons for teachers. Its name is Classmate, PC usage during school lessons – methodological and software knowledge for digital training.
Pedagogical scenarios developed as part of the initiative	The aim of the training is to know and utilize ICT tools and set a methodological knowledge base. It is very important to have the proper knowledge before setting up the technical conditions for teaching with CMPCs. In order to have an efficient usage of the asset CMPC teaching should be differentiated according to age, subject, theme.
Further information	*http://www.nfu.hu/content/4634*

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INSIGHT
observatory for new technologies and education

TIOP-1.1.1/09/1

Timeframe	2009 Spring, ongoing tender
Objective	Public educational programmes of the Social Infrastructure Operative Programme serve the establishment of the modern educational tool system by supporting the acquisition of IT tools needed to develop key competences for lifelong learning: This construction aims to contribute directly to the implementation and distribution of a strong ICT-supported, 1:1 educational environment in state education.
Short description	1:1 educational environment is the next generation of the educational tool system supported by ICT, which focuses on individual and individually organized team learning processes besides frontal teaching, and which supports even more efficiently the capability of individual learning and the development of cooperative techniques. The construction also contributes to the integration of digital contents during teaching aimed at competence development. Infrastructure development realized in the framework of the construction contributes to the distribution of electronic measurement/evaluation and electronic educational administration.
	Scope
Target audience	Educational institutions
Level of education	State educational institutions: primary school, secondary school
Age range of students	Ongoing tender, ages addressed according to school, 6-18
	Organization and implementation
Initiator	National Development Agency
Actors involved	Co-financed project by the EU
Finance model	Funds available at launch of the tender: HUF 4.3m State schools can apply for minimum HUF 0,5m, maximum HUF 190m
Funding provided	Funds available at launch of the tender: HUF 4.3m
Conditions for participation	In the Central Hungary region (Budapest, Pest county) new projects could not be subsidized within the framework of the present call for applications.
Additional equipment	Teacher laptop, router, WiFi access point, digital trolley, screen reading software
	Pedagogical Dimension
Training provided to teachers	The School of the House of Future set out 30 training lessons for teachers. Its name is Classmate, PC usage during school lessons – methodological and software knowledge for digital training.
Pedagogical scenarios developed as part of the initiative	The aim of the training is to know and utilize ICT tools and set out a methodological knowledge base. It is very important to have the proper knowledge before setting up the technical conditions for teaching with CMPCs. In order to have an efficient usage of the CMPC asset, teaching should be differentiated according to age, subject, theme.
Further information	*http://www.nfu.hu/content/4901*

IRELAND

CONNECT SCHOOL PROJECT - ST AIDAN'S COMMUNITY SCHOOL

Timeframe	2006-2007
Objective	To develop student-centred technology and create a Virtual Learning Environment for students and teachers.
Short description	The aim of the project is to improve the educational outcomes of our students through investment in ICTE. The delivery of education to the students of St. Aidan's is enhanced through ICT-enabled classrooms and the use of ICT on a daily basis (context of a disadvantaged community).

Scope

Target audience	Students, teachers
Number of classes, schools, students, teachers or families involved	Laptops were rolled out to the teachers of St. Aidan's in May 2006. In February 2007 laptops were rolled out to all 1st years for use throughout their school career and to each subsequent year's intake of students
Level of education	1st – 5th year students, secondary education
Age range of students	13 - 17
Number of laptops/netbooks	700

Organization and implementation

Initiator	The Connect School Project was officially launched by Minister Mary Hanafin, Department of Education and Science in April 2007.
Actors involved and their role in the initiative	Connect School is delivered with the support of South Dublin City Council, National Centre for Technology in Education/the Department of Education and Dublin West Education Centre and Institute of Technology, Tallaght.
Funding provided for this initiative	Funding for broadband, teacher professional development and other supports provided by the NCTE
Direct costs of the provision of laptops	South Dublin County Council funded the yearly purchase of the laptops
Conditions for participation	Student commitments to participate in the project on entering school
Additional equipment provided (e.g. IWB)	A wireless network was installed throughout the school. Video projectors were installed in all classrooms and the school has invested in a number of digital cameras and IWBs.
Description of the device	Regular off-the-shelf laptop/netbook

