

FLEXPUB: The Development of Flexible and Innovative Location-based e-Services



A Strategic Vision for Location-based e-Services

Today's ongoing and steady technological advancements change the citizens' and businesses' expectations and transform the relationship between the society and the administration. As society evolves, influenced by the wave of digitalisation that flows over an ever-more globalised world, the expectations grow for the administration to innovate in the way it works and interacts with citizens and businesses. In conjunction with those technological developments, it becomes more and more visible that the position of the administration in society is changing, moving from a leading and dominant position towards a new role as facilitator and partner.

Going digital is the future. Therefore, a clear and strategic approach towards e-services is a prerequisite for the development of a strong forward-thinking federal administration. A strong federal e-government policy does not only serve the administration's organisations, but also, and more importantly, citizens, business and society as a whole. It provides the citizens with the necessary protection and security in this digitalised world. It also offers economic opportunities, not only via Open Data, but also via the re-use and sharing of building blocks and other digital tools.

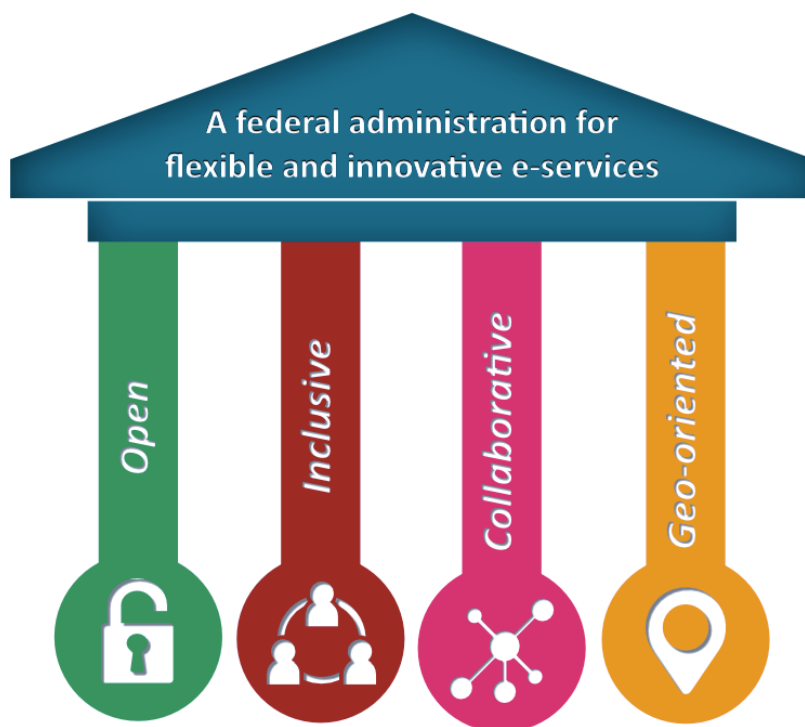
These last years, the federal administration took crucial steps to improve its online presence by transforming existing services into e-services. Steps have been taken at project and strategic level, and different administrative levels have realised that cooperation with others is the way forward. A single and dominant position is no longer possible and feasible in a multi-level governance context.

Those actions are however only the beginning of a long process, and several challenges remain to be tackled within the different administration's organisations. Although there is no silver bullet to approach the future digital developments, the federal administration can be organised in a way that allows for constant interaction and reaction to the changing demands of society. An innovative administration is capable of reinventing and transforming itself and the services that it offers, in order to match new demands and needs. This implies a need for flexibility, which in turn requires finding a correct and workable balance between independence and unity. Organisations should be able to modify their e-services if needed, but these e-services should nevertheless always remain in line with the overall federal approach and requirements.

To guide the federal administration along the way, a **twelve years (2018-2030) strategic vision** is required. Not only for e-services in general, but also for location-based e-services in particular, as data and information, and especially geo data and information, are key to offer real-time and valuable services to citizens, businesses and other administrative organisations.

This strategic vision is envisaged as a framework that aims to establish an environment in which federal organisations and civil servants can reflect on e-government and e-service developments. This framework was built on the basis of existing frameworks, such as the "Open Government Framework" and the findings from the FLEXPUB research.

