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À PROPOS DE NOUS

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ABOUT US

The **International Journal of Open Governments / Revue Internationale des Gouvernements ouverts (RIGO)** is an academic journal created and edited by Irène Bouhadana and William Gilles at IMODEV, the Institut du monde et du développement pour la bonne gouvernance publique.

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THE FUTURE OF E-GOVERNANCE BETWEEN AI AND BIG DATA: INFORMATION BROKERS AND NAVIGATORS FOR THE DIGITAL WORLD

by **Marino CAVALLO & Simone FERRARO**, University of Bologna and Research, Innovation and European Projects at Metropolitan City of Bologna

INTRODUCTION: “THE FUTURE IS NO LONGER AN EXTENSION OF THE PRESENT”

Those who would like to review many of the forecasts made less than a decade ago about the transformations that - even then - the very rapid spread of E-Services, i.e. services based on digitisation, could have imprinted on the economy of the more industrialised countries cannot fail to see how they have not misunderstood their nature, but, rather, underestimated their intensity.

As in a “*trompe-l’œil*” the eyes were not deceived on the shape of the observed model but on its distance from the observer.

Although it was already evident even to the less shrewd futurologists that the “service society”, as Rifkin theorized at the beginning of the 10’s of the new millennium¹, would profoundly innovate the choice processes that orient markets and supply and demand dynamics, the time variable of this phenomenon seems to have overlooked by many. This rapid evolution has led to an increase of the complexity in the interactions between businesses and citizens with governments and for this reason can be read as a reflection of an “economic reality”, where companies, citizens and governments become increasingly interconnected, both at the national and international level. Economic reality on which governments, with a growing awareness of urgency, are trying to affect through the implementation of One-Stop Shops (OSS) as a means of reducing transaction cost².

In fact, only a few would have bet that the innovations announced, thanks to the “new oil” and the “new electricity”, respectively, the use of Big Data, and the use of Artificial Intelligence (AI) based solutions, would have replaced with such strength the desire to own and purchase new products and goods with the desire to access new functions and services. A new scenario, based on the paradigm of disintermediation through “Apps”, which has placed the relational and “contact” aspects as central and has assigned the ability to fully understand the communication and cultural universes of consumers a role of

¹ J. RIFKIN, *The Zero Marginal Cost Society: The Internet of Things, The Collaborative Commons, and The Eclipse of Capitalism*, Palgrave Macmillan, New York, 2015; M. E. PORTER, J. E. HEPPELMANN, «How Smart, Connected Products Are Transforming Companies», *Harvard Business Review*, n° 3/2015.

² OECD, *One-Stop Shops for Citizens and Business*, OECD Publishing, Paris, 2020, p. 10.

fundamental importance for business success³. If, as Gerd Leonhard, one of the brightest and most listened to “*maître à penser*” in the field of innovation, says, «the future is no longer an extension of the present», at this stage, the entities that by their nature are called to give continuity to the economic policies of States, or of their supranational unions, such as Public Administrations (PA), are faced with an extremely challenging task: to keep in balance the necessary development of technologies capable of enabling the exploitation of new and revolutionary opportunities with the needs of the actors, on whose “legs” these same technologies will have to walk: (i) the people; (ii) the traditional entrepreneurial ecosystem; (iii) the new high-tech business realities as the Start Up and the Innovative Small and Medium Enterprises – SMEs)⁴.

PAs know the mechanisms and degrees of feasibility of political projects from the inside, and only their active participation allows the implementation of “policies by design”, where “design” is the exploitation of an opportunity, under certain conditions, for the solution of a problem with the aim of achieving a goal⁵. Policies “by design” which not only can give shape to the relational conditions of possibility of behaviour (incentivised or censored), but which can, at the same time, create relational mechanisms based both on “command and control” and on a logic recently defined by Floridi as “the reflexivity of self-reinforcement”, in which virtuous circles operate, which, the more they work, the better they work, thus creating a “network effect”⁶.

This article will provide examples of consistent implementation of this type of policy. This will be done by using the cases of those OSS that have been able to deliver “win-win” results for governments and clients⁷, improving both service and regulatory compliance. In addition to good practice procedures that make it easier for citizens and businesses to identify the modules, provide and receive information once for multiple scopes (Once-and-Only Principle - OOP)⁸, examples of initiatives that can support entrepreneurship through the organization of “*Ad hoc*” events and initiatives (such as periodic fairs, awards, national digitization campaigns) or facilitation in the creation of co-working and co-designing

³ M. CAVALLO, *Designing and Promoting E-Service*, Franco Angeli, Milano, IT, 2016, pp. 34-52. M. CAVALLO, «Sharing Economy, Sharing Information. Are Open Data Addressing Us Towards a New Wikieconomy?», *International Journal of Digital and Data Law*, n° 2/2016. V. VENKATESH, J. Y. L. THONG, X. XU, «Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead», *Journal of the Association for Information Systems*, n° 5/2016, p. 335.

⁴ S. ALBERTINI, C. MUZZI, «Institutional Entrepreneurship and Organizational Innovation: The Start-Up of a Divergent New Venture at the Periphery of a Mature Field», *The International Journal of Entrepreneurship and Innovation*, n° 2/2016.

⁵ M. MORTATI, S. MAFFEI, *Researching Design Policy Ecosystem in Europe*, Tongji University Press, Tongji, 2018.