Pedagogical Dimension

Training provided to teachers	A Core Group of Teachers with high ICT Skills was initially identified through an ICT audit and this group leads the project within the school and develops and delivers the training programme to their colleagues. The success of this peer-to-peer learning approach has been the key to the success of the project to date.
Pedagogical scenarios developed as part of the initiative	Daily use of laptops incorporated into existing pedagogical approaches but within a developed technology management strategy for the classroom developed by the teachers
Evaluation (yes/no)	Yes, available at: *http://connect.southdublin.ie/connect/images/stories/d/connect%20school%20evaluation%20report_final%20%282%29.pdf*
Summary of main results of evaluation	Project outcomes: • Higher school attendance rates. • Improved participation levels in class. • Better educational outcomes for students. • New teaching methodologies developed. • Increased awareness and application of ICT.
Further information	*http://connect.southdublin.ie/connect*

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ITALY

CL@SSI 2.0

Timeframe	2009-2010
Short description	1:1 computing in each classroom
	Emphasis on the support and experimentation of the project.

Scope

Target audience	Students, classrooms
Number of schools involved	156 lower secondary schools
Level of education	Secondary schools

Organization and implementation

Initiator	Ministry of Education
Funding provided	€30,000 for each classroom

Pedagogical Dimension

Training provided to teachers	University coaching, Ministry organization and training
Further information	*http://www.scuola-digitale.it/classi2.0*

CLASSMATE

Timeframe	2009-2010
Short description	This project encourages middle-school students to use mini laptops for learning support; the Government gives €150 incentives for their purchase.

Scope

Target audience	Students
Level of education	Students in middle school (lower secondary school)

Organization and implementation

Initiator	Ministry of Education
Finance model	€150 incentives to buy laptops

ELECTRONIC SCHOOLBAG

Timeframe	2002-2004
Objective	The main objective is to give pupils the opportunity to work with computers anywhere, anytime, thus introducing the electronic schoolbag as a daily working tool which can be easily used whenever the learning situation arises.
Short description	The idea of the project is to make a personal laptop available to all pupils at the Lycée Aline Mayrisch.

Scope

Target audience	Lycée Aline Mayrisch
Number of schools	One school: Lycée Aline Mayrisch.
Level of education	Secondary education
Number of laptops/ netbooks involved	800 laptops were operational at the beginning of the school year in September 2002. In 2004 approximately 1,300 laptops circulated in the school.

Organization and implementation

Additional equipment provided (e.g. IWB)	Networking facilities (WLAN) and video projectors for easy and rapid connection of the laptop computers to the local area network.

Pedagogical Dimension

Training provided to teachers	Ongoing training programme is continuously offered to teachers.
Further information	*http://www.laml.lu*
	http://www2.myschool.lu/home/pla/Downloads/Electronic_Schoolbag.pdf

NORWAY

IMITATIVE

Timeframe	From autumn 2006
Objective	Equip all upper-secondary students with laptops
Short description	From 2006, county school authorities in all parts of Norway have run projects aimed at equipping all students with personal laptops. These projects should partly be seen in relation to the new clause in the education law, which lays down the right to learning resources free of cost in primary and secondary education. Related to the laptop initiatives one should also mention the creation of a portal with free of charge learning resources called "National Digital Learning Arena" (NDLA).

Scope

Target audience	All students in upper secondary education
Number of students involved	All students in K11-K13. (ca. 180,000)
Level of education	Upper secondary
Age range of students	16-19
Number of laptops/netbooks	Approximately 180,000

Organization and implementation

Initiator	County authorities
Actors involved	County authorities and local schools.
Finance model	County authorities' spending is partly covered by funds from the Ministry of Education aimed at providing all students with free of charge learning resources (both analogue and digital). Each student pays an annual leasing fee of about €100, this equals the minimum study fund for which any student is eligible.
Direct costs of the provision of laptops	Rough estimate = €30m/year (which includes the students' leasing fee)
Conditions for participation	Not relevant
Additional equipment	None
Description of the device	No standardization, each county choose devices separately.

Pedagogical Dimension

Training provided to teachers	This varies a lot. There is no national initiative related to the laptop initiative.
Pedagogical scenarios developed	There are several scenarios which evolve from this national project, but little has been done to collect and share these scenarios.
Evaluation (yes/no)	Yes, on several levels (national and local). But no system of collection and sharing of these evaluations.
Summary of main results	It would need a greater effort than possible here to summarize the results.
Further information	Please contact Gunstein Egeber: *gunstein.egeberg@iktsenteret.no*
Additional information	There are several local initiatives for lower secondary and even primary education regarding laptops. It will be interesting to see how 1:1 coverage in upper secondary affects the coverage and choice of technology in lower levels of education.