This framework lays the foundations enabling a federal administration to build flexible and innovative e-services, by relying on four pillars: **Openness, Inclusion, Collaboration, and Geo-orientation**.



Openness is about sharing information and services as broadly as possible, when possible for free, in a secure and privacy compliant manner, in order to increase transparency and foster economic growth through collaboration and data re-use, and to generate value-added services.

It implies fundamental data governance reflections, rather than being content with simply opening data on a portal, as rethinking the whole information management system is a pre-requisite to achieve efficient openness. Indeed, integrated information systems can enable better decision-making and help improve on the public values that the federal administration pursues.

It also implies finding the right balance between budgetary autonomy and user orientation, namely between free and royalty fees' models, as sufficient funding is necessary to keep the quality of the data, and specifically its up-to-dateness, at an appropriate level.

Inclusion is about involving all the stakeholders impacted by the digitalisation strategy, by taking into account their evolving requirements, needs, ideas or necessary training. This inclusion is essential to be able to match the expectations of the stakeholders regarding the e-services.

This implies the inclusion of two main stakeholder groups. The first one are the external users – whether these are citizens or private or public sector organisations –, that have to participate in the development of e-services. Thanks to this participation, the e-services will be better aligned with these stakeholder's requirements and, ultimately, more widely used, not only by the tech-savvy, but by all. The second stakeholder group to consider are the internal public servants whose jobs will evolve due to the digitalisation. As they will interact with the e-services in the back-office, it is essential to accompany this change with appropriate change management actions.

Collaboration is about the administration's organisations embracing an ever more globalising world and society, in which they no longer act as single actors, but strive from an administration wide perspective towards alliances, cooperation and the sharing of data, tools and capacity to fulfil their tasks and duties towards a variety of stakeholders (public, private and citizens).

It implies that federal organisations restructure their cooperation in such a way that a coordinated partnership is established, if need to be with the private sector when relevant. Via those partnerships, a common strategic vision can be established that guides the federal organisations in the development of their future services. At the same time, there is a need for organisational independence. Federal organisations require sufficient organisational leeway and freedom at project level to fulfil their tasks and duties, including developing their own e-services. Guidance, within the federal administration, by a single organisation, is however necessary to establish a common foundation for all, on top of which each organisation can create innovation and flexibility.

Geo-orientation is about generating added value by answering the increasing demand for real-time and geo data and location-based services. This is not only relevant within a group of specialised actors, but also for actors from other policy fields, which might not always realise the potential of including a location component in their services. "What?", "When?" and "Where?" are the three simple questions that are to be considered in any e-service offered.

In order to achieve geo-orientation, information integration is a necessity. As everything happens somewhere, geo data and systems help to understand the interrelationships between and among the issues that the administration, businesses and citizens face every day via the integration of information and visualisations based on location. With the emergence of new technologies (including sensors and Internet of Things) and the increasing amounts of data, the need for ubiquitous and authoritative location information is becoming even more pressing. New technologies combined with advanced use of geo-oriented information systems are powerful tools for the governance of the administration as it supports policy making and services offered to the end users.

In light of the above, this document aims at providing such a **twelve years (2018-2030) strategic vision for flexible and innovative e-services**, via the development of an **Open, Inclusive, Collaborative, and Geo-oriented federal administration**, as well as concrete guidelines to implement it.

Findings

In order for the readers to understand the context in which the strategic vision is established, we first outline the main findings of the FLEXPUB project. We present these according to the logic of this vision, – in terms of challenges faced by the federal administration when developing e-services.

Openness

We noted that:

- many federal organisations open their data for re-use, mainly via Open Data platforms, but often lack an Open Data mind-set that goes further than simply limiting themselves to minimum compliance with the PSI Directive, because of a combination of high costs and lack of visibility on the concrete re-uses and potential benefits;

- security requirements are essential to consider when developing e-services, to improve the users' trust in e-services and government as a whole. This is especially crucial for the implementation of the EU General Data Protection Regulation and Open Data initiatives;
- federal organisations are sensitive to the citizens' privacy concerns and are well aware of the entry into force, in May 2018, of the General Data Protection Regulation, but many civil servants did not receive sufficient information about the concrete rules contained therein, which leads to anxiety about the potential effects on their work.

