



PROFESSOR PAOLA PISANO

Summary

Professor of Economy and Innovation Management, she was former Italian Minister of Technological Innovation and Digitalization, adviser for digital economy and technological innovation for the Italian Minister of Foreign Affairs and International Cooperation, adviser at the Italian Ministry of Public Administration and former Councilor of the city of Torino for Innovation and Smart City. Her inclusive and multidisciplinary approach plays a vital role in ensuring that everyone works together towards the common goal of progress. With an extensive professional background in both the private and public sectors, she has enhanced project management and leadership skills.



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Paola Pisano

ONGOING POSITION

2006-to present. University of Torino. Associate professor of Economic and Innovation Management at the Department of "Economic and Statistic"

Teaching activities at national and international institutions in MBA, Master and PHD level.

- **Courses:** "Digital Transformation"; "Managing Innovation and New Technologies for Private Organizations and Public Institutions"; "Economics and Innovation Management"; "Innovation and new technology in green economy".
- **Institution:** University of Turin, Politecnico di Milano, Luiss University Rome, Sapienza University Rome, University of Catania, University of Pavia, Westminster University, ESCP Business School, Glasgow Caledonian University, Italy-USA Foundation, Ministry of Foreign Affairs.
- **Approach:** Based on the UN Convention on the Rights of Persons with Disabilities (2006) and the application of new technologies (such as AI and Virtual Reality), the approach is focused on leaving no one behind.
- **Methodology:** Teaching with cases following Harvard Business Publishing Education.

Team.

- **5 PHD students** in: data scientist (2), circular economy (1), innovation (1), robotics automation (1).
- **3 Research fellows** in cultural heritage.
- **1 Full professor** in circular economy.
- **1 Associate professor** in management of innovation.
- **2 Researchers** in economics and innovation.

Research topics and collaboration.

1. **Reinforcing private and public organizations' resilience toward Machine Learning and Early Warning System:** in collaboration with *Department of Peace and Conflict Research*, Uppsala University, Sweden; *Italian Ministry of Foreign affair and International Cooperation*; *Nato Defense College Foundation*; *Italy's National Cybersecurity Authority* and *Department of Political and Peacebuilding Affairs*, UN.

2. **Bringing transparency and Ethical approach in Artificial Intelligence (AI) systems development:** in collaboration with *Intesa Sanpaolo Bank*, *UNESCO*. Notre Dame University
3. **Enhancing the value of the Italian cultural heritage through a policy analysis definition and implementation:** in collaboration with Italian Ministry of Cultural Heritage; *Cloudif.ai Srl*, leader in new technologies and methodologies of Artificial Intelligence and Data Science; *University Sapienza*, Rome; *University Suor Orsola*, Naples and other Italian Universities.
4. **Supporting green and technological transformation:** in collaboration with *Oracle*, American multinational computer technology corporation; *Reply spa*, Italian company specialized in consulting, system integration, and digital services; *Opinno tree*, global consulting company; *Athonet*, Hewlett Packard Enterprise leader in mobile core network technology; *Computer Science; Chemistry departments*, University of Torino; Politecnico of Torino.
5. **Using new technologies in education activities:** in collaboration with *Synesthesia*, Italian digital experience company.

Projects founded and my role.

1. **DigImpact.** Economic impacts evaluation of the Italian National Strategy for the digitization of cultural heritage. Founded by the Ministry of Cultural Heritage. Principal Investigator.
2. **Nodes.** Supporting digital and ecological transition. Founded by Next Generation EU-National Recovery and Resilience Plan. Team Leader.
3. **Data and AI.** The relationship between geopolitical changes and value chains evolution in the field of advanced technologies. Founded by Compagnia di SanPaolo Foundation (bank foundation). Principal investigator.
4. **Predictive Diplomacy-Breaking the Trend.** Anomaly Detection Models for Early Warning of Socio-Political Unrest. Founded by University of Torino. Principal investigator.
5. **Investigating Integrated Gradients as XAI Methods for Multivariate Timeseries Transformers.** Founded by Notre Dame-IBM Technology Ethics Lab. Principal Investigator

Publications: More than 90 national and international academic journal publications and author of 2 books.