POLAND

NETBOOK FOR EDUCATION

Timeframe	2003
Objective	Provide teachers and educators with high quality notebooks; mobile teaching
Short description	The project Notebook for education aims at providing teachers and educators with high quality good-value notebooks
	Scope
Target audience	Teachers and educators
	Organization and implementation
Initiator	Interkl@sa runs this project together with IBM
Actors involved and their role in the initiative	Interkl@sa provides teachers with IBM notebooks at reduced prices. Interkl@sa together with IBM started the process of implementing mobile computers in Polish schools and gives the opportunity to deploy mobile teaching.
Finance model	IBM notebooks at reduced prices
Further information	*www.interklasa.pl*

PORTUGAL

E-INICIATIVAS

Timeframe	2007
Objective	To finance actions to facilitate access to the Information Society, in order to promote e-inclusion
Short description	Under the programme Novas Oportunidades, (eOportunidades, eEscola and eProfessor), eIniciativas gives the opportunity for everyone to have a laptop at a low price (€ 150) and affordable Internet access.

Scope

Target audience	It involves teachers, school students and also students in vocational training
Number of people involved	More than 750,000

Organization and implementation

Initiator	Initiative launched by the government and supported by MoE and private enterprises
Actors involved	MoE, private enterprises

Pedagogical Dimension

Further information	*http://www.eescola.net/*

INICIATIVA ESCOLAS, PROFESSORES E COMPUTADORES PORTÁTEIS

Timeframe	2005-2006
Objective	This initiative supported the curricular integration of ICT and innovation; improved the use of ICT in the classroom; promoted teamwork between teachers and educational groups; helped teachers to manage and prepare daily activities; and sustained educational projects for the present and for the future.
Short description	During that school year schools had to establish valid projects to develop and submit them for MoE appreciation. The goal was to give each school 10 laptops for teachers' use and 14 for students' use, according to the submitted project.

Scope

Target audience	Secondary schools: teachers and students
Level of education	Secondary schools
Number of laptops/netbooks involved	In September 2006, 85% of the laptops were allocated, with the remaining 15% issued in January 2007. In four months this initiative distributed 31,000 laptops to 1,200 schools all over the country.

Organization and implementation

Initiator	MoE CRIE (Computers, Networks and Internet at School) unit at the Directorate-General of Innovation and Curricular Development (DGIDC)
Additional equipment provided (e.g. IWB)	In addition to the laptops each school also received a video projector and a WiFi access point.
Further information	*http://www.crie.min-edu.pt/index.php?section=39*

KID SMART PROJECT

Timeframe	2004-2007
Objective	Promotion of e-inclusion
Short description	IBM gave workstations to kindergartens to contribute to the development of the Information and knowledge Society.

Scope

Target audience	Kindergartens

Organization and implementation

Initiator	MoE, IBM
Actors involved and their role in the initiative	IBM provides workstations to kindergartens

MAGALHÃES

Timeframe	2009
Objective	To guarantee the general use of computers and the Internet, in order to promote access to knowledge
Short description	The e.escolinha programme is addressed to all pupils in the first year of private and state schools.

Scope

Target audience	First-year school pupils
Number of students involved	Nationwide: all pupils in the first year of private and state schools
Level of education	Primary education
Number of laptops/netbooks	500,000 Magalhães computers distributed

Organization and implementation

Actors involved	The Portuguese government and INTEL established an agreement
Description of the device	This computer was specifically designed for children in this age range. It is shock and liquid proof and it is light and small but can be used by the whole family. Magalhães is equipped with educational contents which are specially selected for these children and Internet access.

Pedagogical Dimension

Training provided to teachers	This programme provides specific training for teachers to certify their ICT skills; partnership with parents' associations to develop regional workshops for parents on the use of ICT in education
Further information	*http://www.iniciativa-magalhaes.com/* *www.eescolinha.gov.pt.*

EDUCAT1X1 (CATALONIA)

Timeframe	2009-10 to 2012-13
Objective	Merge with state-wide project "Escuela 2.0"
Short description	Project designed to be gradually applied to the whole educational community (5th and 6th primary, 1st to 4th secondary, 1st and 2nd upper secondary: 500,000 students). It is a four-year plan, and the first year is just finishing. The project started with 1st and 2nd years of secondary school and the plan is to gradually extend it to primary and then upper secondary.