Inclusion

We noted that:

- too often, e-services are developed on basis of the former non-digitalized processes without sufficient consideration of the external users (citizens, businesses, other public partners etc.). Due to this lack of external consideration, the e-services are sometimes not used as much as expected as they are not fully aligned with users' needs and expectations;
- the inclusion of users in the development of e-services is considered to be difficult due to a number of factors such as the heterogeneity of the users, time-consuming processes or user motivation;
- the federal organisations makes continuous efforts in trying to increase the use of their e-services by citizens and businesses. However, more can be done to include all citizens (e.g. citizens with disabilities or those who prefer to have more "traditional" contacts with the administrations) in order to avoid a digital divide;
- federal organisations face difficulties in attracting specific strongly demanded IT profiles, which can lead to unfortunate situations where organisations are unable to rollout their e-service projects, due to a lack of internal IT skills;
- notwithstanding the actions taken by the Federal Public Service Policy & Support – Directory General Digital Transformation (hereafter "FPS BOSA – DG DT") and its predecessors, as well as those taken individually by federal organisations to change their organisational culture, there remains a resistance to change among civil servants.

Collaboration

We noted that:

- the lack of a common strategic approach can lead to replication of services and a waste of resources within and/or between organisations;
- the federal government has created the G-Cloud and the new FPS BOSA – DG DT with the intention of creating a shared e-government approach via the creation of a common strategy and the provision of technical e-service support to the different actions taken by federal organisations;
- digitalisation requires organisations to redesign and improve their existing services, by taking a high-level view and rethinking their processes, within and across organisations.

Geo-orientation

We noted that:

- the federal administration misses a common organisational approach towards the collection, processing and distribution of geo data. Accordingly, the National Geographic Institute (hereafter “NGI”) wishes to take up its role of geo-broker but remains restricted in its capacity to do so;
- the distribution of geo data via the federal service integrators remains limited and a structured organisational cooperation is lacking for the development of (location-based) e-services both at the federal level and across various levels;
- strong inherent silo structures within and between organisations exist regarding (geo) data in terms of types, standards, processing, management, distribution, use, financial and legal arrangements, leading to a lack of interoperability;
- the uptake of (geo) data is hampered by the ignorance about its existence, meaning, value and sources;
- no hierarchy exists between the federal level and the regions, making it more difficult to harmonise the creation and use of geo data. Moreover, there does not seem to be a political and common will to do so.

Action points

In light of these findings, and in order to provide a **twelve years (2018-2030) strategic vision for flexible and innovative e-services**, via the development of an **Open, Inclusive, Collaborative, and Geo-oriented federal administration**, we suggest the following action points:

Openness

We recommend:

- that the federal government foresees a sustainable “Open Data funding” in order to ensure the quality, the continuity and the maintenance of the opened data, via a global federal budgetary envelope, or via the creation of “Freemium models” (data would be shared freely, but administrations could sell the services built on top of this data to third parties);
- that FPS BOSA – DG DT launches awareness raising campaigns about the benefits of Open Data, as the public sector is the first beneficiary of Open Data, because it forces the organisations to invest in their information management systems and in structures that will facilitate their work;
- that the federal organisations provide tools and instruments facilitating data re-use, notably via standardisation and via the creation of a single point of contact to help re-users know where to find the specific information that they look for;
- that the federal organisations work on making their data available via Application Programming Interfaces (APIs);

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- that the federal, regional's and communities' governments harmonise their "data re-use licences", thus avoiding licensing incompatibilities' issues;
- that the Data Protection Authority, with the support of the FPS BOSA, trains the civil servants about the impact on their daily work of the EU General Data Protection Regulation (documents, templates, workshops, traineeships,...);
- that the federal organisations take personal data protection and security concerns into consideration from the start when designing public e-services (Privacy-by-design), and adopt strict policies in this regard.