Examples of peer reviewed publications:

- Valentina Cillo, Alice Mazzucchelli, Paola Pisano, Domenico Graziano. (2023). "Inside talent management: the strategic role of knowledge sharing and ICT capabilities in MNEs' performance", *European journal of international management*, vol. 19, p. 614-633, ISSN: 1751-6757
- L. Dezi, P.Pisano, M.Pironti, A. Papa, (2018). "Unpacking open innovation neighborhoods: le milieu of the lean smart city", *Management Decision*, p. 1-24, ISSN: 0025-1747
- Papa Armando, Mital Monika, Pisano Paola, Del Giudice Manlio (2018). "E-health and wellbeing monitoring using smart healthcare devices: An empirical investigation", *Technological forecasting and social change*, p. 1-10, ISSN: 0040-1625
- A.Rieple, , J.Gander, , P.Pisano, A. Haberberg, (2015), "UK Fashion Designers Working in Micro-sized Enterprises; Attitudes to Locational Resources, Their Peers and the Market", *Industry and Innovation*, vol. 22, p. 147-164, ISSN: 1366-2716

Article under review in line with the research project presented:

- L. Macis, M.Tagliapietra, R. Meo, P.Pisano, “Breaking the Trend: Anomaly Detection Models for Early Warning of Socio-Political Unrest”, submission date:2/2 2023, Journal of Politics.
- L. Macis, M.Tagliapietra, R.Meo, P.Pisano, “Predicting Unrest Events with Pre-trained Temporal Transformers: A Time Series Classification Approach” in progress.

2016 - to present. University of Torino. Director of “Smart City Laboratory”

An interdepartmental laboratory for smart city technologies to make life easier for citizens and to reduce digital divide.

2019 - to present. Digital Library, organization owned by Italian Ministry of Culture in charge for the digitalization of Italian cultural heritage. Member of the Board of Directors

2021 - to present. Corriere della Sera, Italian newspaper, MIT Business Technology Review Italy, EastWest. Geopolitical and technology, Start up Italia. Writer

2022 - to present. Radio Radicale, National Station. Collaboration on a program implementation

Design, implementation and execution of a new radio program related to technologies and their social and geopolitical impacts.

2023 - to present. UNESCO. Member of the bureau Women4Ethical AI platform

The objective of the platform is to put in practice the UNESCO Recommendation on AI Ethics, with a specific focus on gender diversity and women empowerment.

PROFESSIONAL EXPERIENCE – PUBLIC SECTOR

2021- 2022. Italian Ministry of Foreign Affairs and International Cooperation. Minister adviser for digital economy and technological innovation

Achievement

Digital and technological innovation strategy for the Ministry based on three pillars and 50 projects:

- Pillar 1. Reinforcing the Ministry international position in digital and technological field.
- Pillar 2. Using technologies to support diplomatic activities.
- Pillar 3. Improving the competences and skills of diplomats on new technologies applications in their daily activities.

Projects examples

1.1 Position papers on the EU’s “Digital Compass Strategy” and on “Critical issues such as global connectivity, strategic autonomy, cybersecurity and AI”.

1.2 Definition of a national cyber capacity building ecosystem.

2.1 Supporting Italian citizens living abroad to use ministerial applications for their safety and security.

2.2 Redesigning and sharing digital services for Italian citizen abroad. Some examples are Spid (Italian digital identity), digital payment, and e-voting.

2.4 Using of open data and Early Warning System technique to support geopolitical issues.

2.5 Designing and starting up of misinformation and disinformation unit.

3.1 Designing and delivering courses for diplomats on technologies and their use.

2021-2022. Ministry of Public Administration. Minister adviser for digital services and new technologies in the Public Administration

Supporting the Minister on international, national policy and regulation in technological and digital field.

2021-2022. FORMEZ, public administration study center. Scientific expert for the digitalization of the Public Administration

Increasing competences and skills on new technologies and digital applications in the public administration.

2021-2022. OCSE. Italian Representative

Reinforcing democracy using digital services and technologies.

2021-2022. Italian Government. Italian Representative in “UNESCO drafting committee for the Recommendation on the Ethics of Artificial Intelligence” (adopted by the UNESCO General Conference at its 41st session)

My focus during the negotiations was on mass surveillance and social scoring which were completely banned from the recommendation.