Scope

Target audience	All students, all teachers, all schools in Catalonia
Number of schools, students and teachers involved	Project designed to be gradually applied to the whole educational community (500,000 students). Last phase: 1,000 schools, 9,900 classrooms, 250,000 students, 45,000 teachers
Level of education	5th & 6th primary, 1st to 4th secondary, 1st and 2nd upper secondary

Organization and implementation

Initiator	Department of Education of the Generalitat de Catalunya and Catalonian Foundation for Research and Innovation
Actors involved	Catalonian Foundation for Research and Innovation, Department of Education of the Generalitat de Catalunya; private enterprises; large and small computer suppliers; families
Finance model	• Bought and maintained by families, maximum price: €300, co financing (50% family, 50% public funds, grants for low-income families) • Co-financing of access to commercially available educational digital content
Funding provided	€46m per year in total (broken down as indicated below)
Direct costs of the provision of laptops	These are the costs for 60,000 new students per year: €23m from the Department of Education of the Generalitat de Catalunya, €16m from the Spanish Ministry of Education (contributing to 50% of the deployment costs, not including wide area telecommunications and other hidden costs), and €7m from families, who pay half the cost of the pupils' PCs.
Estimated total costs of initiative	Estimated costs per student: • Administration: €650 for the first year, €250 for the following • Families: €180 for the first year
Conditions for participation	Voluntary participation, based on school and teacher decision
Additional equipment	• Unified WAN-LAN architecture for all schools • Low-cost Internet connections for students at home • Extensive use of digital textbooks from commercial publishers (easy transition to the digital world, 85% of teachers could take the step forward – basic project hypothesis)

Pedagogical Dimension

Training provided to teachers	• Basic ICT training for all teachers in Catalan education • Specific training for the teachers participating in the project • Continuous "on-demand" coaching
Pedagogical scenarios developed as part of the initiative	• IWBs • Virtual learning systems • Classroom management • Digital textbooks
Evaluation (yes/no)	No objective evaluation finished yet
Additional information	In parallel with this initiative the Spanish central government launched another project called Escuela 2.0, with quite similar objectives. The two projects merged, and this gave the Catalonian project a significant increase in budget. Escuela 2.0 has different implementation strategies in the various autonomous regions of Spain. *http://www.educat1x1.cat/*

SPAIN

ESCUELA 2.0

Timeframe	2009
Objective	The project provides each fifth grade pupil with a notebook
Short description	In September 2009 an ambitious nationwide ICT plan for schools, Escuela 2.0, was launched. It builds on the developments already achieved in each region and goes further, trying to generalize access to hardware and digital content in schools in order to integrate ICT pedagogically into the school life. While some projects have already piloted this type of technological setup, the political will to extend it to the whole country is what makes this plan most remarkable.

Scope

Target audience	Fifth grade pupils, teachers,
Number of students and teachers	Nationwide ICT plan for schools: 400,000 students, 20,000 teachers
Level of education	Fifth grade primary education, lower secondary education
Age range of students involved	10-14
	Students will keep their computers until they are 14 years old, and in each of the next four years the new fifth graders will be provided with notebooks.
Additional equipment	14,000 classes "digitalized"

Organization and implementation

Initiator	Ministry of Education
Actors involved	Ministry, families

Pedagogical Dimension

Training provided to teachers	Teachers are provided with training (mainly online) according to their level of competence.
Further information	*http://www.plane.gob.es/escuela-20/*
	Pizarra Digital

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SPAIN

PIZARRA DIGITAL

Timeframe	2003-2004
Objective	1:1 computing, to encourage the innovative process in the educational context
Short description	The Community of Aragon has pilot plans for introducing tablet PCs and IWBs in its schools (within the framework of Escuela 2.0).