⁶ L. FLORIDI, *The Green and the Blue: Naïve Ideas to Improve Politics in a Mature Information Society*, in C. ÖHMAN, D. WATSON (eds), *The 2018 Yearbook of The Digital Ethics Lab.*, Springer, Cham, 2019, pp 183-221.

⁷ E. ALFONSI, N. CASALINO, G. SPAGNUOLO, *The One Stop Shop for Productive Activities (SUAP): How to Lower the Barriers to Enterprises' Start-Up, Simplifying and Streamlining the Procedures to Reduce the Cost of Starting Business*, in F. VISINTIN, D. PITTINO, G. LAUTO, P. A. M. MAZZURANA (eds), *Organising for Growth: Theories and Practices*, CreateSpace Independent Publishing Platform, 2014, p. 51-71.

⁸ R. KRIMMER, T. KALVET, M. OLESK, A. CEPILOVS, E. TAMBOURIS, *Exploring and Demonstrating the Once-Only Principle: A European Perspective*, in ASSOCIATION FOR COMPUTING MACHINERY, *Proceedings of the 18th Annual International Conference on Digital Government Research*, ACM, New York, 2017, pp. 546-551.

spaces⁹ (FabLab, Accelerators and Start Up Incubators) will also be provided. In fact, the collection has shown that it is only by creating synergies between these two factors that governments can receive better quality information in the first place, and better compliance rates that reduce the amount of resources needed to apply the rules.

§1- ARTIFICIAL INTELLIGENCE (AI) IN ITALY

A) Artificial Intelligence (AI) in Italy: What's Going On?

In Italy new scenarios imposed by the spread of AI are creating a strong turbulence in the entrepreneurial ecosystems. As a matter of fact, International competition is putting a sense of urgency on how to compete with these new technologies. The market is now globalized and Italy is lagging behind in understanding how to use these “new engines”, i.e. there is no full understanding of what the concrete profit margins of these new value chains could be or what the loss of competitiveness that a delay in this field could create in the coming years will be. The country most important economic players would seem to be still without a forward-looking perspective and seems unable to completely intercept the opportunities reported by leading international financial analysts: neither the examples of the past¹⁰ nor the advice for the future¹¹ are fully understood. The reasons for this trend should be sought in historical reasons: the largest private companies belong to the utilities sector¹². Conversely, if we look at the top five companies listed in the New York Stock Exchange (NYSE) today, these are software companies (technology companies) and these technology companies are investing to make the AI the “engine” of their competitiveness in the coming years. The “sense of panic” born from this unequal competition imposes new relational models for Italian companies. These new relational models can be based on the use of the AI as an “aid in choices” (Artificial Intelligence Counselling – Company Brain). The strategic plans of these technology companies stems from the aim of exploiting the potential of certain competitive factors of the industry of the future. Competitive factors based on the assumption that AI assistance shows its maximum effectiveness in three main competitive factors: (i) predictive models; (ii) logistics; (iii) model for accompanying choices (i.e. dynamic pricing). These competitive factors are maximized in companies’ relationships with their customers (in both Business to Business and Business to Client) and also allow two other advantages: cost reduction (in manufacturing and supply-chain); product customization and customer engagement (on-demand manufacturing). The “global customer” wants “tailor made” products and services and to meet this demand AI

⁹ M. PORTER, «Location, Competition, and Economic Development: Local Clusters in a Global Economy», *Economic Development Quarterly*, n° 1/2000, pp. 15-34. N. J. DEE, F. LIVESEY, D. GILL, T. MINSHALL, *Incubation for Growth: A Review of the Impact of Business Incubation on New Ventures with High Growth Potential*, NESTA, London, 2011.

¹⁰ M. ANDREESSEN, «Why Software Is Eating the World», *The Wall Street Journal*, 20th August 2011.

¹¹ M. CASADO, M. BORNSTEIN, *The New Business of AI (and How It's Different From Traditional Software)*, published 16th February 2020 on Andreessen Horowitz (“a16z”) venture capital official website.

¹² AGICI, *The Italian Utilities Industry. Success Stories and Future Perspectives*, A. GILARDONI (eds), Springer, Cham, 2020.

represents a competitive advantage that today is not possible to miss. All these processes in the future can use AI in order to reduce the most important factor in globalized competition: “Time”¹³. Italy still has a long way to go and if it does not take advantage of these opportunities the “productivity leap” that our competitors will be able to make thanks to the AI will leave our country even more on the margins of the world economy.

B) START-EASY: Democratization of Access to Goods and Services by Proposing Solutions

If we consider the role of PA in supporting the Italian entrepreneurial ecosystem, the main issue concerns the necessity of its intervention. Because the lack of investment in these sectors will lead to a loss of competitiveness, both for individual companies, and for the entire national production system. With a view to loyal collaboration between different levels of government, the numerous initiatives currently being carried out at ministerial level¹⁴ one of the interventions that the Metropolitan City of Bologna wants to operate is to open its E-Government laboratory to the entrepreneurial ecosystem thanks to its European project called START EASY¹⁵.

