

Electronic budgeting Innovative approaches to budgeting

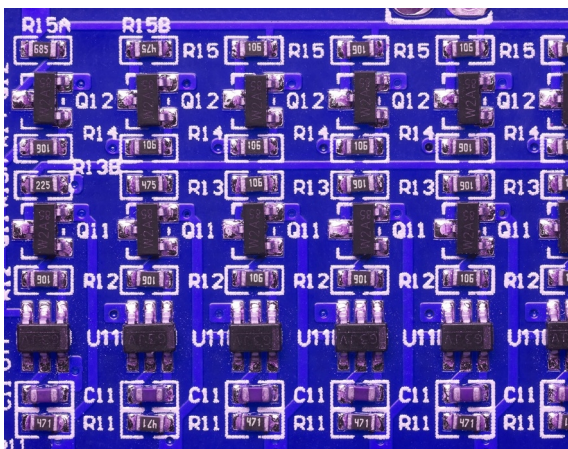
SUMMARY

There is scarcely any aspect of government activity that does not involve the use of information and communication technologies (ICTs). The EU has supported the building of digital infrastructures and the sharing of best practices on efficient delivery of e-government services for the last 15 years. One of the goals of the EU Digital Action Plan was to increase the take-up of e-government services by 50% of citizens and 80% of businesses by 2015.

The introduction of digitalised procedures also affects the budgetary field. Scholars address ICT applications used for budgetary functions, procedures, or services across the budgetary cycle (planning, programming, budgeting, appropriations, control, and evaluation of financial resources), using the term 'e-budgeting'.

e-budgeting refers to the digitalisation of budgetary procedures, the diffusion of Open Data (i.e. the diffusion of budgetary information to the public in an open format) and Big Data (i.e. the use of complex databases of budgetary information to inform policy-making).

One of the most distinctive features of e-budgeting (and e-government in general) is that it promotes an active role for citizens and civil society organisations. A diffuse movement of activists and civil society organisations champions the use of digital technologies within public decision-making procedures to enhance citizens' participation and to control governmental activities.



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Glossary

Information & Communication technologies (ICT): Information and communication technology that includes broadband, satellite, video and cable technology, as well as stand-alone computers (source: [European Commission](#)).

E-government: Definitions of e-government and its lexical counterparts (e.g. digital government, Government 2.0) present important semantic variations and reflect different government priorities. Three main definitions of e-government are currently in use: (1) internet-based service delivery (e.g. online consultations); (2) the use of ICT in government; (3) the capacity to transform public administration through the use of ICT.

Financial Management & Information Systems: The automation solutions that enable governments to plan, execute and monitor the budget (source: [World Bank](#)).

Open government: The use of ICT to improve the efficiency, effectiveness and quality of public services by introducing new processes, products, services and methods of delivery (source: [European Commission](#)).

The e-government imperative

In 2003 the Organisation for Economic Co-operation and Development (OECD) defined e-government practices as an '[imperative](#)' for public bodies. The emergence of the internet and the parallel developments in processing capacity and data storage that occurred over the 1990s – explained OECD analysts – were profoundly impacting the way public governance was conducted around the world.

A decade later, e-government has become a familiar and universally used concept in governmental practices worldwide. There is scarcely any aspect of government activity that does not involve the use of information and communication technologies (ICTs). The widely held belief among rule-makers is that the use of ICT brings substantial benefits to public administrations, business enterprises and citizens (see box).

The United Nations (UN) 2014 [E-government Survey](#)¹ shows that **Europe is the world leader** with the highest regional e-government development index, followed by the Americas and Asia. The leading nations in Europe are: France (4th in the global ranking); Netherlands (5th); United Kingdom (8th); and Finland (10th). In 2014, for the first time since the UN survey was published, **all 193 UN members had national websites in place**, albeit not all of these websites are of the same quality. Only 40% of the surveyed governmental websites, for instance, enabled user options features, such as 'tag clouds' and 'hot topics' lists. In the light of this, the 2014 e-government survey recognises that progress in e-government worldwide has been attained through increased online participation, growth of mobile channels and social media, the burgeoning of open government data and their expanded usage. The report stresses the importance of continuous efforts towards the digitalisation of public processes.