Scope

Target audience	5th & 6th levels of primary schools
Number of students involved	14,000 primary school pupils involved in the Community of Aragon (1,296,655 inhabitants) in 2009-2010
Level of education	Primary schools
Age range of students	10-11

Organization and implementation

Initiator	Community government of Aragon
Funding provided	€15m (for 5 years: 2005-2009)
Additional equipment	IWBs are also included in the programme
Description of the device	Tablet PC

Pedagogical Dimension

Pedagogical scenarios	Innovative process in educational context, impact on social and family environment
Evaluation (yes/no)	Evaluation of the programme by the University of Barcelona (2008-2009)
Summary of main results of evaluation	Achievement: support from education community, better learning environment, valorisation of teachers' professional development. Challenges: more difficulties in secondary schools, collective use, teacher training
Further information	*http://www.plane.gob.es/escuela-20/*

LAPTOPPROJECT AT
THE "VERENIGDE SCHOLEN J.A. ALBERDINGK THIJM"

Timeframe	Late 1990s
Objective	To enrich our education programme with all the possibilities that a laptop can offer
Short description	See attached document (PDF-format)
	Scope
Target audience	Students aged 12-18; teachers
Number of classes, schools, students, teachers or families involved	Two schools within the AT-schools, a regular secondary school with 850 students and an International School with 450 students. At these two schools every student and teacher works with an Apple Macbook.
Level of education	Secondary education
Age range of students	12-18
Number of laptops/netbooks	More than 1,400 Macbooks
	Organization and implementation
Initiator	Board of Governors of the AT-schools
Actors involved	All students, teachers (and all other employees) at these two schools
Finance model	The school provides the laptops for the teachers. Parents pay for the students' laptops.
Funding provided	No external funding
Direct costs of the provision of laptops	€1.6m
Estimated total costs	More than €2m
Conditions for participation	For students (and teachers) at one of these two schools
Description of the device	Apple Macbook
	Pedagogical Dimension
Training provided to teachers	Many trainings for students and teachers are organized within these two schools.
Evaluation (yes/no)	No formal evaluation process
Further information	*www.atscholen.nl* Herman Rigter (director ICT): *h.rigter@atscholen.nl*

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THE UK

HOME ACCESS PROGRAMME

Timeframe	2008-2010 (national rollout of the Home Access programme announced by the Prime Minister in January 2010)
Objective	Based on the government's aspiration that all school-age learners should have access to a computer and connectivity at home
Short description	Over the next two years the programme will target the most disadvantaged families so that their children can have access to appropriate technology to support their learning at home.
	Context: Home: 91% of children from high income families have home access to Internet, only 67% in deprived families. Over 1 million children have no access. UK research shows: having a computer at home associates with a 2 grade improvement in formal exams, parental engagement a significant factor in improving pupil attainment.

Scope

Target audience	Students, families
Number of students and families involved	The programme aims to benefit more than 270,000 households that currently lack access by March 2011.The pilot: over 12,000 grants were awarded to eligible families.
Level of education	Years 3 to 9 inclusive.

Organization and implementation

Initiator	Minister of State for Schools and Learners
Actors involved and their role in the initiative	The Home Access programme works with local authorities, schools, colleges and tertiary sector organizations to ensure that families are provided with the support and guidance they need to realize the benefits of having access to technology at home.
Finance model	Government money on those most in need, encourage those not entitled to government help to self-purchase.

Pedagogical Dimension

Training provided to teachers	Engage more parents in their child's learning
Summary of main results of evaluation	Background evidence: recent evidence has also suggested that having home access to a computer could help learners achieve a two grade improvement in one subject at GCSE, i.e., a pupil who would have got a D, could, through the effective home use of technology, now get a B at GCSE.
Further information	*http://schools.becta.org.uk/*

ANNEX 3 TABULAR OVERVIEW OF TARGET GROUPS AND INITIATORS

Target groups	Initiators		
	Public	**PRIVATE AND PUBLIC**	**INCENTIVES**
Teachers	**ESTONIA** (MoE) • *Laptop for teachers* (4,000 teachers out of 15,000) conditions to get laptop: desire, methodological ICT training. **GREECE** State schools: supply **notebooks for 9,157 teachers** of A' Grade in lower secondary school (2009 data)	**POLAND** (MoE, Interkl@asa, IBM) • **Notebook for education** Notebooks at reduced prices for teachers	**MALTA** All primary school teachers equipped with laptops; at secondary level schools implementing ICT across the curriculum will get IWBs
Students	**GREECE** • State school: supply **notebooks (1:1) for 122,383 students** attending A' Grade in lower secondary school all over Greece (2009 data) **ISRAEL** • Laptop computers and Internet based learning for **students with special educational needs** (special individual programmes) **SPAIN** • *eduCAT1x1* (only in Catalonia, but designed to merge with Escuela 2.0, Generalitat de Catalunya, notebooks are bought and maintained by families at a maximum price of €300, co-financing: 50% family and 50% public funds, grants for low-income families)	**PORTUGAL** (MoE and INTEL) • *Initiativa e-Escolinha* (Magalhaes) (laptop for all 1st year primary school children, private and state schools, 1:1, nationwide) **SPAIN** • *Escuela 2.0* (nationwide, each 5th grade pupil provided with notebook, until he/she is 14 years old + IWBs and WiFi for their class) **NORWAY** • County school authorities in all parts of Norway have run projects aimed at equipping all students with personal laptops.	**ITALY** (Gov) *The Classmate project* (€150 incentives for the purchase of mini laptops for middle school students). **FRANCE** (MoE and private enterprises) *A WiFi laptop for every students* (university students, opportunity to buy laptop on credit)