2019-2021. Government of Italy. Minister of Technological Innovation and Digitalization (for more information see Annex 1)

Achievement

- 1. Ministry set up.** It was the first time that Italian Government decided to have a Ministry of Technological innovation and digitalization so I had the privilege to set it up from the scratch: recruiting over 100 professionals with a multidisciplinary background, promoting gender equality in the hiring process and achieving 50% gender parity, introducing fully digital procedures and adopting an agile approach with specialized micro-teams.
- 2. All the following strategic plan and regulations were defined and approved.**
 - “Strategy for technology innovation and digitalization” based on three pillars: digital transformation; innovation economy boost; sustainable and ethical society. 20 actions were defined to support the three pillars above.
 - “Information technology for public administration. Three years plan”, with guidelines and criteria to monitor progress of any ICT projects.
 - “National Strategy on Digital Competency and its implementation plan”.
 - “Regulatory framework” to foster innovation and sustain digitalization, security and data privacy.
 - “Legal framework for public data interoperability and secure National Cloud infrastructure” to preserve Public Administration strategic data and services.
 - “New procurement regulations for ICT” to encourage and simplify access to tender for start-ups and SMEs along with big companies.

3. Development of digital services for all citizens to ensure and preserve their rights.

- Introducing measures to promote the adoption of “digital-identity-as-a-service”, developing and launching of the application “IO”: a single mobile channel to access to all PA’s central and local digital services; promoting the adoption of electronic payments, engaging numerous local and central government administrations (33,000+ entities).

4. Digital infrastructure and inclusion.

- Ultra-Broadband connection. 1,715 municipalities were connected thanks to a strong multilateral activity with the European Commission that supported Italy in starting the executive phase and in obtaining grants for 1 billion and 146 million euros for families with a low income, schools, and hospitals.

5. Inspiring digital solidarity to contrast the Covid-19 pandemic.

- “Digital Solidarity initiative” to provide free digital services to citizens, scholars, professionals and companies. The initiative received 758 free offers.
- “Connected neighborhoods - Digital services for the local economy”. Local small businesses that were negatively affected by Covid-19 were supported in e-commerce adoption.

6. Leading Italy toward Innovative technologies.

- “Sperimentazione Italia” (Italia Experimentation), an agile legal framework to allows the development of frontier innovations not covered by regulations and encouraging the government to create the regulatory framework.
- “Smarter Italy Program” to provide innovative digital services and infrastructures to 11 Italian cities and 12 small villages.

7. National and international projects on AI.

- Setting up a national working group for “AI ethical framework indicators definition” to select AI service providers for the Italian Public Administration.
- Signing, on behalf of Italian Government, the "Rome Call for AI Ethics" together with the UN FAO Director General, the President of Microsoft and the Vice President of IBM, an initiative to guide the ethical development of AI.
- Joining the Global Partnership on Artificial Intelligence (GPAI) for the development of AI applications.

8. Awards and special acknowledgments.

- Immuni, a digital application designed, developed and launched to track Covid-19 diffusion, was rated by the Massachusetts Institute of Technology (MIT) in Boston with the highest score and receiving positive evaluation from the Council of Europe.
- In December 2020, as Minister for Technological Innovation and Digitalization, I was nominated among the world’s 50 most influential people for pioneering innovation in the public sector by Apolitical and the “Global Future Council on Agile Governance” of the World Economic Forum.

2016-2019. City of Turin. Councilor for Innovation and Smart City.

Achievement

1. Technology and digital innovation.

- Launching the initiative “Torino city lab” to support innovators in scaling up their initiatives at national or international level. Involving more than 80 partners, key projects focused on smart and autonomous mobility, robotics, 5G technology and AI.
- Obtaining 7,5 ml of Euro government funding to attract and support companies in testing and scaling their innovations.
- Some projects are listed below:
 - 2018 and 2019: 200 and then 300 drones flew autonomously over the city. It was the highest number of drones flying autonomously in the center of a European city testing AI and 5G technology.
 - 2018-2019: An autonomous bus was tested on the United Nations campus in Turin, and a path for autonomous cars was created in the city.
 - Use of AI for underground traffic management.
- Reinforcing the use of digitalization inside the Public administration (e.g. cloud based application, public data interoperability).