The expected benefits of e-government

Reasons for embracing e-government as a means of reforming public administration are generally summarised in the following five points:

- (1) Improved **efficiency** and enhanced **quality of public service**;
- (2) More **effective outcomes** in key policy areas (e.g. health, welfare);
- (3) Improvement in the overall **trust relationship** between citizens and the public sector;
- (4) Positive impact on **business productivity**;
- (5) Help to forward the **reform agenda** of the public sector.

Other surveys confirm this representation. The official OECD statistics, for instance, report an average use of e-government over **50%** among the public administrations of the OECD's member states. To further support the development and implementation of digital government strategies, in 2014 the OECD adopted a [Recommendation on digital government strategies](#). This recommendation mandates that governments develop strategies to further enhance transparency, openness and inclusiveness in public decision-making and that they establish a data-driven culture in the public sector.

The [Global Open Data Index](#) was created by the not-for-profit organisation Open Knowledge Foundation (OKF) to measure and benchmark the openness of data around the world. OKF reports a vivid increase in the number of governments who publish data online in an open format. In 2014 the Global Open Data Index surveyed nearly **400 open data portals** worldwide, and the Boston Consulting Group (BCG), a consultancy firm, [reported](#) that **one tenth** of citizens' transactions with governments were performed online. The BCG estimates that **one third** of these transactions worldwide will take place online by 2020.

The expansion of e-government in the European Union

The EU has supported the building of digital infrastructures and the sharing of best practices on efficient delivery of e-government services for the last 15 years. The European Commission adopted an [Action Plan for e-government](#) in 2011, setting out concrete actions to support the implementation of e-government services at local, regional, national and European level. The plan stresses the importance of advancing the realisation and operationalisation of e-procurement, document management and open-data portals. The final goal is to increase the take-up of e-government services by **50%** of citizens and **80%** of businesses by 2015. In October 2015, the European Commission launched a [public consultation](#) on the next e-government action plan (2016-2020).

The European Parliament has commissioned studies on the digitalisation of public services since 2011, with a focus on the implementation of e-democracy tools and the protection of data security.² The Parliament is also active in promoting the introduction of electronic services in the areas of competence of the EU. [Directive 2014/55/EU](#), adopted in 2014, on electronic invoicing in public procurement is an example. As far as the Council of the EU is concerned, the 2009 Malmö [Declaration on e-government](#) Member States should increase the availability of e-government services to citizens.

The expansion of digital services in the EU is supported not only through official declarations, secondary legislation and studies, but is also funded through various programmes. Examples include the Connecting Europe Facility (to finance e-government infrastructures), interoperability programmes (to promote the interoperability for European e-government Services) as well as structural and investment funds.

e-budgeting

The use of ICT in the public sector encompasses all types of governmental activities, including the budgetary field. The term 'e-budgeting' is used to address any ICT application or tool that is used for budgetary functions, procedures, or services across the budgetary cycle (planning, programming, budgeting, appropriations, control, and evaluation of financial resources). In more detail, e-budgeting includes three different, although related, profiles: the first, and main one, consists of the digitalisation of budgetary procedures; the second relates to the diffusion of budgetary information to

the public in an open format (open data); the third concerns the use of complex databases of budgetary information to inform policy-making (big data).

The digitalisation of budgetary procedures

The automated solutions that enable public institutions to plan, execute and monitor the budget are normally termed **Financial Management and Information Systems** (FMIS). FMIS help public decision-makers to comply with financial regulations and reporting standards. Also, FMIS platforms facilitate the disclosure of information concerning the budgetary procedure and therefore have a potential beneficial impact on governmental accountability and participation.

There are many examples of the use of electronic tools in budgetary procedure. An interesting use of electronic tools can be observed in the field of participatory budgeting – i.e. a process in which community members participate directly in decisions on how to spend part of a public budget. ICT use in participatory budgeting is mainly aimed at increasing citizen participation. In the Brazilian municipality of Belo Horizonte, for instance, electronic participatory budgeting aimed to engage all residents above the age of 16, with the result that a total of 173 000 voters, 10% of the local electorate, participated and expressed their opinions.³ In Europe, the first municipalities to introduce participatory budgeting in combination with electronic voting are Lisbon (since 2008) and Cologne (since 2007).