START EASY wants to support companies that want to maximize the competitive factors of the industry of the future thanks to support of European OSSs. Thanks to the ability to concentrate functions and packages of services in one – physical or virtual – place OSSs will encourage the development of services based on the model of a “Single Access Point”. This model makes it possible to set up integrated desks dedicated to specific types of users¹⁶. In this way the PA will provide services aimed at businesses and the market by promoting models of “Open Innovation” and a new “Corporate culture”¹⁷.

Regarding “Open Innovation”, it is necessary to highlight how “Globalisation” has made research and development processes increasingly expensive and risky because the life cycle of products has become shorter and shorter (“Time” as a central factor). For this reason, it is necessary to overcome the paradigm of “closed innovation” (R&D only within the company) also overcoming companies’ fears of not being the sole owners of their innovation processes. The START EASY’s OSSs will give the opportunity to become more competitive to those who manage to create innovative products and services modulating in the best way “what comes from inside” and “what can be obtained from the

¹³ Time is a central factor in products selection, helping to cut costs, improve production processes, and logistics optimization - picking. “Time” is also a fundamental element in the Customer’s Experience (CX) curve and in cost optimization.

¹⁴ Thanks to an opposite platform dedicated by the OECD it is possible to observe the state of the art and their continuous evolution at the following internet site: <https://www.oecd.ai/dashboards/countries/Italy> (accessed on 27th November 2020).

¹⁵ Interreg Europe START EASY project (*Smart Tools for Quick and Easy Business Start-Up in Europe: the Once-Only Challenge*) website: <https://www.interregeurope.eu/starteasy/> (accessed on 27th November 2020). M. CAVALLO, «The Impact of the Covid-19 on the European Entrepreneurial Ecosystems», published 26th October 2020 on *The Smart City Journal. Noticias*.

¹⁶ M. CAVALLO, *The Essence of E-Service*, Conference Proceeding at «Local Authorities in the Open Government Era» - International Meeting, 8th July 2014, Charles University, Prague.

¹⁷ H. W. CHESBROUGH, *Open Innovation: the New Imperative for Creating and Profiting from Technology*, Harvard Business School Publishing Corporation, Boston, 2003.

players outside” its corporate perimeter (Start-Ups, Universities, Research Institutes, Suppliers, Inventors, Programmers, Consultants, and so on). It will be possible to see concrete examples of this, in the promotion made by START EASY’s OOS of: (i) Competitions for innovative ideas (calls for ideas, hackathons, prizes); (ii) Collaboration agreements between partners; (iii) Opening of hubs; opening of in-house think tanks; acquisitions. Moreover, in the field of the New “Corporate culture” these further aspects will be investigated by the project: (i) In-house know how production; (ii) Technology scouting; (iii) Matching between supply and demand of technology; (iv) Start-Up selection and their presentation to “customers”; (v) Creation of a Value Propositions; (vi) Cross-technology approach in the business solutions.

C) The AI’s value supply chain in Italy: Scenario analysis

Italy is the fourth country in the world in the field of AI research, but despite the excellence of its researchers, Italy is the 27th country in the world for research funding¹⁸. For this reason, in Italy the AI sector has difficulties in following traditional R&D schemes (i.e. Technology Readiness Levels/TRL scheme¹⁹: I) Research; II) Product; III) Market). Given the characteristics of our system, a circular scheme between all the ecosystems operating in this sector could give better results. Schemes that the START EASY’s OSS could realize.

Ecosystems operating in the field of AI are: (i) Research; (ii) “Who produces AI” (ITC companies; software manufacturers; hardware manufacturers; advanced robotics manufacturers; and so on); (iii) “Who uses AI solutions” (corporations and civil society). The START EASY’s OSS could give these three ecosystems a chance to work together. For example, by making the world of research (universities - research institutes) dialogue not only with those “Who produces AI solutions”, but also with those “Who uses” them.

First of all, the START EASY’S OSSs could promote cooperation between the world of research and technology companies aimed at developing better solutions for end customers. Moreover, they could create an AI’s value supply chain by promoting the exchange of data between those who will adopt the AI solution and research institute, thus giving universities the opportunity to develop the first feasibility studies without the obligation to produce any product ready for the market (TRL 8/9). According these possible initiatives research institutes then could provide these “refined data” to “Who produces AI” will be able to carry out industrial research generating value. In this way it is possible to overcome two kinds of barriers: *legislative* (processing of personal data in a General Data Protection Regulation -GDPR EU Law compliant manner); *commercial* (reluctance of private companies sharing data and information that could benefit their direct competitors)²⁰.

¹⁸ POLITECNICO DI MILANO, *Artificial Intelligence: on your marks!*, Conference Proceeding 19th February 2019, Artificial Intelligence Observatory, Milano, IT, 2019.

¹⁹ M. HÉDER, «From NASA to EU: the Evolution of the TRL Scale in Public Sector Innovation», *The Innovation Journal*, n° 2/2017, p. 11.

²⁰ O. G. YALÇIN, *Examination of Current AI Systems within the Scope of Right to Explanation and Designing Explainable AI Systems*, in M. PALMIRANI (eds), *DC JURIX 2019. Proceedings of the Seventh JURIX 2019 Doctoral Consortium*, Sun SITE Central Europe/RWTH Aachen University, Aachen, 2020.

In this way the START EASY's OSSs could lead to concrete progress in the engagement of PA in the field of Digital Governance. The uniqueness of the data collected is in their ability to express the proactive function of PA. Registration for its services is not only a bureaucratic obligation but users are encouraged to register because of the same nature of the services provided.