2. Social innovation.

- Launching “Torino Social Impact”, a framework to support social innovation. More than 170 companies, institutions, financial operators, charities, foundations contributed to the project implementation aimed at solving emerging social problems.
- Some projects are listed below:
 - “Homes4All”: to address the housing emergency.
 - “Fooding”: to fight food waste using perishable food and food surpluses for disadvantaged families and homeless people.

2014-2016. University of Torino ICxT, Interdepartmental Technological Innovation Center for technology transfer to SMEs. Founder and Director

PROFESSIONAL EXPERIENCE: PRIVATE SECTOR

2011-2012. 3H partner, consulting company London UK, Innovative entrepreneurial solutions provider. Senior consultant

Relevant project: Pfizer: “Using technology for rebuilding organizations”.

2005- 2009. ESCP Business School, Paris, London, Berlin, Torino. Senior consultant

Torino headquarter startup, training courses definition for students and managers.

1999-2005. A&G consulting group. Senior consultant.

Relevant Projects in Fashion, Finance and Publishing industry.

Minister for Technological Innovation and Digitization

Summary of the most relevant results of projects and initiatives in 2020

(information and data updated to January 20, 2021)

Digitization

- **Digital Identity - Spid**
 - There are 16 million 400 thousand citizens who are currently equipped with SPID, the Public Digital Identity System. In September 2019, at the time of the inauguration of the second government led by Prime Minister Giuseppe Conte, there were about 4 million. Now that's 10 million more.

- **Digital identity - CIE**
 - Currently there are 18 million and 600 thousand citizens who have an electronic identity card, CIE.

- **Electronic payments - pagoPA platform**
 - In September 2019, direct payments to public administrations were migrated to the "Payment node-SPC" (pagoPA platform). In January 2016 they totaled approximately 57 million while to date there are over 170 million. In 2020 alone, 100 million payments went through the platform, for over 18 billion euros.

- **Access to the digital services of the Public Administration - the app "IO"**
 - Since April 28th, the "IO" mobile application is available to all citizens. By the end of Dic. 2020, it was downloaded by over 9 million and 300 thousand citizens.
 - Through the app "IO", citizens can currently access 115 public digital services, a number that is constantly increasing. It allows citizens to receive notification and pay school fees, waste, parking, taxes, etc. Some Regions including Umbria, Veneto and Piedmont offer their digital services on the application so do big municipalities such as Rome, Milan, Turin, Venice, and some agencies and ministries: the Ministry of Economy and Finance, Revenue Agency, Automobile Club of Italy.

- Since June, the app “IO” has been used to transfer the so-called “Holiday Voucher” to eligible applicants. Thanks to the full interoperability between the Public Administration databases, the applicants’ eligibility can be assessed in 30 seconds, a significantly shorter time if the applicants would have been standing in front of a physical counter.
 - Since December 8, citizens have been able to join the "Cashback" program which will allow those who make purchases with debit cards, credit cards and debit cards to receive a refund directly on their bank account. Currently the registered users are 5 million and 800 thousand.
- **National Resident Population Register - ANPR**
 - The "National Resident Population Register" (ANPR), the single database of resident population, is almost completed. It will replace the fragmented registers of the 8,000 Italian municipalities.
 - As of 11 January 2021, 7.176 out 7.903 have migrated to ANPR¹ (in October 2019 there were approximately only 3,700 Municipalities). ANPR manages the data of over 55 million citizens.
 - Through this single database, citizens can access the registry services regardless of their place of residence. Soon other features such as the digital domicile, the National Registry of Patients (ANA), the Electronic Health Record (FSE) and the Permanent Census will be implemented as well.
- **Fund for Innovation and Digitization (“Rilancio Law”)**
 - A recent call open for municipalities earmarked 43 million out of the "Fund for Innovation and Digitization" to support municipalities and local authorities to create digital services by the deadline of February 28, 2021 introduced by the “Simplifications” Decree. By that date, public administrations should 1) integrate into their systems, SPID and CIE as the sole identification systems for citizens who access digital services; 2) integrate the pagoPA platform into their collecting revenues systems; 3) develop projects that would allow the access to their services through the app “IO”.
 - The call was launched on 15 December. To date, over 5,560 Municipalities have responded to the call. A further 1,686 Municipalities will access the Fund through regional agreements in six regions and an autonomous province. The applicants must prove that they are starting projects or have already started activities for the adoption of SPID and PagoPa, and the provision of digital services through the app “IO”.