In the case of the EU institutions, among the various ICT tools designed to help civil servants and political groups in their administrative and legislative tasks, two applications are particularly relevant for budgetary procedures: CIBA and Badgebud. CIBA (maintained by the EP) has four main goals: to create legislative amendments and to translate them into all EU official languages; to manage the different steps in the life cycle of an amendment; to produce reports (annexes to the adopted texts during plenary sessions); to automatically integrate the adopted amendments into the EU Budget maintained in CIBA. Badgebud is an interinstitutional application used to collect the budget requests prepared by each EU institution (its maintenance is provided by the European Commission's Budget Directorate-General). Other digital tools used for budgetary purposes include BUFI (a tool for financial management used by the EP Directorate General for the Presidency) and BUDGnet (the application used by the EP Committee on Budgets).

Cost savings

The first benefit associated with the digitalisation of budgetary procedures is **cost savings**. In 2012, the European Commission [estimated](#) that the design of public services (including budget) in digital format could save between **€6.5 and €10 billion annually**. The digitalisation of public procurement procedures, for instance, could reduce European public administration costs by **15-20%**, with estimated savings of **€100 billion** annually.⁴

Reduction of administrative burdens

The second benefit of e-budgeting is the reduction of **administrative burdens**. These burdens consist of the costs that citizens and business bear when obliged to comply with bureaucratic requirements established by government regulation. The introduction of digital procedures is expected to help to establish procedures, boost administrative efficiency and reduce costs for citizens and businesses. The European Commission estimates that the implementation of a 'once only' registration policy at EU level, meaning that users would enter their personal information for administrative purposes

only once, would save **€5 billion per year** by 2017.⁵ Moreover, the reduction of administrative burdens has an impact on citizens' satisfaction with public services.⁶

Open Data and budgets

A second implication of e-budgeting concerns the diffusion of budgetary information through the web, in an open format. This is a highly sensitive political issue. How public money is collected and distributed is a topic of general interest: everybody is affected by decisions concerning fiscal/budgetary policies. In consequence, the diffusion of information concerning the allocation of public funds plays a vital role in tackling the public institutions' accountability deficits.

Digital technologies are considered a potential solution to improving transparency in budget-related matters. **'Open Data'** is the concept used to refer to datasets that can be freely used and distributed without any legal or technological constraint. As internet availability continues to increase, it is expected that the demand for increased volumes (and quality) of information concerning public powers' activities of will strengthen. These requests for information would include data on budgets which comprise budget data plus other components of governmental financial activities, such as extra budgetary funds, tax expenditures and contingent liabilities.

This is further demonstrated by growing use of the term 'open budget data' and its lexical variants on the web and social media. The OKF reports that 'open data' appears in **76.7%** of search engine results for 'open budget data'. Moreover, 'open data' is the second most prominent hashtag in a collection of tweets obtained with key words and phrases associated with 'open budget data'.⁷

Most governments have made substantial investments in capacity building and technology for the development of tools to release information concerning the budgetary cycle in an open format. According to the World Bank, there are

48 countries in the world where civil society and citizens have the opportunity to benefit from public finance information published on the web to monitor the budget and hold their governments accountable.⁸ Progress, however, is uneven. The World Bank reports that 'Governments in high- and middle-income economies publish budget data dynamically in various formats, mainly from centralised systems'. In Europe, the cases of Germany and the United Kingdom are exemplary. In Germany, the public budget system is subjected to obligatory transparency and publication at all administrative levels. The state of Baden-Wurttemberg, for instance, publishes and interlinks all documents related to the budgetary process.⁹ On the other hand, low-income economies tend to publish static budget data, mostly through documents posted on public finance websites.

The EU is committed to release datasets in an open format since 2011. The wide range of data held by EU institutions, agencies and other bodies are made available through a

Definitions of Open budget data

- (1) 'Datasets of fiscal management in the public sector which are made available by the state and public administration to be freely used, redistributed and re-used without restriction'. ([Zeppelin University, 2011](#));
- (2) 'The government budget data that are made accessible to the public (online) in editable (machine-readable) and reusable format, without any restriction (free/legally open)'. ([World Bank](#));
- (3) 'Those quantitative values particular to annual governmental budget. (...) The open part of the phrase indicates the data is published in a transparent manner such that others can easily access machine readable data with the ability to conduct analyses and transformations on that data.' ([Global Initiative for Financial Transparency](#)).

single point of access: the [EU Open Data Portal](#). Launched in December 2012 in beta mode, this portal hosts datasets of various kinds, including those concerning the EU budget. Not only is the EU annual budget available, but also more topical datasets (e.g. share of government budget appropriations, Eurobarometer polls on budgets or the data from the Financial Transparency System).