The nature of this data is unique in that the data collected by START EASY's OSS originates from the same preferences expressed by operators (catching up in the digitalization of public services and implementing the OPP principle for business data registration). The PA has the duty to collect such important data not only because of the monitoring obligations that the Law imposes on it but above all because of its responsibility to intercept the needs of the market in order to lead to the economic development of the entire entrepreneurial ecosystem (i.e. "circular scheme" between all the ecosystems operating in AI sector). The matching between "supply and demand" carried out by the PA is unique in that it is based on its principles of transparency, impartiality and fairness (reliability). If for a private body to operate on the basis of these principles may represent a choice of corporate policy/self-regulation (CSR - Corporate Social Responsibility)²¹ for a Public Body this is an explicit legal obligation and a clear responsibility towards citizens.

§ 2 – THE FUTURE OF E-GOVERNANCE BETWEEN AI AND BIG DATA IN THE EUROPEAN START EASY PROJECT

Beyond the necessary simplifications underlying the concepts dealt with so far, it is now necessary to specify how in this article the key words "Smart" and "City" are to be intended as follows:

A) "Smart" Concept

Any digital technology used in a given urban context with the aim of producing new resources, optimizing existing ones, modifying user behaviour or ensuring other prospective improvements in terms of flexibility, security and sustainability²². Given the extreme semiotic flexibility of this definition, this term will be understood mainly as Resilient/Adaptive, in particular, as the capacity to overcome difficulties and elastically adapt to challenges²³.

B) "City" Concept

The Metropolitan government Public Body²⁴ able to achieve a fair distribution of social costs as defined by Coese, for which rights acquire their contents in the contexts in which they are exercised and evolve as a

²¹ PROVINCE OF BOLOGNA, *Corporate Social Responsibility. Scenarios, Analysis and Case Studies*, M. CAVALLO (eds), Editrice Compositori, Bologna, IT, 2008.

²² F. BRIA, E. MOROZOV, *Rethinking the Smart City. Democratizing Urban Technology*, Codice, Torino, IT, 2018, p. 10.

²³ M. EREMA, L. TOMA, M. SANDULEAC, «The Smart City Concept in the 21st Century», *Procedia Engineering*, n° 2/2017.

²⁴ V. OSTROM, C. M. TIEBOUT, R. WARREN, «The Organization of Government in Metropolitan Areas: A Theoretical Inquiry», *The American Political Science Review*, n° 4/1961.

result of their change²⁵. The Metropolitan level of government is a concrete example of collaboration between International, Regional, National and Sub-National levels of government according to the principles of differentiation and “subsidiarity”²⁶. That is the reason why it is able to ensure continuity and attention to long-term objectives, transparency and the representation of a high number of interrelated interests.

To bring these two concepts into the territorial context of Bologna, it should also be pointed out that the inhabitants of the Metropolitan City of Bologna has the explicit right of all for a “digital citizenship”.

This right not only commits the institution to develop projects to ensure the exercise of this right (a condition that also affects the management of European projects), but in the future it may lead to the birth of own city data commons on the model of cities such as Barcelona, where the access to the data and their control represents not only a strategic resource but most of all a “good” of the whole community²⁷.

Specifically with regard to the development of the technological infrastructure of the City, these have seen a turning point in 2010 with a memorandum of understanding with the most important stakeholders of the territory for the establishment of the project’s platform “Bologna Smart City”.

As foreseen by its Metropolitan Strategic Plan, the actions of this project had 7 key areas: (i) Cultural heritage; (ii) Iperbole 2020 Cloud & Crowd (civic network based on cloud technology and integrated digital identity); (iii) Ultra-broadband fiber to the home and smart lighting system; (iv) Sustainable mobility (electric mobility network); (v) Sustainable restructuring of public assets and private for energy efficiency, security, social housing, and promotion of new services for the waste management; (vi) E-Care, E-Health, process optimization and business intelligence; (vii). Strong collaboration with the Alma Mater Studiorum University of Bologna and fostering of a new technical and scientific culture. More recently, Bologna promoted the European Digital Agenda²⁸, the European Commission policy focused to: (i) The development of the information and knowledge society at the local level; (ii) The deployment of these principles in Metropolitan contexts, through the stimulation of actions and commitments of local actors.

²⁵ R. H. COESE, «The problem of social costs», *Law & Economy*, n° 3/1960.

²⁶ G. F. CARTEL, V. FERRARO, «Rapports. Italy: Reform of the Fifth Title of Italian Constitution: a Step Towards a Federal System?», *European Public Law*, n° 4/2002. M. POTO, «The Principle of Proportionality in Comparative Perspective», *German Law Journal*, n° 9/2007, pp. 845-6, p. 864.

²⁷ OGP, ITALIAN GOVERNMENT, PRIME MINISTER’S OFFICE, CIVIL SERVICE DEPARTMENT, *4th National Action Plan for Open Government 2019-2021*, 31st August 2020. F. BRIA, E. MOROZOV, *Rethinking the Smart City*, op. cit., p. 103. EUROCITIES, *Data People Cities. EUROCITIES Citizen Data Principles in Action*, Brussels, 2019. UCLG, OGP, *Building Open, Transparent, Responsive and Inclusive Cities. Urban 20 White Paper*, Buenos Aires, 2018. EUTROPIAN RESEARCH & ACTION, *Funding the Cooperative City: Community Finance and the Economy of Civic Spaces*, D. PATTI, L. POLYAK (eds), Cooperative City Books, Vienna, 2017.