¹ <https://stato-migrazione.anpr.it/>

- **"Designers" and "Developers Italia"**

- The "Designers" and "Developers Italia" are two communities of developers which help the Public Administration in the design and development of digital services that are easy to use, and fully accessible for visually impaired and people with disabilities. 15 toolkits (parts of code, tools for practical software verification, tools to assess the digital services' user centricity) were made available to help Public Administrations with the design of their digital services. Additionally, there is an online channel "Forum Italia", through which citizens, public employees and technology suppliers can exchange views, share information and ask or provide suggestions.

Regulations, Strategic and Operational Plans

- The Covid-19 emergency with the consequent lockdowns and mobility restrictions required a "Necessity and Urgency Decree" to speed up the digitalisation of the Public Administration. The Minister for technological Innovation and digitalization introduced some specific provisions in the emergency measures approved by the Government.
- With article 75 of the "Cura Italia" decree, the Public Administration has been authorized to purchase IT and connectivity goods and services through a new negotiated procedure. Administrations should select the supplier from at least four proposals among which at least one must come from an innovative startup or an innovative small or medium-sized enterprise.
- With the "Rilancio" Decree, a first "Fund for technological innovation and digitization" was set up with an initial allocation of 50 million euros to be used to digitize public administration services for citizens and businesses.
- The "Simplification and Digital Innovation" Decree introduces measures for the support, development and dissemination of new digital services. Hereafter a brief description of the main measures. By 28/2/2021, all the administrations should use SPID, CIE, Pagopa and the app "IO" as the sole means for respectively accessing, paying and offering mobile digital services. The "Notification Platform" will allow digital communications between the Public Administration and citizens with registered mail; the National Digital Data Platform assures interoperability between the different public sector data sets. The "National Strategic Pole" (PSN), a highly reliable infrastructure and a network of data centers located on the national territory to guarantee quality, safety, scalability, energy efficiency, economic sustainability and the operational continuity of digital systems and services.
- In July, the New "2020-2022 Three-year plan" for information technology in the public administration was approved. For the first time, the plan has an operational and not just a strategic cut: it contains guidelines, criteria for

verifying the progress of projects, specific tasks to be assigned to various branches of the Public Administration.

- In July, Italy issued the National Strategy on Digital Skills and the related implementation plan, which is being carried out in conjunction with the Ministry of Economic Development, the Ministry of Labor, the Ministry of Education, the Ministry of University and Research and the Minister for the Public Service.

Connectivity and the “Ultra Broadband Project” (BUL)

- At the end of 2019, already four years after the start of the announcement of the Ultra Broadband Strategy Plan, there were only 79 Municipalities that had completed the ultra-broadband connection. In 2020 alone, the works were completed in 1,715 municipalities.
- In November, the executive phase of the “Voucher Plan” was launched: one billion and 146 million euros of grants were assigned to families and businesses to acquire new connecting technologies.
- The first phase of the vouchers scheme is underway; the first tranche of 200 million euros will be assigned to families with ISEE below 20 thousand euros.

Schools, distance learning and connectivity

- In May, the Ultra-Broadband Committee approved the "School Plan" which earmarked 400 million euros to connect 35 thousand school buildings out of 40 thousand with ultra-broadband and free 1 Gbps connectivity, within five years. At the end of the year, about 200 schools have been connected.
- In March, at the start of the epidemic, during the lockdown, the “Digital Solidarity” initiative was launched with the aim of providing free services for citizens, professionals and companies for limited periods of time, so that citizens could continue their activities despite the limitations. The initiative received 758 offers including distance learning and smart working, online shopping, leisure services, reading books and newspapers online, free connectivity and more. The Digital Solidarity website has been consulted over 11 million times.
- In September, in collaboration with the Ministry of Education, we launched the “Digital Education” project with the aim of facilitating distance learning thanks to free remote assistance services.
- Since November, at the request of the Government, the telephone companies have offered free and unlimited data to access the platforms for distance learning.