Inclusion

In order to include external stakeholders, we recommend:

- that federal organisations adopt an Agile way of working when developing their e-services. These methods allow for a more collaborative work environment between stakeholders, and will allow the integration of the input from customers and users more easily. We recommend the tailoring of an existing Agile methodology (e.g. SCRUM), in order to be more adapted to the specificities of the federal administration and its e-services;
- that, in light of gaining constructive feedback, federal organisations particularly focus on the participation of potential users in the development of e-services, to make the e-services more user-friendly, more aligned with users' requirements and to potentially increase its usage afterwards.;
- that the digital-by-default approach has to be complemented with a "multi-channel service delivery" approach, allowing citizens to access the administrative services according to their own preferences;
- that appropriate steps are taken by the federal government to improve data literacy, in order to provide people with the necessary skills to interpret and use data;
- that, in order to ensure that every citizen has access to e-services offered by the federal administration, "Public Internet Access Points" (PIAPs) and "One-stop shops" (OSS) are created, where citizens can initiate, process and complete administrative tasks of various organisations from different administrative levels in one single building or webpage (based on a catalogue of services, ideally structured based on "life events"), with the help of trained supporting staff who can guide the users through the process;
- that recruitment procedures are adapted, in order to provide more flexibility in terms of diploma requirements, salaries, length of contracts or selection procedures;
- that FPS BOSA – DG DT supports federal organisations' communication campaigns (re-branding initiatives, work with newspapers, attendance to "Job days" for students, more traineeship offers for students) in order to shine more light on all the innovative projects of the federal administration.

In order to include internal stakeholders, we recommend:

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- that each federal organisation reflects about the continuous and flexible training and re-orientation possibilities that it offers, for instance via the creation of “Internal IT Academies” or e-learning platforms, where civil servants can be taught new skills (IT, managerial, legal...);
- that organisations analyse, with the support of the DG DT and the DG Recruitment and Development of the FPS BOSA, what organisational culture is present among the management, the civil servants and in their (e-)services. Indeed, if a mismatch appears between those three, an active reordering of the organisational culture and/or of the (e-)services offered by the organisation will be necessary;
- that, as e-services are part of the broader organisation and not a self-standing development, the culture around an e-services is not to be treated as self-standing either, and that an overall approach towards organisational cultural reform, including digital aspects, would be more beneficial for organisations;
- that, given that our attention was drawn to the need for stronger involvement, ownership, responsibility and accountability of civil servants in e-services and the development process, the civil servants are to be actively supported by their top- and middle-management to participate in the development of those e-services;
- that, the DG DT and the DG Recruitment and Development of the FPS BOSA develop a platform serving as a repository of good practices, of which the different federal organisations could make use when (re)developing an e-service, to guide civil servants in the e-service transition process. This toolbox can be made available via the federal intranet or FEDWEB website.

Collaboration

We recommend:

- that, in order to meet the demand of federal organisations to remain independent in their e-services development, and well as the demand of federal organisations to create a more structured approach towards e-government, the structures and the roles of the FPS BOSA – DG DT and the G-Cloud are further strengthened;
- that given the fact that e-government and data management is a common challenge of the whole federal administration, the Board of the Federal Chief Information Officers, the SIT, which comes together on a monthly basis, is so that this board can take advisory positions in relation to the federal organisations, the three Colleges as well as to the government;
- that this Board of Federal Chief Information Officers has an advisory function for a number of specific e-government non-project related topics, such as the approval of a federal e-government strategy and action plan, or the sharing and re-use of data and e-service tools.
- that the existing federal Working Groups related to e-services and (geo) data report on a regular basis to the Board, and that new Working Groups also have the obligation to report back to the Board to ensure that all federal organisations are kept informed about new developments;
- that a Working Group on Standardisation is created, with representatives of all federal organisations, to discuss, and when possible and feasible, propose and approve common standards, thereby respecting the organisational independence and expertise, given that (i)

data and e-service standardisation is one of the main challenges for federal organisations, (ii) FPS BOSA – DG DT can present and judge on standards, (iii) the Centre for Cybersecurity is responsible for standards related to cybersecurity;