²⁸ AGID – AGENCY FOR DIGITAL ITALY, *Three-Year Plan for IT in the Public Administration*, Rome, July 2020 (as approved by Decree of the Council of Ministers’ President of 17th July 2020, registered by the Court of Auditors under n. 2053/2020. The Decree was published in accordance with the Law in the Italian *Official Journal* n. 255 of 15th October, 2020).

The Metropolitan City of Bologna made these objectives concrete and operative also through the mobilization of external resources (private and no profit), networks of European partnerships.

The main actions to make internet and digital space a common good were: (i) A policy act approved by the municipal Executive Board on the topics and priorities of the Digital Agenda; (ii) New plan of public Wi-Fi spots and free fixed access point available for citizens and city users; (iii) Underground network and infrastructure analysis; (iv) A new plan for high speed broadband; shared city plan for digital inclusion; (vi) Mapping of the training opportunities on digital issues within the city and community. During the last year the main technological infrastructure was the new house of the European Centre for Medium-Range Weather Forecasts (ECMWF). Research team and the supercomputers of the Centre were hosted in an abandoned industrial complex transformed into a modern “Technopole”.

The scenarios outlined so far could lead in the future to an economic revolution based on an impressive, integrated and intelligent technological platform.

This would come from what could be defined as an “internet of communications”, an “internet of energy” (the distributed and decentralised networks that govern the new renewable energy sites, i.e. the smart grind), an “internet of new logistics” (with goods and objects that are connected to each other via Internet of Things - IoT and constantly send information that can be used to optimise the production process).

An integrated network (Smart network) that will be able to unite people, objects, infrastructures and will be the ideal support for “prosumers”, for consumers who are protagonists of this new economy based on E-Service and the power of relations instead of the traditional rules of markets and profit maximization²⁹.

A Smart network where the AI will have the function of both “traffic light” and “watchful”, making billions of intelligent devices converse with each other, and will be able to connote an area or territory as an intelligent city or smart city thanks to its use in: (i) A smart grind (including infomobility, intelligent and renewable energy); (ii) Hub for dissemination and technology transfer (production of content and knowledge); (iii) Public E-Service civic networks for the reduction of bureaucratic procedures and tools for civic collaboration in support of social innovation and economic development.

In this Smart City, an efficient bureaucracy will be an indispensable factor for competitiveness. In the near future, large organisations will increasingly decide on their direct investments in a country and on their strategies for establishing production facilities, making comparisons on the level of PA efficiency as well as on financial incentives and labour costs with increasing detail.

To this end, the homogeneity of the administrative functions involved, the type of information offered or the sector to which the delivery process belongs, will have to be balanced with new priorities.

What will become a priority will be the need of the user. The whole structure will therefore be organised around the user’s needs, the

²⁹ M. CAVALLO, *Designing and Promoting E-Service*, op. cit., p. 9. L. BECCHETTI, *Wikieconomics. Civil Economy Manifesto*, Il Mulino, Bologna, IT, 2014.

multiplicity of needs which, like a mosaic, will make up his demand and requests to the PA.

These daring service architectures³⁰ will also impose many questions on the transformation of the relationship between citizens and PA. Applying forms of organisation and marketing in the public sector that usually belong to the private sector will present undeniable risks. For example, reducing rights and access to services to a mere process of consumption of services.

For this reason, it is essential to proceed with caution and to prefer the range of services, the planning of participation and access to the delivery process and the shared and cooperative selection of priorities on which to organise the offer and the actual delivery of services.

Today an additional way to avoid this risk and approach the future with greater confidence is represented by the European project of the Bologna Metropolitan City START EASY.

Financed by the Interreg Europe Programme, START EASY will allow it to face these challenges by improving the conditions for the economic growth of the territories, through the planning of interventions on public decision-making processes.

The different partners involved (public bodies and research centres from Spain, Italy, Lithuania, Poland, Belgium and France) will learn from each other (peer review), exchanging and integrating their good practices, and developing common strategies.

The plans outlined in this way will then be aimed at improving, in individual national contexts, public services for the support of entrepreneurship and the strengthening of tools able to facilitate the entry of new players into the market.

In particular, projects for administrative simplification will be supported also through the implementation of new digital services or the strengthening of pre-existing OSS.

These will be inspired by the principle of ‘once-only’ E-Government, i.e. ensuring that throughout the service delivery process, citizens, institutions and businesses must provide certain standard information to authorities and public authorities only once.

By 2023, the actions that will be implemented in this way will lead to better governance, involving an increasing number of stakeholders in the understanding, development and implementation of policies. Comparison between policy makers and stakeholders that can involve all levels of governance, including management authorities, agents of the Start-Up ecosystem (such as “incubators” and “accelerators” or “clusters” of companies), enabling institutions, such as insurance companies, banks or other credit institutions, and operators in the field of alternative finance.

The support provided to PA to adopt more strategic approaches to the use of technology that stimulate more open, participative and innovative public-private relationships will show how, although it is not the task of governance to manage the speed of change in technological innovation, it can and should determine the goodness of its direction.