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Initiators

Target groups	PUBLIC	PRIVATE AND PUBLIC	INCENTIVES
One class	**ESTONIA** (MoE) • Laptop for students** (from 5 selected schools, one class from each) **ITALY** • C@ssi 2.0 1:1 computing 156 lower secondary school classrooms (K10–13), €30,000 each classroom, university coaching	**GERMANY** • *Tender Programme, City of Hamburg* (notebook experienced classes involved, communities/schools invited to submit a project, 1:1)	
Whole School	**CZECH REPUBLIC** (MoE) *Education for competitiveness* (nationwide, project-based grant system for schools) **HUNGARY** • *Heptof 3.1.3/B/09/03* (National Development Agency) 400 projects supported within the scope of the tender. Nursery, primary and secondary schools can apply for grants (more than 3,000 student laptops and software and digital learning content). • *Tiop-1.1.1/07/1* (National Development Agency) 896 projects supported within the scope of the tender. Primary and secondary schools involved. Additional equipment: school workstation, classroom package, ICT package for special needs students • *Tiop-1.1.1/00/1* (National Development Agency) Student and teacher laptops provided, 1:1 educational environment, co-financed by the EU	**PORTUGAL** • *Schools, Teachers and Laptops/Iniciativa Escolas, Professores e Computadoras Portateis* (nationwide, schools have to submit a project, each school receives: 10 laptops for teachers' use and 14 for students' use, according to the project, WiFi + video projector included; MoE and INTEL) • **KidSmart project** (IBM gave working stations to kindergartens) **UK** • Northern Ireland (65,000 laptops for grant-aided schools) **GERMANY** (Lower Saxony and Humboldt University in Berlin) *1000 mal 1000: Notebooks in schoolbags* (13 schools in Lower Saxony involved)	**ISRAEL** *Orange Computer* (8 schools involved, laptops given as a loan to students)

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Initiators

Target groups	PUBLIC	PRIVATE AND PUBLIC	INCENTIVES
Whole School	**IRELAND** • *Connect School Project* St Aidan's Community School Laptops were rolled out to the teachers and to all 1st years for use throughout their school career **ISRAEL** • *Whiteboard* (providing schools with workstations, laptops, projectors and IWBs) • *Katom* (examination of the use of laptops for instructional needs) **MALTA** • suggested computer distribution at school: 4 computers per classroom (providing schools nationwide with 1,200 laptops) **LUXEMBOURG** • *Electronic Schoolbag* (a personal laptop available to all pupils at the Lycée Aline Mayrisch, evaluation included)	**SPAIN** • *Tablet PC* (pilot plan for introducing tablet PC and IWB in schools, only in Aragon Community, 1:1 **AUSTRIA** (MoE and Microsoft) • *Netbooks in Education* (9 schools in 2010, families lease a mobile computer) **FRANCE** (MoE and private enterprises) • *Rural Digital Schools* 6,700 rural schools will be equipped with high-speed Internet connection, acquisition of laptops **THE NETHERLANDS** • *Laptop project at the "Verenigde Scholen J.A. Alberdingk Thijm"* In two schools within the AT-schools, a regular secondary school with 850 students and an International School with 450 students every student and teacher works with an Apple Macbook	
Families		**UK** • *Home Access Programme* Provides grants to families to purchase a compliant computer and Internet package (targeting the most disadvantaged families, 12,000 grants awarded, nationwide)	**PORTUGAL** *einitiativas* (opportunity to buy laptop at low price for everyone, more than 750,000 people targeted)

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