- that, for the sake of the future generations' interest in federal (geo) data, and in light of the existing Archiving Law (2009) and the two Royal Decrees (2010) on archiving, the State Archives are more strongly included in the collection and processing of data by the federal organisations to ensure that the data meets the necessary archiving standards;
- that, in support of various organisations which do only partially or do not possess the necessary resources to reflect on innovation within their organisation, a multidisciplinary innovation team is set-up, in conjunction with an e-government lab under the auspices of the FPS BOSA – DG DT, which could propose, develop, redesign and implement (location-based) e-services for the federal administration;
- that an Innovation and Collaboration Funding Mechanism is created to support federal organisations dealing with innovative and collaborative projects;
- that the FPS BOSA – DG DT and the G-Cloud continue to implement a decentralised information management model, based on the concept of Authoritative Data sources;
- that FPS BOSA – DG DT pushes for stronger “once-only” implementation policies, so that organisations collaborate and share information more intensively, thus reducing the burden on citizens and businesses;
- that the FPS BOSA – DG DT envisages the possibility to coordinate a decentralised pool of skilled IT people (IT architects, developers, programmers...), consisting of voluntary or appointed civil servants that the organisations are willing to detach to another organisation on a project basis and for a well-defined period of time.

Geo-orientation

We recommend:

- that, given that the successive state reforms led to a reshuffling of competences of the Federal Public Service Finance concerning cadastral information, and that the NGI is currently building up its role of geo-broker, a geo-organisation, within the federal administration, is tasked with geo data management (bringing together topographical mapping, cadastral mapping, geological mapping, aerial mapping, remote sensing and marine mapping). Also, given the importance of geo data in statistical analysis, it is proposed to include the General Direction Statistics – Statistics Belgium in this organisation.
- that this organisation takes up a number of tasks such as (i) the development and the implementation of a strategy for geo data; (ii) the collection, processing, and distribution of geo data; (iii) the development of technical building blocks for the use of geo data within (existing) e-services – in collaboration with the FPS BOSA – DG DT; (iv) the offering of a common acquisition platform for geo data and tools, and (v) the continuation of the tasks executed by the previously existing entities which it groups;
- that this geo-organisation could function as a focal point and could work, in close collaboration with the FPS BOSA – DG DT and the Working Group on Standardisation, on the establishment

and implementation of common standards derived, if possible, from other already existing standards, be it at the supranational (preferably) or regional level;

- that this geo-organisation functions as centre of expertise that:
 - safeguards the national fundamentals of geo data (such as the national coordinate system);
 - collects and stimulates the exchange of knowledge on geo data and e-services, in relation to both the federal organisations, and international/regional organisations;
 - is consulted by all federal users on matters such as standards, software, data, openness of systems or visualisation platforms;
 - develops instruments to support the integration of information systems, linking with national authoritative geo data sources;
- that a federal sharing platform and catalogue for internal federal use is set-up, containing geo datasets and metadata, which allows the different federal organisations and civil servants to easily re-use geo data. Geo.be, the gateway platform to geo data of the federal government, could serve as a starting point for further developing such an internal federal sharing platform;
- that a Belgian approach towards authoritative data sources is further developed, including the three regional administrations and the federal administration;
- that, in order to foster the societal and economic growth and possibilities created by geo data, action is undertaken by the geo-organisation: (i) to continue on the path of opening up data, (ii) to bring together data from regional organisations, and to create federal datasets which have a societal and economic relevance, and (iii) to create specific tools and instruments which might increase the societal and economic benefits created by the Open Data approach.

Final remarks

This strategic vision aims to provide a discussion ground for future developments. It contains ideas and suggestions that can stimulate thoughts and reflections on the development of future federal e-services. Concretely, we present a vision that needs to be implemented in practice. A possible lead for the implementation of this vision would be to apply an “enterprise architecture” methodology (e.g. Zachman and TOGAF). This methodology will sub-divide the vision into concrete actions, business, information and technology architectures with clearly defined actors, roles, resources and structures. According to us, this “enterprise architecture” view can be best led by the FPS BOSA – DG DT in conjunction with all federal organisations, which should be part of this process, and with a specific reference to the NGI and the G-Cloud.

As a final note, we want to underline that this is a working document. We do highly welcome suggestions, feedback and comments on this vision and do hope to foster debate among members of the federal administration and beyond.