³⁰ A. COCOZZA, *The Revolutionary Reform. Leadership, Professional Groups and Enhancement of Human Resources in Public Administrations*, Franco Angeli, Milano, IT, 2004.

§ 3 – THERE IS NO UNIVERSAL OSS MODEL FOR ALL CIRCUMSTANCES

The considerations expressed so far have been instrumental in reaching a specific conclusion, for which the OSS model desirable today to intercept more closely current economic trends is that defined in § 5 as “I-OSS” (“Intelligent One-Stop-Shop”). A model that could, on the one hand, promote the use of new technologies within its business ecosystem and, on the other, use them to increase its performance, including using AI-based solutions. In this paragraph, therefore, with the aim of offering concrete comparative models for this finding, we propose a benchmarking review of the best practices existing today in the field of OSS. Two methodological clarifications should be added to this review:

I) With regard to the contents of the first table (Tab. 1 OECD - *OSSs Best Practices*), the data source used is the Report produced in 2020 by the OECD «*One-Stop Shops for Citizens and Business*»³¹. It also highlights how in all these examples are present either directly³² or indirectly³³ AI solutions.

II) As regards the contents of the second table (Tab. 2 START EASY Project - *Good Practices*), the data source used is the page of the START EASY Project website dedicated to the *Good Practices* collected during its first year of activity. Although cases from the Metropolitan Area of Bologna have been included in this online page, in order to avoid duplication and overlapping, it has been chosen not to include them in the table 2 if they have already been mentioned in the previous paragraphs of the article.

To collect data in the rows and columns of the two tables, the following concepts from the Logical Framework Approach (LFA)³⁴ have been used: (i) Activity: Intervention logic; (ii) Indicators: Performance standards; (iii) Evaluation: Verification sources; (iv) Assumption: External Factors.

The use of these concepts has served to highlight the points of contact that can be identified between the two data sources. Possible points of contact although the two reviews have been carried out with two logics for the selection of cases definable as specular.

If in the OECD report an inductive procedure has been followed, prefiguring a structure, in which, from individual cases, a greater level of abstraction has been reached (from case studies to the formulation of Best Practice Principles)³⁵, in the selection made so far by the START EASY project, from the general principles set out so far by the European institutions on the digitisation of public services in this sector (mainly contained in the Communication “European strategy for data” COM/2020/66 final, the “General Data Protection Regulation” (EU) 2016/679, the “EU Re-Use of Public Sector Information” Directive 2013/37/EU, the “EU Services” Directive 2006/123/EC), we have, on the other hand, deductively arrived at the identification of concrete ways of implementation.

³¹ OECD, *One-Stop Shops for Citizens and Business*, op. cit.

³² As in cases of use of “virtual assistants” or “chat boxes”.

³³ As in the case of use as indicators of data from analytics tools able to integrate “machine learning” solutions.

³⁴ GOVERNMENT OF NORWAY - DIRECTORATE FOR DEVELOPMENT AID, *The Logical Framework Approach (LFA)*, NORAD, Oslo, 1999, p. 97.

³⁵ OECD, *One-Stop Shops for Citizens and Business*, op. cit., p. 9.

Tab. 1 OECD - OSSs Best Practices

County	CANADA	GERMANY	MEXICO	NORWAY	PORTUGAL	UNITED KINGDOM
Name	<i>BizPaL</i>	<i>Informationsportal für Arbeitgeber</i>	<i>Tu Empresa</i>	<i>Altinn information portal</i>	<i>ePortugal.gov.pt</i>	<i>The GOV.UK web site</i>
Activity	Web site that enables Canadian businesses to identify and obtain permits or licences	Portal to provide employers, which are hiring new employees for the first time, with information on their social security rights and obligations	Websites that provides information on the procedures for opening, operating, and closing a business in Mexico (website transmits electronically the information to the agencies responsible)	E-government portals that allow service providers to get the information they need and complete administrative procedures online.	Starting point for over 1000 essential government services. Organised on a life events approach, the services offered are provided by 590 entities	Starting point for 152 essential government services
Indicators	Periodic reviews of the service	Around 150.000 visitors in the first year	From January to May 2017, the website received 348.722 requests in total for denominations or corporate names, of which 85.056 were authorised	As of May 2019, 57 entities are involved in the Altinn collaboration. More than 400 municipalities use Altinn to communicate to citizens and businesses in their Altinn inbox	Page views, sessions, visitors, registered users, number of authentications, most viewed pages, most viewed services, most performed services, and user satisfaction.	Over 500000 web pages
Evaluation	Google Analytics are used to record usage by clients. Extensive client experience audit	Report on the usage, costs and possible further development of the portal	Government supervision within the Mexican National Digital Strategy	Government supervision (EU Services Directive 2006/123/EC)	Management and co-ordination of the National Administrative Modernisation Agency	Feedback buttons for users. GOV.UK is constantly being updated and improved in response to user feedback and changing circumstances
Assumption	Multilevel governance	Lack of support specifically at the stage of the data collection on the employer's side, prior to the actual transmission of data to the social insurances	Delay for procedures issued by the subnational governments	Authentication of users is established by a national service for authentication (several ID authentication solutions developed by the private or public) sector	Differences in human capital and the administrative expertise of the several entities involved	Advice is provided also by local authority regulators, in discussion with the business, or representatives of relevant trade associations or franchises