Innovation: innovative technologies

- The “Smarter Italy” Program is aimed at equipping 11 large cities and 12 small villages with innovative services. The program, in collaboration with the Ministry of Economic Development, the Ministry of University and Research and the Agency for Digital Italy (AGID), allocates 90 million to 5 sectors: mobility, cultural heritage and tourism, wellness and health, economy and environment .
- Article 36 of the “Simplification and digital innovation” introduced “Sperimentazione Italia” (Italia Experimentation) a provision that allows companies, universities, research institutions, etc. to quickly experiment with frontier innovations and ensure that disruptive innovations opportunities are not missed. Any positive outcome of the experimentation will lead to a review of the regulatory framework and scale the innovation at national level.
- Together with the Ministry of Economic Development and the Ministry of University and Research, 45 national poles were selected in view of the European Digital Innovation Hubs network for the growth of emerging technologies.

Covid Applications

- Since June, “Immuni”, the Covid-19 exposure notification app has been available in the Apple and Google stores.
- After seven months, it was downloaded 10 million times.
- The app is fully interoperable with apps of other Eu countries namely Croatia, Denmark, Germany, Ireland, Latvia, the Netherlands, Poland and Spain.
- A call center supports citizens to send the exposure notifications.

International Projects

- Last March, together with the FAO Director General, the President of Microsoft and the Vice President of IBM, we signed the "Rome Call for AI Ethics", an initiative promoted by the Pontifical Academy for Life. The document contains a set of policy principles to guide the development of artificial intelligence algorithms such as transparency, inclusiveness, responsibility, security and privacy.
- In July, Italy joined the Global Partnership on Artificial Intelligence - GPAI (Global Partnership on Artificial Intelligence) for the development of artificial intelligence algorithms useful for the world of work and health. The initiative, in addition to Italy, includes among the founding countries Australia, Canada, France, Germany, India, Japan, Mexico, New Zealand, Republic of Korea,

Singapore, Slovenia, United Kingdom, United States of America and the European Union.

- In October, together with 28 Confindustria companies, Italy joined GAIA-X, the European project for an open federated data infrastructure. The federated data infrastructure should improve and simplify the access and sharing of data in a simple and secure way.
- In December, together with France, Germany and Spain, Italy proposed the *Important Projects of Common European Interest (IPCEI) on Next Generation Cloud Infrastructure and Services (IPCEI-CIS)* to finance the development of the next generation of cloud infrastructures and services in the EU. In the coming months, the needs and requests of industrial stakeholders will be collected in order to develop concrete proposals and projects. This project covers research, development, innovation and first industrial implementation (FID) of the next generation of cloud and edge infrastructure and services.
- In December, Italy took over the Presidency of the G20. The Digital Economy Task Force DEFT will include, among its topics for discussion, the digitization of the public sector with a specific focus on digital identity as a tool for social inclusion, applications of Artificial Intelligence to the public sector and experimentation with “agile regulation”.

Digital skills for citizens

- In 2020, 2.5 million students, over 70,000 teachers, 900,000 citizens and 200,000 workers received digital training through the Repubblica Digitale project.
- 34,000 women participated in courses of digital literacy.
- In December, we launched the first experimental program "Digital Civil Service" which involves 1000 volunteers to help citizens in the use of information technologies and digital public services (the program is in collaboration with the Department of Youth Policies and the Universal Civil Service).
- In December the Italian version of the “Elements of AI” platform was made available for free to train 1% of citizens on the basic concepts of artificial intelligence and its applications (<https://www.elementsofai.it/>).

Awards and Acknowledgments

- The Immune app was rated by the Massachusetts Institute of Technology in Boston with the highest score, and has received positive evaluation from the Council of Europe.

- In December, Apolitical and the Global Future Council on Agile Governance of the World Economic Forum nominated the Minister for Technological Innovation and Digitalization among the world's 50 most influential people for pioneering innovation in the public sector.