Big Data and budgets

Big Data is a term used to describe the production, storage and management of large and complex datasets, with various formats and structures, aiming to serve the needs of private companies, policy makers (to develop evidence-based policies), and the general public. In fact, the knowledge that can be extracted from large data sets can have a strong influence on the quality of decision-making, including in the budgetary field. According to the International Data Corporation – a global consultancy focused on information technology, telecommunications and consumer technology markets – the economic value of the use of Big Data technology is expected to grow annually by 50% until 2017, reaching a total value of **€32.4 billion**.

The role of civil society

One of the most distinctive features of e-budgeting (and e-government in general) is that it provides more opportunities for the civil society to play an active role in the budgetary process. A diffuse movement of activists and civil society organisations (CSO) champion the use of digital technologies within public decision-making procedures, aiming to enhance citizens' participation in the procedures and to exercise control over governmental activities.

Key examples of CSOs advocating in favour of transparency in budgetary matters include the following:

- The [Global Initiative for Fiscal Transparency](#) – a multi-stakeholder action network focusing on advancing global norms and improvements on fiscal transparency, participation, and accountability in countries around the world.
- The [Sunlight Foundation](#) –Sunlight's vision is to use technology to enable more complete, equitable and effective democratic participation. The Foundation suggests that governments should release a comprehensive list of financial datasets so that citizens, civil society groups, and campaigners can help to prioritise processes to make more data accessible. Of particular importance are the Ten [Principles](#) for Opening-up Government Information, that also refer to budget data, financial management information, and other budget-related documents.
- [The International Budget Partnership](#) – a not-for-profit association whose mission is to analyse and influence public budgets in order to reduce poverty and improve the quality of governance.

Other examples include the already mentioned OKF, as well as [Freedominfo](#), a one-stop portal dedicated to campaign strategies and tactics, linked to freedom of information advocates around the world, and [Publish What You Fund](#), a global campaign for aid transparency in various fields.

Barriers to e-budgeting

There are three main problems associated with the adoption of ICTs in budgetary matters. The first is the implementation costs. In the short run, the digitalisation of budgetary procedures may involve direct and indirect costs. The second problem of

digitalisation of public procedures is referred to as the digital divide. This relates to the barriers preventing citizen access to digital services for a number of reasons (e.g. poverty, age, or limited digital literacy). The digital divide, however, may be overcome with improved access to digital services and with enhanced training for civil servants. The third main problem is related to the protection of citizens' privacy. Increased accessibility of personal data, and the risk of data theft, may impede the distribution of this information. In addition, data protection comes with increasing costs for public institutions.

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Endnotes

¹ This is a report, published bi-annually, which carries the task of assessing the e-government development status of the 193 UN member states.

² See, for instance, European Parliament, [E-public, e-participation and e-voting in Europe](#), 2011; European Parliament, [Workshop The Collaborative Economy: Impact and Potential of Collaborative and Additive Manufacturing](#), 2015.

³ See T. Peixoto, [E-participatory budgeting: e-democracy from theory to success?](#), E-Democracy Centre working paper, 2008.

⁴ See European Commission, [Digital 'to-do' list: new digital priorities for 2013-2014](#), Brussels 2014.

⁵ See European Commission, [Digital Single Market Strategy](#), COM(2015) 192 final, 2015.

⁶ See L. G. Tummers, U. Weske, R. Bouwman, S.G. Grimmelikhuisen, [The impact of red tape on citizen satisfaction: An experimental study](#), International Public Management Journal, 2015.

⁷ See J. Gray, [Open Budget Data. Mapping the landscape](#), 2015.

⁸ See C. Dener, S. Y. Min, [Financial information systems and Open Budget Data: do governments report on where the money goes?](#), Washington, World Bank, 2013.

⁹ See University of Zeppelin, [Open Budget 2.0 & Open budget Data](#), 2011.

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eprs@ep.europa.eu

<http://www.eprs.ep.parl.union.eu> (intranet)

<http://www.europarl.europa.eu/thinktank> (internet)

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