Tab. 2 START EASY Project - *Good Practices*

<i>Digitalisation Initiatives</i>	<i>Activity</i>	<i>Indicators</i>	<i>Evaluation</i>	<i>Assumption</i>
Alternative Funding Recommending Tool - ACCIÓ Agency for business competitiveness (Catalan Government - Spain)	This tool drives users through five questions which will lead them to the alternative funding suggestions that best fit the sector they operate in and the specifications of their projects and businesses. Based on the answers the users give to these questions, the tool filters by the 120 currently identified funding instruments and it lists the ones that best meet their needs.	In 2019 the tool achieved 11.260 viewed pages that year, and 1.600 businesses had been advised on funding options. Venture capital investment alone has been raising around 50% the last 3 years.	Government supervision.	The online tool is permanently improved (possible misalignment between the database updating methodologies)
Virtual Marketplace - ACCIÓ Agency for business competitiveness (Catalan Government - Spain)	Connects companies in Catalonia that offer technology and health-related material, or have production capacity, to help ease the consequences of COVID- 19.	More than 2.000 companies are participating and offering solutions.	Government supervision.	The Covid-19 crisis has disrupted value and supply chains across the world.
Start-up VISA (Ministry of Economy- Lithuania)	Procedure that provides a streamlined entry process to the Lithuanian start-up ecosystem for innovative non-EU entrepreneurs.	Increased number of non-EU start-up founders were granted with Start-up visa: 2017 – 27 2018 – 83, 2019 Q2 – 70, in total 35% of applications were approved. These non-EU start-ups consisted almost 16% of all start-ups working in Lithuania in 2020.	Government supervision (EU Services Directive 2006/123/EC). Evaluation committee made up of representatives of local start-up accelerators and venture capital funds, plus staff from Start-up Lithuania and the Agency for Science, Innovation and Technology.	The start-up must operate in an innovate field, the applicant must legally be at least a partial owner of the newly founded company, and they must have enough financial resources to achieve the set business goals for 1 year.
Trusted Profile (Mazovia Development Agency- Poland)	Free method of confirming a citizen's identity in electronic administration systems, just like a qualified electronic signature.	Already 8 million Poles have Trusted Profile. 328 banks have already joined the network.	Auditing of the Polish Integrated State Informatization Program (European Digital Single Market - DSM Strategy implementation).	Balance in effective way this elements: high security and user-friendliness / smoothness of the tool
<i>Forum, Grant, Fairs</i>	<i>Activity</i>	<i>Indicators</i>	<i>Evaluation</i>	<i>Assumption</i>

Investment Forum - ACCIÓ Agency for business competitiveness (Catalan Government - Spain)	Place where local start-ups from Catalonia meet annually with international and national investors. 50 start-ups are selected to be part of the Investment Forum catalogue and 21 finalists are chosen to pitch at the event.	25th edition in 2020; 100 applications every year; The start-ups that participated in 2009-2019 raised € 271 million from business angels, venture capital funds and public institutions.	Government supervision.	Difficulties on increase the interaction among attendants.
Grant Programme to Business Angel Networks - ACCIÓ Agency for business competitiveness (Catalan Government - Spain)	Grant programme addresses the accredited Business Angels Networks in Catalonia with the aim to foster investment into Catalan start-ups and businesses with high growth potential. Business angel networks are ranked based on the number of deals closed in a year	2012: 66 funding deals were achieved and €10.6 million were invested into companies. 2018: 79 funding deals were achieved and €14.8 million invested.	Government supervision.	Sometimes it's hard for the Business Angels Networks to obtain the documentation giving proof of the deals they helped to achieve, namely the bank receipts and public deeds.
Start-up Fair (Start-up Lithuania- Lithuania)	Annual conference for start-ups where local and international speakers present the most relevant start-ups' topics.	2019: 118 start-ups from 25 different countries in the pitch battle; attracted investors from 11 different countries; 54 speakers.	Presence of foreign experts or start-up supporters such as investors, tech gurus, owners of accelerators.	The annual variation of the agenda (adapt to local circumstances and the conditions that exists at a current time).
<i>Co-working, Incubator, Hub</i>	Activity	Indicators	Evaluation	Assumption
Co.Start Villa Garagnani (Municipality of Zola Predosa (Bologna) - Italy)	The Municipality yearly publishes a call for start-ups, in order to provide for free the spaces and the services offered by Co.Start (which include dedicated offices, co-working spaces, coaching and mentoring activities).	13 start-ups in 4 years have benefited from the Co.Start. In 2019 private sponsors contribution was about € 35.000.	Zola Predosa Municipality are responsible for the accounting procedures.	Efficacy of the public-private partnership. Exploitation of R&D interests of big companies located in the territory to promote and develop local and innovative ideas.
"Le Serre dei Giardini" Incubator (Margherita Gardens' Greenhouses) (Bologna - Italy)	Co-working space, facilities for the training of young students and teachers in entrepreneurship and an accelerator for	204 companies used this consulting/mentorship services. 67 of these companies re-used the services a second time. 87 project of	For the management of the space, a hybrid approach has been adopted, which includes the involvement of both institutional and non-	Threats and opportunities of its multidimensional approach.

	start-ups and creative/innovative business ideas.	enterprise participated to their incubation and impact programmes. 11 of these projects turned in actual companies.	institutional agents. Governance includes profit activities which balance the non-profit ones.	
Crowdfunding Hub (Metropolitan City of Bologna - Italy)	Disseminates the Crowdfunding tool and its potential by providing free consultancy and training to start-up, SMEs, local public bodies.	Hundreds of people who have already followed the free courses made available and connected to the site for information on crowdfunding techniques.	Interreg Central Europe programme – Crowd-Fund-Port project Steering Committee Auditing.	The activities is ensured by the Metropolitan City of Bologna by using its own financial and human resources.
<i>OSSs</i>	Activity	Indicators	Evaluation	Assumption
Canal Empresa - Covid-19: Business support and assistance service (Catalan Government - Spain)	Services to provide up-to-date information about the economic measures taken to deal with the COVID-19, and to offer support and assistance to businesses via Canal Empresa website.	100.000 visits, 45.000 users, 2.306 resolved queries, complaints and suggestions online forms, 956 interactions in social media, more than 150 queries solved chatbox.	The platform involves business advisors who provide personalized help to companies in need of assistance.	Difficulties in the coordination of the information exchange system amongst different departments and government agencies.
“Insieme per il lavoro” (Together for work) (Metropolitan City of Bologna - Italy)	Enhances vulnerable people motivation, supports basic and specific training, and guarantees ad hoc tutoring within companies.	602 job placements, 135 companies involved, 106 self-employment paths and 56 social innovation projects were analyzed which led to the financing of 20 start-ups.	European Enterprise Promotion Awards selection board.	Establishment of collaborative relationships with companies.

CONCLUSIONS: FROM THE “OSS” TO THE “I-OSS”

This article presents projects that PAs are developing in the fields of the AI and the innovation of the Service for the citizen and enterprise. This review has given us the opportunity to present a project that the Metropolitan City of Bologna is realizing in the context of its European Funding Programmes, the Interreg Europe START EASY project. Project on the service for the enterprise and especially on the OSS for the enterprise, service that act as an “information brokers” and a “navigator” for the SMEs of our territory, especially the most innovative enterprises such as Start Up. First of all, we presented the framework of OSS concept, which has as its objective offer service and engage Start Up and enterprise. The specificity of OSS is the openness and a different approach to the service for the enterprise. In OSS it's possible find aggregate the similar service but also other service - other kind of services – that are considered for the needs of enterprise useful. In a sort of “service package” all these different kinds of service could integrate the different needs of the enterprise. We can say that the OSS tries to replicate the concept of a “supermarket”. As you go to the supermarket, and you can find all the different kind of goods you need - sub product for the need of the day life - the idea is to replicate this concept of “supermarket” is the context of the service for the enterprise. We think that in this the AI solutions can support us for a better user profiling of the needs. So, the first use is a support for the profiling of the users. But the development of AI solutions requires a new concept of partnership, which is why in the START EASY project we want to bring together the researchers but also the AI device and software manufacturers, ICT companies, software manufacturers and AI users. In this gathering we believe in the importance of the user's role. We have to design the experience of the user and how the user can help us to satisfy this specific objective. For this reason, in the OSS to build this a new ecosystem, the different actors will have to work together.

We are aware that now in the international competition the most important factor is the “time factors”. Many industries in the future will use AI in order to reduce the most important factor in the era of the globalization: the time. Reduce the time to market for the product, reduce the time for the selection of product or use, and so on.

In this we have to improve the possibilities for a product to enter in the market but also enhances the industrial process system, foster the sustainability of the production and the logistic optimization.

The PA have an important role to support our enterprise in the competition challenges and one way to support our enterprise is the reduction of the bureaucratic procedure and the support to these in funding research. To do this in the past years, we started with a network of “Single Access Point” for the entrepreneurship and thanks to a specific agreement signed with Emilia-Romagna Region we assumed the coordination of this network of service for the local enterprise. “Single Access Points” are the offices where you can find support for all the bureaucratic procedures set to Start Up and enterprise a business and to have support for the founding of your enterprise. Now with the support of European funds granted thanks the START EASY project we would like to try to change the single point of access and to move toward to an

“I-OSS” (“Intelligent One-Stop-Shop”), a new “supermarket” for the SMEs. This is our goal in the in the next month and in the next years. “I-OSS” could represent an evolution from the previous model and with the support of AI we will try to create the pilot of a new a new kind of service. “I-OSS” is one of the future deliverable of START EASY project and we will try to concentrate in these new innovative function for provide to enterprise a new “service package”.

We will also encourage the development of service based on the model of an intelligent interaction between the different actors, between the public administration and the entrepreneur.

We want to use in this new “I-OSS” methodology for improve the user experience, designing, thinking and the mapping of the user experience. We are at the begging of the START EASY Project, and in its first phases the whole attention is focused on Start Up regulation and the use of law for support the new company the activity, the networking of different enterprises, and the innovation financing. We are trying to find a solution to question as: how I can finance my Start Up and the new technological solution as AI?

The next stages will be the development of “I-OSS” hypothesis for new services, better communication about the service of enterprise. This will allow us new opportunities in the cooperation between public administration and enterprises. At this end, we will foster new policies for the attraction of the talent in our territory, because the human resource in technological context is really strategic and are the most important results of open innovation in the enterprise but also in the territories.

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